

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**ORDER NO. R9-2021-0015  
MASTER RECYCLING PERMIT  
FOR CITY OF SAN DIEGO, SOUTH BAY WATER RECLAMATION PLANT,  
SAN DIEGO COUNTY**

The City of San Diego, as described below, is subject to waste discharge and water recycling requirements set forth in this Order:

**Discharger Information**

Discharger:	- City of San Diego
Name of Facility:	- South Bay Water Reclamation Plant
Facility Address:	- 2411 Dairy Mart Road, San Diego, CA 92154, San Diego County
Facility Contact Information:	- Thomas Rosales, Deputy Director, Public Utilities Department, 858-654-4245; Shauna Lorange, Director, Public Utilities Department, 858-292-6441
Mailing Address:	- 9192 Topaz Way, San Diego, CA 92123
Type of Facility:	- Wastewater Treatment Plant
Tertiary Treatment Capacity:	- 15 million gallons per day maximum

**Discharge Location**

Discharge Point:	- Recycled Water Use Areas
Effluent Description:	- Disinfected Tertiary Recycled Water
Hydrologic Area of Discharge:	- Otay Valley Hydrologic Area (HA) (910.20) of the Otay Hydrologic Unit and the Tijuana Valley HA (911.10) and San Ysidro HA (911.11) of the Tijuana Hydrologic Unit

**Effective Date**

The Order was adopted by the California Regional Water Quality Control Board, San Diego Region and is effective on: **June 9, 2021**

I, David W. Gibson, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on June 9, 2021.

**David W. Gibson, Executive Officer**

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## I. FINDINGS

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), finds:

- A. **Background.** The City of San Diego (Discharger) began operating the 15 million gallons per day (MGD) South Bay Water Reclamation Plant (Facility) in 2002. The Facility treats wastewater collected from the southern portion of the City of San Diego, including San Ysidro, Otay Mesa, and the Tijuana River Valley (all which flow through the Grove Avenue Pump Station (GAPS)). The Facility also receives raw wastewater from a portion of the Imperial Beach sewage collection system (through the Otay River Pump Station), the City of Chula Vista, and unincorporated portions of South County and East County. Wastewater from the GAPS and the Otay River Pump Station is primarily domestic sewage from residential and commercial activities. The Facility uses tertiary treatment processes to produce recycled water and distributes the treated wastewater to customers in the Otay Valley Hydrologic Area (HA) (910.20) and Tijuana Valley HA (911.10) for a range of potential uses including the following: landscape irrigation, agricultural irrigation, industrial process, construction, restricted recreational impoundments, or landscape impoundments. The Discharger disposes of excess recycled water and secondary treated water, when recycled water demands are low, to the Pacific Ocean through the South Bay Ocean Outfall. Discharges to the outfall are permitted by National Pollutant Discharge Elimination System (NPDES) Permit Order No. R9-2021-0011 (NPDES No. CA0109045), Waste Discharge Requirements for the City of San Diego South Bay Water Reclamation Plant, Discharge to South Bay Ocean Outfall (Order No. R9-2021-0011). The Facility is in the western portion of the Tijuana River Valley on a 22.3-acre lot on the southeast corner of the intersection of Dairy Mart Road and Monument Road (Figure 1 of Attachment A).

The San Diego Water Board adopted Order No. 2000-203, *Waste Discharge and Water Recycling Requirements for the Production and Purveyance of Recycled Water for the City of San Diego, South Bay Water Reclamation Plant* (Order No. 2000-203) on November 8, 2000. Order No. 2000-203 established waste discharge requirements and water recycling requirements for production, distribution, and use of up to 15.0 million gallons per day of recycled water at use sites within the Otay Valley HA (910.20) and the Tijuana Valley HA (911.10) for a range-of potential uses.

The San Diego Water Board adopted Addendum No.1 to Order No. 2000-203, *Waste Discharge and Water Recycling Requirements for the Production and Purveyance of Recycled Water for City of San Diego, South Bay Water Reclamation Plant, San Diego County* on October 13, 2004 (Addendum No. 1). Addendum No. 1 addressed modifications to original discharge specifications, disinfection process specifications, the facility operation manual, monitoring provisions, and effluent monitoring requirements in response to issues the State Water Resources Control Board, Division of Drinking Water (DDW)<sup>1</sup> identified during a commissioning study of the ultraviolet (UV) disinfection system at the Facility.

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<sup>1</sup> Formerly known as the California Department of Health Services.

The San Diego Water Board adopted Addendum No. 2 to Order No. 2000-203, *Waste Discharge and Water Recycling Requirements for the Production and Purveyance of Recycled Water for City of San Diego, South Bay Water Reclamation Plant, San Diego County* on June 14, 2006 (Addendum No. 2). Addendum No. 2 further modified the design and operation specifications required by Order No. 2000-203 to comply with requirements established by DDW.

The City of San Diego (Discharger) submitted an updated *Permit Application and Report of Waste Discharge, South Bay Water Reclamation Plant, Waste Discharge Requirements and Master Reclamation Permit* (ROWD), dated June 2020, stating the Discharger had installed a new ultraviolet (UV) disinfection system and requested the development of an updated master recycling permit for the Facility. The San Diego Water Board enrolled the Discharger in Order No. R9-2019-0005 *Conditional Waivers of Waste Discharge Requirements for Low Threat Discharges in The San Diego Region Waiver No. 2 - Discharges to Land of Recycled Water* on June 30, 2020. The waiver enrollment allows the Facility to continue to produce recycled water that meets the requirements in Order No. 2000-203 and the DDW's *Conditional Acceptance of Trojan Signa Disinfection System*. The Discharger's waiver enrollment expires June 30, 2021.

Recycled water produced at the Facility will serve various irrigation sites near existing recycled water pipelines as shown in Figure 2 of Attachment A. The treatment process includes screening and grit removal, primary sedimentation, primary effluent flow equalization, aeration tanks, coagulation and filtration, electro dialysis reversal, and an UV disinfection system.

- B. Legal Authorities.** Order No. R9-2021-0015 *Master Recycling Permit for City of San Diego, South Bay Water Reclamation Plant, San Diego County* (Order) is issued pursuant to sections 13263 and 13523.1 of the Water Code. This Order serves as a Master Recycling Permit and includes waste discharge requirements (WDRs) issued pursuant to section 13263 of the Water Code, and water recycling requirements (WRRs) for the production, distribution, and use of recycled water from the Facility issued pursuant to sections 13523 and 13523.1 of the Water Code. Together, the WDRs and WRRs serve as a Master Recycling Permit.
- C. Rationale for Requirements.** The requirements in this Order are based on information in the ROWD, water quality control plans, policies,<sup>2</sup> the *Title 22 Engineering Report Addendum for the Trojan Signa UV disinfection system at the South Bay Water Reclamation Plant* (Title 22 Report), observations made during inspections and site visits, and other available information. The Fact Sheet, Attachment C, prepared for this Order contains the rationale for the requirements and is hereby incorporated into and constitutes findings for this Order.
- D. Antidegradation Policy.** The State Water Resources Control Board (State Water Board) established California's Antidegradation Policy in Resolution No. 68-16, *the Statement of Policy with Respect to Maintaining High Quality of Waters in California*

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<sup>2</sup> Including the State Water Board's *Recycled Water Policy*:  
[https://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/2018/121118\\_7\\_final\\_amendment\\_oal.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf)

(Resolution No. 68-16). Resolution No. 68-16 requires existing quality of waters be maintained unless degradation is justified based on specific findings. The San Diego Water Board's *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan) implements and incorporates by reference both the State and federal antidegradation policies. As discussed in section V of the Fact Sheet, the discharge regulated by this Order is consistent with the Basin Plan and Resolution No. 68-16.

- E. **Notification of Interested Persons.** The San Diego Water Board notified the Discharger and interested agencies and persons of its intent to adopt a Master Recycling Permit that also prescribes WDRs. The San Diego Water Board also provided stakeholders with an opportunity to submit their written comments and recommendations. Details of the notification are provided in section IX of the Fact Sheet.
- F. **Consideration of Public Comment.** The San Diego Water Board, in a public meeting, considered all comments pertaining to the discharge. Details of the schedule for the Public Hearing are provided in section IX of the Fact Sheet.
- G. **California Environmental Quality Act.** Adoption of this Order is exempt from the California Environmental Quality Act (CEQA, Public Resources Code, section 21000 et seq.) pursuant to California Code of Regulations, title 14, section 15301 (negligible or no expansion of use of existing facility).

**IT IS HEREBY ORDERED**, that, this Order supersedes Order No. 2000-203 as amended by Addendum No. 1 and 2, except for enforcement purposes. To meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and applicable regulations adopted thereunder, the Discharger shall comply with the Order requirements.

## II. DISCHARGE PROHIBITIONS

- A. Discharge of waste to land, which has not been specifically described in this Order or in the ROWD, and for which valid WDRs are not in force, is prohibited.
- B. Discharges of treated or untreated solid or liquid waste to waters of the United States are prohibited unless authorized by a NPDES permit issued by the San Diego Water Board.
- C. Discharges of treated or untreated solid or liquid waste directly or indirectly to any waters of the State (including ephemeral streams and vernal pools) are prohibited.
- D. The treatment, storage, or disposal of waste in a manner that creates pollution, contamination, or nuisance, as defined by Water Code section 13050, is prohibited.

## III. DISCHARGE SPECIFICATIONS

- A. The average annual flow from the Facility shall not exceed a daily maximum flowrate of 15.0 MGD and no less than 4.0 MGD when in use.
- B. Discharges of recycled wastewater from the Facility shall not contain constituents in excess of the discharge specifications in Table 1.

**Table 1. Discharge Specifications**

Constituent	Units	Daily Maximum <sup>1</sup>	Monthly Average <sup>2</sup>	Annual Average <sup>3</sup>
Biological Oxygen Demand (BOD <sub>5</sub> @ 20°C)	mg/L	45	30	-
Total Suspended Solids (TSS)	mg/L	45	30	-
pH	pH units	6.5-9.0	6.5-9.0	6.5-9.0
Total Dissolved Solids (TDS)	mg/L	1300	-	1200
Chloride (Cl)	mg/L	350	-	300
Sulfate (SO <sub>4</sub> )	mg/L	350	-	300
Sodium (Na) Hazard <sup>4</sup>	%	60	-	-
Total Nitrogen (N)	mg/L	-	-	15
Iron (Fe)	mg/L	-	-	0.3
Manganese (Mn)	mg/L	-	-	0.05
Methylene Blue-Activated Substances (MBAS)	mg/L	-	-	0.5
Boron (B)	mg/L	-	-	0.75
Fluoride (F)	mg/L	-	-	1.0

<sup>1</sup> The daily maximum discharge specification shall apply to the results of a single composite or grab sample representing non-overlapping 24-hour periods.

<sup>2</sup> The monthly average discharge specification shall apply to the arithmetic mean of the results of all samples collected during each calendar month.

<sup>3</sup> The annual average discharge specification shall apply to the arithmetic mean of the results of all samples collected in a calendar year period.

<sup>4</sup> See the Sodium Hazard Discharge Specification Alternative Compliance section below this table.

**C. Sodium Hazard Discharge Specification Alternative Compliance.** If the percent sodium value of the effluent exceeds 60 percent, compliance with the Sodium Hazard discharge specification may be evaluated by calculating the adjusted sodium adsorption ratio (SAR) and the electrical conductivity of the effluent. If the adjusted SAR and electrical conductivity values indicate the degree or restriction of use of the effluent falls within or below the slight to moderate range, as indicated in Basin Plan Table 3-1, the effluent will comply with the sodium hazard discharge specification.

Adjusted SAR is calculated using the following equation:

$$SAR = \frac{Na}{\sqrt{\frac{(Ca_x + Mg)}{2}}}$$

Where  $Na$ ,  $Ca$ , and  $Mg$  are in milliequivalents per liter.

Refer to Attachment E to this Order for  $Ca_x$  values.

- D. Recycled water produced from the Facility shall comply with the following additional requirements:
1. The median density of total coliform bacteria measured in the effluent from the Facility shall not exceed a Most Probable Number (MPN) of 2.2 organisms per 100 milliliters, utilizing the bacteriological results of the last seven days for which analyses have been completed; and the number of total coliform bacteria shall not exceed an MPN of 23 organisms per 100 milliliters in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
  2. Turbidity measurement of the effluent from the Facility shall not exceed a daily average value of 2 Nephelometric Turbidity Units (NTU), shall not exceed 5 NTU more than 5 percent of the time during a 24-hour period, and shall not exceed 10 NTU at any time.
  3. The UV disinfection system shall be operated in compliance with the following parameters:
    - a. Since a media filter is used upstream of the UV disinfection system, the Facility must be operated to always deliver a minimum UV dose of 105 mJ/cm<sup>2</sup>.
    - b. The DDW provided the following equations in the August 17, 2017, *Conditional Acceptance of Trojan Signa Disinfection System*. These equations must be used as part of the automatic UV disinfection control system for calculating UV dose.

$$S_o = 10^{-4.16162 \times UVT^{1.91459} \times BPL^{0.76858}}$$

$$RED_{calc} = CR \times 10^{[4.58043 - 1.65778 \times UVA]} \times UVA_{254}^{[2.54274 \times UVA]} \times [S/S_o]^{0.97312} \times Q^{-0.97312} \times B$$

Where:

- BPL: Ballast power level setting (percent)  
 UVT: UV transmittance through 1 cm of water at 254 nm, expressed as percent, at or above 53.7 percent<sup>3</sup>  
 S: Measured UV sensor value (mW/cm<sup>2</sup>)

<sup>3</sup> At UVT values above 80 percent, the value (80 percent UVT, or  $A_{254} = 0.097$ ) should be used as the default value in the RED calculation.

