

INFORMATION SHEET

ORDER NO. R9-2012-0054, WASTE DISCHARGE REQUIREMENTS FOR THE SAN DIEGO COUNTY SANITATION DISTRICT HARMONY GROVE WATER RECLAMATION PLANT, SAN DIEGO COUNTY

This Information Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of Order No. R9-2012-0054.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table 1. Facility Information

WDID	9 00000 2490
Discharger	San Diego County Sanitation District-
Name of Facility	Harmony Grove Water Reclamation Plant
Facility Address	Harmony Grove Road & Country Club Drive
	Harmony Grove Road & Country Club Drive
	San Diego, CA 92029
Facility Contact, Title and Phone	Milica Kaludjerski Schipper, Unit Manager, 858-694-2718
Mailing Address	County of San Diego, Department of Public Works, Wastewater Management Section 5500 Overland Drive, Suite 315, San Diego, CA 92123
Billing Address	County of San Diego, Department of Public Works, Wastewater Management Section 5500 Overland Drive, Suite 315, San Diego, CA 92123
Type of Facility	Water Reclamation Plant
Threat to Water Quality	2
Complexity	B
Reclamation Requirements	Producer
Facility Permitted Flow	541,000gallons per day
Average Dry Weather Flow	180,000 gallons per day
Peak Monthly Dry Weather Flow	216,000 gallons per day
Receiving Water	Escondido (HSA 904.62)
Receiving Water Type	Groundwater

- A. The San Diego County Sanitation District (hereinafter Discharger) is the owner and operator of the Harmony Grove Water Reclamation Plant (plant). Tertiary treated recycled water produced from the plant will be pumped into Rincon Del Diablo Municipal Water District's (Rincon Del Diablo MWD) recycled water distribution system. Rincon Del Diablo MWD will oversee distribution and purveyance of recycled water produced from the plant.

For the purposes of this Order, references to the "discharger" in applicable state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B. The discharge of disinfected tertiary recycled wastewater from the plant will occur in the Escondido Hydrologic Subarea (904.62) of Escondido Hydrologic Area (904.6).
- C. The Discharger filed a Report of Waste Discharge and submitted an application for Waste Discharge Requirements (WDRs) on March 13, 2012. The application was deemed complete on May 8, 2012.

II. FACILITY DESCRIPTION

The Harmony Grove Village development project is a master-planned community located in an unincorporated area of northern San Diego County between the cities of San Marcos and Escondido. The project proposes the development of single family residential units, commercial buildings, a park, several community purpose facilities, and an equestrian area. The Harmony Grove Village development will occupy a total of 468 acres, and is bounded to the north by Mt. Whitney Road, to the south and east by Harmony Grove Road, and to the west by undeveloped land. The plant will be designed for an average daily flow of 541,000 gallons per day and will treat domestic wastewater generated at the Harmony Grove development.

- A. **Description of Wastewater and Biosolids Treatment or Controls.** The proposed plant will provide secondary and tertiary treatment of domestic wastewater generated by the Harmony Grove Village development, and will be owned and operated by the San Diego County Sanitation District- (Discharger). The primary treatment processes at the plant will consist of a rotating drum screen, a bypass channel with a manually cleaned bar rake, and two equalization basins. Secondary treatment will consist of an Aero-Mod extended aeration activated sludge process made up of selector tanks, aeration tanks, and clarifiers. Tertiary treatment will be provided by granular sand media filters with flocculation, and disinfection in chlorine contact tanks. Associated solids handling processes will consist of aerobic digesters within the Aero-mod treatment process and a solid bowl decanter centrifuge.
- B. **Discharge Points and Receiving Waters.** Effluent produced from the plant will initially be used for dust control and grading onsite. Once the plant has been certified to discharge tertiary treated effluent (recycled water) by the California Department of Public Health (CDPH), recycled water produced at the plant will be pumped into the Rincon Del Diablo MWD's recycled water distribution system. The recycled water will be used for irrigation within the Harmony Grove Village development as well as other areas within the Rincon Del Diablo MWD service area. All the discharge areas will be located in the Escondido HSA (904.62). Requirements for the purveyance and distribution of recycled water produced from the plant by Rincon Del Diablo MWD will be established in separate water reclamation requirements.

