

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

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**TENTATIVE ORDER NO. R9-2024-0035
ADDENDUM NO. 1 TO ORDER NO. R9-2020-0001 AS AMENDED BY
ORDER NO. R9-2020-0183
NPDES NO. CA0109398**

**AMENDING WASTE DISCHARGE REQUIREMENTS AND NATIONAL POLLUTANT
DISCHARGE ELIMINATION SYSTEM PERMIT FOR THE CITY OF SAN DIEGO
NORTH CITY WATER RECLAMATION PLANT AND PURE WATER FACILITY,
DISCHARGE TO MIRAMAR RESERVOIR SAN DIEGO COUNTY**

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

1. BACKGROUND

- 1.1. The City of San Diego (Discharger) is the owner and operator of the North City Water Reclamation Plant (NCWRP) and the North City Pure Water Facility (NCPWF).
- 1.2. The Discharger is expanding the treatment capacity of the NCWRP from 32 to 56.7 million gallons per day (MGD) and constructing the new NCPWF, as part of phase 1 of its Pure Water Project. Recycled water from the NCWRP will serve as the source water for the NCPWF. The NCPWF will use advanced treatment processes to produce up to 30 MGD of advanced treated recycled water on an annual average basis. Advanced treated recycled water from the NCPWF will be discharged to Miramar Reservoir (Reservoir).
- 1.3. The Discharger expects to complete the NCWRP expansion and NCPWF construction projects by June 30, 2027, and anticipates full commissioning by December 31, 2027.
- 1.4. The San Diego Water Board adopted Order No. R9-2020-0001, NPDES No. CA 0109398 (2020 Order) on May 13, 2020, establishing waste discharge requirements for the discharge of advanced treated recycled water to the Reservoir. The San Diego Water Board adopted Order No. R9-2020-0183 on August 12, 2020, which amended the 2020 Order to correct non-substantive typographical errors, including flow references in table notes. Order No. R9-2024-0035 (Amending Order) refers to Order No. R9-2020-0001, as amended, as the “2020 Order.”
- 1.5. The Discharger submitted a letter to the San Diego Water Board, dated December 4, 2023, requesting modifications to the 2020 Order. San Diego Water Board staff reviewed the Discharger’s letter and considered the following changes requested by the Discharger:

- i. **Remove the requirement in the monitoring and reporting program (MRP) of the 2020 Order for continuous monitoring in the Reservoir for specified parameters using a moored sensor string.** The Discharger proposed collecting weekly grab samples at 1 meter intervals from the surface to the bottom of the Reservoir (profile monitoring) at monitoring location RSW-001 in lieu of the current continuous monitoring using the moored sensor string (continuous monitoring).

The MRP requires the Discharger to install a moored sensor string for measuring dissolved oxygen, temperature, pH, and electrical conductivity continuously at the surface and at specified depths in the Reservoir. The Discharger installed the moored sensor string in the Reservoir and determined that data obtained using the moored sensor string is unreliable due to: 1) severe fouling of the sensors (caused by algae and quagga mussels), 2) bird damage, 3) sensor flooding/O-ring failure, 4) burial in lake sediments, and 5) errors in sensor configuration or calibration settings, that resulted in failed data communication. In addition, the Discharger reported that the continuous monitoring proved to be more costly than anticipated due to the anti-fouling cleanings that need to be performed every 2 weeks.

The Amending Order implements the following phased approach for addressing the Discharger's request to end the continuous reservoir monitoring and to increase the frequency of profile monitoring. The Discharger will continue to implement the continuous reservoir monitoring prescribed by [Order No. R9-2020-0183, as amended the 2020 Order](#); and will increase the frequency of profile monitoring at monitoring location RSW-001 upon adoption of the Amending Order by the San Diego Water Board. The Discharger will analyze and compare the data collected from the continuous monitoring and profile monitoring, over a period of at least [12 months prior to discharge to Miramar Reservoir and for at least 20 months after the discharge to Reservoir commences](#) ~~12 months, commencing with the discharge to the Reservoir~~. The Discharger will submit a final assessment report to the San Diego Water Board, providing the Discharger's conclusions on the comparative reliability and usefulness of the continuous reservoir monitoring and profile monitoring to accurately predict the possibility of formation of harmful algal bloom in the Reservoir (see section [9.3 8-3](#) of the Amending Order). San Diego Water Board staff will review and consider the Discharger's final assessment report, and if the data supports the Discharger's proposal, the San Diego Water Board Executive Officer will issue a letter of concurrence to Discharger, and the Discharger may replace the continuous monitoring activities with the profile monitoring activities.