- $S_o$ : Calculated intensity from a new lamp at full power (at same UVT) with clean sleeves, typically expressed as a function of UVT ( $\text{mW}/\text{cm}^2$ ).
- $\text{RED}_{\text{calc}}$ : UV dose calculated with the UV dose monitoring equation ( $\text{mJ}/\text{cm}^2$ )
- CR: Confidence factor = 0.884
- A254: UV absorbance at 254 nm ( $\text{cm}^{-1}$ ).
- Q: Flow rate per lamp, calculated as gallons per minute (gpm) divided by the number of lamps in one bank (gpm/lamp)
- B: Number of operating banks.

- c. The Facility's UV disinfection system is limited to the following operational parameter ranges:
- Flowrate from 4 to 15 MGD,
  - Ultraviolet Transmittance (UVT) at or above 55 percent
  - Sensor UV Intensity at or above  $2.67 \text{ mW}/\text{cm}^2$
- d. On-line monitoring of UV intensity, flow, UVT, and power must always be conducted.
- e. Flow meters, UV intensity sensors, and UVT monitors must be properly calibrated to ensure proper disinfection.
- f. All duty UV intensity sensors must be checked at least monthly for calibration against a reference UV intensity sensor.
- g. For all UV intensity sensors in use, the ratio of the duty UV sensor intensity to the reference UV sensor intensity must be less than or equal to 1.2. If the calibration ratio is  $>1.2$ , the failed duty UV sensor must be replaced by a properly calibrated sensor and recalibrated by a qualified facility. The reference UV intensity sensors shall be recalibrated at least annually by a qualified facility using a National Institute of Standards and Technology (NIST) traceable standard.
- h. UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
- i. If the on-line analyzer UVT reading varies from the bench-top spectrophotometer UVT reading by 2% or more, the on-line UVT analyzer must be recalibrated by a procedure recommended by the manufacturer.
- j. Flow meters measuring the flow through a UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods.
- k. The Facility's UV system must be designed with built-in automatic reliability features that must be triggered by critical alarm setpoints.



- I. Conditions triggering an alarm and startup of the redundant bank shall include the following:
  - i. the UV dose goes below 110 mJ/cm<sup>2</sup>,
  - ii. Sensor UV Intensity below 2.67 mW/cm<sup>2</sup>
- m. Discharger shall divert effluent to the headworks or ocean outfall under the following disinfection system conditions:
  - i. The combined UV dose of all banks is below the minimum UV dose of 105 mJ/cm<sup>2</sup>,
  - ii. UVT is below the minimum UVT commissioned of 55%,
  - iii. complete UV system failure, and
  - iv. flow above the maximum flowrate specification of 15 MGD.
- n. Equivalent or substitutions of equipment are not acceptable without an adequate demonstration of equivalent disinfection performance.

#### IV. WATER RECYCLING REQUIREMENTS

- A. The Discharger must develop and make the following information available to the San Diego Water Board, DDW, County of San Diego Department of Environmental Health (County DEH), and all recycled water use area supervisors.
  1. Rules and Regulations for Recycled Water Users, Attachment B, governing the design and construction of recycled water use facilities and the use of recycled water. Rules and regulations for purveyance of recycled water shall, at a minimum, include the requirements listed in Attachment B to this Order. The San Diego Water Board must receive the Rules and Regulations for Recycled Water Users within 90 days of the adoption of this Order.
  2. A program to conduct compliance inspections of recycled water use sites. Inspections shall determine the status of compliance with the Discharger's approved Rules and Regulations for Recycled Water Users. The Discharger shall provide an outline that describes how this program will be implemented in compliance with the approved Rules and Regulations for Recycled Water Users.
- B. Prior to providing recycled water to a new use site, the Discharger shall:
  1. Submit a *New Reuse Site Report* to the San Diego Water Board, DDW, and County DEH prior to providing recycled water to any new reuse site located within the areas identified in this Order. The report shall include a detailed description of each reuse site and shall include the information below:
    - a. The number, location, and type of facilities within use areas.
    - b. An estimation of the average number of persons served by each facility daily.

- c. The specific boundaries of the proposed use area including a map showing the location of each facility.
  - d. The person or persons responsible for operation of the recycled water system at each facility.
  - e. The methods that the Discharger will use to assure that the installation and operation of the recycled system will not result in cross connections between the recycled water piping system and the potable water piping system including a description of pressure, dye, or other test methods to be used to test the system.
  - f. The specific use of the recycled water at each facility. Plans and specifications for new recycled water use sites and new dual-plumbed sites shall be submitted to the DDW and County DEH; and must include the following:
    - i. Proposed piping system,
    - ii. Pipe locations of both the recycled and potable systems,
    - iii. Type and location of the outlets and plumbing fixtures that will be accessible to the public,
    - iv. The methods and devices to prevent backflow of recycled water into the public water system, and
    - v. Provide a domestic water supply well location in a map if the well is within 1,000 feet from the recycled water use area
2. Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the Discharger shall ensure that the dual-plumbed system within each type of building or structure, or defined area of specific public use that uses or proposes to use a dual plumbed system and use area, is inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for cross-connections at least once every four years. The testing shall be conducted in accordance with the method described in the report submitted pursuant to title 22, California Code of Regulations (title 22), section 60314. The inspection and testing shall be performed by a cross-connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. The County DEH shall be notified 30 days prior to any cross-connection test. A written report documenting the results of the inspection or testing for the prior year shall be submitted to the County DEH and DDW within 30 days of the completion of the inspection or testing.
- C. The Discharger shall ensure the following requirements are met for all recycled water use sites:
1. Enforcement of the Rules and Regulations for Recycled Water Users.
  2. Recycled water reuse site compliance inspections are conducted in accordance with the program developed as required by section IV.A.2 of this Order.

3. The DDW and County DEH must be notified of any incidence of recycled water backflow into the potable water system as soon as possible, but in no case later than 24 hours after the incident is identified.
4. A current list of all recycled water site supervisors must be maintained.

## V. PROVISIONS

A. The Discharger shall comply with all the following Standard Provisions:

1. The Discharger must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the Water Code and is grounds for (a) enforcement action; (b) termination, revocation and reissuance, or modification of this Order; or (c) denial of a ROWD in application for new or revised WDRs.
2. The Discharger shall allow the San Diego Water Board, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
  - a. Enter upon the Discharger's premises where the regulated Facility or activity is located, conducted, or where records are kept under the conditions of this Order.
  - b. Have access to and copy, at reasonable times, any records that are kept under the conditions of this Order.
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this Order.
  - d. Sample or monitor, at reasonable times for the purposes of assuring compliance with this Order or as otherwise authorized by the Water Code, any substances, or parameters at any location.

B. The Discharger shall report any noncompliance that may endanger human health, safety, or the environment. Pursuant to section 5411.5 of the Health and Safety Code, any sewage overflow or spill shall be immediately reported to the California Office of Emergency Services (OES) and County DEH. In addition, any such information shall be provided verbally to the San Diego Water Board within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided to the San Diego Water Board within 5 days of the time the Discharger becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The San Diego Water Board may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

Discharger verbal and written notifications for spills completed in compliance with San Diego Water Board Order No. R9-2021-0011 NPDES No. CA0109045 and State Water Board Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements*

for *Sanitary Sewer Systems* (Order No. 2006-0003-DWQ), or revised or amended NPDES permit shall be deemed as complying with the requirements of this section.

- C. The Discharger shall report the following occurrence(s) to the San Diego Water Board within 24 hours:
1. Any intentional or unintentional bypass of any portion of the Facility,
  2. Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge, or any other circumstances,
  3. Any treatment plant upset resulting in an exceedance of the discharge specifications of this Order,
  4. Failure of disinfection system,
  5. Disinfected tertiary effluent total coliform bacteria greater than 240 MPN/100 milliliters (mL), and
  6. Any known direct cross-connection between recycled water and potable water systems.
- D. The Discharger shall report all overflow events that occur at the Facility. For purposes of this reporting requirement, an overflow event is defined as a discharge of treated or untreated wastewater at a location onsite or other lands or waters not authorized by WDRs which results from a pump station failure, line break, obstruction, surcharge, or any other operational dysfunction. This reporting requirement applies to all overflow events other than those events subject to regulation under the State Water Board Order No. 2006-0003-DWQ, and San Diego Water Board Order No. R9-2007-0005, *Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region*. The types of overflow identified under this provision shall be reported to the San Diego Water Board within the corresponding monthly monitoring report.
- E. If the Discharger or end user, without regard to intent or negligence, causes or permits an unauthorized discharge of 50,000 gallons or more of recycled water that has been treated to at least disinfected tertiary recycled water,<sup>4</sup> or 1,000 gallons or more of recycled water that is treated at a level less than disinfected tertiary recycled water, shall immediately notify the San Diego Water Board in accordance with reporting requirements in Provision V.B of this Order as soon as (1) that person has knowledge of the discharge, (2) notification is possible, and (3) notification can be provided without substantially impeding cleanup or other emergency measures.
- F. The incidental discharge of recycled water to waters of the State is not a violation of these requirements if the incidental discharge does not affect the beneficial uses of the water and does not result in the receiving water exceeding an applicable water quality objective.

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<sup>4</sup> Disinfected tertiary recycled water is defined in title 22, chapter 3, section 60301.230.

- G. The Discharger shall take all reasonable steps to assess, minimize, and correct any adverse impact on the environment resulting from noncompliance with this Order including accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.
- H. Upon reduction, loss, or failure of the Facility the Discharger shall, to the extent necessary to maintain compliance with this Order, control production and/or control all discharges, until the Facility is restored, or until an alternative method of treatment is provided. This provision applies, for example, when the primary source of power to the Facility has failed or been reduced.
- I. Except for a discharge which is in compliance with this Order, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, shall immediately notify the County DEH and California OES of the discharge as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, in accordance with Health and Safety Code section 5411.5, and the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to title 2, Government Code, division 1, chapter 7, article 3.7 (commencing with section 8574.17). This provision does not require reporting of any discharge of less than a reportable quantity as provided for under Water Code, section 13271, subdivisions (f) and (g), unless the Discharger is in violation of a prohibition in the Basin Plan.
- J. Except for a discharge which is in compliance with this Order, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where the oil or petroleum product is or probably will be discharged in or on any waters of the State shall immediately notify the California OES of the discharge as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Government Code title 2, division 1, chapter 7, article 3.7 (commencing with section 8574.1). This requirement does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Clean Water Act section 311, or the discharge is in violation of a Basin Plan prohibition.
- K. A copy of this Order shall be maintained at the Facility and shall always be available to operating personnel.
- L. The Discharger shall provide to the San Diego Water Board, within a reasonable time, any information which the San Diego Water Board may request to determine whether cause exists for modifying, rescinding and reissuing, or terminating this Order. The Discharger shall also furnish to the San Diego Water Board, upon request, copies of records required to be kept by this Order.
- M. This Order may be modified, rescinded and reissued, or terminated at any time including, but not limited to:

1. Violation of any terms or conditions of this Order,
  2. Obtaining this Order by misrepresentation or failing to disclose fully all relevant facts,
  3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge, and
  4. The reduction or cessation of the discharge for any reason at any time. The Discharger shall provide written notification of the change in action to the San Diego Water Board, DDW, and County DEH.
- N. The filing of a request by the Discharger for the modification or rescission of this Order, or notification by the Discharger of planned changes or anticipated noncompliance does not stay any condition of this Order.
- O. The Discharger shall file a new ROWD stamped or signed by a licensed professional,<sup>5</sup> at least 120 days prior to the following:
1. Addition of a major industrial waste discharge to a discharge of domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the wastes.
  2. Significant change in the treatment or disposal method (e.g., change in the method of treatment which would significantly alter the nature of the waste).
  3. Change in the disposal area from that described in the findings of this Order.
  4. Increase in discharge flowrate beyond that specified in this Order.
  5. Other circumstances that result in a material change in character, amount, or location of the waste discharge.
  6. Any planned change in the Facility or activity which may result in noncompliance with this Order.
- P. This Order is not transferable to any person except after notice to the San Diego Water Board. The notice must be in writing and received by the San Diego Water Board at least 120 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the existing and the new discharger. This agreement shall include an acknowledgement that the existing Discharger is liable for violations occurring before the transfer date and that the new discharger is liable from the transfer date and thereafter. The San Diego Water Board may require modification or revocation and reissuance of this Order to change the name

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<sup>5</sup>All reports, plans, and documents required under this Order must be prepared under the direction of appropriately qualified professionals. California Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations.

of the Discharger and incorporate such other requirements as may be necessary under the Water Code.

- Q. Where the Discharger becomes aware that it failed to submit any relevant facts in a ROWD or submitted incorrect information in a ROWD or in any report to the San Diego Water Board, the Discharger shall promptly submit such facts or information.
- R. All applications, reports, or information submitted to the San Diego Water Board shall be signed and certified as follows:
1. The ROWD shall be signed as follows:
    - a. For a corporation by either a principal executive officer or ranking elected official,
    - b. For a municipality, State, federal or other public agency by either a public Executive Officer or ranking elected official,
    - c. For judgments being performed by or under the direction of licensed professionals. The lead professional shall sign and affix their license stamp to the report, plan, or document.
    - d. By direction of the person designated in paragraph "a." or "b." of this provision, only if:
      - i. The authorization made in writing by a person described in paragraph 1.a or 1.b of this provision.
      - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.
  2. All other reports required by this Order and other information required by the San Diego Water Board shall be signed by a person designated in Provision R.1 of this Order or a duly authorized representative of that person. An individual is a duly authorized representative only if all the following are true:
    - a. The authorization made in writing by a person described in Provision R.1 of this Order.
    - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.
    - c. The written authorization is submitted to the San Diego Water Board.
  3. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there

are significant penalties for submitting false information, including the possibility of a fine and imprisonment."

