CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

20 March 2017

Rick Staggs
Wastewater Manager
City of Fresno
Department of Public Utilities
5607 West Jensen Avenue
Fresno, California 93706

CERTIFIED MAIL
7016 0750 0000 7453 2498

NOTICE OF APPLICABILITY

STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2016-0068-DDW WATER RECLAMATION REQUIREMENTS FOR RECYCLED WATER USE CITY OF FRESNO WATER RECYCLING PROJECT FRESNO COUNTY

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff reviewed the City of Fresno's 19 July 2016 Notice of Intent (NOI) for regulatory coverage under Water Quality Order WQ 2016-0068-DDW, *Water Reclamation Requirements for Recycled Water Use* (hereafter, General Order). The NOI included the *Title 22 Engineering Report for the Production, Distribution and Use of Recycled Water,* dated 2 November 2015 (2015 Title 22 Engineering Report). The NOI was also submitted to the State Water Resources Control Board, Division of Drinking Water (Division of Drinking Water). The City of Fresno submitted a revised Recycled Water Title 22 Report, dated 8 November 2016, in response to comments from the Division of Drinking Water.

In partnership with the City of Clovis, the City of Fresno (City) owns and operates the Fresno-Clovis Regional Wastewater Reclamation Facility (Reclamation Facility) at 5607 West Jensen Avenue in Fresno County. The Reclamation Facility is currently regulated under Waste Discharge Requirements Order 5-01-254 for the discharge of undisinfected secondary wastewater to surrounding percolation ponds and on-site reclamation areas.

The City is constructing a tertiary treatment and disinfection facility (Tertiary Treatment Facility) and proposes to administer a recycled water use program primarily for 1) agricultural irrigation for farms and dairies, 2) landscape irrigation (e.g., parks, cemeteries, schools, and highways), and 3) industrial uses (e.g., heating/cooling, dust control, and cleanup/wash down water).

On 7 June 2016, the State Water Resources Control Board adopted the General Order to regulate the use of recycled water for all Title 22 uses except groundwater recharge. In addition, the General Order delegates the responsibility of administering water recycling programs to a designated Administrator to the fullest extent possible. Based on the information provided in the NOI and in subsequent information submitted by the City, the proposed water recycling project satisfies the general and specific conditions of the General Order. Therefore,

this serves as formal notice that Order WQ 2016-0068-DDW is applicable to the site and discharge described below. The City will act as the Administrator of the Recycled Water Program for this discharge. You are hereby assigned **WQ 2016-0068-R5004** for this discharge. Please include this order number on all correspondence related to this discharge.

As previously mentioned, potential recycled water users may include dairies. **Prior to accepting recycled water,** dairies that wish to receive recycled water from the Tertiary Treatment Facility shall provide the City and the Central Valley Water Board with a revised Nutrient Management Plan and/or Waste Management Plan for their respective dairy, subject to Executive Officer approval. The dairy shall ensure compliance with the Dairy General Order R5-2013-0122 (if applicable) and manage all applications of recycled water correctly. Acting as the Administrator, the City has an obligation to remind dairies and other recycled water users to apply recycled water agronomically in accordance with the certified Nutrient Management Plan (if applicable).

As of the date of this Notice of Applicability (NOA), the City is completing the construction of the Tertiary Treatment Facility. On 25 September 2015, the Central Valley Water Board received a Report of Waste Discharge for an increase in permitted flow of undisinfected secondary-treated wastewater at the Reclamation Facility and for the proposed Tertiary Treatment Facility. Central Valley Water Board staff is currently working on drafting new waste discharge requirements that will regulate both the Reclamation Facility and the Tertiary Treatment Facility. Since the City has submitted a complete Report of Waste Discharge (over 140 days ago) and the necessary environmental documentation for California Environmental Quality Act has been approved (over 90 days ago), the City has satisfied the requirements in Section 13264 of the California Water Code to initiate the discharge of disinfected tertiary-treated wastewater to recycled water use areas.

Prior to conveying disinfected tertiary-treated recycled water from the Tertiary Treatment Facility to any use area, the City shall submit a post-construction report. The post-construction report shall include the following:

1) Certification, from a California registered civil engineer who supervised the construction of the Tertiary Treatment Facility, that the Facility was designed and constructed to produce disinfected tertiary-treated recycled water compliant with California Code of Regulations, title 22, division 4, chapter 3 (Uniform Statewide Recycling Criteria);
2) Certification, from the Tertiary Treatment Facility chief plant operator, that the Tertiary Treatment Facility will be operated in compliance with the Uniform Statewide Recycled Criteria; and
3) Certification from the Tertiary Treatment Facility chief plant operator that the Tertiary Treatment Facility's ultraviolet light disinfection system will be operated as recommended by the Division of Drinking Water in its 12 September 2016 letter (enclosed).

You should familiarize yourself with the entire General Order and its attachments enclosed with this letter, which describe mandatory discharge and monitoring requirements. Sampling, monitoring, and reporting requirements applicable to your recycled water project must be completed in accordance with the attached Monitoring and Reporting Program (MRP) WQ 2016-0068-R5004. This MRP was developed after review of your NOI as described in the enclosed Technical Memorandum.

WASTEWATER TREATMENT FACILITY

The City is currently constructing Phase 1 of the Tertiary Treatment Facility at the Reclamation Facility. The initial phase will have a capacity of 5 MGD, but will be laid out for future expansion to an ultimate design capacity of 30 MGD. Primary effluent from Train C of the Reclamation Facility will be diverted to the Tertiary Treatment Facility. The primary effluent will be treated by fine screening at a new fine screen facility then conveyed to the Tertiary Treatment Facility. The Tertiary Treatment Facility will treat the fine screen effluent and produce tertiary-treated recycled water using a membrane bioreactor process. Membrane permeate will be disinfected by an in-pipe ultraviolet light disinfection system meeting Title 22 recycled water quality criteria.

The initial phase of the planned distribution system includes the design and construction of certain elements of the recycled water transmission mains referred to as the Southwest Quadrant, together with a related recycled water booster pump station.

RECYCLED WATER APPLICATION

The City proposes to administer a recycled water use program for nearly 30 users with total estimated usage of nearly 2,800 acre-feet per year on 860 irrigable acres, primarily for agricultural irrigation for farms and landscape irrigation for cemeteries, parks, highways and a school. The City, as the date of this NOA, does not have final agreements with any potential recycled water users. As such, the use area site maps and use area supervisors are currently unknown.

ADDITIONAL SITE SPECIFIC CONDITIONS

On 11 April 2013, the City Council adopted a resolution certifying the final Environmental Impact Report (EIR) and adopted the Recycled Water Master Plan. In December 2015, an addendum to the EIR was prepared to address changes in operating parameters, discharge and effluent limits, and permitted uses. The addendum provided documentation to support that the proposed project would not result in significant effects.

WATER RECYCLING PROGRAM ADMINISTRATION FOR AGRICULTURAL AND LANDSCAPE IRRIGATION AND OTHER USES

The City, as the Administrator, will be responsible for the administration of the Recycled Water Program authorized pursuant to this General Order, including the requirements of Title 22. The City is also the recycled water Producer and Distributor and is responsible for all permit requirements related to the production and distribution of recycled water.

The NOI provided a detailed description of the City's water recycling program according to the following topics:

- Authority, Rules and Regulation, and User Agreements;
- Design and Implementation Program;
- Cross-Connection Testing Responsibilities and Procedures;
- Monitoring and Reporting Program;
- Use Area Inspection Program;
- Operations and Maintenance Program;
- Compliance Program;
- Recycled Water Site Supervisor; and
- Emergency Procedures and Notification.

DIVISION OF DRINKING WATER CONSIDERATIONS

The City submitted the 2015 Title 22 Engineering Report for Division of Drinking Water approval. On 4 October 2016, the Division of Drinking Water provided the City a letter with conditional approval, but required that certain issues in the Report be revised and that the Title 22 Engineering Report be resubmitted as detailed in the enclosed Technical Memorandum. On 30 November 2016, the City submitted a revised Title 22 Engineering Report to address the Division of Drinking Water's 4 October 2016 comments. On 17 March 2017, the Division of Drinking water issued a letter approving the City's November 2016 Title 22 Engineering Report for the discharge of disinfected tertiary-treated wastewater to recycled water use areas.

As previously mentioned, the City does not have final agreements with any potential recycled water users. As such, the use area site maps and use area supervisors are unknown. The City is required to submit information to the Division of Drinking Water on each use area as it is developed and receive written approval from Division of Drinking Water prior to delivering recycled water to the new use area. As part of the submittal, the City shall include an addendum to its current Title 22 Engineering Report that describes the new use area in detail for Division of Drinking Water approval.

WATER RECYCLING USE REQUIREMENTS

1. The production, distribution, and use of recycled water shall be managed in accordance with the NOI, the Title 22 Engineering Report approved by the Division of Drinking Water, and this NOA.
2. Application of recycled water shall be limited to the uses described in the NOI, the Title 22 Engineering Report approved by the Division of Drinking Water, and this NOA.
3. The use of recycled water shall not cause pollution or nuisance, as defined by Water Code section 13050.
4. The recycled water shall be disinfected tertiary recycled water as defined by Title 22, section 60301.230.
5. The City of Fresno shall promptly notify the Central Valley Water Board of any recycled water spills or unauthorized uses.

GENERAL INFORMATION AND REQUIREMENTS

The City of Fresno shall comply with the Specifications, Water Recycling Administration Requirements, and General Provisions of the General Order.

Please review this NOA carefully to ensure that it completely and accurately reflects the proposed Recycled Water Program. If the discharge violates the terms or conditions, the Central Valley Water Board may take enforcement action, including the assessment of an administrative civil liability. Failure to abide by the conditions of the General Order, including MRP WQ 2016-0068-R5004, and this letter authorizing applicability could result in enforcement actions, as authorized by provisions of the California Water Code.

The required annual fee specified in the annual billing from the State Water Resources Control Board shall be paid until this NOA is officially terminated. The City of Fresno must submit in writing a Notice of Termination once the water recycling program has ended.

DOCUMENT SUBMITTALS

The Central Valley Water Board have gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondences shall be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50 MBs should be emailed to centralvalleyfresno@waterboards.ca.gov. Documents that are 50 MBs or greater should be transferred to a disc and mailed to the Central Valley Water Board at 1685 "E" Street, Fresno, CA 93706.

During the life of this General Order, either the State Water Resources Control Board or the Central Valley Water Board may require the Administrator to electronically submit reports using the State Water Resources Control Board's California Integrated Water Quality System (CIWQS) program, GeoTracker program, or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System. Until directed otherwise, the City shall submit all documents using our Paperless Office System.

If you have any questions regarding this matter, please contact Alex Mushegan at (559) 488-4397 or at Alexander.Mushegan@waterboards.ca.gov.