- ii. **Correct language and clarify terms used in specific sections of the 2020 Order.** The Discharger requested minor modifications to several sections of the 2020 Order which included corrections to: abbreviations used, Discharger and NCWRP/NCPWF facility information tables, monitoring station descriptions, and units of specific monitoring parameters.

- iii. **Modify due dates in the 2020 Order for submitting specific monitoring reports.** The Discharger requested the San Diego Water Board modify the due dates for: 1) submitting specific monitoring reports (such as, Annual Receiving Water Monitoring Reports, Annual Summary Reports, and Annual Biosolids Reports); and 2) uploading receiving water data to the California Environmental Data Exchange Network (CEDEN) database and submitting statements to the San Diego Water Board certifying the upload of the receiving water data into CEDEN. The Discharger's request explained that additional time is needed to: 1) maintain consistency with the reporting requirements in its NPDES permits for the South Bay Water Reclamation Plant and the and E.W Blom Point Loma Wastewater Treatment Plant, and 2) adequately interpret the monitoring data and perform quality assurance/quality control assessments prior to submitting the data to the San Diego Water Board. The San Diego Water Board finds the Discharger's requests for modification of the due dates for submitting the reports reasonable. In addition, allowing the Discharger additional time for quality assurance/quality control and interpretation of monitoring data should improve the quality of reports submitted.
- 1.6. The San Diego Water Board acknowledges that implementation of the continuous reservoir monitoring and frequent cleaning required to avoid fouling and maintain integrity of the sensors does impose some financial and logistical burdens on the Discharger. Nutrient inputs to the reservoir will change with advanced treated recycled water replacing imported water as the source water for the Reservoir. Implementation of the continuous reservoir monitoring for a limited timeframe can be used to assess whether change of the source water of the reservoir to advanced treated recycled water will increase the potential for algal bloom formation. Continuous measurements of parameters such as temperature and dissolved oxygen using the moored sensor string can be used to predict the possibility of formation of algae in the Reservoir. Algae growth is influenced by water temperature, with warmer temperatures generally promoting faster growth rates. Algal blooms can lead to fluctuations in dissolved oxygen levels, particularly during nighttime when algae consume oxygen through respiration. Moored string sensor measurements can detect changes in dissolved oxygen concentrations, providing early warning signs of potential algal activity.
- 1.7. The Discharger submitted a proposed antifouling strategy to the San Diego Water Board, dated June 5, 2023, for cleaning and maintaining the integrity of the sensors. The proposed antifouling strategy involves covering the sensors with copper tape and screen/mesh, and slowly releasing food oils under the screens or mesh in the area surrounding the sensors. The proposed food oils to be used are thymol and carvacrol. The San Diego Water Board does not object to the Discharger's proposed antifouling measures.
- 1.8. The State Water Resources Control Board Division of Drinking Water (DDW) requested via email on March 20, 2024, that the San Diego Water Board modify the 2020 Order to require monitoring for aluminum, electrical conductivity, and per-and poly fluoroalkyl substances (PFAS) at specific monitoring locations in the

Reservoir pursuant to section 60320.326 (a) of title 22 of the California Code of Regulations (CCR). DDW also requested the San Diego Water Board modify the 2020 Order to add monitoring for total coliform at specific locations at monitoring location RSW-001. This modification was requested in a separate email on April 23, 2024, pursuant to section 60320.326 (a) of title 22 of the CCR. The Amending Order makes the modifications requested by DDW.

2. PURPOSE OF ORDER NO. R9-2024-0035, ADDENDUM NO. 1 TO ORDER NO. R9-2020-0001 (ORDER)

This Amending Order makes the following modifications to the 2020 Order:

- Allows the Discharger to implement a phased approach to support discontinuing continuous reservoir monitoring;
- Requires the Discharger to increase the frequency of profile Monitoring measurements at monitoring location RSW-001 in the Reservoir from monthly or every two weeks (for half the year) to weekly (throughout the year). The weekly profile monitoring measurements at monitoring location RSW-001 are intended to eventually replace the continuous monitoring measurements, as proposed by the Discharger and outlined above;
- Requires the Discharger to analyze and compare continuous monitoring and profile monitoring measurements and submit a final assessment report to the San Diego Water Board;
- Corrects inconsistent language and clarifies terms used in specific sections of the 2020 Order;
- Modifies due dates for submitting specific monitoring reports; and
- Adds monitoring for aluminum, electrical conductivity, PFAS, and total coliform at specific monitoring locations in the Reservoir pursuant to section 60320.326 (a) of title 22 of the CCR.