The Rincon Del Diablo MWD has established rules and regulations for the use of recycled water within its service area and has an ongoing recycled water distribution program. Rincon Del Diablo MWD also currently distributes recycled water from the City of Escondido's Hale Avenue Resource Recovery Facility to use areas east of the Harmony Grove Village development within the Escondido Hydrologic Subarea.

- C. **Expected Plant Effluent Quality.** Effluent produced at the plant is expected to be similar in quality to recycled water produced from the Meadowlark Water Reclamation

Plant (Meadowlark WRP) and the Hale Avenue Resource Recovery Facility (HAARF), Escondido. The effluent quality from the plant will likely be more similar to that of the Meadowlark WRP because the source potable water is the same for the Meadowlark WRP and the Harmony Grove Water Reclamation Plant.

Table 2. Expected Effluent Quality

Parameter	Units	Meadowlark WRP Effluent Data	HAARF Data
Biochemical Oxygen Demand ₅	Milligrams per liter (mg/L)	4.6	Not Reported
Total Suspended Solids	mg/L	3.3	3.4
pH	pH units	6.9	Not Reported
Total Dissolved Solids (TDS)	mg/L	927	819
Chloride (Cl)	mg/L	238	189
Sulfate (SO ₄)	mg/L	Not Reported	211
Total Kjeldahl Nitrogen (TKN)	mg/L	Not Reported	15.53
Iron (Fe)	mg/L	0.02	0.05
Manganese (Mn)	mg/L	0.03	0.04
Methylene Blue-Activated Substances (MBAS)	mg/L	Not Reported	0.13
Boron (B)	mg/L	0.35	0.31
Turbidity (Nephelometric Turbidity Units, NTU)	NTU	0.9	1.1
Fluoride (F)	mg/L	Not Reported	0.625
Aluminum	mg/L	Not Reported	0.319
Arsenic	mg/L	Not Reported	Non Detect (ND)
Barium	mg/L	Not Reported	0.0292
Cadmium	mg/L	Not Reported	ND
Chromium	mg/L	Not Reported	Not Regulated
Lead	mg/L	Not Reported	Not Regulated
Mercury	mg/L	Not Reported	0.002
Selenium	mg/L	Not Reported	0.05
Silver	mg/L	Not Reported	Not Regulated

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

- A. **Legal Authorities.** This Order is issued pursuant to section 13263 of the California Water Code. This Order serves as waste discharge requirements pursuant to Article 4, Chapter 4, Division 7 of the Water Code.
- B. **California Environmental Quality Act.** An Environmental Impact Report (EIR) for the project was certified by the San Diego County Board of Supervisors on February 7, 2007 pursuant to requirements of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000, et seq.). The EIR concludes that the proposed project will have significant unmitigatable impacts related to transportation, air quality, noise, and aesthetics. The EIR, however, also concludes that the project will have no significant or less than significant impacts related to water quality, biological resources, land use, and cultural/historical resources with mitigation measures incorporated in the proposed project.
- C. **Water Quality Control Plans.** The Water Quality Control Plan for the San Diego Basin (hereinafter 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 Resources Control Board (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. Beneficial uses of groundwater that are designated for the Escondido Hydrologic Subarea (HSA 904.62) include municipal and domestic supply, agricultural supply, and industrial service supply.
- D. **Recycled Water Policy.** The State Water Board established the Recycled Water Policy in Resolution No. 2009-0011. The Recycled Water Policy establishes criteria for recycled water projects and permits. The intent of the Policy is to increase recycled water use, streamline permitting for appropriate projects, and manage salt and nutrients on a basin-wide approach.
- E. **Antidegradation Policy.** The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings.