Clay L. Rodgers

for Pamela C. Creedon
Executive Officer

Enclosures: (1) State Water Resources Control Board Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use (Discharger Only)
(2) Monitoring and Reporting Program WQ 2016-0068-R5004
(3) Technical Memorandum of the City of Fresno's Notice of Intent
(4) Division of Drinking Water Ultraviolet Light Spot Check Bioassay Test Report

cc via email: Timothy O'Brien, State Water Resources Control Board, Sacramento (via email)
Kassy Chauhan, State Water Resources Control Board, Division of Drinking Water, Fresno (via email)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. WQ 2016-0068-R5004

FOR

THE CITY OF FRESNO
FRESNO COUNTY

This monitoring and reporting program (MRP) describes requirements for monitoring a recycled water system. This MRP is issued pursuant to Water Code section 13267. The City of Fresno (Administrator) shall not implement any changes to this MRP unless and until a revised MRP is issued by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) Executive Officer.

The Administrator has applied for and received coverage for the recycled water system that is subject to the notice of applicability (NOA) of Water Quality Order 2016-0068-DDW (WQ 2016-0068-R5004). The reports are necessary to ensure that the Administrator complies with the NOA and General Order. Pursuant to California Water Code section 13267, the Administrator shall implement this MRP and shall submit the monitoring reports described herein.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The name of the sampler, sample type (grab or composite), time, date, location, bottle type, and any preservative used for each sample shall be recorded on the sample chain of custody form. The chain of custody form must also contain all custody information including date, time, and to whom samples were relinquished. If composite samples are collected, the basis for sampling (time or flow weighted) shall be approved by Regional Water Board staff.

Field test instruments (such as those used to test pH, dissolved oxygen, and electrical conductivity) may be used provided that they are used by a California Environmental Laboratory Accreditation Program (ELAP) certified laboratory or:

1. The user is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;
3. Instruments are serviced by the manufacturer or authorized representative at the recommended frequency; and
4. Field calibration reports are maintained and available for at least three years.

Monitoring requirements listed below may duplicate existing requirements under other orders including WDRs or waivers of WDRs that regulate agricultural discharges from irrigated lands. Duplication of sampling and monitoring activities are not required if the monitoring activity satisfies the requirements of this General Order. Collecting composite samples is acceptable in most cases. The facility may continue using existing sampling collection equipment that is consistent with the applicable facility order. However, due to short sample holding times, bacteriological samples collected to verify disinfection effectiveness must be grab samples. In addition to submitting the results under another order, the results shall be submitted in the reports required by this General Order.

All of the monitoring listed below may not be applicable to all recycled water projects. Consult the NOA or Central Valley Water Board staff to determine applicable requirements.

RECYCLED WATER MONITORING

If recycled water is used for irrigation of landscape areas[1], priority pollutant monitoring is required at the production facility. The frequency of monitoring corresponds to the flow rate of the recycled water use. Sampling shall be consistent with the following:

Constituent	Treatment System Flow Rate	Sample Frequency	Reporting Frequency
Priority Pollutants [1]	< 1 mgd [2]	5 years	The next annual report.
	≥ 1 mgd	Annually	Annually

[1] Priority pollutants are listed in Appendix A of Code of Federal Regulations, Part 423.
[2] mgd denotes million gallons per day.

DISINFECTION SYSTEM MONITORING

Samples shall be collected downstream of the ultraviolet light disinfection system and analyzed by an approved laboratory per Title 22, section 60321(a). The Authority shall conduct the following monitoring:

Constituent/Parameter	Units	Sample Type	Sample Frequency	Reporting Frequency
Total Coliform Bacteria	MPN/100 mL[1]	Grab	1/Day	Monthly [2]
Turbidity	NTU [1]	Meter	Continuously	Monthly [2]

[1] MPN/100 mL denotes most probable number per 100 mL sample. NTU denotes nephelometric turbidity unit.
[2] Summarize monthly reports and include in the Annual Report due April 1st.

USE AREA MONITORING

The Administrator shall monitor use areas(s) at a frequency appropriate to determine compliance with this General Order and the Administrator's recycled water use program requirements. An Administrator may assign monitoring responsibilities to a User as part of the Water Recycling Use Permit program. The Administrator retains responsibility to ensure the data is collected, prepared, and submitted in the Annual Report.

The following shall be recorded for each User with additional reporting for use areas as appropriate. The frequency of use area inspections shall be based on the complexity and risk of each use area. Use areas may be aggregated to combine acreage for calculation or observation purposes. Use area monitoring shall include the following parameters:

1 Landscape areas are defined as parks; greenbelts, playgrounds; school yards; athletic fields; golf courses; cemeteries; residential landscaping; common areas; commercial landscaping (except eating areas); industrial landscaping (except eating areas); freeway, highway, and street landscaping.

Parameter	Units	Sample Type	Sampling Frequency [1]	Reporting Frequency
Recycled Water User	--	--	--	Annually
Recycled Water Flow	gpd [2]	Meter [3]	Monthly	Annually
Acreage Applied [4]	Acres	Calculated	--	Annually
Application Rate	inches/acre/year	Calculated	--	Annually
Soil Saturation/Ponding	--	Observation	Quarterly	Annually
Nuisance Odors/Vectors	--	Observation	Quarterly	Annually
Discharge Off-Site	--	Observation	Quarterly	Annually
Notification Signs [5]	--	Observation	Quarterly	Annually

1 Or less frequently if approved by the Regional Water Board Executive Officer.
2 gpd denotes gallons per day.
3 Meter requires meter reading, a pump run time meter, or other approved method.
4 Acreage applied denotes the acreage to which recycled water is applied.
5 Notification signs shall be consistent with the requirements of California Code of Regulations, title 22, section 60310 (g).

REPORTING

In reporting monitoring data, the Administrator shall arrange the data in tabular form so that the date, data type (e.g., flow rate, bacteriological, etc.), and reported analytical or visual inspection results are readily discernible. The data shall be summarized to illustrate compliance with this General Order and NOA as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall be reported in the next regularly scheduled monitoring report and shall be included in calculations as appropriate.

The Central Valley Water Board have gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondences shall be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50 MBs should be emailed to centralvalleyfresno@waterboards.ca.gov. Documents that are 50 MBs or greater should be transferred to a disc and mailed to the Central Valley Water Board at 1685 "E" Street, Fresno, CA 93706.

During the life of this General Order, either the State Water Resources Control Board (State Water Board) or the Central Valley Water Board may require the Administrator to electronically submit reports using the State Water Board's California Integrated Water Quality System (CIWQS) program, GeoTracker program, or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System. Until directed otherwise, the Administrator shall submit reports using our Paperless Office System.

A. Annual Report

Annual Reports shall be submitted to the Central Valley Water Board by **April 1st following the monitoring year**. The Annual Report shall include the following:

1. A summary table of all recycled water Users and use areas. Maps may be included to identify use areas. Newly permitted recycled water Users and use areas shall be identified. When applicable, identify any modifications to the approved Title 22 Engineering Report and include the State Water Board's letter approving such modifications.
2. A summary table of all inspections and enforcement activities initiated by the Administrator. Include a discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the NOA and/or General

Order. Copies of documentation of any enforcement actions taken by the Administrator shall be provided.

3. 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.
4. Tabular and graphical summaries of all monitoring data collected during the year, including priority pollutant monitoring, if required.
5. The name and contact information for the recycled water operator responsible for operation, maintenance, and system monitoring.

A letter transmitting the annual report shall accompany each report. The letter shall summarize the numbers and severity of violations found during the reporting period and actions taken or planned to correct the violations and prevent future violations. The transmittal letter shall contain the following penalty of perjury statement and shall be signed by the Administrator or the Administrator's authorized agent:

"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 the 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 fine and imprisonment."

The Administrator shall implement the above monitoring program as of the date of this MRP.

Ordered by:

Clay L. Rodgers
for PAMELA C. CREEDON, Executive Officer

3/20/2017
DATE

TO: Clay L. Rodgers
Assistant Executive Officer

Lonnie M. Wass
Supervising Engineer

FROM: Scott J. Hatton
Senior Engineer
RCE 67889

Alexander S. Mushegan
Water Resource Control Engineer
RCE 84208

DATE: 20 March 2017

SUBJECT: **APPLICABILITY OF COVERAGE UNDER STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2016-0068-DDW, WATER RECLAMATION REQUIREMENTS FOR RECYCLED WATER USE, CITY OF FRESNO, FRESNO COUNTY**

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff received a 19 July 2016 Notice of Intent (NOI) from the City of Fresno (City) for regulatory coverage under the *State Water Resources Control Board Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use* (General Order). The NOI included the *Title 22 Engineering Report for the Production, Distribution and Use of Recycled Water,* dated 2 November 2015 (2015 Title 22 Engineering Report). The 2015 Title 22 Engineering Report was signed by Karl E. Kienow, a California registered professional civil engineer with Blair Church & Flynn Consulting Engineers. The NOI was also submitted to the State Water Resources Control Board, Division of Drinking Water (Division of Drinking Water). This memorandum provides a summary of Central Valley Water Board staff's review of the NOI and evaluates if the City's proposed discharge of disinfected tertiary-treated wastewater for recycled water uses is eligible for enrollment under the General Order.

DESCRIPTION OF DISCHARGE

In partnership with the City of Clovis, the City of Fresno (City) owns and operates the Fresno-Clovis Regional Wastewater Reclamation Facility (Regional Facility) at 5607 West Jensen Avenue in Fresno County. The Regional Facility is currently regulated under Waste Discharge Requirements Order 5-01-254 for the discharge of undisinfected secondary wastewater to surrounding percolation ponds and on-site reclamation areas.

Given California's frequent drought conditions, the City is constructing a tertiary treatment and disinfection facility (Tertiary Treatment Facility) at the Regional Facility and proposes to administer a recycled water use program. The proposed recycled water use program will

consist of approximately 30 recycled water users, with a total estimated usage of approximately 2,800 acre-feet per year on approximately 860 acres. The proposed recycled water uses primarily consist of 1) agricultural irrigation for farms and dairies, 2) landscape irrigation (e.g., parks, cemeteries, schools, and highways), and 3) industrial uses (e.g., heating/cooling, dust control, and cleanup/wash down water).

As of the date of this memorandum, the City is completing the construction of the Tertiary Treatment Facility. On 25 September 2015, the Central Valley Water Board received a Report of Waste Discharge for the increase permitted flow of undisinfected secondary-treated wastewater from the Regional Facility and for the proposed Tertiary Treatment Facility. Central Valley Water Board staff is currently working on drafting new waste discharge requirements that will regulate both the Reclamation Facility and the Tertiary Treatment Facility. Since the City has submitted a complete Report of Waste Discharge (over 140 days ago) and the necessary environmental documentation for California Environmental Quality Act has been approved (over 90 days ago), the City has satisfied the requirements in Section 13264 of the California Water Code to initiate the discharge of disinfected tertiary-treated wastewater to recycled water use areas.

The City, prior to conveying disinfected tertiary-treated recycled water to use areas, must certify that the Tertiary Treatment Facility was designed and constructed to produce disinfected tertiary-treated recycled water compliant with California Code of Regulations, title 22, division 4, chapter 3 (Uniform Statewide Recycling Criteria).