3. LEGAL AUTHORITIES

- 3.1. Section 13263(e) of the California Water Code (Water Code), provides that the San Diego Water Board may, upon application by any affected person, or on its own motion, review, and revise waste discharge requirements. Section 122.62(a) of 40 CFR authorizes the reopening and modification of a NPDES permit based upon the receipt of new information that was not available at the time of permit issuance.
- 3.2. The 2020 Order is not being reopened for any other purpose than the revisions contained herein. Except as contradicted or superseded by the findings and directives set forth in this Order, all of the previous findings and directives of the 2020 Order shall remain in full force and effect.

4. CALIFORNIA ENVIRONMENTAL QUALITY ACT

This action is exempt from the requirement of preparation of environmental documents under the California Environmental Quality Act (Public Resources

Code, division 13, chapter 3, section 21000 et seq.) in accordance with section 13389 of the Water Code.

5. PUBLIC PARTICIPATION

- 5.1. The San Diego Water Board notified the Discharger and interested agencies and persons of its ~~the~~ intent to adopt this Amending Order and provided them with an opportunity to submit written comments and recommendations.
- 5.2. The San Diego Water Board in a public meeting heard and considered all comments pertaining to the adoption of this Amending Order.
- 5.3. 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 California Code of Regulations, title 23, sections 2050 et seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the adoption date of this Amending Order. 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 or will be provided upon request. For instructions on how to file a petition for review, see the State Water Board website at: https://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

THEREFORE IT IS HEREBY ORDERED that, pursuant to Water Code section 13263 and 40 CFR section 122.62, Order No. R9-2020-0001, as amended by Order No. R9-2020-0183 (2020 Order) is amended as follows:

1. DISCHARGER AND FACILITY INFORMATION

Tables 1 and F-1 have been replaced as shown below.

- 1.1. Table 1 has been replaced with the following:

Table 1. Discharger Information

Discharger	Name of Facility	Facility Address
City of San Diego	North City Water Reclamation Plant	4949 Eastgate Mall, San Diego, CA 92121
City of San Diego	North City Pure Water Facility	4940 Eastgate Mall, San Diego, CA 92121

1.2. Table F-1 has been replaced with the following:

Table F-1. Facility Information

Type of Information	Facility/Discharger Information
WDID	9 000003344
Discharger	City of San Diego
Facility and Facility Address	North City Water Reclamation Plant, 4949 Eastgate Mall, San Diego, CA 92121
Facility and Facility Address	North City Pure Water Facility, 4940 Eastgate Mall, San Diego, CA 92121
Facility Contact, Title, Email, and Phone	Juan Guerreiro, Director Public Utilities Department, JGuerreiro@sandiego.gov (858) 292-6436
Authorized Person to Sign and Submit Reports	Peter Vroom, PhD, Deputy Director, Public Utilities Department, PVroom@sandiego.gov (619) 758-2301
Mailing Address	9192 Topaz Way, San Diego, CA 92123
Billing Address	Same as Mailing Address
Type of Facility	Publicly-Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Recycling Requirements	Producer
North City Pure Water Facility (NCPWF) Permitted Flow	30.0 million gallons per day (MGD)
NCPWF Design Flow	34.0 MGD
Watershed	Miramar Reservoir Watershed (Hydrologic Area 906.10)
Receiving Water	Miramar Reservoir
Receiving Water Type	Inland surface water

2. REPORT SUBMITTAL DUE DATES

The due dates for submitting specific reports are modified as shown below. A due date for submitting the final assessment report is also being added to Table E-19 (see section 8.2 of this Amending Order).

2.1. The following portions of Table E-19 have been modified as shown:

Table E-19. Other Reports

Report	Location of Requirement	Due Date
Annual Biosolids Report	Section VI.C.5.a.viii	Annually on February 1 9
CEDEN Certification	Section IV.C of this MRP	Annually on March <u>November</u> 1
Annual Receiving Water Monitoring Report	Section IV.D.2 of this MRP	Annually on March <u>July</u> 1
Annual Summary Report	Section VII.A.3 of this MRP	Annually on February <u>July</u> 1
<u>Final Assessment Report</u>	<u>Section IV.A.3 of this MRP</u>	<u>April 1, 2028</u>

2.2. Section IV.C of the MRP has been modified as shown:

C. California Environmental Data Exchange Network

In addition to submitting self-monitoring reports (SMRs), the Discharger shall also ensure that receiving water monitoring results from section IV.A and IV.B.2 of this MRP are submitted to the California Environmental Data Exchange Network (CEDEN) no later than ~~90~~ 120 days after the deadline for submitting the annual receiving water monitoring report completion of monitoring. A statement certifying that all monitoring results have been timely uploaded into CEDEN shall be submitted annually by ~~March~~ November 1 of each year.