- S. The Discharger shall submit reports required under this Order in text searchable PDF format via the internet into the GeoTracker database at <http://geotracker.waterboards.ca.gov/>. Report submittals must include a signed cover/transmittal letter that includes the Facility name, Facility contact information, and reference code (**BBushnell:257831**), unless directed otherwise by the Executive Officer.

## VI. SPECIAL PROVISIONS: FACILITY DESIGN AND OPERATION SPECIFICATIONS.

- A. The Discharger shall properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order.
- B. The Discharger shall ensure that recycled water and fertilizer are applied at use sites at agronomic rates<sup>6</sup> by implementing the following:
1. Monitor nutrient concentrations in recycled water supplies and notify recycled water site supervisors of the nutrient concentrations of recycled water. In the case of recycled water fill stations, customers must be notified of the nutrient concentrations in the recycled water.
  2. Conduct periodic inspections of end use sites.
- C. The Discharger shall prepare a Title 22 Engineering Report, in accordance with title 22, section 60323, to be reviewed by the San Diego Water Board, DDW, and County DEH prior to any changes in the treatment facilities.
- D. The Discharger shall operate the Facility in accordance with an approved operations plan, which clearly specifies the operational limits and responses required for critical alarms. A copy of the approved operations plan shall be maintained at the Facility and be readily available to operations personnel and regulatory agencies. A reference data sheet on plant operations shall be posted at the Facility and include the following information:
1. Alarm set points for secondary turbidity, tertiary turbidity, flowrate, UV dose, UV intensity, and UVT.

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<sup>6</sup> Agronomic rates refer to the rates of application of recycled water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants' root zone.



2. Levels at which flow will be diverted to either the outfall or headworks for secondary turbidity, tertiary turbidity, and UV dose, UV intensity, and UVT.
  3. When to divert flow for high daily and weekly median total coliform.
  4. When the DDW, County DEH, and/or San Diego Water Board must be notified of a diversion.
  5. Names and phone numbers of the authorities to be notified in case of a diversion.
  6. Frequency of calibration for all meters/analyzers.
  7. The required frequency of mechanical cleaning and equipment inspection.
  8. The UV lamp age tracking procedures and replacement intervals for each reactor.
- E. The Discharger shall ensure the Facility is supervised and operated by persons possessing certificates of appropriate grade pursuant to title 23, California Code of Regulations (title 23), chapter 3, subchapter 14.
- F. The Discharger shall ensure that all waste treatment, storage, and purveyance facilities are protected against 100-year peak stream flows as defined by the County of San Diego, Department of Public Works, Flood Control Section.
- G. The Discharger shall ensure that all wastewater and recycled water storage facilities are protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour frequency storm.
- H. The Discharger shall comply with the Monitoring and Reporting Program No. R9-2021-0015, Attachment D, and any future revisions specified by the San Diego Water Board. Monitoring results shall be reported at the frequency specified in Monitoring and Reporting Program No. R9-2021-0015.

## VII. NOTIFICATIONS

- A. If any person uses, transports, or stores recycled water in a manner which creates, or threatens to create conditions of pollution, contamination, or nuisance, as defined in Water Code section 13050, the San Diego Water Board may initiate enforcement action against the Discharger, which may result in the termination of the recycled water discharge.
- B. This Order does not convey property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the Discharger from liability under federal, State or local laws, nor create a vested right for the Discharger to continue the waste discharge.
- C. These requirements have not been reviewed by the United States Environmental Protection Agency and are not issued pursuant to Clean Water Act section 402.

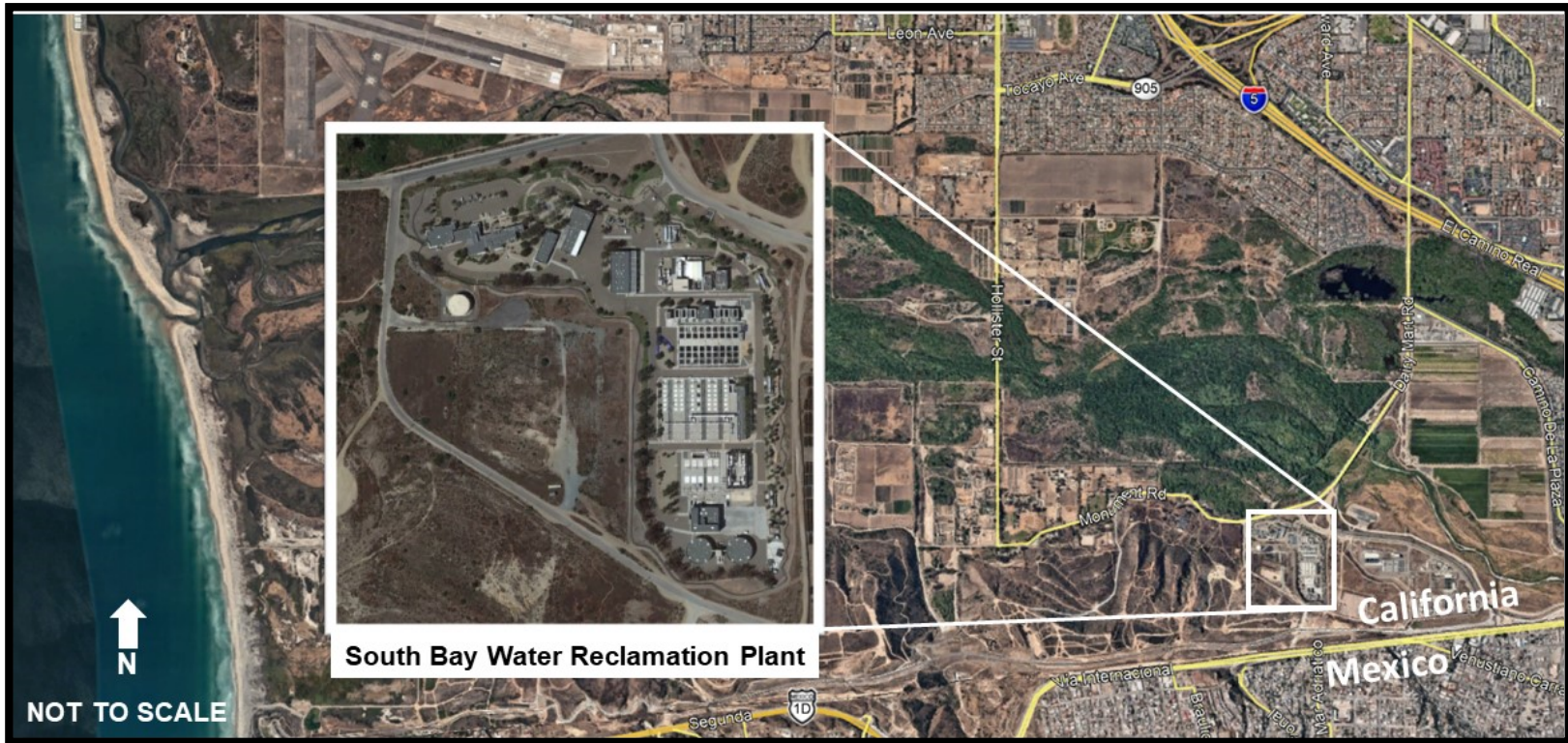
- D. Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and title 23, sections 2050 and following, of the California Code of Regulations. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or State holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.
- E. This Order becomes effective on the date of adoption by the San Diego Water Board.

**ATTACHMENT A – SOUTH BAY RECLAMATION PLANT MAPS**

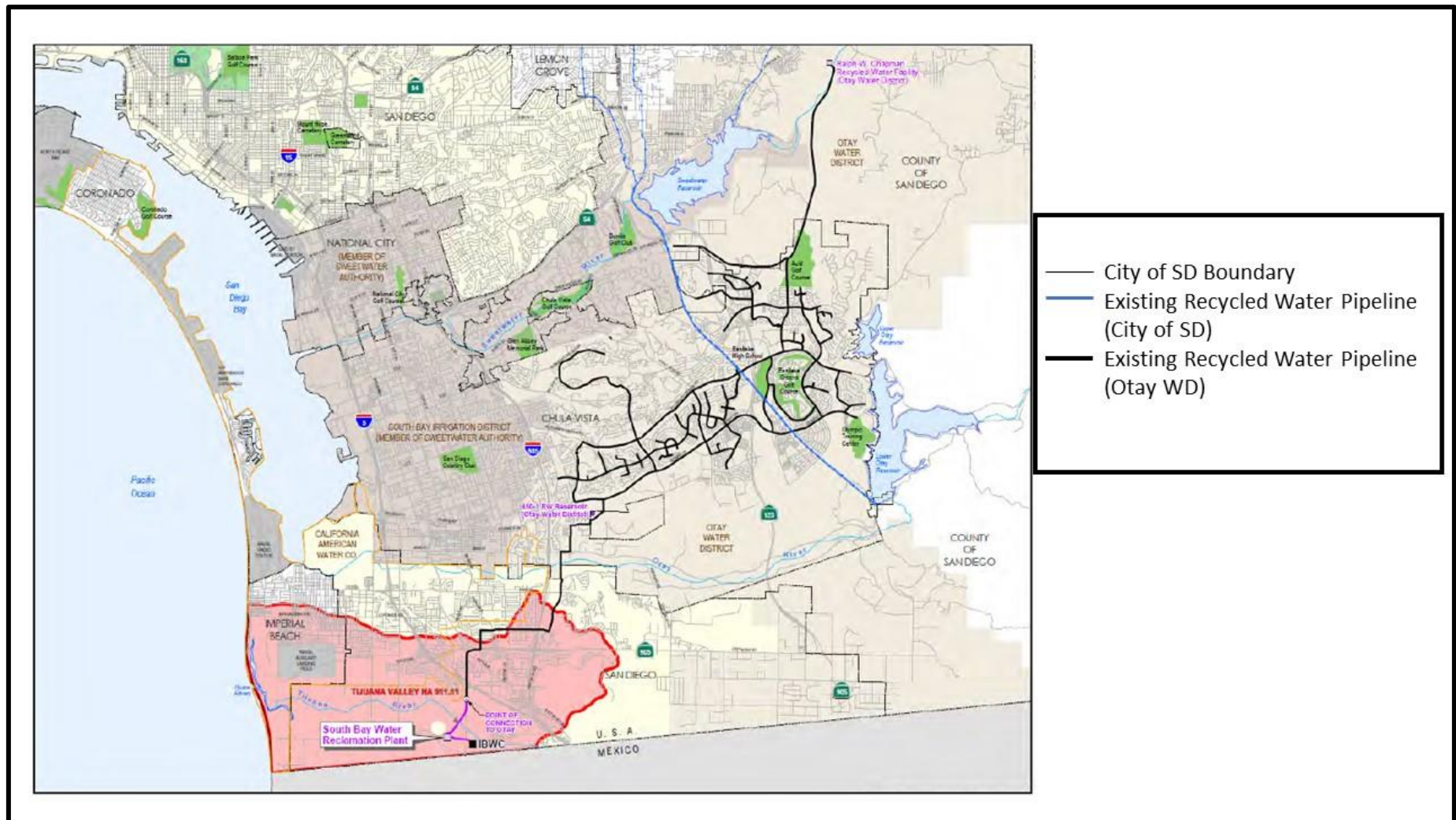
**ORDER NO. R9-2021-0015**

**MASTER RECYCLING PERMIT  
FOR THE CITY OF SAN DIEGO, SOUTH BAY RECLAMATION PLANT,  
SAN DIEGO COUNTY**

**FIGURE 1  
SOUTH BAY WATER RECLAMATION PLANT LOCATION MAP**



**FIGURE 2**  
**SOUTH BAY WATER RECLAMATION PLANT SERVICE AREA MAP**





# ATTACHMENT B - RULES AND REGULATIONS FOR RECYCLED WATER USE

## ORDER NO. R9-2021-0015

### MASTER RECYCLING PERMIT FOR THE CITY OF SAN DIEGO, SOUTH BAY RECLAMATION PLANT, SAN DIEGO COUNTY

Pursuant to Water Code section 13523.1(b)(3), Order No. R9-2021-0015 *Master Recycling Permit for City of San Diego, South Bay Water Reclamation Plant, San Diego County* (Order) requires the City of San Diego (Discharger) to establish and enforce rules and regulations governing the design, construction and use of recycled water distribution and disposal systems by its customers. The rules and regulations shall be consistent with the following criteria:

- Title 22, California Code of Regulations (title 22), division 4, chapter 3 (Water Recycling Criteria).
- Title 17, California Code of Regulations (title 17), division 1, chapter 5, subchapter 1, group 4, article 1 (general provisions) and 2 (backflow preventers).
- The State Water Board Division of Drinking Water (DDW) *Guidelines for Use of Recycled Water, Guidelines for Use of Recycled Water for Construction*<sup>1</sup>.
- Any measures that are deemed necessary for protection of public health, such as the American Water Works Association (AWWA) California/Nevada Section, *Guidelines for the Distribution of Non-Potable Water* and *Guidelines for Retrofitting to Recycled Water*<sup>2</sup> or alternate measures that are acceptable to the DDW.

#### I. STANDARD RULES AND REGULATIONS

At a minimum, the rules and regulations shall notify the users that:

- A. The use of recycled water shall not cause a condition of pollution, contamination, or nuisance, as defined by Water Code section 13050.
- B. The Discharger, the San Diego Water Board, the DDW, and the County Department of Environmental Health (County DEH), or an authorized representative of these parties, upon presentation of proper credentials, shall have the right to enter upon the recycled water use site during reasonable hours, to verify that the user is complying with the Discharger's rules and regulations.