According to the City, the City's December 2010 Recycled Water Master Plan states that the objectives for a recycled water production and distribution system are:

- Protect and improve groundwater quality by reducing the use of the Regional Facility's percolation ponds;
- Increase the use of recycled water through urban reuse, groundwater recharge, and agricultural reuse to help meet increasing water demands in the region; and
- Offset potable water use to enhance the sustainability of the City's water supply.

Potential recycled water users may include dairies. Any dairies requesting to receive recycled water from the Tertiary Treatment Facility, must provide the City and Central Valley Water Board with a revised Nutrient Management Plan and/or Waste Management Plan for their respective dairy. The dairy should ensure compliance with the Dairy General Order R5-2013-0122 (if applicable) and manage all applications of recycled water correctly. Acting as the Administrator, the City is obligated to remind dairies and other recycled water users to apply recycled water agronomically in accordance with a certified Nutrient Management Plan (if applicable).

The City will assume the roles and responsibilities of the Administrator under the General Order, provide training to recycled water users, and require them to submit a recycled water use permit application for approval.

DIVISION OF DRINKING WATER CONSIDERATIONS

The City submitted the 2015 Title 22 Engineering Report to the Division of Drinking Water for review of the proposed recycled water use program. On 4 October 2016, the Division of

Drinking Water sent the City a letter with conditional approval and required that certain issues in the 2015 Title 22 Engineering Report be revised and that the Title 22 Engineering Report be resubmitted. The issues include the following:

- The City does not have final agreements with any potential recycled water users. As such, the use area site maps and use area supervisors are unknown. The City is required to submit information to the Division of Drinking Water on each use area as it is developed and receive written approval from Division of Drinking Water prior to the delivery of recycled water to the new use area. As part of the submittal, the City shall include an addendum to its Title 22 Engineering Report that describes the new use area in detail for approval from the Division of Drinking Water.
- The City must ensure that there are safeguards in place to ensure that the equipment used on the recycled water system is not interchanged with the equipment used on the potable water supply system.
- The City must demonstrate that the ultraviolet light low intensity, ultraviolet light dose failure, and ultraviolet light transmission alarms are functional and can shut the Tertiary Treatment Facility down if necessary.

On 30 November 2016, the City submitted a revised Title 22 Engineering Report to address the Division of Drinking Water's 4 October 2016 comments. On 17 March 2017, the Division of Drinking Water issued a letter approving the City's Title 22 Engineering Report.

MONITORING REQUIREMENTS

Monitoring requirements included in the following sections of Attachment B of the General Order are appropriate for this discharge:

- Recycled Water Monitoring,
- Disinfection System Monitoring, and
- Use Area Monitoring.

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board
Division of Drinking Water

September 12, 2016

Scott J. Hatton, PE
Senior Engineer
CA Regional Water Quality Control Board
1685 E Street
Fresno, CA 93706
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FRESNO CLOVIS REGIONAL WASTEWATER RECLAMATION FACILITY
UV SPOT CHECK BIOASSAY TEST REPORT August 2016

Dear Mr. Hatton,

The purpose of this letter is to make recommendations for the permit and evaluate the results from the 2016 spot-check bioassay testing of the ultraviolet light (UV) disinfection system at the Fresno Clovis Regional Wastewater Reclamation Facility (FCRWRF) located at the City of Fresno. As part of the tertiary treatment system four TrojanUVFit™ 72AL75 UV disinfection reactors were installed, downstream of a membrane filter. As a whole the UV system consists of three duty and one redundant reactor that stand side by side in parallel. Each reactor has an integral sensor. The TrojanUVFit™ 72AL75 is a low-pressure high-output (LPHO) closed vessel reactor with 72 UV lamps per UV reactor that utilizes 250-W LPHO lamps (Trojan part number 794447 manufactured by Heraeus Noblelight).

To verify performance of the FCRWRF UV system at several flows and UVTs, an on-site spot check bioassay using seeded MS2, was conducted. Results, documenting virus disinfection performance of the UV system compared to the standards found in Title 22 of the California Code of Regulations, was submitted to Division of Drinking Water (DDW) for acceptance. The report "Fresno-Clovis Regional Wastewater Reclamation Facility TrojanUVFit™ 72AL75 Spot Check Bioassay Test Report" (Moreland Consulting LLC, August 2016) contains the bioassay results of the testing on-site at the plant.

Eight tests were conducted at various flow rates (0.857 to 3.005 MGD) and UVTs (64% to 77%). These eight "spot checks" were compared to the dose predicted by the operating equations developed and documented in the "Addendum – TrojanUVFitTM 72AL75 Validation Report 2012 NWRI Analysis of the TrojanUVFitTM 72AL75 Reactor Validation Data". For only one of the eight test runs (12.5%), the dose measured was greater than or equal to the dose predicted by the TrojanUVFit™ 72AL75 dose operating equation, which controls the power and dosage level applied. The Spot Check Bioassay Test Report states, "The UV chambers tested did not perform as expected and should be operated with the 2012 NWRI updated algorithm with a 0.815 (SF) multiplier for control." Instead of operating to deliver a minimum UV dose of 80 mJ/cm^2 for a

membrane plant, the preferred alternative is to provide a minimum UV dose of 98 mJ/cm^2 at all times.

The following recommendations are based on the equipment cited in the report. These applicable recommendations should be incorporated into the final permit for the UV system. Approval for the use of any and all water recycling applications is granted through the Regional Water Quality Control Board's Water Reclamation permitting process.

1. Each UV reactor at the FCRWRF must be operated independently to deliver a minimum UV dose of 98 mJ/cm^2 at all times.

2. The equations below must be used for each UV reactor as part of the automatic UV disinfection control system for calculating UV dose and should be specified as a permit provision. They are from the "Addendum – TrojanUVFit™ 72AL75 Validation Report 2012 NWRI Analysis of the TrojanUVFit™ 72AL75 Reactor Validation Data".

$$S_o = ([1.05509 \times 10^{-7} \times 100] - 4.9730 \times 10^{-6}) \times UVT^{2.7691}$$

$$RED_{calc} = CR \times 10^{2.7060} \times UVA^{[-1.9050xUVA+9.3234xUVA\text{^}2]} \times [S/S_o]^{0.8234} \times Q^{-0.8415}$$

Where:

UVT = UV transmittance at 254 nm, expressed as a whole number, e.g., 64 to 81,
S = Measured UV sensor value (mW/cm^2)
S_o = Calculated intensity from new lamp at full power (at same UVT) with clean sleeves, typically expressed as a function of UVT (mW/cm^2).
RED_{calc} = UV dose calculated independently for each reactor operated in parallel that is online, using the 2012 NWRI analysis UV dose-monitoring equation (mJ/cm^2)
CR = Confidence factor = 0.909
UVA = UV absorbance at 254 nm (cm^{-1}), e.g., between 0.1918 and 0.091[1].
Q = Flow rate, (million gallons per day [MGD]) per reactor

3. The FCRWRF UV disinfection system is limited to the following operational parameter ranges:

   a. Permit total plant flow up to 9.015 MGD (3.005 MGD per UV reactor).
   b. UVTs at or above 64 percent,
   c. UV sensor intensities ranging from 0.49 to 1.8 mW/cm^2.

4. On-line monitoring of UV intensity, flow, and UVT must be provided at all times.

5. Flow meters, UV intensity sensors, and UVT monitors must be properly calibrated to ensure proper disinfection.

[1] At UVT values above 81 percent, the value (81 UVT, or UVA =0.091) should be used as the default value in the S_o and RED calculations respectively.

6. At least monthly, all duty UV intensity sensors must be checked for calibration against a reference UV intensity sensor.

7. 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.

8. UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.

9. 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.

10. 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.

11. Each UV reactor at the FCRWRF UV system must be designed with built-in automatic reliability features that must be triggered by critical alarm setpoints.

12. Conditions triggering an alarm and startup the redundant reactor include the following:

    a. the UV dose goes below 103 mJ/cm^2,

    b. ballast failure, and

    c. multiple lamp failure

13. Conditions that should divert effluent to waste include the following:

    a. UV dose is below the minimum UV dose of 98 mJ/cm^2,

    b. UVT is below the minimum UVT commissioned of 64%,

    c. UV intensity below the minimum validated of 0.49 mW/cm^2

    d. complete UV reactor failure, and

    e. flow above the maximum flow commissioned of 3.005 MGD per reactor.

14. The FCRWRF should be operated in accordance with an approved operations plan, which specifies clearly the operational limits and responses required for critical alarms. The operations plan should be submitted and approved prior to issuance of the operating permit. A copy of the approved operations plan should be maintained at the treatment plant and be readily available to operations personnel and regulatory agencies. A quick

reference plant operations data sheet should be posted at the treatment plant and include the following information:

a. The alarm set points for flow, UV dose, UV intensity, and UVT.

b. The values of flow, UV dose, UV intensity, and UVT when effluent must be diverted to waste.

c. The required frequency of verification and calibration for all meters/analyzers measuring flow, UV intensity, and UV transmittance.

d. The required frequency of mechanical cleaning and equipment inspection.

e. The UV lamp hour tracking procedures and replacement intervals.

15. This UV dose equation assumes that the intensity sensors would measure the decline as the lamps age. Since there is one UV Intensity sensor for 72 lamps, the lamp with the highest number of hours should be closest to the UV sensor.

16. Equivalent or substitutions of equipment, including lamps, are not acceptable without an adequate demonstration of equivalent disinfection performance.

Should you have any questions regarding the content of this letter, please feel free to contact me at (brian.bernados@waterboards.ca.gov; 619.525.4497) or Randy Barnard (randy.barnard@waterboards.ca.gov; 619.525.4022).