2.3. Section ~~IV.~~ IV. ~~IV.~~ D.2 of the MRP has been modified as shown:

2. **Receiving Water Monitoring Report.** The Discharger shall submit a Receiving Water Monitoring Report annually on ~~March~~ July 1. The Receiving Water Monitoring Report shall cover the receiving water monitoring requirements of sections ~~IV.~~ IV. ~~IV.~~ A and B of this MRP and include, as a minimum, the following information:

2.4. Section VII.A.3 of the MRP has been modified as shown:

3. The Discharger shall submit an annual summary report to the San Diego Water Board by ~~February~~ July 1 of each year that contains tabular and graphical summaries of the monitoring data obtained during the previous year.

3. FILTRATION RATES FOR NON-POTABLE REUSE

Section VI.C.2.c.viii has been modified as shown:

- viii. **Filtration Rates.** ~~For the production of disinfected tertiary treated recycled water to be distributed under the Master Recycling Permit for the City of San Diego North City Water Reclamation Plant, San Diego County (Order No. R9-2015-0091), the~~ The NCWRP may operate at filtration rates up to a daily average 8.7 gallons per minute per square feet (gpm/sf), subject to meeting the following conditions:

4. INDICATOR BACTERIA ANALYSES

Section VII.L.2 has been modified as shown:

- 2. For all bacterial analyses, sample dilutions should be performed so the range of values extends from ~~2 to 16,000~~ 1 to 24,000 MPN. The detection methods used for each analysis shall be reported with the results of the analysis. Detection methods used for coliforms (total and fecal) shall be those listed in 40 CFR part 136 or any improved method determined by the San Diego Water Board (and approved by USEPA) to be appropriate. Detection methods used for Escherichia coli (E. coli) or enterococcus shall be those presented in USEPA publication USEPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water by Membrane Filter Procedure*, listed under 40 CFR part 136, and any other method approved by the San Diego Water Board.

5. CHANGES TO UNITS FOR BACTERIA ANALYSIS

All references to colony forming units per 100 milliliter (CFU/100 mL) in the 2020 Order have been replaced with most probable number per 100 milliliter (MPN/100 mL).

- 5.1. The following rows in Attachment A, Part 1 have been modified as shown:

Part 1. - Abbreviations

Abbreviation	Definition
CFR	Code of Federal Regulations
CFU	Colony Forming Units
MMEL	Median Monthly Effluent Limitation
MPN	Most Probable Number
MRP	Monitoring and Reporting Program

5.2. Table E-4 has been modified as shown:

Table E-4. Effluent Monitoring at Monitoring Location EFF-001¹

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/Month	2
<i>Escherichia coli</i> (<i>E. coli</i>)	colony forming units- most probable number per 100 milliliters (CFU MPN/100 mL)	Grab	1/Week	2
Phosphorous, Total (as P)	mg/L	24-hour composite	1/Month ³	2

5.3. Table E-16 has been modified as shown:

Table E-16. Reservoir Water Monitoring Requirements¹

Parameter	Units	Sample Type	Minimum Sampling Frequency ²	Required Analytical Test Method	Monitoring Location
Total Coliform	CFU MPN/100 mL	Grab	1/Month	5 ⁹	RSW-001 ^{4,6,7,8} , 7,8 RSW-003 ^{4,7,8}
<i>E. coli</i>	CFU MPN /100 mL	Grab	1/Week 9 ¹⁰	5 ⁹	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Color	ADMI Color Units	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}

Notes for Table E-16

- At the surface (~~0.5 m~~ 0.3 m, approximately 1 foot below surface).
- Samples shall be analyzed collected on the same day and analyzed within acceptable method holding times using both a Clean Water Act methods specified in 40 CFR part 136 and a drinking water methods ~~specified in 40 CFR 141~~, and ~~results of both analyses shall be included in monitoring reports required by this MRP approved by the State Water Board for the contaminant pursuant to section 60320.304 of title 22 of the CCR for the contaminant and by a laboratory accredited by the State Water Board Environmental Laboratory Accreditation Program (ELAP) for the analytical method used. Results of both analyses shall be included in monitoring reports required by this MRP.~~ Analyses using the Clean Water Act

methods are not required if the equivalent drinking water methods are more sensitive. Samples can be analyzed using Alternative Test Procedures (ATPs) upon approval of ATPs by the State Water Board.