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<sup>1</sup> Referenced material can be found at the following webpage:  
[https://www.waterboards.ca.gov/sandiego/water\\_issues/programs/ground\\_water\\_basin/recycled\\_subsurface/docs/Guidelines\\_for\\_the\\_Distribution\\_of\\_Nonpotable\\_Water.pdf](https://www.waterboards.ca.gov/sandiego/water_issues/programs/ground_water_basin/recycled_subsurface/docs/Guidelines_for_the_Distribution_of_Nonpotable_Water.pdf)

<sup>2</sup> Referenced material can be found at the following webpage:  
[https://www.waterboards.ca.gov/sandiego/water\\_issues/programs/ground\\_water\\_basin/recycled\\_subsurface/docs/Guidelines\\_for\\_the\\_On-Site\\_Retrofit\\_of\\_Facilities\\_Using\\_Disinfected\\_Tertiary.pdf](https://www.waterboards.ca.gov/sandiego/water_issues/programs/ground_water_basin/recycled_subsurface/docs/Guidelines_for_the_On-Site_Retrofit_of_Facilities_Using_Disinfected_Tertiary.pdf)

- C. The recycled water user shall provide written notification, in a timely manner, to the Discharger of any material change or proposed change in the character of the recycled water use.
- D. The recycled water user shall submit to the Discharger, plans and specifications for the recycled water distribution facilities prior to the initiation of recycled water service.
- E. The recycled water user shall designate a recycled water supervisor who is responsible for the recycled water system at each use area under the user's control. Specific responsibilities of the recycled water supervisor include the proper installation, operation, and maintenance of the irrigation system; maintaining project compliance with the Discharger's rules and regulations; prevention of potential hazards; and preservation of the recycled water distribution system plans in "as built" form. Designated recycled water supervisors shall obtain instruction in the use of recycled water from an institution approved by the DDW and County DEH, as required.
- F. The Discharger may terminate service to a recycled water user who uses, transports, or stores such water in violation of the Discharger's rules and regulations.
- G. Recycled water shall not be applied to a recycled water use area within 24 hours of forecasted precipitation with a greater than 50-percent probability of occurring,<sup>3</sup> during precipitation events, or when the recycled water use area surface soil is saturated.
- H. All recycled water storage facilities owned and/or operated by recycled water users shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour frequency storm unless the San Diego Water Board approves alternative storm protection measures for the facility.
- I. All recycled water storage facilities owned and/or operated by recycled water users shall be protected against 100-year frequency peak stream flows as defined by the San Diego County flood control agency unless the San Diego Water Board approves alternative storm protection measures for the facility.
- J. The San Diego Water Board may initiate enforcement action against any recycled water user who discharges recycled water in violation of any applicable discharge requirement prescribed by the San Diego Water Board or in a manner which creates or threatens to create conditions of pollution, contamination, or nuisance, as defined in Water Code section 13050.
- K. A copy of the recycled water rules and regulations, irrigation system layout map, and recycled water system operations manual shall be maintained at the use area. These documents shall always be available to operating personnel.

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<sup>3</sup> 50-percent probability of occurring as forecasted by the National Oceanic Atmospheric Administration for the closest weather station to the reuse site.

- L. Irrigation with disinfected tertiary recycled water shall not take place within 50 feet of any domestic water supply well unless all the following conditions have been met:
  - 1. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface,
  - 2. The well contains an annular seal that extends from the surface into the aquitard,
  - 3. The well is housed to prevent any recycled water spray from contacting the wellhead facilities,
  - 4. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well, and
  - 5. The owner of the well approves of the elimination of the buffer zone requirement.
- M. Impoundment of disinfected tertiary recycled water shall not occur within 100 feet of any domestic water supply well.
- N. Irrigation with, or impoundment of, disinfected secondary-2.2<sup>4</sup> or disinfected secondary - 2.3<sup>5</sup> recycled water shall not take place within 100 feet of any domestic water supply well.
- O. Irrigation with, or impoundment of, undisinfected secondary recycled water shall not take place within 150 feet of any domestic water supply well.
- P. Recycled water facilities shall be operated in accordance with best management practices (BMPs) to prevent direct human consumption of recycled water and to minimize misting, ponding, and runoff. BMPs shall be implemented that will minimize both public contact and discharge onto areas not under recycled water users' control.
- Q. Irrigation with recycled water shall be conducted during periods of minimal human use of the service area. Consideration shall be given to allow a maximum dry-out time before the irrigated area will be used by the public.
- R. All drinking fountains located within the approved use area shall be protected by location and/or structure from contact with recycled water spray, mist, or runoff. Protection shall be by design, construction practice, or system operation.
- S. Facilities that may be used by the public, including but not limited to eating surfaces and playground equipment, and located within the approved use areas, shall be protected to the maximum extent possible, by siting and/or structure from contact by irrigation with recycled water spray, mist, or runoff. Protection shall be by design, construction practice or system operation.

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<sup>4</sup> Disinfected secondary-2.2 recycled water is defined in, title 22, chapter 3, section 60301.220.

<sup>5</sup> Disinfected secondary-2.3 recycled water is defined in title 22, chapter 3, section 60301.225.

- T. Spray irrigation with recycled water, other than disinfected tertiary recycled water, shall not take place within 100 feet of the property line of a residence or a place where public exposure could be like that of a park, playground, or schoolyard.
- U. All use areas where recycled water is used and that are accessible to the public shall be posted with conspicuous signs, in a size no less that includes the following wording in a size no less than 4 inches high by 8 inches wide: "RECYCLED WATER - DO NOT DRINK." The sign(s) shall be of a size easily readable by the public.
- V. No physical connection shall exist between any recycled water system and any separate system conveying potable water.
- W. The recycled water piping system shall not include any hose bibs. Quick couplers that are different from that used on the potable water system may be used.
- X. The public water supply shall not be used as a backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of title 17, sections 7602(a) and 7603(a) and the approval of the public water system has been obtained. If a "Swivel-ell" type connection is used it must be used in accordance with the provisions of the State Water Board Division of Drinking Water Policy Memo 95-004. Approved backflow prevention devices shall be provided, installed, tested, and maintained by the recycled water user in accordance with the applicable provisions of title 17, division 1, chapter 5, subchapter 1, group 4, article 2.
- Y. No person other than the Discharger shall make a connection to the recycled water distribution system.
- Z. All recycled water piping and appurtenances in new installations and appurtenances in retrofit installations shall be colored purple or distinctively wrapped with purple tape in accordance with Health and Safety Code, chapter 7.9, section 4049.54.
- AA. Reuse site shut down tests and inspections shall be monitored by the DDW.
- BB. Customer complaints concerning recycled water use that may involve public illness shall be reported to the County DEH, DDW, and to the Discharger who shall maintain a log of all customer complaints regarding recycled water.
- CC. Any backflow prevention device installed to protect the public water system shall be inspected and maintained in accordance with title 17, section 7605.
- DD. Recycled water and fertilizer shall be applied to landscapes at agronomic rates.
- EE. Overwatering of landscapes and runoff are prohibited.
- FF. Recycled water supervisors are responsible for determining onsite fertilizer needs, ensuring recycled water is applied to landscapes at agronomic rates, and completing training and education in compliance with recycled water agency rules and regulations



to: (1) Minimize the potential for runoff or over-irrigation and, (2) Determine the fertilizer needs of the landscape considering the nutrient value of recycled water.

## **II. GENERAL REQUIREMENTS FOR HAULING OR TRANSPORTATION OF RECYCLED WATER**

The Discharger's Rules and Regulations for Recycled Water Use must include requirements that ensure use and transport of recycled water from the fill stations will be protective of public health and the environment. At a minimum, the Rules and Regulations for Recycled Water Use must include the following requirements.

- A. The Discharger or hauler must comply with the requirements in sections II-IV of this attachment, unless the DDW or County DEH determine that alternative criteria provide equivalent or better protection of public health and the environment.
- B. Haulers interested in participating in this program must apply for a Recycled Water Use Permit issued by the Discharger.
- C. Use areas receiving hauled recycled water must meet the same requirements of titles 17 and 22 as a similar use area receiving traditionally piped recycled water. These requirements must be addressed in the Discharger's permitting process.
- D. Before trucks or containers can be filled for the first time, haulers are required to attend a brief on-site orientation or training to learn about using the filling station and proper handling and safe use of recycled water. Annual refresher training must be required. The Discharger shall maintain records of all training.
- E. Once the hauler completes the on-site orientation or training and a Recycled Water Program inspector verifies the tanker truck or containers meet the recycled water use requirements, the inspector will issue a signed Recycled Water Use Permit. The Recycled Water Use Permit must always be available for inspection. The hauler must always carry a copy of the permit in the vehicle while hauling recycled water.
- F. Recycled water must not be introduced into any potable water piping system and no connection shall be made between the tank and any part of a potable water system.
- G. If the hauler requests to supply recycled water to a use area that uses any plumbed potable or recycled water distribution systems, the Discharger must ensure the end use complies with all applicable requirements of titles 17 and 22, including cross-connection control testing and backflow prevention device installation, prior to allowing pick up of recycled water. Dual plumbed use areas can only receive recycled water from a recycled water agency that has been granted approval under title 22, section 60313(a).
- H. The hauler must keep a logbook for each vehicle, tank, or container used to transport recycled water. The logbook must always be available for inspections. The hauler must always carry a copy in the vehicle while hauling recycled water. The logbook must include:
  - 1. Date of delivery and use,

2. Volume of water delivered and used,
  3. Intended use of water, and
  4. Name and address of the recipient/customer.
- I. The hauler or recycled water site supervisor must notify workers and the public when recycled water is used at a use site and inform workers and the public not to drink recycled water or use it for food preparation.
  - J. Precautions must be taken to avoid contact between food and recycled water while the use site is wet.
  - K. No irrigation or impoundment of recycled water is allowed within a minimum of 50 feet of any domestic drinking water well.
  - L. The hauler shall take adequate measures to prevent overspray, ponding, or run off of recycled water from the authorized recycled water use area.
  - M. No connection shall be made between a tank or container of recycled water and any part of a potable water system.
  - N. The Recycled Water Use Permit issued by the Discharger must always be available for inspection.
  - O. Recycled water shall not be applied where it could spray on external drinking water fountains, passing vehicles, buildings, or areas where food is handled or eaten.
  - P. Tank trucks, containers, and appurtenances must be clearly identified as “non-potable,” equipped with a legally sized air gap, and must not be used to provide potable water. Containers and hoses associated with hauling recycled water must not be used for potable water. Commercial hauling trucks that may be filled with potable water for non-potable uses must have two separate filling systems, one dedicated to potable water and one dedicated to recycled water. When the truck is filled from a potable water source, there must be a water agency or municipality provided meter and backflow device between the truck fill line and the potable source.
  - Q. Vehicles, tanks, and containers must have water-tight valves and fittings, must not leak or spill contents during transport, and must be cleaned of contaminants. These requirements must be checked by the hauler before each use. Water-containing vessels that are open to the atmosphere during hauling are prohibited.
  - R. Haulers shall not overfill containers or trucks.
  - S. Hoses used for the application of recycled water shall be removable and shall be stored in a disconnected condition during transport. Hoses must be inspected prior to filling to ensure that they are in serviceable condition and free of leaks.

- T. In the event of an emergency concerning the recycled water hydrant, meter, fill pipe, or hose (spillage, leaks, etc.), the hauler must call the emergency contact number listed on the filling station sign for further instructions.
- U. The Discharger may conduct use area visits to ensure proper use of recycled water according to all applicable requirements of titles 17 and 22, and Recycled Water Use Permit conditions. These visits may include follow up phone calls or surveys of end users about completion of the hauling process and recycled water application.
- V. The Discharger must clearly communicate conditions under which haulers may lose their permits. Those conditions must specify that failure to follow program requirements, including adhering to applicable State, County, or local codes, will result in suspension of the hauler's permit. Violations of such codes may also result in agencies levying fines and applicable administrative fees.
- W. Residential hauling programs shall have fill stations always staffed by a representative from the Discharger to ensure proper handling and filling procedures.
- X. Residential hauling programs must limit one-time hauls to 300 gallons.
- Y. The permitted hauler shall notify the Discharger prior to using recycled water for a use not approved by the Discharger.
- Z. The Discharger, San Diego Water Board, DDW, and County DEH have the right to enter any recycled water use site during reasonable hours to ensure the user is complying with these requirements and the Discharger's Rules and Regulations for Recycled Water Use.

**III. RULES AND REGULATIONS FOR HAULING OR TRANSPORTATION OF RECYCLED WATER FROM COMMERCIAL VEHICLE FILL STATIONS**

- A. Trucks hauling recycled water that may also be filled with potable supplies for non-potable purposes shall have a dedicated potable use fill line through an air gap separation. The fill lines shall be labeled as potable or recycled water. As an alternative, the water supplier may install a reduced pressure principal backflow device on the potable system for filling trucks with potable water. Vehicles used to transport recycled water shall not be used to carry water for potable purposes.
- B. The risers, hoses, and fittings for each supply shall be color coded or painted blue for potable and purple for recycled water.
- C. The hoses, hydrants, and risers for each supply shall have separate and unique fittings (e.g., 2-1/2-inch diameter on the potable system and 2-inch diameter on the recycled water system) to ensure the potable system cannot accidentally be used on the recycled system and vice versa.
- D. All vehicles used in transporting recycled water must be clearly marked with signage that reads: "CAUTION: RECYCLED WATER - DO NOT DRINK" in English and Spanish. The Discharger shall conduct annual inspections of the trucks to ensure that all

requirements in the Order are met and that recycled water is being used in compliance with the requirements of the Order.

- E. Vehicles used for transportation or distribution of recycled water, or for street sweeping must have an air gap to ensure backflow protection.
- F. The use of recycled water for street sweeping or construction shall comply with the appropriate local storm water ordinance. Typical compliance measures include preventing overspray, ponding, or runoff of recycled water from the use area.
- G. During each visit, haulers are required to enter the date, amount collected, locations the recycled water will be used, and approximate amounts on the fill stations log sheet.
- H. For Hydrant Meter Filling Stations, ensure the meter is shut off before disconnecting the fill line and no water is leaking from the meter or hydrant.
- I. For Gate Access Filling Stations, ensure no water is leaking from the fill pipe or hose and securely re-lock the gate after leaving the filling station.
- J. A truck or tank that has contained material from a septic tank or cesspool shall not be used to distribute recycled water.