Sincerely,

Original signed by

Brian Bernados, P.E.
Technical Specialist

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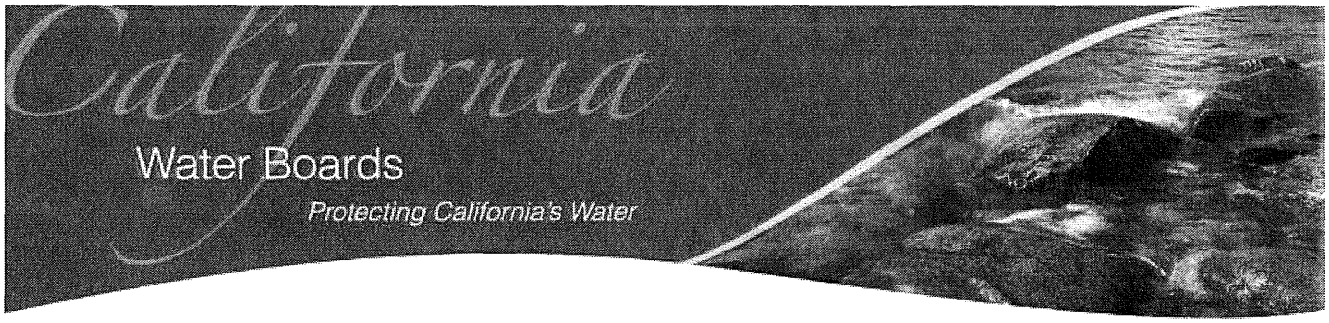

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2016-0068-DDW

WATER RECLAMATION REQUIREMENTS FOR RECYCLED WATER USE

Adoption Date

June 7, 2016

CALIFORNIA
Water Boards

STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

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ACRONYMS AND ABBREVIATIONS	
AGR	Agricultural supply
Antidegradation Policy	State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California
AQUA	Aquaculture
Basin Plan	Water Quality Control Plan
BPTC	Best practicable treatment or control
CDPH	California Department of Public Health
CEC	Contaminants of Emerging Concern
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
DBP	Disinfection By-products
Delta	Sacramento-San Joaquin River Delta Estuary
DDW	Division of Drinking Water
DWR	Department of Water Resources
E. coli	Escherichia coli
e.g.	Latin *exempli gratia* (for example)
FRESH	Fresh water replenishment
gpd	gallons per day
GWR	Groundwater recharge
IND	Industrial service supply
mg/L	Milligrams per liter
MPN	Most Probable Number
MRP	Monitoring and Reporting Program
MUN	Municipal supply
MOA	Memorandum of Agreement
NOA	Notice of Applicability
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
pdf	Portable Document Format
PROC	Industrial process supply
REC-1	Water contact recreation
Regional Water Board	Regional Water Quality Control Board
State Water Board	State Water Resources Control Board
TBD	To Be Determined
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
Water Boards	State Water Board and Regional Water Boards
WILD	Wildlife habitat
WDRs	Waste Discharge Requirements
WRRs	Water Reclamation Requirements

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

FINDINGS:

The State Water Resources Control Board (State Water Board) finds that:

BACKGROUND INFORMATION

1. On January 17, 2014, California's Governor proclaimed a Drought State of Emergency and directed state officials to take all necessary actions to prepare for drought conditions. On March 1, 2014, the Governor signed bipartisan drought relief legislation, Senate Bill (SB) 103 and 104, modifying the Budget Act of 2013 (Stats. 2013, ch. 20 and 354) to provide additional funds for drought relief. (Stats. 2014, ch. 2 and 3, respectively).

2. On April 25, 2014, the Governor proclaimed a continued State of Emergency due to severe drought conditions and directed the State Water Board to "adopt statewide general waste discharge requirements to facilitate the use of treated wastewater that meets standards set by the California Department of Public Health (CDPH) in order to reduce demand on potable water supplies."

3. California experiences frequent drought conditions. The recent emergency actions follow a similar Declaration of Statewide Drought in effect from 2008 through 2011 (Executive Order S-06-08) and Drought Declaration State of Emergency in effect from 2009 through 2011 (Executive Order S-11-09). Drought conditions in California also persisted from 1987 through 1992. Paleoclimatologists have reconstructed medieval climate episodes from tree ring studies, sediment deposition, and other sources. These studies show that the most severe droughts during the past 1,000 years have lasted from 20 to more than 150 years.[1]

4. On June 3, 2014, the State Water Board adopted Water Quality Order 2014-0090-DWQ, *General Waste Discharge Requirements for Recycled Water Use* to streamline permitting of recycled water use statewide.

5. Order WQ 2014-0090-DWQ was adopted to facilitate recycled water use and reduce demand on potable water supplies; this General Order further encourages recycled water projects by (1) maintaining the streamlined approach in permitting new Users through a water recycling program and (2) providing the option for a single recycled water use permit coverage for larger Users that typically need permit coverage from multiple Regional Water Boards. Enrollees issued a Notice of Applicability (NOA) under order WQ 2014-0090-DWQ must

1 Michael Dettinger, *Droughts, Epic Droughts and Droughty Centuries—Lessons from California's Paleoclimatic Record: A PACLIM 2001 Meeting Report*, (Summer 2001) Interagency Ecological Program Newsletter, at p. 50.

notify the State Water Board of its intention to be regulated under this General Order.

6. Prior to July 1, 2014, CDPH provided public health recommendations to the Water Boards through review and approval of Title 22 Engineering Reports prepared pursuant to California Code of Regulations, title 22, section 60323. The Water Boards then issue permits. Effective July 1, 2014, the administration of the Drinking Water Program, including responsibility for review of Title 22 Engineering Reports was transferred from the CDPH to the State Water Board.

7. "Recycled water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource. (Wat. Code, § 13050(n).) Coverage under these Water Reclamation Requirements (WRRs) for Recycled Water Use (General Order) is limited to treated municipal wastewater for uses consistent with the Uniform Statewide Recycling Criteria, and other uses approved by the State Water Board on a case-by-case basis, other than direct or indirect potable uses. An estimated 1.85 to 2.25 million acre-feet of water supply could be realized annually though recycling by the year 2030.[2] Of this total amount, an estimated 0.9 million to 1.4 million acre-feet of recycled water could be realized through recycling of municipal wastewater that is discharged into the ocean or saline bays. Downstream beneficial uses will be protected by requiring compliance with Water Code section 1211, as described in the Antidegradation Analysis section of this General Order.

8. Recycled water use can help to reduce local water scarcity. It is not the only option for bringing supply and demand into a better balance, but it is a viable cost effective solution that is appropriate in many cases. 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 supplies. In normal precipitation years recycled water use may reduce groundwater extraction.

9. The California Legislature has declared that a substantial portion of the future water requirements of the state may be economically met by beneficial use of recycled water. (Wat. Code, § 13511.) The Legislature also expressed its intent that the state undertakes 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. (Wat. Code, § 13512.)

10. On February 3, 2009, the State Water Board adopted Resolution 2009-0011, Adoption of a Policy for Water Quality Control for Recycled Water (Recycled Water Policy) (Revised January 22, 2013, effective April 25, 2013.) The

2 California Department of Water Resources, Bulletin 160-2009, p. 11-9.

Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gas emissions.

11. Water recycling is an essential part of an overall program to manage local and regional water resources. Many local governing bodies have adopted resolutions establishing their intent to proceed with planning, permitting, and implementation of recycled water projects. These projects will provide water supply and municipal wastewater disposal benefits for communities, and will provide water supply benefits to agriculture.

12. The Uniform Statewide Recycling Criteria was established for the protection of public health and are codified in the California Code of Regulations, title 22, division 4, chapter 3 (herein referred to as Uniform Statewide Recycling Criteria). Approved uses of recycled water under the Uniform Statewide Recycling Criteria depend on the level of treatment and potential for public contact. Under the Uniform Statewide Recycling Criteria, recycled water is categorized based on treatment levels. There are four categories of recycled water relevant to this General Order; they are listed here and defined in the indicated regulations section:

    a. Undisinfected secondary recycled water (Cal. Code Regs., tit. 22, § 60301.900.)

    b. Disinfected secondary-23 recycled water (Cal. Code Regs., tit. 22, § 60301.225.)

    c. Disinfected secondary-2.2 recycled water (Cal. Code Regs., tit. 22, § 60301.220.)

    d. Disinfected tertiary recycled water (Cal. Code Regs., tit. 22, § 60301.230.)

    An approved Title 22 Engineering Report addressing protection of public health is required before authorization to use recycled water is granted by the Regional Water Board Executive Officer.

13. When used in compliance with the Recycled Water Policy, the Uniform Statewide Recycling Criteria , and all applicable state and federal water quality laws, the State Water Board finds that recycled water is safe for approved uses, and strongly supports recycled water as a safe alternative to raw and potable water supplies for approved uses.

14. This General Order authorizes beneficial, non-potable recycled water uses consistent with the Uniform Statewide Recycling Criteria and any additional requirements specified in the Notice of Applicability. Activities that are not authorized by this Order include:

a. Activities designed to replenish groundwater resources. Groundwater replenishment activities include surface spreading basins, percolation ponds, or injection through groundwater wells[3].

b. Disposal of treated wastewater by means of percolation ponds, excessive hydraulic loading of recycled water in use areas, etc., where the primary purpose of the activity is disposal of treated wastewater.

c. Direct potable reuse (Wat. Code, § 13561(b)), indirect potable reuse for groundwater recharge (Wat. Code, § 13561(c)), or surface water augmentation (Wat. Code, § 13561(d)).

15. There are many sources of salts and nutrients in surface and groundwater, including water soluble inorganic and organic constituents in imported water, leaching of naturally occurring salts in soils as a result of irrigation and precipitation, animal wastes, fertilizers and other soil amendments, municipal use including water softeners, industrial wastewater, and oil field wastewater. In coastal areas and areas adjacent to the Sacramento-San Joaquin Delta, seawater intrusion is also a source of salinity in groundwater, particularly in over-drafted basins. Imported water is a major source of salt. In water year 2010, 45 percent of the surface water used in the San Joaquin Valley was imported from the Sacramento-San Joaquin Delta through the Delta Mendota Canal, Folsom South Canal, and California Aqueduct (DWR).[4] In an average year, more than 800,000 tons of salt are imported from the Sacramento-San Joaquin River Delta Estuary (Delta) into the northern portion of the San Joaquin Valley, and another two million tons of salt are imported into the Tulare Lake Basin.[5] Southern California also imports significant water supplies from the Delta. In addition, it imports 4.4 million acre-feet of water each year from the Colorado River. Colorado River water has, on average, twice the salinity of northern California water sources, and water imported from the Delta is blended with Colorado River supplies to control salinity. The use of recycled water for irrigation has the potential to increase salts and other constituents in groundwater, but is not expected to be a significant source of salt loading relative to other potential sources, particularly when recycled water is used in the same watershed in which it would otherwise be discharged. Basin-specific salt and nutrient management plans, however, will provide definitive information on where assimilative capacity is available.

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3 Injection well is defined in Water Code 13051.

4 Water Recycling and Desalination Section, California Department of Water Resources.

5 Department of Water Resources, Water Facts-Salt Balance in the San Joaquin Valley <http://www.water.ca.gov/pubs/environment/salt_balance_in_the_san_joaquin_valley water facts_20_/water_facts_20.pdf>, accessed 3 April 2014.

16. Use of recycled water has the potential to increase nutrients in groundwater supplies. In order to minimize the nutrient loading, this Order requires that recycled water used for irrigation purposes be applied at agronomic rates.

17. The Recycled Water Policy calls on local water and wastewater entities together with other stakeholders who contribute salt and nutrients to a groundwater basin or sub-basin, to fund and develop Salt and Nutrient Management Plans to comprehensively address all sources of salts and nutrients. The State Water Board herein reasserts the need for comprehensive salt and nutrient management planning and directs that salinity and nutrient increases should be managed in a manner consistent with the Recycled Water Policy. It is the intent of the Recycled Water Policy that every groundwater basin/sub-basin in California ultimately has a consistent Salt and Nutrient Management Plan. The appropriate way to address salt and nutrient issues is through the development of regional or subregional Salt and Nutrient Management Plans.

18. The Recycled Water Policy includes monitoring requirements for Constituents of Emerging Concern[6] (CECs) for the use of recycled water for groundwater recharge by surface and subsurface application methods. The monitoring requirements and criteria for evaluating monitoring results in the Recycled Water Policy are based on recommendations from a Science Advisory Panel.[7] Because this General Order is limited to non-potable uses and does not authorize groundwater replenishment activities, monitoring for CECs is not required.