6. At depth of Outlet Ports 1, 2a, 2b, 3a, 3b, 4a, and 4b.
7. At mid-depth; in the epilimnion approximately 2 m above the thermocline.
8. At approximately 1 m above solid bottom of the reservoir.
9. Sample shall be analyzed as specified in 40 CFR 136.
10. If exceedances of applicable receiving water limitations for E. coli specified in section V.B of the Order are observed at Monitoring Location EFF-002 and Discharge Point No. 001 (at Monitoring Location RSW-003), the Discharger shall increase the receiving water monitoring frequency at Monitoring Location RSW-003 for that parameter(s) to three times per week until the receiving water has demonstrated compliance at Monitoring Location RSW-003 with applicable receiving water limitations for that parameter(s) specified in section V.B of the Order for a minimum of one week or the Discharger demonstrates to the San Diego Water Board that Facility effluent is not a contributing source of that parameter(s) to the downstream receiving water exceedances at Monitoring Location RSW-003.

6. DELETE THE ACRONYM “MF”

6.1. The following row in Attachment A, Part 1 has been deleted as shown:

Part 1. - Abbreviations

Abbreviation	Definition
Metrosystem	San Diego Metropolitan Sewerage System
MF	Microfiltration
MRP	Monitoring and Reporting Program

6.2. Table E-1 has been modified as shown:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
---	INF-001	A location where all influent flow to the North City Water Reclamation Plant (NCWRP) are <u>is</u> accounted for in monitoring events; upstream of any in-plant return flows, and where a representative sample of the influent can be obtained. Latitude: 32.8766° Longitude: -117.1973°
---	INT-005-A	Ultrafiltration Membrane filtration Microfiltration (MF) feed (at each of

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	INT-005-B INT-005-C INT-005-D INT-005-E INT-005-F INT-005-G INT-005-H INT-005-I INT-005-J INT-005-K INT-005-L	the 12 <u>ultrafiltration MF</u> units) - A point where effluent from the membrane effluent strainers to each <u>membrane ultrafiltration</u> unit can be monitored prior to the <u>ultrafiltration membrane filtration reverse osmosis (RO) treatment</u> process.
---	INT-006-A INT-006-B INT-006-C INT-006-D INT-006-E INT-006-F INT-006-G INT-006-H INT-006-I INT-006-J INT-006-K INT-006-L	<u>Membrane filtration Ultrafiltration filtrate MF permeate</u> (at each of the 12 <u>ultrafiltration membrane filtration MF</u> units) - A point where effluent from each <u>ultrafiltration membrane filtration</u> unit can be monitored prior to the RO feed tank.

7. CHANGES TO TABLE E-3, INTERNAL MONITORING REQUIREMENTS

Table E-3 has been modified as shown:

Table E-3. Internal Monitoring Requirements¹

Parameter	Units	Monitoring Location/Station ²	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Pressure <u>Decay Rate</u>	<u>psi pounds per square inch per minute (psi/min)</u>	INT-005-A through L INT-006-A through L	Recorder	<u>Continuous 1/Day</u>	---
TOC	mg/L	INT-009	<u>24-hour composite Grab</u>	1/Week ⁶	5

8. TOTAL ORGANIC CARBON (TOC) MONITORING AT MONITORING LOCATION, EFF-001

Table E-4 has been modified as shown:

Table E-4. Effluent Monitoring at Monitoring Location EFF-001¹

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
TSS	mg/L	24-hour composite	1/Month	2
TOC	mg/L	24-hour composite Grab	1/Month	2
Turbidity	NTU	24-hour composite	1/Month ^{4,5}	6

9. CHANGES TO RESERVOIR MONITORING REQUIREMENTS

The reservoir monitoring requirements in section IV.A of Attachment E are being modified as shown below. In addition a footnote which applies to several tables in Attachment E is being modified for clarity.