#### **IV. RULES AND REGULATIONS FOR USE OF RECYCLED WATER FOR FIRE FIGHTING**

- A. Unused recycled water must not be released into storm drains, streams, rivers, or waterways.
- B. Fire hydrants supplied with recycled water must be clearly identified by purple paints, signs, tags, stencils or other such labeling, to notify firefighters that the fire hydrants are supplied with recycled water.
- C. Fire truck tanks must be disinfected following the use of recycled water for firefighting because fire trucks could be used to distribute drinking water during civil emergencies.
- D. Firefighting personnel must be adequately trained in safe use of recycled water. New and current firefighting personnel must receive periodic refresher courses regarding proper handling and use of recycled water.

## ATTACHMENT C - FACT SHEET

ORDER NO. R9-2021-0015

### MASTER RECYCLING PERMIT FOR THE CITY OF SAN DIEGO, SOUTH BAY WATER RECLAMATION PLANT, SAN DIEGO COUNTY

This Fact Sheet includes background information, legal requirements, and technical rationale; and serves as the basis for the requirements of Order No. R9-2021-0015 *Master Recycling Permit for City of San Diego, South Bay Water Reclamation Plant, San Diego County* (Order) and the directives in Monitoring and Reporting Program No. R9-2021-0015 (MRP). This Fact Sheet is hereby incorporated into and constitutes findings for the Order and MRP.

#### I. INTRODUCTION

The City of San Diego (Discharger) submitted an updated *Permit Application and Report of Waste Discharge, South Bay Water Reclamation Plant, Waste Discharge Requirements and Master Reclamation Permit* (ROWD), dated June 2020, stating the Discharger had installed a new ultraviolet (UV) disinfection system and requested the development of an updated master recycling permit for the Facility. The Order establishes Waste Discharge Requirements (WDRs) for the production and Water Recycling Requirements (WRRs) for the production, distribution, and use of recycled water from the South Bay Water Reclamation Plant (Facility), which together serve as a Master Recycling Permit for the following purposes:

- Permits the tertiary treatment systems at the Facility,
- Permits the Otay Valley Hydrologic Area (HA) (910.20) of the Otay Hydrologic Unit and the Tijuana Valley HA (911.10) and San Ysidro HA (911.11) of the Tijuana Hydrologic Unit for use of recycled water from the Facility for approved uses, and
- Adds requirements of the State Water Resources Control Board (State Water Board) *Water Quality Control Policy for Recycled Water (Recycled Water Policy)*.<sup>1</sup>

This MRP requires the Discharger to furnish monitoring reports to demonstrate beneficial uses of groundwater are protected and compliance with the requirements of the Order. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) developed the requirements in the Order and the directives in the MRP based on information in the report of waste discharge, water quality control plans and policies, and other available information.

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<sup>1</sup> Water Quality Control Policy for Recycled Water, adopted December 11, 2018, Effective April 8, 2019:

[https://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/2018/121118\\_7\\_final\\_amendment\\_oal.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf)

For the purposes of this Fact Sheet, the Order, and MRP, references to the “discharger” in applicable state laws, regulations, plans, or policy are considered equivalent to references to the “Discharger” herein.

## II. FACILITY DESCRIPTION

### A. Description of South Bay Water Reclamation Facility

The Facility was constructed in 2002 and is located at 2411 Dairy Mart Road in the City of San Diego, California, location shown in Figure 1 in Attachment A of the Order. The Facility receives raw wastewater from the southern portion of the City of San Diego, including San Ysidro, Otay Mesa, and the Tijuana River Valley, all of which flows through the Grove Avenue Pump Station (GAPS). The Facility also receives raw wastewater from a portion of the Imperial Beach sewage collection system, through the Otay River Pump Station, the City of Chula Vista, and unincorporated portions of South County and East County. Wastewater from the GAPS and the Otay River Pump Station is primarily domestic sewage from residential and commercial activities. Waste solids from the Facility are directed back to the Point Loma Wastewater Treatment Plant, via the South Metro Interceptor, where they are stabilized in anaerobic digesters. After digestion, the solids are pumped to the Metro Biosolids Center where they are dewatered and thickened for reuse as a soil amendment or for disposal. A portion of the flow discharged from the Facility to the ocean is secondary treated wastewater, and regulated under National Pollutant Discharge Elimination System (NPDES) Permit Order No. R9-2021-0011 (NPDES No. CA0109045), *Waste Discharge Requirements for the City of San Diego South Bay Water Reclamation Plant, Discharge to South Bay Ocean Outfall* (Order No. R9-2021-0011). Order No. R9-2021-0011 authorizes up to 15 million gallons per day (MGD) to be discharged into the Pacific Ocean through the South Bay Ocean Outfall. Wastewater treatment unit operations and processes at the Facility consist of influent screening using mechanical bar screens, aerated grit chambers, primary sedimentation tanks, 1.5 million gallons of primary flow equalization basins with air-activated sludge process and an anoxic selector zone, secondary clarifiers, mono-media (anthracite) filters, and ultraviolet (UV) disinfection. Otay Water District operates a 12.5-million-gallon recycled water storage tank which the Facility supplies water to as needed.

### B. Recycled Water Use

Recycled water produced at the Facility will be used for landscape irrigation at various sites in the Otay Valley HA (910.20) of the Otay Hydrologic Unit and the Tijuana Valley HA (911.10) and San Ysidro HA (911.11) of the Tijuana Hydrologic Unit. The Discharger also operates a recycled water fill station that distributes a small portion of the recycled water produced at the Facility.

The Facility is designed to produce disinfected tertiary recycled water in accordance with the requirements of Title 22 of the California Code of Regulations (title 22). In 2019 the Facility treated approximately 3,370 acre-feet of wastewater to tertiary standards which was then disinfected and reused. That equates to 47% of the 7,216 acre-feet of raw wastewater that the Facility received in 2019.

### **C. Disposal**

The Discharger intends to dispose of any secondary treated wastewater, excess recycled water, or recycled water that does not meet title 22 requirements for reuse, to the existing South Bay Ocean Outfall (SBOO). All SBOO discharges from the Facility shall be in compliance with Order No. R9-2021-0011.

## **III. APPLICABLE PLANS, POLICIES, AND REGULATIONS**

The requirements contained in the Order are based on the requirements and authorities described in this section.

### **A. Legal Authorities**

The Order is issued pursuant to sections 13263, 13267, and 13523.1 of the Water Code. The Order serves as a Master Recycling Permit which includes WRRs and WDRs issued pursuant to article 4, chapter 4, division 7 of the Water Code.

### **B. California Environmental Quality Act**

Adoption of the Order is exempt from the California Environmental Quality Act (CEQA, Public Resources Code, section 21000 et seq.) pursuant to California Code of Regulations, title 14, section 15301 (negligible or no expansion of use of existing facility).

### **C. Water Reclamation Statute**

The California Legislature declared in Water Code section 13511, that a substantial portion of the future water requirements of the State may be economically met by beneficial use of recycled water. The Legislature also expressed in Water Code section 13512, the State's intent to undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the State. The adoption of the Order is consistent with the legislature's declaration because it facilitates the use of recycled water in place of potable water supplies.

### **D. Water Quality Control Plans**

The *Water Quality Control Plan for the San Diego Basin* (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Order implements the Basin Plan by prescribing requirements for the production, reuse, and disposal of recycled water that will not adversely impact water quality, beneficial uses, human health, or the environment.

The beneficial uses listed in the Basin Plan for the Otay Valley HA (910.20) of the Otay Hydrologic Unit are municipal, agricultural, and industrial supply. The Tijuana Valley HA (911.10) and San Ysidro HA (911.11) of the Tijuana Hydrologic Unit do not have any beneficial uses named in the Basin Plan.

#### **E. Recycled Water Policy**

The *Recycled Water Policy* establishes criteria for recycled water projects, recycling requirements, and WDRs. The intent of the *Recycled Water Policy* is to protect designated beneficial uses and water quality while increasing recycled water use, allowing for streamlined permitting for appropriate landscape irrigation projects, and allowing basin-wide management of salts and nutrients. The Order is consistent with the Recycled Water Policy because the Discharger is required to conduct annual volumetric reporting, implement nutrient management measures, and implement nutrient management planning elements of the 2019 Integrated Regional Water Management Plan (2019 IRWMP).<sup>2</sup>

The Otay and Tijuana Hydrologic Units are designated as low priority Tier D basins in Table 7-9 of 2019 IRWMP. Under the guidelines of the 2019 IRWM, Tier D basins have high concentrations of total dissolved solids (TDS) in groundwater and have TDS groundwater quality objectives that exceed 1,200 milligrams/liter (mg/L). The guidelines conclude that salt and nutrient management plans (SNMPs) are not required within Tier D basins, as more than adequate TDS assimilative capacity exists within the Tier D basins to support existing and future recycled water use and ensure that recycled water use is protective of groundwater quality and meets the stated objectives of the *Recycled Water Policy*.

The *Recycled Water Policy* states that the appropriate way to address salts and nutrients is through development of regional and sub-regional SNMPs. SNMPs have not been prepared for the Tier D basins, however, the San Diego County Water Authority included salt and nutrient management planning elements in its 2019 IRWMP that address the Tier D and E basins in the San Diego Region.

Recycled water use can help to reduce the scarcity of local water supplies. Recycled water not only brings water supply and demand into a better balance, but it is a viable cost-effective solution. The feasibility of recycled water use depends on local circumstances, which affect the balance of costs and benefits. In drought conditions, recycled water can be particularly valuable given the scarcity of alternative potable water supplies. In normal precipitation years recycled water reduces the need for groundwater extraction and other local water supplies. Broader and more effective uses of recycled water are consistent with the goals and objectives of the *Recycled Water*

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<sup>2</sup> A copy of the 2019 Integrated Regional Water Management Plan can be viewed by visiting <https://sdirwmp.org/2019-irwm-plan-update#codeword3>



*Policy* and the San Diego Water Board’s Practical Vision strategy for achieving a sustainable local water supply.<sup>3</sup>

**F. Antidegradation Policy**

The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Resolution No. 68-16). Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in section V of this Fact Sheet, regulation of the discharges of recycled water from the Facility will result in receiving water quality that is consistent with the State and federal antidegradation policies.

**IV. RATIONALE FOR DISCHARGE SPECIFICATIONS**

The Order establishes technology and water quality-based discharge specifications, based on the Basin Plan and title 22, for the discharge of recycled water from the Facility.

**A. Technology-Based Discharge Specifications**

The technology-based discharge specifications are for biological oxygen demand (BOD<sub>5</sub>), total suspended solids, and pH. These discharge specifications are based on design criteria for removal of these constituents by secondary wastewater treatment technology and are necessary to ensure the secondary treatment system is functioning properly.

**B. Water Quality-Based Discharge Specifications**

The water quality-based discharge specifications are derived from the basin-specific water quality objectives listed in Table 1 (from Table 3-3 of the Basin Plan). The water quality objectives for the Hydrologic Areas (HAs) where recycled water from the Facility is currently being used or could potentially be used are listed in Table 1. The San Ysidro HA (911.11) of the Tijuana Hydrologic Unit does not have specific water quality objectives listed in Table 3-3 of the Basin Plan.

**Table C1. Basin-Specific Groundwater Water Quality Objectives**

Hydrologic Areas	CONSTITUENT (mg/L or as noted)												
	(Concentrations not to be exceeded more than 10% of the time during any one-year period)												
	TDS	Cl	SO <sub>4</sub>	%Na	NO <sub>3</sub>	Fe	Mn	MBAS	B	TURB (NTU)	COLOR (UNITS)	F	
Otay Valley HA (910.20)	1,500	500	500	60	45	0.3	0.05	0.5	0.75	5	15	1.0	

<sup>3</sup> See Practical Vision for “Strategy for Achieving a Sustainable Local Water Supply” [https://www.waterboards.ca.gov/sandiego/water\\_issues/programs/practical\\_vision/docs/PV\\_5\\_Sustainable\\_Local\\_Water\\_Supply\\_Dec2013.pdf](https://www.waterboards.ca.gov/sandiego/water_issues/programs/practical_vision/docs/PV_5_Sustainable_Local_Water_Supply_Dec2013.pdf)

Hydrologic Areas	CONSTITUENT (mg/L or as noted)											
	(Concentrations not to be exceeded more than 10% of the time during any one-year period)											
	TDS	Cl	SO <sub>4</sub>	%Na	NO <sub>3</sub>	Fe	Mn	MBAS	B	TURB (NTU)	COLOR (UNITS)	F
Tijuana Valley HA (911.10)	2,500	550	900	70	45				2.0			

**Endnotes for Table 1**

mg/L = milligrams per liter, TDS = Total Dissolved Solids, Cl = Chloride, SO<sub>4</sub> = Sulfate, % Na = Percent Sodium, NO<sub>3</sub><sup>-</sup> = Nitrate, Fe = Iron, Mn = Manganese, MBAS = Methylene Blue Activated Substances, B = Boron, TURB = Turbidity, NTU = Nephelometric Turbidity Units, F<sup>-</sup> = Fluoride

**C. Total Nitrogen Discharge Specification**

Order No. 2000-203, *Waste Discharge and Water Recycling Requirements for the Production and Purveyance of Recycled Water for the City of San Diego, South Bay Water Reclamation Plant* did not include requirements for nitrate or total nitrogen. The Order establishes a daily maximum total nitrogen effluent discharge specification of 15 mg/L. A recent Basin Plan amendment raised the groundwater quality objective for nitrate to the drinking water standard of 45 mg/L, or 10 mg/L nitrate expressed as total nitrogen, for all basins in the Region except the Warner Basin. A concentration of 10 mg/L total nitrogen ensures that the concentration of nitrate cannot exceed 45 mg/L. If 10 mg/L of total nitrogen were to completely nitrify in the environment it would equal 45 mg/L nitrate. However, the Discharger submitted a total nitrogen balance demonstrating that a concentration of 15 mg/L total nitrogen will not exceed the groundwater quality objective for nitrate. Additional uptake of nutrients by vegetation at the recycled water use areas allows for the higher concentration discharge specification for nitrate expressed as total nitrogen. By adding up the total nitrogen applied through recycled water and fertilizer use, and subtracting the nutrient uptake within the root zone, the Discharger calculated that no excess nutrients should percolate into the underlying groundwater.