IV. RATIONALE FOR DISCHARGE SPECIFICATIONS

A. Discharge Specifications

The Order establishes both technology and water quality based discharge specifications for the discharge of recycled water from the plant. The technology based effluent limitations specified in the Order for biological oxygen demand, total suspended solids, and pH are based on design criteria for removal of these constituents by secondary wastewater treatment technology. The water quality-based discharge specifications specified are derived from the water quality objectives (shown in Table D-3 below) listed in Table 3.3 of the Basin Plan) for the Escondido HSA, the water quality objectives for inorganic chemicals which apply to areas designated for domestic or municipal water supply (listed in Table 3-4 of the basin plan), and CDPH standards for disinfected tertiary recycled water.

Table 3. Basin Plan Groundwater Water Quality Objectives

Hydrologic Area	TDS (mg/L)	Cl (mg/L)	SO ₄ (mg/L)	%Na	NO ₃ (mg/L)	Fe (mg/L)	Mn (mg/L)	M B A S (mg/L)	B (mg/L)	O D O R	TURB (NTU)	COLOR (color units)	F (mg/L)
Escondido HSA 904.62	1,000	300	400	60%	10	0.3	0.05	0.5	0.75	None	5	15	1.0

The plant will operate in an extended aeration mode and will include a denitrification process which will reduce the total nitrogen concentration in the effluent to approximately 10 mg/L as N, which will be above the water quality objective for nitrate established at 2.2 mg/L as N (or 10 mg/L as nitrate-NO₃). Discharge of nitrogen above the water quality objective, however, is not expected to adversely impact water quality because wastewater will be applied at agronomic rates which allow for uptake of nitrogen by turfgrass on the reuse sites. The Discharger reported that the application rate of nitrogen will range from 1.63 to 3.26 pounds per 1,000 square feet (lbs per 1,000 ft²) if the concentration of total nitrogen in the recycled water discharged from the plant is between 10 to 20 mg/L as N. Information submitted by the Discharger also shows that nitrogen demand of turf grass ranges from 3 to 6 lbs per 1,000 ft². With nitrogen concentrations in recycled water expected to be about 10 mg/L, uptake of nitrogen in applied water by turfgrass will ensure the application of recycled water does not contribute to the exceedances of the nitrate water quality objective in the groundwater.

It is essential that recycled water users take into account nutrient levels in recycled water prior to fertilizer application. As a result, Special Provision F.3 in the Order requires the Discharger to submit copies of its monitoring reports to Rincon Del Diablo MWD to enable Rincon Del Diablo MWD and its recycled water users to monitor levels of nitrogen and other nutrients in recycled water. Furthermore, Water Reclamation Requirements, Order No. R9-2012-0055 requires Rincon Del Diablo MWD to submit an operations management plan to the San Diego Water Board which must describe measures it will implement to ensure that nutrient application from recycled water and fertilizer use on reuse sites do not exceed demands of landscape vegetation. Since other types of vegetation may be grown on the landscape as well as turfgrass, the operations management plan will take into account uptake of nitrogen by other types of landscape plants to ensure that nitrogen input from use of recycled water and fertilizer will not cause exceedance of the nitrate water quality objective in the groundwater.

Table 4. Summary of Discharge Specifications

Constituent	Units	Daily Maximum ¹	Monthly Average ²	12-Month ³
Chlorine Residual	Milligrams per liter (mg/L)	See WDR Order No. R9-2012-0054, Section D.2		
Chlorine-Contact Time (CT)	Milligrams minute per liter (mg-min/L)	See WDR Order No. R9-2012-0054, Section D.2		
Total Coliform Bacteria ^c	Most Probable Number per 100 milliliters(MPN per 100 mL)	See WDR Order No. R9-2012-0054, Section D.3		
Turbidity (TURB)	Nephelometric Turbidity Units (NTU)	See WDR Order No. R9-2012-0054, Section D.4		
Biological Oxygen Demand (BOD ₅ @ 20°C)	mg/L	30	45	
Total Suspended Solids (TSS)	mg/L	30	45	
pH	pH units	Within the limits of 6.5-8.5 at all times		
Total Dissolved Solids (TDS)	mg/L	-	-	1,000
Chloride (Cl)	mg/L	-	-	300
Sulfate (SO ₄)	mg/L	-	-	400
Percent Sodium (% Na)	%	-	-	60%
Total Nitrogen (N)	mg/L	-	-	15
Iron (Fe)	mg/L	-	-	0.30
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	-	-	2.0
Aluminum	mg/L	-	-	1
Arsenic	mg/L	-	-	0.05
Antimony	mg/L	-	-	0.006
Barium	mg/L	-	-	1
Beryllium	mg/L	-	-	0.004
Cadmium	mg/L	-	-	0.005
Cyanide	mg/L	-	-	0.2
Mercury	mg/L	-	-	0.002
Nickel	mg/L	-	-	0.1
Perchlorate	mg/L	-	-	0.006
Selenium	mg/L	-	-	0.05
Thallium	mg/L	-	-	0.002