9.1. Table E-16 and footnotes for Table E-16 has been replaced with the following:

Table E-16. Reservoir Water Monitoring Requirements¹

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Visual Observations	---	Visual	2	---	2
Reservoir inflow	MGD	Recorder/ Totalizer	Continuous	---	---
Reservoir outflow	MGD	Recorder/ Totalizer	Continuous	---	---
Reservoir storage volume	MG (million gallons)	Calculation	1/Day	---	---
Total Coliform ³	MPN/100 mL	Grab	1/Month	5-9	RSW-001 ^{4,6,7,8} RSW-003 ^{4,7,8}
<i>E. coli</i> ³	MPN/100 mL	Grab	1/Week ¹⁰	5-9	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Color ³	ADMI Color Units	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Odor ³	Units	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Temperature ³	°F	Continuous profile	1/Week ^{11,13}	--	RSW-001, RSW-002, RSW-003
Temperature ³	°F	Recorder	Continuous ¹² .13	9--	RSW-001 ⁴
Dissolved Oxygen ³	mg/L	Recorder	Continuous ¹² .13	9--	RSW-001 ⁴
Dissolved Oxygen ³	mg/L	Continuous profile	1/Week ^{11,13}	--	RSW-001, RSW-002, RSW-003
pH	standard units	Recorder	Continuous ¹² .13	9--	RSW-001 ⁴
pH	standard units	Continuous profile	1/Week ^{11,13}	--	RSW-001, RSW-002, RSW-003
Turbidity ³	NTU	Continuous profile	1/Week ^{11,13}	--	RSW-001, RSW-002, RSW-003
Nitrate Nitrogen ³	mg/L	Grab	14	9	RSW-001 ^{4,7,8} , RSW-002 ^{4,7,8} , RSW-003 ^{4,7,8}
Nitrite Nitrogen ³	mg/L	Grab	14	9	RSW-001 ^{4,7,8} , RSW-002 ^{4,7,8} , RSW-003 ^{4,7,8}
Nitrogen, Total (as N) ³	mg/L	Grab	14	9	RSW-001 ^{4,6,7,8} , RSW-002 ^{4,7,8} , RSW-003 ^{4,7,8}
Dissolved Phosphorus ³	mg/L	Grab	14	9	RSW-001 ^{4,6,7,8} , RSW-002 ^{4,7,8} , RSW-003 ^{4,7,8}

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Phosphorous, Total (as P) ³	mg/L	Grab	14	9	RSW-001 ^{4,6,7,8} , RSW-002 ^{4,7,8} , RSW-003 ^{4,7,8}
Ammonia, un-ionized (as N)	mg/L	Grab	14	9	RSW-001 ^{4,6,7,8} , RSW-002 ^{4,7,8} , RSW-003 ^{4,7,8}
Chlorophyll-a biomass (ash free dry weight) ³	mg/m ³	Grab	14	9	RSW-001 ^{4,6,7,8} , RSW-002 ⁴ , RSW-003 ^{4,7,8}
Total Toxins (measured separately): Microcystin, Cylindrospermopsin, Anatoxin ¹²	µg/L	Grab	14	15	RSW-001 ⁴ , RSW-002 ⁴ , RSW-003 ⁴
Total Organic Carbon ³	mg/L	Grab	14	9	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Total Dissolved Solids ³	mg/L	Grab	14	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Electrical Conductivity ³	mmho/cm or dS/m	Continuous profile	1/Week ^{11,13}	--	RSW-001, RSW-002, RSW-003
Electrical Conductivity	mmho/cm or dS/m	Recorder	Continuous ¹² .13	9 --	RSW-001 ⁴
Chloride ³	mg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Iron ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Sulfate ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Manganese ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Total Hardness (as CaCO ₃)	mg/L	Grab	1/Month	9	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
MBAS (surfactants) ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Thiobencarb ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Methyl- <i>tert</i> -butyl ether (MTBE) ³	mg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
PFAS ³	µg/L	Grab	1/Month	17	RSW-001 ⁶
PARAMETERS FOR THE PROTECTION OF AQUATIC LIFE					
Aluminum ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Arsenic, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Cadmium, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Chromium (VI), Total Recoverable ⁵	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Copper, Total ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Lead, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Mercury, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Nickel, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Selenium, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Silver, Total ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Zinc, Total ³	µg/L	Grab	1/Month	5	RSW-001 ^{4,6,7,8} , RSW-003 ^{4,7,8}
Cyanide, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/6-Months	9	RSW-002 ¹⁶