**D. Sodium Hazard Discharge Specification**

The Basin Plan establishes a groundwater quality objective for percent sodium that protects agricultural supply beneficial uses from the potential hazard due to sodium in irrigation waters. The Basin Plan sets water quality objectives, and the Order establishes a sodium hazard discharge specification because excess concentrations of sodium in irrigation water reduce soil permeability to water and air. Reduced soil permeability can negatively impact agricultural supply beneficial use. The percent sodium objective is expressed as the ratio of sodium to the sum of sodium, calcium, magnesium, and potassium (expressed in milliequivalents per liter).

The Order sets the discharge specification for sodium at the water quality objective for percent sodium of 60 percent. However, the Basin Plan provides an alternative to the percent sodium water quality objective to determine the potential sodium hazard of

irrigation water. The alternative objective determines the sodium hazard using a methodology that evaluates the adjusted sodium adsorption ratio (SAR) and the electrical conductivity of the water. The water quality objective is met if the adjusted SAR and electrical conductivity values indicate that the “degree or restriction on use” of the water is within or below the “slight to moderate” range in Table 3-1 of the Basin Plan.

The Order includes the adjusted SAR alternative to assess the sodium hazard if the percent sodium is above the 60 percent discharge specification. In that situation the Discharger may demonstrate that the recycled water’s sodium hazard is within or below the slight to moderate range for the “degree of restriction or use” determined by an evaluation of the adjusted SAR and the electrical conductivity of the recycled water.

#### **E. Title 22 Specifications**

The Order contains discharge specifications for UV dose, turbidity, and total coliform bacteria. Title 22 specifications are included in the Order because the Facility will provide recycled water from the Facility to recycled water use areas. These specifications are based upon concentration limits found in title 22 and recommendations from the State Water Board Division of Drinking Water (DDW) for the protection of human health at use sites. Recycled water from the Facility discharged to use sites must meet the definitions of “disinfected tertiary recycled water” in title 22, section 60301.230; and “filtered wastewater” in title 22, section 60301.320, including future changes to these regulations as the changes take effect.

### **V. COMPLIANCE WITH THE ANTIDegradation POLICY**

A. State Water Board Resolution No. 68-16 requires that disposal of waste into the waters of the State, including groundwater, be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the State. The quality of some waters is higher than established by adopted policies and that higher quality water must be maintained consistent with the Antidegradation Policy. The Antidegradation Policy requires the following.

- Higher quality water will be maintained until it has been demonstrated to the State that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in the Basin Plan.
- Any activity that produces or may produce waste, or increases the volume or concentration of waste, and discharges to existing high quality waters will be required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the State will be maintained.

B. **Maximum Benefit to the People of the State.** In a semi-arid climate, such as that of the San Diego Region, the maximum benefit to the people of the State can only be

achieved by ensuring long and short-term protection of economic opportunities, human health, and the environment. To do that, water uses must be matched to water quality, and use of local supplies must be encouraged to the extent possible, including reusing treated wastewater that would otherwise be discharged to the ocean without supporting beneficial uses during transmission.<sup>4</sup> The use of recycled water in place of both raw and potable water supplies for the non-potable uses allowed under the Order improves water supply availability in the region and helps to ensure that higher quality water will continue to be available for human beneficial uses and for fish and wildlife.

**C. Present and Anticipated Uses of Water and Water Quality Prescribed in the Basin Plan.**

Constituents associated with recycled water that have the potential to degrade groundwater quality include TDS, nutrients, chloride, pathogens (represented by coliform bacteria), and manganese. The use of recycled water permitted under the Order will not unreasonably affect present and anticipated beneficial uses or result in water quality that is less than that prescribed in the Basin Plan because of the following characteristics, requirements, and applicable policies associated with each of the recycled water constituents of concern.

1. **Total Dissolved Solids.** Recycled water can contain TDS at concentrations that can degrade groundwater quality. Use of recycled water with high TDS concentrations can impact receiving water TDS levels. The TDS groundwater quality objective is 1,500 mg/L and 2,000 mg/L in the Otay Valley HA and Tijuana Valley HA, respectively. TDS concentrations in recycled water are not expected to adversely affect groundwater quality because recycled water TDS concentrations according to the *Permit Application and Report of Waste Discharge, South Bay Water Reclamation Plant, Waste Discharge Requirements and Master Reclamation Permit (ROWD)* are proposed to be equivalent or below the TDS groundwater quality objectives in the HA's in which recycled water will be used.
2. **Sulfates.** Recycled water can contain sulfates at concentrations that can degrade groundwater quality. The sulfate groundwater quality objective is 500 mg/L and 900 mg/L in the Otay Valley HA and Tijuana Valley HA, respectively. The discharge specification for sulfate is a daily maximum of 350 mg/L and an annual average of 300 mg/L. The discharge specifications are set below the water quality objectives to ensure the objectives are not exceeded. This concentration of sulfate is not expected to cause an exceedance of receiving groundwater quality objectives.
3. **Nitrogen.** Nitrogen is a nutrient that may be present in recycled water at a concentration that can degrade groundwater quality. The Order requires end users to take into consideration nutrient levels in recycled water and nutrient demand by plants when using recycled water for landscape irrigation. Application of recycled water at agronomic rates considers nutrient and water demand and minimizes the movement of nutrients below the plant's root zone. When applied to cropped or

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<sup>4</sup> The Legislature also expressed its intent that the State undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the State (Water Code section 13512).

landscaped land, some of the nitrogen in recycled water will be taken up by the plants and lost to the atmosphere through volatilization of ammonia or denitrification. Applying recycled water at agronomic rates will prevent the use of recycled water from impairing an existing and/or potential beneficial use of groundwater.

4. **Pathogens.** Pathogens and other microorganisms may be present in recycled water depending upon the disinfection status of the recycled water. Coliform bacteria are used as a surrogate (indicator) because they are present in untreated wastewater, survive in the environment like pathogenic bacteria, and are easy to detect and quantify. Pathogens are generally limited in their environmental mobility when applied to land. The use of recycled water permitted under the Order will not unreasonably affect present and anticipated beneficial uses or result in water quality that is less than that prescribed in the Basin Plan.

Setbacks from recycled water use areas are required in title 22 as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to a well or other potential exposure route (e.g., water contact activities). In general, a substantial unsaturated zone reduces pathogen survival compared to saturated soil conditions. Fine grained soil particles, like silt or clay, reduce the rate of groundwater transport and therefore are generally less likely to transport pathogens. Setbacks also provide attenuation of other recycled water constituents through physical, chemical, and biological processes. Attachment B of the Order requires the Discharger to implement and maintain adequate setback distances in the end use areas from drinking water wells. These requirements must be specified in the Discharger's Rules and Regulations for Recycled Water Use. The Order also requires the Discharger to treat recycled water to meet disinfection requirements for tertiary treated recycled water specified in title 22.

5. **Manganese.** Recycled water can contain manganese at concentrations that can degrade groundwater quality. When present in domestic water supplies at high concentrations can cause unpleasant tastes, deposits on food during cooking, stains on laundry and plumbing fixtures, and could lead to regrowth of some microorganisms in reservoirs, filters, and distribution systems. Most of the HAs in the San Diego Region, including the Otay HA, have a groundwater quality objective of 0.05 mg/L, which is also the secondary drinking water standard for manganese. Secondary drinking water standards are guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. The use of recycled water permitted under the Order will not unreasonably affect present and anticipated beneficial uses or result in water quality for manganese that is less than that prescribed in the Basin Plan.

## VI. RATIONALE FOR WATER RECYCLING AND UV REQUIREMENTS

Water Recycling and UV Requirements are included in the Order pursuant to Water Code section 13523 and based on recommendations from the DDW. In accordance with title 22, the DDW reviews engineering reports for the production, distribution, and use of recycled water. The San Diego Water Board relies on the expertise of the DDW and includes recommendations from the DDW in WDRs to ensure recycled water is treated and used in

a manner that protects human health. The Discharger must certify that the Facility and other existing purveyance facilities meet the DDW's requirements or must update the Title 22 Engineering Report Addendum for the Trojan Signa UV disinfection system at the South Bay Water Reclamation Plant (Title 22 Report) to comply with the DDW's requirements. The Order also requires the Discharger to maintain Rules and Regulations for Recycled Water Use (Attachment B) that comply with the DDW's requirements. The Rules and Regulations must include an inspection and cross-connection testing program. The Order also requires the Discharger to update its Rules and Regulations to include requirements to ensure use and transport of recycled water from recycled water fill stations will be protective of public health and the environment.

## **VII. RATIONALE FOR STANDARD PROVISIONS, SPECIAL PROVISIONS, AND NOTIFICATIONS**

- A. **Standard Provisions.** The standard provisions contain requirements that allow the San Diego Water Board to enforce the Order. Provisions include need for inspection, spill and emergency reporting, records maintenance, and reporting of changes. Standard provisions apply to all WDRs and are consistent with San Diego Water Board findings.
- B. **Special Provisions – Facility Design and Operation Specifications.** The Facility was designed and constructed in accordance with title 22 engineering reports reviewed by the DDW. The Design and Operation Specifications in section VI of the Order requires the plant to be operated by appropriately certified wastewater operators, implementation of best management practices for protection of human health, and maintenance of the Facility in accordance with the operation manual and appropriate references. Section VI also requires that recycled water and fertilizer be applied at agronomic rates. These requirements ensure the Facility operates properly and within design parameters to not cause or contribute to a condition of pollution or nuisance and to protect beneficial uses.
- C. **Notifications.** Notifications are included in the Order to inform the Discharger of administrative issues regarding the Order.

## **VIII. RATIONALE FOR MONITORING AND REPORTING PROGRAM REQUIREMENTS**

- A. The purpose of the MRP is to determine and ensure compliance with effluent discharge specifications and other requirements established in the Order, assess treatment efficiency, characterize effluents, ensure water quality objectives and beneficial uses of the groundwater basins are protected, and minimize the effects of the discharge on the receiving water quality. The MRP also specifies requirements concerning the proper use, maintenance, methods, and the monitoring type intervals and frequency necessary to provide data that are representative of the activities and discharges regulated under the Order.
- B. The MRP is issued pursuant to Water Code section 13267, which authorizes the San Diego Water Board to require dischargers to submit technical and monitoring reports.
- C. Title 22 requires monitoring and reporting for recycled water production and use, including daily coliform bacteria and continuous turbidity monitoring (section 60321), operational records and reports (section 60329), and bypass reporting (section 60331).

The use of laboratories certified for federally standardized test methods, and quality assurance and control procedures, ensure the reliability and validity of the data as well as consistency and comparability with regulations.

D. Consistent with the *Framework for Monitoring and Assessment in the San Diego Region*,<sup>5</sup> the monitoring required by the Order answers the two specific monitoring questions below.

1. Will the production, conveyance, and end use of recycled water regulated by the Order be done in a manner that protects public health and the environment?
2. Is groundwater designated for municipal and domestic use safe to drink in irrigation end use areas regulated by the Order?

E. This monitoring program has two basic components, effluent quality monitoring and recycled water production/distribution monitoring. Specific monitoring questions related to the questions above for each component are provided below.

1. Effluent monitoring consists of the basic site-specific monitoring necessary to measure compliance with individual effluent discharge specifications and/or assess potential impacts to receiving water quality. Effluent monitoring is typically conducted at the end of the treatment process and prior to distribution of recycled water to use sites. Effluent monitoring will answer the following questions.
  - a. Does the effluent comply with permit discharge specifications and other requirements of the Order, thereby ensuring that water quality objectives are achieved in the groundwater?
  - b. Does the effluent comply with the statewide treatment standards for recycled water, as required by title 22?
  - c. Is the Facility being properly operated and maintained to ensure compliance with the conditions of the Order?
2. Recycled water distribution monitoring provides information necessary to track the distribution of recycled water in the San Diego Region. This information provides an essential part of a cumulative picture of the distribution and use of recycled water within the San Diego Region. Collection and analysis of recycled water production and use site data will help answer the following.
  - a. What is the total volume of recycled water produced from the facility?
  - b. Where are the recycled water use sites located?

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<sup>5</sup> California Regional Water Quality Control Board, San Diego Region, Staff Report, November 2012. [A Framework for Monitoring and Assessment in the San Diego Region \(ca.gov\)](https://www.cdrwb.org/Portals/0/Files/2012/01/20120120%20Framework%20for%20Monitoring%20and%20Assessment%20in%20the%20San%20Diego%20Region%20.pdf)

- c. What is the volume of recycled water delivered to each use site?
  - d. What is the level of compliance with Rules and Regulations at recycled water use sites?
- F. The burden, including costs, of the reports bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

## IX. PUBLIC PARTICIPATION

Two of the four values of the San Diego Water Board espoused in its Practical Vision are communication and transparency. Public participation in the decision-making process of the San Diego Water Board is a hallmark of the governmental structure in California and essential to the San Diego Water Board's success. The San Diego Water Board has taken the following steps to encourage public participation in the Master Recycling Permit adoption process.