19. The Recycled Water Policy requires permits for landscape irrigation with recycled water to include priority pollutant monitoring at the recycled water production facility. Annual monitoring is required for design production flows greater than one million gallons per day; a five year monitoring frequency is required for flows less than one million gallons per day. Priority pollutants are listed in Appendix A of 40 Code of Federal Regulations (CFR) Part 423.

STATUTORY AND REGULATORY ISSUES

20. Pursuant to Water Code section 13523, the Regional Water Board, after consulting with and receiving the recommendation of the State Water Board, may prescribe water reclamation requirements for water that is used or proposed to be used as recycled water. The requirements shall be established in

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6 For this Policy, CECs are defined to be chemicals in personal care products, pharmaceuticals including antibiotics, antimicrobials; industrial, agricultural, and household chemicals; hormones; food additives; transformation products, inorganic constituents; and nanomaterials.

7 The Science Advisory Panel was convened in accordance with provision 10.b of the Recycled Water Policy. The panel's recommendations were presented in the report; *Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water - Recommendations of a Science Advisory Panel*, dated June 25, 2010.

conformance with the Uniform Statewide Recycling Criteria pursuant to Water Code section 13521. Pursuant to Water Code section 13523 (b), the requirements for use of recycled water not addressed by the Uniform Statewide Recycling Criteria will be considered on a case-by-case basis by Regional Water Boards, after consulting with and receiving the recommendations of the State Water Board. The State Water Board provides such recommendations through acceptance letters for Title 22 Engineering Reports. These recommendations become requirements of the Order when specified in the Notice of Applicability.

21. Pursuant to Water Code section 13528.5, the State Water Board may carry out duties and authority granted to a Regional Water Board pursuant to the Water Code, division 7, chapter 7, including the authority to prescribe water reclamation requirements pursuant to Water Code section 13523.

22. Pursuant to Water Code section 13241 and 13263, the State Water Board, in establishing the requirements contained herein, considered factors including, but not limited to, the following:

    a. Past, present, and probable future beneficial uses of water;

    b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;

    c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;

    d. Economic considerations;

    e. The need for developing housing within the region(s); and

    f. The need to develop and use recycled water.

23. Pursuant to Water Code section 106.5, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This General Order promotes that policy by encouraging uses of recycled water. Such uses must be consistent with the requirements of California Code of Regulations (including the Uniform Statewide Recycling Criteria). This General Order furthers the human right to water by encouraging use of recycled water thus reducing demand on other other sources, including use of potable water used for non-potable uses where recycled water is available.

24. Technical and monitoring reports specified in this General Order are required pursuant to Water Code section 13267. Failing to furnish the reports by the due date or falsifying information in the reports is a misdemeanor that may result in assessment of civil liabilities against the Discharger. Water Code section 13267 states, in part:

    "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is

suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. ... (f) the State Board may carry out the authority granted to a regional board pursuant to this section."

The technical reports required by this General Order, the NOI, and the Monitoring and Reporting Program (MRP) are necessary to assure compliance with this General Order. The burden and cost of preparing the reports are reasonable and consistent with the best interest of the people of the state in maintaining water quality.

25. This General Order is applicable to recycled water projects where recycled water is used or transported for non-potable uses (for example: landscape irrigation, irrigation of crops and pasture land, construction, fire suppression, hydrostatic testing, etc.) This General Order does not regulate the treatment of wastewater. Compliance with this General Order does not relieve producers or distributors from the obligation to comply with applicable Waste Discharge Requirements (WDRs) for discharges from wastewater treatment plants, other than the recycled water uses described herein.

26. The uses of recycled water described in this General Order are exempt from the requirements of Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste in California Code of Regulations, title 27, division 2, subdivision 1, section 20005, et seq. The activities are exempt from the requirements of title 27 so long as the activity meets, and continues to meet, all preconditions listed below. (Cal Code Regs., tit. 27, § 20090.)

    a. Sewage—Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to California Code of Regulations, title 23, division 3, chapter 9, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludge or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable State Water Board promulgated provisions of this division. (Cal. Code Regs., tit. 27, § 20090(a).)

b. Wastewater—Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leach fields if the following conditions are met: (1) the applicable Regional Water Board has issued WDRs, reclamation requirements, or waived such issuance; (2) the discharge is in compliance with the applicable water quality control plan; and (3) the wastewater does not need to be managed according to, California Code of Regulations, title 22, division 4.5, chapter 11, as a hazardous waste. (Cal. Code Regs., tit. 27, § 20090(b).)

c. Reuse – Recycling of other use of materials salvaged from waste or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of Title 27 regulations.(Cal. Code Regs., tit. 27, § 20090(h).)

ANTIDEGRADATION ANALYSIS

27. State Water Board Resolution No. 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (the Antidegradation Policy) requires that disposal of waste into the waters of the state 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 shall be maintained to the maximum extent possible consistent with the Antidegradation Policy. The Antidegradation Policy requires the following:

    a. 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 policies.

    b. Any activity that produces a waste or may produce waste or increased 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 (BPTC) 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.

28. This General Order regulates discharges to groundwater basins throughout the state. There is not sufficient data to determine which groundwater basins are high quality waters for the various constituents that may be associated with recycled water. To the extent use of recycled water may result in a discharge to a groundwater basin that contains high quality water, this General Order authorizes limited degradation consistent with the Antidegradation Policy as described in the findings below. Further, Salt and Nutrient Management Plans,

developed in accordance with the Recycled Water Policy, will require analysis on an ongoing basis to evaluate inputs to the basin, the salt and nutrient mass balance, and the available assimilative capacity.

29. This General Order requires BPTC, which is a combination of treatment, storage, and application methods that implement the requirements of the Uniform Statewide Recycling Criteria and the Regional Water Board Water Quality Control Plans (Basin Plans). Recycled water is generated by treating (primarily) domestic wastewater adequately to make the water suitable for a direct beneficial use that would not otherwise occur. The required level of treatment corresponds to the proposed use of the recycled water. In addition, this General Order includes requirements regarding the storage and application of recycled water to protect water quality and limit public contact to recycled water, where appropriate. Wastewater treatment can be accomplished many different ways, but generally consists of physical, chemical, and/or biological methods. Depending upon the use of the recycled water, disinfection may be performed. In addition to the treatment processes, this General Order also requires the following control measures:

    a. Recycled water use shall not cause unacceptable groundwater and/or surface water degradation.

        i. Regional Water Boards have discretion regarding permitting storage of recycled water in unlined ponds. Applicants shall improve storage facilities if deemed necessary by a Regional Water Board.

        ii. Application of recycled water is limited to agronomic rates, which limits the potential for significant amounts of recycled water to impact groundwater quality and allows plants to take up wastewater constituents such as nitrogen compounds.

        iii. Recycled water use shall be controlled to prevent significant runoff from application areas. This General Order authorizes use of recycled water for application to land, where recycled water is further treated in natural soil processes.

    b. Recycled water shall not create nuisance conditions.

        i. The Uniform Statewide Recycling Criteria requires wastewater to be oxidized, which removes putrescible matter and requires dissolved oxygen. Maintaining dissolved oxygen in the wastewater will generally prevent nuisance odors.

        ii. Application of recycled water is controlled to prevent airborne spray from entering dwellings, eating areas, or food handling areas.

        iii. Application of recycled water to saturated soil is prohibited. Application to saturated soil reduces the soil treatment processes and may create conditions for mosquito breeding.

c. Recycled water shall only be used consistent with the Uniform Statewide Recycling Criteria and any other requirements specified in the Notice of Applicability.

   i. A written approval of a Title 22 Engineering Report must be obtained from the State Water Board before a Notice of Applicability (NOA) can be issued.

   ii. Uses of recycled water are subject to category-specific use area signage, and monitoring frequency requirements as specified in the Uniform Statewide Recycling Criteria. Uses not addressed by the Uniform Statewide Recycling Criteria will be considered on a case-by-case basis by Regional Water Boards , after consulting with and receiving the recommendations of the State Water Board. These recommendations become requirements of the Order when specified in the Notice of Applicability.

   iii. Uses of recycled water are subject to backflow prevention, cross connection tests, and setback requirements for surface impoundments, wells, etc. as contained in the Uniform Statewide Recycling Criteria and California Code of Regulations, title 17, division 1, article 2.

30. In an arid climate, such as the climate that exists in most of California, the maximum benefit to the people of the state can only be achieved by ensuring long and short-term protection of economic opportunities, public health, and environmental protection. In order to do that, water uses must be better matched to water quality and use of local supplies must be encouraged to the extent possible, including reusing water that would otherwise flow to the ocean or other salt sinks without supporting beneficial uses during transmission. The use of recycled water in place of both raw and potable water supplies for the non-potable uses allowed under this General Order improves water supply availability and helps to ensure that higher quality water will continue to be available for human uses and for instream uses for fish and wildlife. It also reduces the need for groundwater pumping that has resulted in permanent loss of aquifer storage capacity and land subsidence in some parts of the state.

    As required by the Antidegradation Policy, the State Water Board finds that the limited degradation of water that may occur as the result of recycling under the conditions of this General Order provides maximum benefit to the people of California, provided recycled water treatment and use are managed to ensure long-term reasonable protection of beneficial uses of waters of the state. Recycled water available for reuse under this General Order has been treated at a wastewater treatment plant to levels that comply with permits issued by the State Water Board or Regional Water Boards pursuant to the Clean Water Act for discharges to waters of the United States or the Porter Cologne Water Quality Control Act for discharges to land. Treatment technologies required under these

laws and permits include secondary and/or tertiary treatment and disinfection when needed for pathogen reduction.

The Uniform Statewide Recycling Criteria imposes limitations on the uses of recycled water, based on the level of treatment and the specific use in this General Order to protect public health. By restricting the use of recycled water to those meeting the Uniform Statewide Recycling Criteria, this General Order ensures that recycled water is used safely. To the extent that the use of recycled water may result in some waste constituents entering the environment after effective source control, treatment, and control measures are implemented, the conditions of this General Order limiting the use of recycled water to agronomic rates is part of the suite of treatment, storage and applications measures that comprise BPTC for uses with frequent or routine application, such as landscape or agricultural irrigation. Other types of uses that may be approved, such as dust control, firefighting, hydrostatic testing, and other short term or infrequent application are unlikely to result in sufficient loading of waste constituents that impact water quality.