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Phenolic Compounds (nonchlorinated) ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Phenolic Compounds (chlorinated) ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Endosulfan ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Endrin	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
HCH ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Radioactivity	pCi/L	Grab	1/6-Months	9	RSW-002 ¹⁶
PARAMETERS FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Antimony, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Bis (2-chloroethoxy) Methane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Bis (2-chloroisopropyl) Ether	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Chlorobenzene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Chromium (III), Total Recoverable	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Di-n-butyl Phthalate	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Dichlorobenzenes ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Diethyl Phthalate	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Dimethyl Phthalate	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
4,6-dinitro-2-methylphenol	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
2,4-dinitrophenol	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Ethylbenzene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Fluoranthene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Hexachlorocyclopentadiene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Nitrobenzene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Thallium, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Toluene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Tributyltin	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,1,1-trichloroethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
PARAMETERS FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Acrylonitrile	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Aldrin	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Benzene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Benzidine	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Beryllium, Total	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Bis (2-chloroethyl) Ether	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Bis (2-ethylhexyl) Phthalate	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Carbon Tetrachloride	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Chlordane ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Chlorodibromomethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Chloroform	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Dichlorodiphenyltrichloroethane (DDT) ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,4-dichlorobenzene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
3,3'-dichlorobenzidine	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,2-dichloroethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,1-dichloroethylene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Dichlorobromomethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Dichloromethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,3-dichloropropene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Dieldrin	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
2,4-dinitrotoluene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,2-diphenylhydrazine	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Total Trihalomethanes ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Heptachlor	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Heptachlor Epoxide	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Hexachlorobenzene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Hexachlorobutadiene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Hexachloroethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Isophorone	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
N-nitrosodimethylamine	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
N-nitrosodi-N-propylamine	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
N-nitrosodiphenylamine	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Polynuclear Aromatic Hydrocarbons (PAHs) ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Polychlorinated Biphenyls (PCBs) ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
TCDD equivalents ¹	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,1,2,2-tetrachloroethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Tetrachloroethylene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Toxaphene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Trichloroethylene	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
1,1,2-trichloroethane	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
2,4,6-trichlorophenol	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶
Vinyl Chloride	µg/L	Grab	1/6-Months	9	RSW-002 ¹⁶

Notes for Table E-16

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. Visual observations of the surface water conditions at the designated receiving water stations shall be conducted in such a manner as to enable the observer to describe and report the presence, if any, of floatables of sewage origin. Observations of wind (direction and speed), weather (cloudy, sunny, or rainy), direction of current, water color, discoloration, oil and grease, turbidity, odor, presence of algal blooms, and status of Miramar Reservoir at the point of discharge shall be recorded. These observations shall be taken whenever a sample is collected. Visual observations shall also be conducted for repeat sampling.
3. Pursuant to section 60320.326 of title 22 of the CCR, prior to augmentation of Miramar Reservoir with advanced treated recycled water, each month the Discharger must collect samples, for no less than 24 consecutive months, from the identified monitoring locations. The samples must be analyzed for the secondary MCLs, TOC, total nitrogen, E.coli, total coliform, temperature, dissolved oxygen, chlorophyll a, total and dissolved phosphorus, and other DDW-specified chemicals and contaminants. The Discharger must continue to conduct monthly monitoring for no less than the initial 24 months of operating at the final ramp-up stage. After the completion of the initial 24 months of operating at the final ramp-up stage, the Discharger may request to the San Diego Board and DDW for reduced on-going monitoring.
4. At the surface (0.3 m, approximately 1 foot below surface).
5. Samples shall be collected on the same day and analyzed within acceptable method holding times using both a Clean Water Act method specified in 40 CFR part 136 and a drinking water method approved by the State Water Board [for the contaminant](#) pursuant to section 60320.304 of title 22 of the CCR [for the contaminant](#) and by a

laboratory accredited by the State Water Board Environmental Laboratory Accreditation Program (ELAP) for the analytical method used. Results of both analyses shall be included in monitoring reports required by this MRP. Analyses using the Clean Water Act methods are not required if the equivalent drinking water methods are more sensitive. Samples can be analyzed using Alternative Test Procedures (ATPs) upon approval of ATPs by the State Water Board.

6. At depth of Outlet Ports 1, 2a, 2b, 3a, 3b, 4a, and 4b.
7. At mid-depth; in the epilimnion approximately 2 m above the thermocline.
8. At approximately 1 m above solid bottom of the reservoir.
9. Sample shall be analyzed as specified in 40 CFR 136.
10. If exceedances of applicable receiving water limitations for *E. coli* specified in section V.B of the Order are observed at Monitoring Location EFF-002 ~~and~~ (Discharge Point No. 001) ~~and~~ at (Monitoring Location RSW-003), the Discharger shall increase the receiving water monitoring frequency at Monitoring Location RSW-003 for that parameter(s) to three times per week until the receiving water has demonstrated compliance at Monitoring Location RSW-003 with applicable receiving water limitations for that parameter(s) specified in section V.B of the Order for a minimum of one week or the Discharger demonstrates to the San Diego Water Board that Facility effluent is not a contributing source of that parameter(s) to the downstream receiving water exceedances at Monitoring Location RSW-003.
11. The Discharger shall monitor weekly at RSW-001, twice per month from April to October at RSW-002 and RSW-003, and once per month from November to March at RSW-002 and RSW-003. If there are visible signs of an algal bloom, the Discharger shall monitor at RSW-002 and RSW-003 once per week until the algal bloom is no longer visible. The Discharger shall collect samples throughout the entire water column from one foot below the surface to as close to the bottom as practicable and report results in one-meter intervals.
12. Monitoring shall occur at least one year before the North City Pure Water Facility (NCPWF) becomes operational and begins to discharge to Miramar Reservoir, and will continue after the discharge commences.
13. The Discharger shall measure dissolved oxygen, temperature, pH, and electrical conductivity continuously using the moored sensor string for at least 12 months prior to discharge to Miramar Reservoir, and for at least 20 months after the discharge to Miramar Reservoir commences. Measurements shall be taken at 0.3 m below the water surface of the reservoir, approximately 1 foot below the water surface, and at fixed elevations corresponding to the level of reservoir outlets (~~approximately 1 foot below the water surface~~).
14. The Discharger shall monitor twice per month from April to October and once per month from November to March. If there are visual signs of an algal bloom, the discharger shall monitor 1/week until the algal bloom is no longer visible.
15. Use approved EPA methods for detection of cyanotoxins in water or Solid Phase Adsorption Tracking Technology.