- A. **Notification of Interested Parties.** Consistent with Water Code section 13167.5, the San Diego Water Board has notified the Discharger and interested agencies and persons of its intent to adopt a Master Recycling Permit for the discharge and made the Order available on its website. Furthermore, the San Diego Water Board has provided the public with an opportunity to submit written comments and recommendations. Notification was provided through the San Diego Water Board website and board meeting agenda publication.
- B. **Written Comments.** Until the Order is adopted the staff determinations are tentative. Interested persons were invited to submit written comments concerning the Order. Comments submitted via email to [sandiego@waterboards.ca.gov](mailto:sandiego@waterboards.ca.gov) in Portable Document Format (PDF) or Microsoft Word format by 5:00 p.m. on April 29, 2021 and addressed to Mr. Brandon Bushnell. Comments that were received at the San Diego Water Board offices by 5:00 p.m. on April 29, 2021 were fully responded to by staff and considered by the San Diego Water Board.
- C. **Public Hearing.** The San Diego Water Board held a public hearing on the tentative Master Recycling Permit during its regular meeting on the following date and time and at the following location:

Date: **June 9, 2021**

Time: **9:00 am**

Location: **No Physical Meeting Location – Webcast Only**  
**Video broadcast of meetings will be available at:**  
<https://cal-span.org/>

Interested persons were invited to attend. At the public hearing, the San Diego Water Board heard testimony, if any, pertinent to the discharge, and the Order. Oral testimony



was heard; however, for accuracy of the record, important testimony was requested to be submitted in writing.

Those who commented on an agenda item or presented to the Board registered to participate. Information about participating telephonically or via the remote meeting solution is available at:

[https://www.waterboards.ca.gov/sandiego/board\\_info/remote\\_meeting/](https://www.waterboards.ca.gov/sandiego/board_info/remote_meeting/)

Please be aware that dates and venues may have changed. Our Web address is [http://www.waterboards.ca.gov/sandiego/board\\_info/agendas/](http://www.waterboards.ca.gov/sandiego/board_info/agendas/) where you can access San Diego Water Board Meetings, Agenda, and Minutes for changes in dates and locations.

- D. **Waste Discharge Requirements Petitions.** Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and title 23, sections 2050 and following of the California Code of Regulations. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of the Order, except that if the thirtieth day following the date of the Order falls on a Saturday, Sunday, or State holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.
- E. **Information and Copying.** The Report of Waste Discharge (ROWD), related documents, tentative Master Recycling Permit, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the San Diego Water Board by calling (619) 516-1990.
- F. **Register of Interested Persons.** Any person interested in being placed on the mailing list for information regarding the Order should contact Mr. Brandon Bushnell via phone at (619) 521-0844 or via at [brandon.bushnell@waterboards.ca.gov](mailto:brandon.bushnell@waterboards.ca.gov), reference this facility, and provide a name, address, phone number, and email address.
- G. **Additional Information.** Requests for additional information or questions regarding the Order should be directed to contact Mr. Brandon Bushnell via phone at (619) 521-0844 or via at [brandon.bushnell@waterboards.ca.gov](mailto:brandon.bushnell@waterboards.ca.gov)

## ATTACHMENT D - MONITORING AND REPORTING PROGRAM NO. R9-2021-0015

### ORDER NO. R9-2021-0015

#### MASTER RECYCLING PERMIT FOR THE CITY OF SAN DIEGO, SOUTH BAY WATER RECLAMATION PLANT, SAN DIEGO COUNTY

This Monitoring and Reporting Program No. R9-2021-0015 (MRP) is issued to the City of San Diego (Discharger) pursuant to Title 22, California Code of Regulations (title 22) and Water Code section 13267, which authorizes the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to require technical and monitoring reports. The MRP requirements help determine compliance with Order No. R9-2021-0015, *Master Recycling Permit for City of San Diego, South Bay Water Reclamation Plant, San Diego County* (Order). The San Diego Water Board Executive Officer can modify this MRP as appropriate.

#### I. GENERAL MONITORING PROVISIONS

- A. Samples and measurements collected as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be collected at the monitoring points specified in this MRP and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notifying and receiving approval from the San Diego Water Board for the proposed monitoring location change.
- B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10 percent from true discharge rates throughout the range of expected discharge volumes.
- C. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved in 40 Code of Federal Regulations (CFR), part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants as amended, unless other test procedures have been specified in this MRP.
- D. Unless otherwise permitted by the San Diego Water Board, all analyses shall be conducted at a laboratory certified to perform such analyses by the State Water Board Resources Control Board, Division of Drinking Water (DDW). The Discharger must use a laboratory capable of producing and providing quality assurance and quality control (QA/QC) records for San Diego Water Board review. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports submitted to the San Diego Water Board.
- E. Any report presenting new analytical data is required to include the complete laboratory and analytical report(s). The laboratory analytical report must be signed by the laboratory director and contain:

1. A complete sample analytical report.
  2. A complete laboratory QA/QC report.
  3. A discussion of the QA/QC data.
  4. A transmittal letter indicating whether or not all the analytical work was supervised by the director of the laboratory, and containing the following statement, "All analyses were conducted at a laboratory certified for such analyses by the DDW in accordance with current USEPA procedures."
- F. Specific methods of analysis must be identified in the Discharger's monitoring reports. If the Discharger proposes to use methods or test procedures other than those included in the most current version of the USEPA Guidelines, the exact methodology must be submitted for review and must be approved by the San Diego Water Board prior to use.
- G. If the Discharger monitors any pollutants more frequently than required by this MRP, using test procedures approved in 40 CFR, part 136, or as specified in this MRP, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharger's monitoring report. The increased frequency of monitoring shall also be reported.
- H. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records including all original strip chart and/or electronic recordings for continuous monitoring instrumentation and copies of all reports required by this MRP, and records of all data used to complete the application for this MRP. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during any unresolved litigation regarding this discharge or when required by the San Diego Water Board. Records of monitoring information shall include the following:
1. The date, exact place, and time of sampling or measurements.
  2. The individual(s) who performed the sampling or measurements.
  3. The date(s) analyses were performed.
  4. The individual(s) who performed the analyses.
  5. The analytical techniques or methods used.
  6. The results of such analyses.
- I. All monitoring instruments and devices that are used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.
- J. All applications, reports, or information submitted to the San Diego Water Board shall be signed and certified as follows:

1. The Report of Waste Discharge (ROWD) shall be signed as follows:
  - a. For a corporation-by a principal Executive Officer of at least the level of Vice President.
  - b. For a partnership or sole proprietorship-by a general partner or the proprietor, respectively.
  - c. For a municipality, State, federal or other public agency-by either a public Executive Officer or ranking elected official.
2. All other reports required by this MRP and other information required by the San Diego Water Board shall be signed by a person designated in section J.1 of this MRP or a duly authorized representative of that person. An individual is a duly authorized representative only if all the following are true:
  - a. The authorization is made in writing by a person described above.
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.
  - c. The written authorization is submitted to the San Diego Water Board.
3. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment."
- K. A composite sample is defined as a combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.
- L. A grab sample is an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.
- M. The Discharger shall identify all missing or non-valid monitoring or sampling results in monitoring reports submitted. All instances of missing or non-valid results must be accompanied by an explanation of their root cause and the steps the Discharger has or

will take to prevent future instances. Missing or non-valid results may be considered violations of MRP No. R9-2021-0015 that could result in enforcement action depending on the frequency of such instances and efforts by the Discharger to prevent such failures.

## II. Effluent Monitoring Requirements

Effluent that will be discharged to landscape irrigation sites or use sites subject to Water Recycling Criteria specified in title 22 shall be monitored downstream from the UV disinfection, except for turbidity (see footnote “e.” to Table D1). Required effluent monitoring is shown in Table D1.

**Table D1. Effluent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency <sup>a, b</sup>	Reporting Frequency
Flow Rate	MGD	Continuous	Continuous	Monthly
UV Dose <sup>c</sup>	mJ/cm <sup>2</sup>	Continuous	Continuous	Monthly
UVT <sup>c</sup>	%	Continuous	Continuous	Monthly
UV Intensity	mW/cm <sup>2</sup>	Continuous	Continuous	Monthly
Turbidity <sup>e</sup>	NTU	Continuous	Continuous	Monthly
Total Coliform Bacteria <sup>d</sup>	MPN/ 100 mL	Grab	Daily	Monthly
pH	pH units	Grab	Daily	Monthly
Biological Oxygen Demand (BOD <sub>5</sub> @ 20°C)	mg/L	Composite	Weekly	Monthly
Total Suspended Solids	mg/L	Composite	Weekly	Monthly
Total Dissolved Solids (TDS)	mg/L	Composite	Monthly	Quarterly
Chloride (Cl)	mg/L	Composite	Monthly	Quarterly
Sulfate (SO <sub>4</sub> )	mg/L	Composite	Monthly	Quarterly
Percent Sodium (% Na)	%	Composite	Monthly	Quarterly
Electrical Conductivity	mmho/cm or dS/m	Grab	Monthly	Quarterly
Adjusted SAR	-	Calculated	Monthly	Quarterly
Nitrate (NO <sub>3</sub> )	mg/L	Composite	Monthly	Quarterly
Total Nitrogen	mg/L	Composite	Monthly	Quarterly
Iron (Fe)	mg/L	Composite	Quarterly	Quarterly
Manganese (Mn)	mg/L	Composite	Quarterly	Quarterly

Parameter	Units	Sample Type	Minimum Sampling Frequency <sup>a, b</sup>	Reporting Frequency
Methylene Blue-Activated Substances (MBAS)	mg/L	Composite	Quarterly	Quarterly
Boron (B)	mg/L	Composite	Quarterly	Quarterly
Fluoride (F)	mg/L	Composite	Quarterly	Quarterly
<p>a. The Discharger shall increase the sampling frequency from weekly to daily and from quarterly to monthly for any constituent that exceeds the Discharge Specifications of the Order. The increased frequency of monitoring shall continue until the Discharger achieves compliance with the Specification for three consecutive periods, at which point the Discharger shall resume sampling at the specified frequency. Continuous, daily, and weekly sampling frequencies shall be reported in the monthly monitoring reports.</p> <p>b. Weekly is defined as a calendar week (Sunday through Saturday). Monthly is defined as a calendar month. Quarterly is defined as a period of three consecutive calendar months beginning on January 1, April 1, July 1, or October 1. Annually is defined as a period of 12 consecutive calendar months beginning on January 1.</p> <p>c. Refer to section III.E.4-10 of the Order for UV monitoring requirements.</p> <p>d. Samples for total coliform bacteria shall be collected at least daily and at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures. Results of daily coliform bacteria monitoring, running 7-day median determination shall be reported monthly.</p> <p>e. Effluent samples collected to determine turbidity (when required) shall be collected after the media filters. Effluent tertiary turbidity analyses shall be conducted continuously using a continuous monitoring and recording turbidity meter. Compliance with the daily average effluent turbidity specification of 2 Nephelometric Turbidity Units (NTU) shall be determined using recorded turbidity levels at a minimum of four-hour intervals over a 24-hour period. Compliance with the turbidity standard of not exceeding 5 NTU more than 5 percent of the time over a 24-hour period shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2 hours over a 24-hour period. Should the continuous turbidity meter and/or recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours. The Discharger shall report quarterly results of four-hour turbidity readings, average effluent turbidity (24-hours), 95 percentile effluent turbidity (24-hours), and daily maximum turbidity readings.</p> <p>f. The minimum sampling frequency shall be five days per week and shall increase to seven days per week for at least one week during July or August of each year.</p>				

### III. SAMPLING AND ANALYSIS PLAN

- A. The Discharger shall submit a Sampling and Analysis Plan that incorporates the standard monitoring provisions and describes the sampling and analysis protocols for groundwater and effluent monitoring. The Sampling and Analysis Plan must be received by the San Diego Water Board within 90 days of the adoption of the Order.

1. **Methods of Analysis.** Specific methods of analysis shall be identified in the Sampling and Analysis Plan. If the Discharger proposes to use methods or test procedures other than those included in the most current version of the USEPA SW-846 or methods specified in General Provision I.C of this MRP, the Sampling and Analysis Plan must explain the rationale for the change. The change must be approved by the San Diego Water Board prior to implementation.
2. **Sampling Frequency.** If the Discharger monitors any sampling point or constituent of concern more frequently than required by this MRP, the results shall be included in the monitoring reports in compliance with General Provision I.G of this MRP. The Discharger shall also report the increased frequency of monitoring and specific monitoring locations to the San Diego Water Board.
3. **Protocols.** Sample collection, storage, and analysis shall be performed in accordance with protocols included in the USEPA protocols specified in General Provision I.C of this MRP, and in accordance with a written Sampling and Analysis Plan, approved by the San Diego Water Board.
4. **Calibration.** All monitoring instruments and equipment shall be properly calibrated and maintained as required by General Provision I.I of this MRP.
5. **Record Retention.** The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, and copies of all reports required by this MRP. Records shall be maintained and retained as required by General Provision I.H of this MRP.
6. **Sample Records.** Records of monitoring information shall include:
  - a. The date, identity of sample, monitoring point from which the sample was collected, and time of sampling or measurement,
  - b. The name of the individual(s) who performed the sampling or measurements,
  - c. The date and time that analyses were started and completed,
  - d. The analytical techniques or method used, including method of preserving the sample and any other details requested by the San Diego Water Board, such as the identity and volumes of reagents used,
  - e. The calculation of results,
  - f. The results of analyses and the method detection limit (MDL) and practical quantitative limit (ML) for each parameter,
  - g. The laboratory quality assurance results (e.g., percent recovery, response factor, etc.), and
  - h. Chain of custody forms.