31. Constituents associated with recycled water that have the potential to degrade groundwater include salinity, nutrients, pathogens (represented by coliform bacteria), disinfection by-products (DBPs), constituents of emerging concern (CECs), and endocrine disrupting chemicals (EDCs). If the discharge is not consistent with Basin Plan requirements, the applicant may elect to improve treatment to enroll under this General Order, or to apply for a site-specific order from the Regional Water Board. The State Water Board finds that the use of recycled water permitted under this General Order will not unreasonably affect beneficial uses or result in water quality that is less than that prescribed in applicable policies. The characteristics and requirements associated with each of the recycled water constituents of concern are discussed below:

    a. Salinity is measured in water through various measurements, including but not limited to, total dissolved solids (TDS) and electrical conductivity. Excessive salinity can impair the beneficial uses of water. Salinity levels in the receiving water can be affected by the use of recycled water if the recycled water has elevated concentrations of salinity. However, it is anticipated that in most cases, the use of recycled water for irrigation will consist of a portion of the total applied irrigation water. Other sources of irrigation water are likely to be potable water, imported water, agricultural water supply wells, irrigation districts (surface water supplies), and precipitation. The blending of sources of irrigation water (e.g. recycled water blended with stormwater) will generally reduce concentrations of, and/or loading rates of salinity constituents. As a result, salinity increases in use areas where the irrigation water is a blend of water sources are less likely to impair an existing and/or potential beneficial use of groundwater.

b. Nitrogen is a nutrient that may be present in recycled water at a concentration that can degrade groundwater quality. This General Order requires application of recycled water to take into consideration nutrient levels in recycled water and nutrient demand by plants. Application of recycled water at agronomic rates and considering soil, climate, and plant demand minimizes the movement of nutrients below the plants' root zone. When applied to cropped (or landscaped) land, some of the nitrogen in recycled water will be taken up by the plants, lost to the atmosphere through volatilization of ammonia or denitrification, or stored in the soil matrix. As a result, nitrogen increases are unlikely to impair an existing and/or potential beneficial use of groundwater.

c. Pathogens and other microorganisms may be present in recycled water based on the disinfection status. Coliform bacteria are used as a surrogate (indicator) because they are present in untreated wastewater, survive in the environment similar to pathogenic bacteria, and are easy to detect and quantify. Pathogens are generally limited in their mobility when applied to land.

   Setbacks from recycled water use areas are required in the Uniform Statewide Recycling Criteria as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to a domestic water supply 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 (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.

   When needed, disinfection can be performed in a number of ways. The Uniform Statewide Recycling Criteria lists disinfection requirements for specifically listed activities.

d. Disinfection by-products (DBPs) consist of organic and inorganic substances produced by the interaction of chemical disinfectants with naturally occurring substances in the water source. Common disinfection by-products include trihalomethanes, haloacetic acids, bromate, and chlorite. DBPs present in recycled water receive additional treatment when applied to land. Biodegradation, adsorption, volatilization, and other attenuative processes that occur naturally in soil will reduce the concentrations and retard migration of DBPs in the subsurface.

e. Chemicals of Emerging Concern (CECs) in recycled water as they pertain to the State Water Board's Recycled Water Policy are defined to be chemicals in personal care products, pharmaceuticals including antibiotics, antimicrobials; industrial, agricultural, and household chemicals; hormones;

food additives; transformation products, inorganic constituents; and nanomaterials. CECs are new classes of chemicals, diverse, and relatively unmonitored chemicals. Many of them are so new that standardized measurement methods and toxicological data for interpreting their potential human or ecosystem health effects are unavailable. The State Water Board convened a CEC Advisory Panel to address questions about regulating CECs with respect to the use of recycled water. The Panel's primary charge was to provide guidance for developing monitoring programs that assess potential CEC threats from various water recycling practices, including groundwater recharge/reuse and urban landscape irrigation. The Panel provided recommendations for monitoring specific CECs in recycled water used for groundwater recharge reuse. Monitoring of health-based CECs or performance indicator CECs is not required for recycled water used for landscape irrigation due to the low risk of ingestion of the water. These recommendations were made part of the Recycled Water Policy. This General Order does not provide coverage for groundwater recharge activities or production of recycled water.

f. Endocrine disrupting chemicals (EDCs) are mostly man-made, found in various materials such as pesticides, metals, additives, or contaminants in food, and personal care products. Human exposure to EDCs occurs via ingestion of food, dust and water, via inhalation of gases and particles in the air, and through the skin. Perchlorate is an EDC that may be present in hypochlorite solutions, which is a type of disinfectant used for wastewater. Formation of perchlorate in hypochlorite solution can be minimized when proper manufacturing, handling, and storage conditions are followed. Perchlorate accumulation has been documented in fruit and seed bearing crops and leafy vegetation irrigated with perchlorate contaminated water. Recycled water currently makes up less than one percent of California agricultural water supply. Much of the recycled water used for agricultural irrigation is either undisinfected or is disinfected by means that do not result in perchlorate generation, such as ultraviolet light and chlorine gas. Some sources of agricultural water supply in some areas of the state contain perchlorate, such as surface water from Colorado River or groundwater sources in areas near industrial or military application sites (e.g. Riverside, San Bernardino, and Los Angeles counties). The blending of sources of irrigation water will further reduce any concentration of perchlorate present in recycled water and will be unlikely to affect beneficial uses or degrade groundwater quality.

32. The use of recycled water that would otherwise be discharged to a watercourse can adversely affect the availability of water for beneficial uses of water downstream of the discharge point, including in-stream uses. Water Code section 1211 requires that: (1) the owner of any wastewater treatment plant obtain the approval of the State Water Board before making any change in the

point of discharge, place of use, or purpose of use of treated wastewater where changes to the discharge or use of treated wastewater have the potential to decrease the flow in any portion of a watercourse, and (2) the State Water Board review the proposed changes pursuant to the provisions of Water Code section 1700 *et seq*. In order to approve the proposed change, the State Water Board must determine that the proposed change will not operate to the injury of any legal user of the water involved. (Wat. Code, §1702.) The State Water Board also has an independent obligation to consider the effect of the proposed change on public trust resources and beneficial uses established for areas downstream of the discharge point, and to protect those resources where feasible. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419 [189 Cal. Rptr. 346].)

33. This General Order authorizes uses of recycled water statewide. If an existing or proposed use of recycled water seeking coverage under this General Order could result in water quality degradation as described below, the Regional Water Board's Executive Officer shall notify the applicant/discharger of the need to either revise the proposed/existing project, or apply for or continue coverage under a site-specific order of the Regional Water Board. The Regional Water Board's Executive Officer or the State Water Board's Executive Director (or designee) shall explain the need for a revised project, design, operation, or coverage under a different order, by making one or more of the following findings in the NOI response letter:

    a. The proposed use of recycled water is not consistent with Findings 27 through 32 of this General Order, which collectively provide for compliance with antidegradation findings for projects covered by this General Order. The degradation may be from salinity, nitrogen compounds, pathogens, disinfection by-products, or other substances.

    b. The proposed method of recycled water storage in unlined ponds is not consistent with Findings 27 through 32 of this General Order, which collectively provide for compliance with antidegradation findings for projects covered by this General Order. The degradation may be from salinity, nitrogen compounds, pathogens, disinfection by-products, or other substances.

    c. The proposed use of recycled water or method of recycled water storage will cause or contribute to pollution or nuisance, or otherwise fail to comply with the applicable Basin Plan or State Water Board plans or policies.

    d. The proposed use of recycled water does not implement mitigation measures in a California Environmental Quality Act (CEQA) document.

    e. The proposed use of recycled water is not consistent with a Total Maximum Daily Load (TMDL) waste load or load allocation, or implementation plan as adopted by the Regional Water Board and made part of the Regional Water Board's Basin Plan.

f. The proposed use of recycled water is not consistent with the Basin Plan provisions for implementing a Salt and Nutrient Management Plan.

PURPOSE AND APPLICABILITY

34. The State Water Board recognizes the need for streamlined permitting consistent with the State Water Board's Recycled Water Policy. The State Water Board's intention in the issuance of this statewide order is to provide consistent regulation of non-potable uses of recycled water statewide. To provide such consistency, the State Water Board intends that regulatory coverage under an existing Regional Water Board general order or conditional waiver for non-potable uses of recycled water (landscape irrigation, golf course irrigation, dust control, street sweeping, etc.) will be terminated by the applicable Regional Water Board within three (3) years after adoption of this General Order. Enrollees covered by a Regional Water Board general order or conditional waiver for non-potable uses of recycled water may continue discharging under that authority until the applicable Regional Water Board issues a Notice of Applicability to an Administrator per the terms of this Order. Enrollees under Order WQ 2014-0090-DWQ will be transferred for coverage under this General Order.

35. This document serves as a statewide General Order authorizing the use of recycled water by Producers, Distributors, and Users for uses consistent with the Uniform Statewide Recycling Criteria, other than direct or indirect potable reuse. The intent of this General Order is to streamline the permitting process and delegate the responsibility of administrating water recycling programs to an Administrator to the fullest extent possible. The following may apply for coverage under this General Order and agree to become the Administrator:

    a. Producers of recycled water: Producers may be publicly or privately owned. A Producer will typically produce recycled water that meets the requirements of the Uniform Statewide Recycling Criteria. A Producer may also act as an Administrator.

    b. Distributors of recycled water: In some cases, a Distributor may provide additional treatment (such as disinfection) to meet the Uniform Statewide Recycling Criteria for its intended use, and distribute it to Users. A Distributor is not required to take physical possession of the recycled water and may act simply as an Administrator.

    c. Users of recycled water: Users take physical possession of the recycled water from Producers and/ or Distributors for an approved beneficial recycled water use consistent with Uniform Statewide Recycling Criteria. A User that takes physical possession of recycled water may act as an Administrator and distribute to other Users. Users of recycled water may also use the recycled water under a Water Recycling Use Permit from another Administrator.

d. A legal entity: A joint powers agreement or equivalent contractual agreement between a Producer, Distributor, irrigation district, or other entity. Similar to a Distributor, a legal entity is not required to take physical possession of the recycled water and may act simply as an Administrator.

36. To obtain coverage under this General Order, the applicant shall submit an NOI (Attachment A) and an application fee to the Regional Water Board of jurisdiction. An applicant proposing a water recycling program that covers recycled water use areas within multiple Regional Water Board jurisdictions may submit an NOI (Attachment A) and application fee to the State Water Board. Fee amounts are in accordance with California Code of Regulations, title 23, division 3, chapter 9, article 1. The applicant shall declare responsibility for the administration of the water recycling program authorized pursuant to this General Order. The applicant shall describe a program they will administer to ensure that recycled water use complies with the requirements of the Uniform Statewide Recycling Criteria, and this General Order. Upon authorization by the State or Regional Water Board, the applicant then becomes the Administrator. The Administrator shall be billed for an annual fee until coverage under the General Order is terminated.

37. Pursuant to Water Code section 13554.2, any person or entity proposing the use of recycled water shall reimburse the State Water Board for reasonable costs incurred in performing duties relevant to the implementation of regulatory oversight related to protection of public health for uses of recycled water.

38. This General Order does not authorize discharges of pollutants from point sources to water of the United States, thus the use of recycled water allowed pursuant to the terms of this General Order are not subject to National Pollutant Discharge Elimination System (NPDES) permits. To the extent that this General Order results in agricultural irrigation return flows entering waters of the United States, such return flows are not subject to NPDES permits (33 U.S.C., §1342(l)(1)) but may be subject to waste discharge requirements or conditional waivers as adopted by Regional Water Boards. Where such waste discharge requirements or conditional waivers exist, this General Order requires that uses of recycled water comply with their provisions.