¹The daily maximum effluent limitation shall apply to the results of a single composite or grab sample representing non-overlapping 24 hour periods.

Constituent	Units	Daily Maximum ¹	Monthly Average ²	12-Month ³
<p>²The monthly average effluent limitation shall apply to the arithmetic mean of the results of all samples collected during each calendar month.</p> <p>³The 12-month average effluent limitation shall apply to the arithmetic mean of the results of all samples collected during any 12 consecutive calendar month period.</p> <p>% Na = $\frac{\text{Na}}{(\text{Na} + \text{Ca} + \text{Mg} + \text{K})} \times 100 \%$, where Sodium (Na), Calcium (Ca) Magnesium (Mg), and Potassium (K) are expressed in milliequivalent per liter</p>				

B. Title 22 Specifications

The Title 22 Specifications are based on recommendations of the CDPH for the protection of human health at use sites. Recycled water effluent from the Facility must meet the definition of “disinfected tertiary recycled water” in CCR Title 22 section 60301.230 and by reference “filtered wastewater” in section 60301.320 incorporated by reference, including future changes to the incorporated provisions as the changes take effect.

V. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Effluent monitoring is required to determine compliance with discharge specifications, and facility design and operation specifications. Monitoring and Reporting Program No. R9-2012-0054 is issued pursuant to Water Code section 13267, and authorizes the San Diego Water Board to require technical and monitoring reports. The use of laboratories certified for federally standardized test methods, and quality assurance and control procedures ensures the reliability and validity of the data as well as consistency and comparability with regulations.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

The standard provisions contain language that allows the San Diego Water Board to enforce Order No. R9-2012-0054. 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. Monitoring and Reporting Program Requirements

The MRP is a requirement of the Order. The rationale for the MRP is provided in section V of the Information Sheet above.

C. Special Provisions

- 1. Facility Design and Operation Specifications.** The facility is designed and will be constructed in accordance with Title 22 Engineering Reports that were reviewed by

the CDPH. The Specifications here, which continually apply, include need for properly trained operators, operation and maintenance manuals and references, and best management practices for the protection of human health.

- 2. **Notifications.** The notifications inform the Discharger of administrative issues regarding this Order.

VII. PUBLIC PARTICIPATION

As a step in the WDR adoption process, the San Diego Water Board staff developed tentative WDRs. The San Diego Water Board has taken the following steps to encourage public participation in the WDR adoption process.

A. Notification of Interested Parties

The San Diego Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the San Diego Water Board website and board meeting agenda publication.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the San Diego Water Board Office at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the San Diego Water Board, written comments must be received at the San Diego Water Board offices by 5:00 p.m. on October 31, 2012.

C. Public Hearing

The San Diego Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **November 13, 2012**
Time: **9:00 am**
Location: **City of San Diego Public Utilities Department**
9192 Topaz Way
San Diego, California 92123

Interested persons are invited to attend. At the public hearing, the San Diego Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/sandiego/board_info/agendas/ where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the San Diego Water Board regarding the final WDRs. The petition must be submitted within 30 days of the San Diego Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (ROWD), related documents, discharge specifications and special provisions, 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 858-467-2952.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the Order should contact the San Diego Water Board, reference this facility, and provide a name, address, phone number, and email address.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Mr. Fisayo Osibodu at 858-637-5594.