7. **Standard Reporting Provisions.** The Sampling and Analysis Plan shall incorporate the following:
- a. The methods of analysis shall be appropriate for the expected concentrations.
  - b. Analytical results falling between the MDL and the practical quantitative limit (PQL) shall be reported as “trace” and shall be accompanied by documents reporting both the MDL and PQL values for that analytical run.
  - c. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to the State of California laboratory accreditation procedures. In a relatively interference-free laboratory, derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
  - d. If the laboratory suspects that, due to a change in matrix or other effects, the MDL or PQL for an analytical run differs significantly from historic MDL or PQL values, the results shall be flagged and reported in the QA/QC report.
  - e. The MDL shall always be calculated such that it represents a concentration with a 99 percent reliability of non-zero results.
  - f. The PQL shall represent the lowest concentration at which a numerical value can be assigned with reasonable certainty.
  - g. All QA/QC data shall be reported, along with the sample results to which they apply. The QA/QC information shall include the method, equipment, and analytical detection and quantitation limits, the recovery rates, an explanation for any recovery rate that is less than 80 percent, the results of equipment and method blanks, the results of spiked and surrogate samples, and the frequency of quality control analysis. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in field, trip, or laboratory blank samples, the accompanying sample results shall be appropriately flagged in the tabulated data.
  - h. Upon receiving written approval from the San Diego Water Board, a proposed alternative statistical or non-statistical procedure may be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (e.g., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by the San Diego Water Board.



#### **IV. RECYCLED WATER SUMMARY REPORTS**

- A. The Discharger shall submit a quarterly summary report on recycled water users containing the following information:
1. Total volume of recycled water supplied to all recycled water users for each month of the reporting period,
  2. Total number of recycled water use sites,
  3. Address of the recycled water use site, and,
  4. Basin Plan name and number of hydrologic subareas underlying the recycled water use sites.
- B. The Discharger shall submit an annual recycled water user's compliance report containing the following information:
1. A recycled water use site summary report including:
    - a. Name of each recycled water reuse site,
    - b. Owner of each recycled water use facility,
    - c. Address of each reuse site,
    - d. Name of the recycled water recycled water site supervisor,
    - e. Phone number of the recycled water site supervisor,
    - f. Mailing address of the recycled water on-site use supervisor, if different from site address,
    - g. Volume of recycled water delivered to each reuse site for each of the 12 months in a calendar year, and
    - h. A map showing where the recycled water use areas are located within the hydrologic subarea.
  2. The Discharger shall report the number of recycled water reuse site inspections conducted by its staff and identify the sites inspected for the reporting period.
  3. The Discharger shall identify all recycled water users known to be in violation of its rules and regulations for recycled water users. The report shall include a description of the noncompliance and its cause, including the period of noncompliance; and if the noncompliance has not been corrected, the anticipated time that the noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

- C. The Discharger shall also include the following in the annual recycled water user's compliance report.
1. A list of all approved residential and commercial recycled water haulers including any new recycled water haulers that were approved during the calendar year,
  2. A list of users receiving or proposing to receive recycled water from the fill stations (including a list of uses of recycled water for each user),
  3. A list of recycled water end use sites outside the Discharger's recycled water service area,
  4. A summary of the volume of recycled water used (in acre feet) from the fill stations each quarter during the calendar year,
  5. A summary table of all inspections conducted of recycled water use sites which received recycled water from the fill stations during the calendar year and enforcement/corrective actions initiated by the Discharger during the calendar year. Include a discussion of noncompliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the Order. Copies of any enforcement actions taken by the Discharger shall be provided to the DDW, the San Diego Water Board and County DEH,
  6. An evaluation of the performance of the recycled water treatment facility, including discussion of capacity issues, system problems, and a forecast of the flows anticipated in the next year, and
  7. The name and contact information for the recycled water operator/staff responsible for overseeing operation, maintenance, and system monitoring of the fill stations.
- D. The Recycled Water Summary Reports shall be submitted as an attachment to the quarterly SMRs.

## V. VOLUMETRIC REPORTING

The Discharger shall submit an annual report to the State Water Board by April 30 of each calendar year. The Discharger must submit this annual report containing monthly data in electronic format via the State Water Board's Internet GeoTracker system at <http://geotracker.waterboards.ca.gov/> under a site-specific global identification number. Any data will be made publicly accessible as machine readable datasets. The Discharger must report in accordance with each of the items in section 3 of the *Recycled Water Policy* as described below:

- A. Influent - Monthly volume of wastewater collected and treated by the wastewater treatment plant,
- B. Production - Monthly volume of wastewater treated, specifying level of treatment,

- C. Discharge - Monthly volume of treated wastewater discharged to each of the following, specifying level of treatment:
  - 1. Ocean waters.
- D. Reuse - Monthly volume of recycled water distributed.
- E. Reuse Categories - Annual volume of treated wastewater distributed for beneficial use in compliance with title 22 in each of the use categories listed below:
  - 1. Agricultural irrigation: pasture or crop irrigation.
  - 2. Landscape irrigation: irrigation of parks, greenbelts, and playgrounds; school yards; athletic fields; cemeteries; residential landscaping, common areas; commercial landscaping; industrial landscaping; and freeway, highway, and street landscaping.
  - 3. Golf course irrigation: irrigation of golf courses, including water used to maintain aesthetic impoundments within golf courses.
  - 4. Commercial application: commercial facilities, business use (such as laundries and office buildings), car washes, retail nurseries, and appurtenant landscaping that is not separately metered.
  - 5. Industrial application: manufacturing facilities, cooling towers, process water, and appurtenant landscaping that is not separately metered.
  - 6. Other non-potable uses: including but not limited to dust control, flushing sewers, fire protection, fill stations, snow making, and recreational impoundments.

**VI. SELF-MONITORING REPORTS**

- A. The Discharger shall submit the results of the effluent monitoring required in section II of this MRP in Self-Monitoring Reports (SMRs). SMRs must be received by the San Diego Water Board by 5:00 p.m. on the first day of each month. If the first day of the month falls on a Saturday, Sunday, or a State or federal holiday, submit the SMR by 5:00 p.m. on the next regular business day.
- B. The monitoring results to be reported in each SMR shall be based on the sampling frequency, monitoring period, and due dates specified in Table 2:

**Table D2. Monitoring Periods and Reporting Schedule**

Reporting Frequency	Monitoring Period	SMR Due Date
Monthly	January, February, March, April, May, June, July, August, September, October, November, December	By the first day of the second month following sampling (i.e., March 1 for January samples)

Reporting Frequency	Monitoring Period	SMR Due Date
Quarterly	January 1 through March 30 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Semiannually	January 1 through June 30 July 1 through December 31	August 1 February 1
Annually	January 1 through December 31	February 1

- C. Laboratories must be directed to use PQL that are lower than or equal to the discharge specifications and notification limits. Constituents not detected below the method detection limit shall be reported as non-detect (ND) with the applicable value (e.g., ND<0.05 mg/L). Constituents detected between the laboratory reporting limit and method detection limit shall be reported as “estimated concentrations” or noted with appropriate laboratory flags.
- D. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final discharge specifications.
- E. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. For identified violations, the letter must include a description of the requirement that was violated and a description of the violation.
- F. SMRs must be submitted in text searchable PDF format to the San Diego Water Board via the GeoTracker database at <http://geotracker.waterboards.ca.gov/.SMR> submittals must include a signed cover/transmittal letter that includes the Facility name, Facility contact information, and reference code (**Bushnell:257831**). The electronic data must be uploaded on or prior to the regulatory due dates set forth in MRP, unless directed otherwise by the Executive Officer.

**VII. ONE TIME REPORTING DUE DATES**

This section, and Table 3 below, summarizes all one time reports due to the San Diego Water Board after adoption of the Order and accompanying MRP:

**Table D3. One Time Reporting Schedule**

Report Type	Reference Section	Report Due Date
Sampling and Analysis Plan	MRP section III	Within 90 days of the adoption of the Order

<b>Report Type</b>	<b>Reference Section</b>	<b>Report Due Date</b>
Rules and Regulations for Recycled Water Users	Order section IV.A.1	Within 90 days of the adoption of the Order
New Reuse Site Report	Order section IV.B.1	60 days prior to proposed new reuse
Noncompliance Report	Order section V.B	5 days after noncompliance
Bypass Report	Order section V.F	10 days prior to bypass
Report of Waste Discharge	Order section V.O	120 days prior to proposed major change
Transfer of Ownership	Order section V.P	120 days prior to proposed change

Ordered by: \_\_\_\_\_  
David W. Gibson  
Executive Officer  
June 9, 2021

**ATTACHMENT E - CALCULATION OF ADJUSTED SODIUM ADSORPTION RATIO**

**ORDER NO. R9-2021-0015**

**MASTER RECYCLING PERMIT  
FOR THE CITY OF SAN DIEGO, SOUTH BAY WATER RECLAMATION PLANT,  
SAN DIEGO COUNTY**

The adjusted sodium adsorption ratio (SAR) for the soil surface is calculated from the following equation:

$$SAR = \frac{Na}{\sqrt{\frac{(Ca_x + Mg)}{2}}}$$

Where Na and Mg in milliequivalents per liter (meq/L) are taken from the water quality analysis and Ca<sub>x</sub> is obtained from the table below. To use the table, the applied water electrical conductivity (EC<sub>w</sub>) in mmho/cm or in dS/m and the bicarbonate to calcium ratio (HCO<sub>3</sub>/Ca) using milliequivalents per liter must be known from the water quality analysis.

Ca<sub>x</sub> values for near surface soil-water at various applied water salinities and HCO<sub>3</sub>/Ca ratios assuming equilibrium conditions for soil-water, no precipitation of magnesium, and a partial pressure of CO<sub>2</sub> (P<sub>CO2</sub>) of 0.0007 atmospheres.

**Table E1: Sodium Adsorption Ratio Reference Table**

Salinity of applied water (EC <sub>w</sub> ) (mmho/cm or dS/m)	0.1	0.2	0.3	0.5	0.7	1.0	1.5	2.0	3.0	4.0	6.0	8.0
Ratio of HCO <sub>3</sub> /Ca												
<b>0.05</b>	13.20	13.61	13.92	14.40	14.79	15.26	15.91	16.43	17.28	17.97	19.07	19.94
<b>0.10</b>	8.31	8.57	8.77	9.07	9.31	9.62	10.02	10.35	10.89	11.32	12.01	12.56
<b>0.15</b>	6.34	6.54	6.69	6.92	7.11	7.34	7.65	7.90	8.31	8.64	9.17	9.58
<b>0.20</b>	5.24	5.40	5.52	5.71	5.87	6.06	6.31	6.52	6.86	7.13	7.57	7.91
<b>0.25</b>	4.51	4.65	4.76	4.92	5.06	5.22	5.44	5.62	5.91	6.15	6.52	6.82
<b>0.30</b>	4.00	4.12	4.21	4.36	4.48	4.62	4.82	4.98	5.24	5.44	5.77	6.04
<b>0.35</b>	3.61	3.72	3.80	3.94	4.04	4.17	4.35	4.49	4.72	4.91	5.21	5.45
<b>0.40</b>	3.30	3.40	3.48	3.60	3.70	3.82	3.98	4.11	4.32	4.49	4.77	4.98
<b>0.45</b>	3.05	3.14	3.22	3.33	3.42	3.53	3.68	3.80	4.00	4.15	4.41	4.61
<b>0.50</b>	2.84	2.63	3.00	3.10	3.19	3.29	3.43	3.54	3.72	3.87	4.11	4.30
<b>0.75</b>	2.17	2.24	2.29	2.37	2.43	2.51	2.62	2.70	2.84	2.95	3.14	3.28
<b>1.00</b>	1.79	1.85	1.89	1.96	2.01	2.09	2.16	2.23	2.35	2.44	2.59	2.71
<b>1.25</b>	1.54	1.59	1.63	1.68	1.73	1.78	1.86	1.92	2.02	2.10	2.23	2.33
<b>1.50</b>	1.37	1.41	1.44	1.49	1.53	1.58	1.65	1.70	1.79	1.86	1.97	2.07
<b>1.75</b>	1.23	1.27	1.30	1.35	1.38	1.43	1.49	1.54	1.62	1.68	1.78	1.86
<b>2.00</b>	1.13	1.16	1.19	1.23	1.26	1.31	1.36	1.40	1.48	1.54	1.63	1.70
<b>2.25</b>	1.04	1.08	1.10	1.14	1.17	1.21	1.26	1.30	1.37	1.42	1.51	1.58
<b>2.50</b>	0.97	1.00	1.02	1.06	1.09	1.12	1.17	1.21	1.27	1.32	1.40	1.47
<b>3.00</b>	0.85	0.89	0.91	0.94	0.96	1.00	1.04	1.07	1.13	1.17	1.24	1.30

<b>3.50</b>	0.78	0.80	0.82	0.85	0.87	0.90	0.94	0.97	1.02	1.06	1.12	1.17
<b>4.00</b>	0.71	0.73	0.75	0.78	0.80	0.82	0.86	0.88	0.93	0.97	1.03	1.07
<b>4.50</b>	0.66	0.68	0.69	0.72	0.74	0.76	0.79	0.82	0.86	0.90	0.95	0.99
<b>5.00</b>	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.80	0.83	0.88	0.93
<b>7.00</b>	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.64	0.67	0.71	0.74
<b>10.0</b>	0.39	0.40	0.41	0.42	0.43	0.45	0.47	0.48	0.51	0.53	0.56	0.58
<b>20.0</b>	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.37

Table Notes:

- a. Table 3-2 from Irrigation with Recycled Municipal Wastewater, A Guidance Manual Calculation of adjusted RNA a, b, c
- b. Adapted from Suarez.
- c. The adjusted SAR is a modification of the sodium adsorption ratio SAR procedure. Calcium concentrations in the soil-water is not constant. The calcium concentration at equilibrium depends on both the concentration in the applied water and the dissolution from soil-calcium or precipitation from soil-water. The effect on sodium adsorption by soil-water salinity and the concentration of calcium, bicarbonate, and dissolved carbon dioxide.
- d. The adjusted sodium adsorption ratio includes the effects of the factors noted in the above footnotes and more correctly predicts the sodium hazard and potential infiltration problem caused by water quality.