39. The State Water Board recognizes the need to allow a centralized enrollment process under this General Order to facilitate opportunities for non-potable uses of recycled water by a single entity that may occur in more than one Regional Water Board jurisdictions (for example: hydrostatic testing of utility pipelines owned by a utility company or landscape irrigation at facilities managed by other state agencies). An NOI may be submitted to the State Water Board for such uses of recycled water, when managed by a single Administrator and subject to the corresponding recycled water quality, use area requirements, and reliability features.

40. Enrollment under this General Order may serve as additional authorization for new uses of recycled water presently not covered under existing WDRs, Master Reclamation Permits, or WRRs, as long as such new uses meet the requirements of this General Order and an approved Title 22 Engineering Report. A User that serves as an Administrator may use the additional authorization provided by this General Order to obtain recycled water from other Producers or Distributors permitted under other existing WDRs, Master Reclamation Permits, or WRRs.

41. Agricultural operations subject to waste discharge requirements or waivers of waste discharge requirements regulating discharges from irrigated lands may obtain authorization pursuant to this General Order to use recycled water for irrigation. Such authorization may take the form of a Water Recycling Use Permit from an Administrator covered by this General Order, or the agricultural operation may enroll as its own Administrator. The State Water Board recognizes the need to simplify regulation of recycled water use on agricultural lands. Pursuant to Water Code section 13267, Regional Water Boards' Executive Officers may modify the MRP to prevent duplication of monitoring and reporting activities that satisfy the requirements of both orders.

BASIN PLANS AND BENEFICIAL USES

42. Beneficial uses of groundwater are determined by each Regional Water Board and are listed in their respective Basin Plans. Beneficial uses for groundwater are: municipal supply (MUN), industrial service supply (IND), industrial process supply (PROC), fresh water replenishment (FRESH), aquaculture (AQUA), wildlife habitat (WILD), water contact recreation (REC-1), agricultural supply (AGR), and groundwater recharge (GWR). Some beneficial uses only apply to certain geographical areas within regions.

43. Basin Plans establish water quality objectives to protect beneficial uses. The water quality objectives may be narrative, numerical, or both. This General Order requires proposed recycled water uses to comply with Basin Plan requirements. Determination of compliance with the Basin Plan is part of the application process.

CEQA AND PUBLIC NOTICE

44. On April 25, 2014, the Governor issued an Executive Order declaring a continued state of emergency due to severe drought conditions. Directive No. 10 of the Executive Order directs the State Water Board to adopt statewide general waste discharge requirements to facilitate the use of treated wastewater that meets standards set by CDPH, in order to reduce demand on potable water supplies. Effective July 1, 2014 the authority to establish such standards was transferred from CDPH to the State Water Board. This General Order is intended to satisfy the Directive No. 10 requirement. Directive No. 19 of the Executive Order provides that the California Environmental Quality Act (CEQA)

requirement to conduct an environmental review is suspended to allow the State Water Board to adopt this General Order as quickly as possible.

45. On November 13, 2015, the Governor issued an Executive Order (B-36-15) extending suspension of Division 13 (commencing with section 21000) of the Public Resources Code and regulations adopted pursuant to that Division in the January 17, 2014 Proclamation, April 25, 2014 Proclamation, and Executive Orders B-26-14, B-28-14, and B-29-15. The suspension will remain in effect until the drought state of emergency is terminated. The suspension also applies to the adoption of water reclamation requirements by the State Water Board that serve the purpose of paragraph 10 of the April 25, 2014 Proclamation.
46. The State Water Board has notified interested agencies and persons of its intent to prescribe these WRRs, and has provided them the opportunity to attend a public meeting and to submit their written views and recommendations.
47. The State Water Board, in a public meeting, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED that Order WQ 2014-0090-DWQ is hereby rescinded except for enforcement purposes, effective 60 calendar days after adoption of this General Order ("Effective Date").

To enroll under this General Order, a prospective enrollee must file an NOI indicating its intention to be regulated under the provisions of this General Order, and receive authorization from the appropriate Regional Water Board. A prospective enrollee that intends to obtain authorization from multiple Regional Water Boards may file an NOI and receive authorization from the State Water Board.

To obtain coverage under this General Order, an enrollee under Order WQ 2014-0090-DWQ must notify the State Water Board of its intention to be regulated under this General Order. See Attachment A, "Who May Apply." Coverage will terminate on the Effective Date for any existing enrollee that fails to submit the required documentation.

Pursuant to Water Code sections 13263,13267, 13523 and 13523.1, enrollees under this Order, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, shall comply with the requirements in this Order.

A. PROHIBITIONS

1. The treatment, storage, distribution, or use of recycled water shall not cause or contribute to a condition of pollution as defined in Water Code section 13050(l) or nuisance as defined in Water Code section 13050(m).
2. Recycled water shall not be applied for irrigation during periods when soils are saturated.

3. Recycled water shall not be allowed to escape from the use area(s) as surface flow that would either pond and/or enter surface waters, unless authorized by WDRs, waivers of WDRs, or conditional prohibitions regulating agricultural discharges from irrigated lands.

4. Spray or runoff shall not enter a dwelling or food handling facility and shall not contact any drinking water fountain, unless specifically protected with a shielding device. If the recycled water is undisinfected secondary or disinfected secondary-23 quality then spray or runoff shall not enter any place where public access is not restricted during irrigation.

5. The incidental runoff of recycled water shall not result in water quality less than that prescribed in water quality control plans or policies unless authorized through time schedule provisions in WDRs, waivers of WDRs, or conditional prohibitions regulating agricultural discharges from irrigated lands.

   Recycled water shall not be discharged from treatment facilities, irrigation holding tanks, storage ponds, or other containment, other than for permitted use in accordance with this General Order; Regional Water Board issued WDRs, WRRs, or Master Reclamation Permits; NPDES permits; or a contingency plan in an approved Water Recycling Use Permit.

6. There shall be no cross-connection between potable water supply and piping containing recycled water. All Users of recycled water shall provide for appropriate backflow protection for potable water supplies as specified in California Code of Regulations, title 17, section 7604 or as determined by the State Water Board on a case-by-case basis to protect public health.

7. This General Order authorizes certain beneficial recycled water uses consistent with Uniform Statewide Recycling Criteria. The following activities are not authorized by this General Order:

   a. Activities designed to replenish groundwater resources. Groundwater replenishment activities include surface spreading basins, percolation ponds, or injection through groundwater wells.

   b. Disposal of treated wastewater by means of percolation ponds, excessive hydraulic loading of application areas, or any other method, where the primary purpose of the activity is the disposal of treated wastewater.

   c. Direct potable reuse (Wat. Code, § 13561(b)), indirect potable reuse for groundwater recharge (Wat. Code, § 13561(c)), or surface water augmentation (Wat. Code, § 13561(d)).

8. The use of recycled water in violation of the applicable Regional Water Board's Basin Plan is prohibited.

B. SPECIFICATIONS

1. Recycled water distribution and use permitted under this General Order shall be in compliance with all of the following requirements:

   a. Regulations related to recycled water (including its subsequent revisions) contained in California Code of Regulations, title 17, sections 7583 – 7586, sections 7601 – 7605, and California Code of Regulations, title 22, sections 60001 – 60355.

   b. All requirements of this General Order.

   c. An approved Title 22 Engineering Report that demonstrates or defines compliance with the Uniform Statewide Recycling criteria (and amendments).

   d. The NOA issued by the Regional Water Board or State Water Board.

   e. Applicable Salt and Nutrient Management Plan adopted by the Regional Water Board as a Basin Plan Amendment.

   f. WDRs or NPDES permits for recycled water production facilities, to the extent that the WDRs or NPDES permits include provisions that address recycled water.

   g. Any applicable water quality related CEQA mitigation measure.

   h. Water Code section 1211 for facilities where the changes to the discharge are necessary to accomplish water recycling and will result in changes in flow in a watercourse.

   i. Policy for Water Quality Control for Recycled Water (Recycled Water Policy)

2. The Administrator shall discontinue delivery of recycled water during any period in which it has a reason to believe that the quality of the delivered recycled water is not meeting the Uniform Statewide Recycling Criteria specification. The Administrator shall notify the Regional Water Board, and the State Water Board if it issued the NOA, within one (1) business day of determining that delivery of off-specification recycled water has taken place. In circumstances where the emergency requires termination of delivery to Users, the Regional Water Board, and the State Water Board if it issued the NOA, shall be copied on any correspondence concerning non-compliance between the Administrator and User. This notification does not supersede any notification requirements contained within a Producer's WDRs or Master Reclamation Permit for production facilities.

3. Uses of recycled water with frequent or routine application (for example: agricultural or landscape irrigation uses) shall be at agronomic rates and shall consider soil, climate, and plant demand. In addition, application of recycled water and use of fertilizers shall be at a rate that takes into consideration nutrient levels in recycled water and nutrient demand by plants. The State or Regional Water Board may require the Administrator to submit an Implementation or

Operations and Management Plan specifying agronomic rates and nutrient application for the use area(s) and a set of reasonably practicable measures to ensure compliance with this General Order. An Administrator may submit a nutrient management plan developed to comply with another Water Board's order, such as waste discharge requirements or a waiver regulating discharges from irrigated lands, in lieu of an Implementation or Operations and Management Plan. Other uses of recycled water that are infrequent (for example: dust control, firefighting, hydrostatic testing, etc.) must also be addressed by a set of reasonably practicable measures within an Implementation or Operations and Management Plan.

C. WATER RECYCLING ADMINISTRATION REQUIREMENTS

1. Applicants seeking coverage under this General Order shall submit an NOI in accordance with Attachment A. Responsibilities for an Administrator shall be described in the NOI.
2. Coverage under this General Order becomes effective when the State or Regional Water Board issues an NOA. The Regional Water Board and the State Water Board will coordinate to include Title 22 Engineering Report requirements and conditions of approval.
3. Under this General Order, the Administrator's program shall be implemented to accomplish compliance with Specification B.1. Upon State or Regional Water Board approval of the Administrator's program, which shall accompany the NOI, the Administrator may authorize and/or implement water recycling projects, in accordance with the Administrator's approved program and the approved Title 22 Engineering Report. The Administrator shall obtain written approvals for any changes to the Administrator's approved program, for example: new recycled water use types or distribution methods not already described in the Administrator's approved program.
4. The Administrator shall establish and enforce rules or regulations for recycled water uses governing the design and construction of recycled water use facilities and the use of recycled water in accordance with Specification B.1.
5. A User acting as a water recycling program Administrator is subject to the conditions of its water recycling program prepared in accordance with Specification B.1. A User acting as a water recycling program Administrator is responsible to implement water recycling administration requirements applicable to Users and Administrators as described in Water Recycling Administration Requirements C.1 – C.16.
6. The Administrator shall inspect to ensure that cross-connections between potable water and non-potable water systems have not been created and that backflow prevention devices are in proper working order by conducting or requiring User testing in accordance with the Uniform Statewide Recycling Criteria and California Code of Regulations, title 17, section 7605. Reports of

testing and maintenance shall be maintained by the Administrator. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.