16. At mid-depth; 2 m below the thermocline.
 17. PFAS shall be monitored using EPA Method 533.
- 9.2. Footnote 5 of Table E-3, footnote 6 of Table E-4, and footnote 2 of Table E-5 shall be modified as shown:

Samples shall be collected analyzed on the same day and analyzed using both within acceptable method holding times using both a Clean Water Act methods specified in 40 CFR part 136 and a drinking water methods specified in 40 CFR 141, and results of both analyses shall be included in monitoring reports required by this MRP approved by the State Water Board for the contaminant pursuant to section 60320.304 of title 22 of the CCR approved by the State Water Board for the contaminant and by a laboratory accredited by the State Water Board Environmental Laboratory Accreditation Program (ELAP) for the analytical method used. Results of both analyses shall be included in monitoring reports required by this MRP. Analyses using the Clean Water Act methods are not required if the equivalent drinking water methods are more sensitive. Samples can be analyzed using Alternative Test Procedures (ATPs) upon approval of ATPs by the State Water Board.

- 9.3. The following has been added as section IV.A.3 of Attachment E:
3. The Discharger's Annual Receiving Water Monitoring Report must include an analysis of monitoring results collected in the previous calendar year for electrical conductivity, pH, dissolved oxygen, and temperature from the Continuous and Profile Monitoring measurements. The analysis must include narrative, numerical, and graphical comparisons of the continuous and profile monitoring measurements taken at monitoring location RSW-001. Only high quality data within an acceptable range of accuracy and within calibrated specifications of the sensors shall be used in the comparison. Statistical measures such as the coefficient of variation (CV, standard deviation/mean) and other appropriate measures of variability, and appropriate graphs or charts shall be used to compare variability between measurements. The analysis shall include a discussion on whether the measurements provide comparable data. In addition, the Discharger shall submit a final assessment report to the San Diego Water Board by **April 1, 2028**. The final assessment report shall include the following:
 - Conclusions as to whether the continuous reservoir monitoring is needed to assess the potential for harmful algal blooms in the Reservoir;
 - An explanation of whether other monitoring required by the 2020 Order, such as the profile monitoring and other receiving water monitoring, is sufficient to assess the potential for harmful algal blooms in the Reservoir; and

- The Discharger's recommendations for retaining or discontinuing moored sensor string requirements in future iterations of the 2020 Order.

9.4. Sections VI.C.5.e and VI.C.5.f of the 2020 Order have been modified as shown:

- e. The NCPWF ~~microfiltration~~ ultrafiltration (~~MF~~) membrane effluent at each ultrafiltration ~~MF~~ rack must be continuously monitored for turbidity as an indirect integrity test at monitoring locations INT-006 A through L. The turbidity must be measured continuously (at least every 15 minutes), and if two consecutive readings are greater than 0.15 NTU for a period exceeding 15 minutes, a pressure decay test (PDT) must be initiated on the rack with the potential integrity breach.
- f. Membrane integrity testing (MIT) (aka PDT) must be performed on each of the ultrafiltration ~~MF~~ membrane racks at the NCPWF a minimum of once every 24 hours of operation. A MIT verification program must be submitted to DDW for review and approval. A copy of the MIT verification program must also be submitted to the San Diego Water Board.

10. ORDER EFFECTIVE DATE

Order No. R9-2024-0035, Addendum No. 1 to Order No. R9-2020-0001 as amended, shall become effective on October 9, 2024.

I, David W. Gibson, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an order adopted by the California Regional Water Quality Control Board, San Diego Region, on October 9, 2024.

TENTATIVE

David W. Gibson, Executive Officer