7. The Administrator shall ensure recycled water meets the quality standards of this General Order and shall be responsible for the operation and maintenance of major transport facilities and associated appurtenances. If an entity other than the Administrator has actual physical and ownership control over the recycled water transport facilities, the Administrator may delegate operation and maintenance responsibilities for such facilities to that entity. The Administrator shall require the use of the recycled water to be in accordance with the Uniform Statewide Recycling Criteria and to comply with this General Order, including requirements to apply only at agronomic rates and not cause unauthorized degradation, pollution, or nuisance. If not the same entity, the Producer shall provide water quality data and communicate to Users the nutrient levels in the recycled water.
8. The Administrator shall conduct periodic inspections of the User's facilities and operations to determine compliance with conditions of the Administrator requirements and this General Order. The Administrator shall take whatever actions are necessary, including the termination of delivery of recycled water to the User, to correct any User violations. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.
9. The Administrator shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements (Attachment C) and any amendments thereafter.
10. The Administrator shall require Users to comply with the Administrator's use area conditions. Use area requirements shall be consistent with Specification B.1.
11. If recycled water will be transported by truck for uses consistent with the Uniform Statewide Recycling Criteria such as dust control, the Administrator shall provide notification and control measures for Users consistent with the provisions of the approved Title 22 Engineering Report that addresses protection of public health.
12. A copy of the Water Recycling Use Permit must be provided to Users by the Administrator (electronic format is acceptable). The Users must have the documents available for inspection by State and Regional Water Board staff, State/County officials, and/or the Administrator.
13. The Administrator shall comply with the attached monitoring and reporting program including any amendments issued by the entity that issued the NOA (State or Regional Water Board). This monitoring program shall be consistent with any applicable Salt and Nutrient Management Plan for the basin/sub-basin.

The Administrator is responsible for collecting reports from Users. Where applicable, Users are responsible for submitting on-site observation reports and use data to the Administrator, who will compile and file an annual report with the entity that issued the NOA. The Administrator, at its discretion, may assume the User's responsibility for on-site observation reports and use data.

14. The Administrator and Users shall maintain in good working order and operate as efficiently as possible any facility or control system to achieve compliance with this General Order. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.

15. The Administrator shall require that personnel receive training to assure proper operation of recycling facilities, worker protection, and compliance with this General Order. The Administrator shall require Recycled Water Supervisor(s) to be familiar with the Administrator permit conditions.

16. The Administrator shall assure that all above ground equipment, including pumps, piping, storage reservoir, and valves which may at any time contain recycled water are identified with appropriate notification as required by the Uniform Statewide Recycling Criteria and California Health and Safety Code section 116815. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.

D. GENERAL PROVISIONS

1. The Administrator shall document compliance with all conditions of this General Order and requirements specified in the Uniform Statewide Recycling Criteria and California Code of Regulations title 17.

2. If directed by the State Water Board or a Regional Water Board pursuant to Water Code section 13267, an Administrator shall prepare and submit a Salt and Nutrient Management Plan, acceptable to the entity that issued such order, to ensure that the overall impact of permitted water recycling projects does not degrade groundwater resources in a manner inconsistent with Findings 27 through 32. Unless otherwise directed by the entity that issued such order, in lieu of developing an individual Salt and Nutrient Management Plan, the Administrator shall participate in a Regional Water Board's existing salt and nutrient management planning effort to meet the requirements of this provision.

3. State and/or Regional Water Board staff may conduct inspections/audits of water recycling projects. The Administrator and Users shall permit the State and/or Regional Water Board or its authorized representatives, in accordance with Water Code section 13267(c):

a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this General Order.

b. Access to and copy of, at reasonable times, any records that must be kept as a condition of this General Order.

c. Inspection, at reasonable times, of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this General Order.

d. To sample or monitor, at reasonable times, for the purpose of assuring compliance with this General Order.

4. The State or Regional Water Board may terminate or modify an Administrator's coverage under this General Order for cause, including, but not limited to:

   a. Violation of any term or condition contained in this General Order;

   b. Obtaining this General Order by misrepresentation, or failure to disclose fully all relevant facts;

   c. Endangerment to public health or environment that can only be mitigated to acceptable levels by General Order modification or termination.

   d. An increase in recycle flows which causes a reduction of treated effluent flow from the wastewater treatment plant into a surface water body with beneficial uses dependent on flow without the approval of the Division of Water Rights.

5. The State or Regional Water Board, upon a finding of non-compliance with this General Order, may revoke an Administrator's authority to issue Water Recycling Use Permits.

6. The State Water Board will review this General Order periodically and may revise the requirements as deemed necessary.

7. Users shall comply with all requirements of other applicable WDRs or waivers of WDRs, including without limitation WDRs or waivers regulating agricultural discharges from irrigated lands.

8. The Administrators shall comply with the MRP issued with the NOA, as specified by the Regional Water Board's Executive Officer or State Water Board's Executive Director (or designee). A model MRP is provided as Attachment B. However, the State Water Board's Executive Director (or designee) may modify or replace the MRP when deemed necessary.

CERTIFICATION

The undersigned, Clerk to the State Water Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on June 7, 2016.

AYE:	Chair Felicia Marcus Vice Chair Frances Spivy-Weber Board Member Tam M. Doduc Board Member Steven Moore Board Member Dorene D'Adamo
NAY:	None
ABSENT:	None
ABSTAIN:	None

Jeanine Townsend
Clerk to the Board

Attachments:

A. Notice of Intent (NOI) - General Instructions
B. Monitoring and Reporting Program
C. Standard Provisions & Reporting Requirements
D. Definition of Terms

ATTACHMENT A: NOTICE OF INTENT (NOI) – GENERAL INSTRUCTIONS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

WHO MAY APPLY

This Order is intended to serve as a statewide General Order for use of recycled water. It may be used to (1) replace waste discharge requirements (WDRs) / water reclamation requirements (WRR) , or a conditional waiver of WDRs; (2) serve as an additional authorization for new uses of recycled water not previously permitted, issued to any of the following:

a. Producers of recycled water. Producers may be publicly or privately owned. A Producer will typically produce recycled water that meets the requirements of the Uniform Statewide Recycling Criteria. A Producer may also act as an Administrator.

b. Distributors of recycled water. In some cases, a Distributor may provide additional treatment (such as disinfection) to meet the Uniform Statewide Recycling Criteria for its intended use, and distribute it to Users. A Distributor is not required to take physical possession of the recycled water and may act simply as an Administrator.

c. Users of recycled water: Users take physical possession of the recycled water from a Producer or Distributor for an approved beneficial recycled water use consistent with the Uniform Statewide Recycling Criteria. Users may use the recycled water under a Water Recycling Use Permit from an Administrator or act as an Administrator.

d. A legal entity such as a joint powers agreement or equivalent contractual agreement between a Producer, Distributor, irrigation district, or other entity. Similar to a Distributor, a legal entity is not required to take physical possession of the recycled water and may act simply as an Administrator.

Applicants that have been previously issued an order authorizing water recycling may be able to submit an abbreviated information package. Such applicants should contact Regional Water Board and State Water Board staff to determine the application information needs.

Enrollees covered under Order WQ 2014-0090-DWQ who wish to continue coverage must acknowledge in writing their consent to coverage under this General Order. Enrollees who submit the required documentation will automatically be covered under this General Order. The State Water Board will provide existing enrollees with a form for this purpose. A new NOI is not required if the project has not materially changed.

Any applicant whose NOI is pending on the date this General Order is adopted must update its NOI to request coverage under this General Order. If the NOI is approved before the Effective Date, the applicant will be enrolled in Order WQ 2014-0090-DWQ

until the Effective Date and coverage under this General Order will commence on the Effective Date.

WHERE TO APPLY

An applicant should submit an NOI to their applicable Regional Water Board and submit a Title 22 Engineering Report to the applicable State Water Board Division of Drinking Water Field Operations Branch office. The NOI cannot be considered complete until the responsible staff in the State Water Board provides a Title 22 Engineering Report approval letter. An Applicant proposing to administer a water recycling program that covers recycled water use areas within multiple Regional Water Board jurisdictions and is therefore seeking General Order coverage from multiple Regional Water Boards may submit an NOI to the State Water Board.

WHEN TO APPLY

An applicant should normally file the NOI at least 90 days prior to the project start.

WHAT TO FILE

The NOI shall include a water recycling program technical report containing the following information:

SECTION I - FACILITY/WASTE TREATMENT INFORMATION

Description of existing and/or proposed treatment, storage, and transmission facilities for water recycling (much of this may be from current orders/reports, but should be updated if necessary). This shall include the type and level of wastewater treatment for water recycling applications, estimated seasonal flows of recycled water, and a summary of monitoring data that describes the chemical, physical, and disinfection characteristics of the recycled water. A copy of the approved Title 22 Engineering Report and the corresponding State Water Board approval letter, shall be included in the submittal.

SECTION II – RECYCLED WATER APPLICATION

Describe how recycled water will be used. This should include the following information:

a. Administrator owned/controlled uses

    1. An estimated amount of recycled water used at use area(s)

2. Relevant information regarding use type and use area (e.g. for agricultural irrigation use, provide information on irrigation type, acreage, and locations; for hydrostatic testing of utility pipelines, provide information on project locations, schedule/duration of testing, and type of utility pipeline; etc.).

3. A proposed Implementation or Operations and Management plan (Plan). For uses with frequent or routine application (such as irrigation), the Plan shall specify agronomic rates and nutrient application for the use area(s) and a set of reasonably practicable measures to ensure compliance with this General Order. For uses with infrequent or non-routine applications, the Plan shall specify a list of practices to ensure compliance with this General Order. The Plan may include a water and nutrient budget for use area(s), site supervisor training, periodic inspections, or other appropriate measures. An Administrator may submit a nutrient management plan developed to comply with another Water Board order, such as waste discharge requirements or a waiver regulating discharges from irrigated lands, in lieu of an Implementation or Operations and Management Plan.

b. Non-Administrator owned/controlled uses or contracted user applications (use areas that consist of small lots, e.g., residential/ industrial developments, roadway median irrigation, etc., may be aggregated to combine acreage for calculation purposes.)

1. List of Users receiving or proposing to receive recycled water (including a list of uses of recycled water for each User).

2. An estimated amount of recycled water used at use area(s) of each User.

3. A proposed Implementation or Operations and Management plan (Plan). For uses with frequent or routine application (such as irrigation), the Plan shall specify agronomic rates and nutrient application for the use area(s) and a set of reasonably practicable measures to ensure compliance with this General Order. For uses with infrequent or non-routine applications, the Plan shall specify a list of practices to ensure compliance with this General Order. The Plan may include a water and nutrient budget for use area(s), site supervisor training, periodic inspections, or other appropriate measures. This requirement does not apply to the extent Users are subject to WDRs or waivers of WDRs that require implementation of nutrient management plans.

4. Descriptions/maps of use area(s).

5. Method(s) of conveyance to Users.

SECTION III - DESCRIPTION OF WATER RECYCLING PROGRAM

The Administrator's water recycling program should be fully described as follows:

a. Description of the Administrator agency's authority, rules, and/or regulations

b. Design and implementation of program

c. Cross-connection testing responsibilities and procedures

d. Monitoring and Reporting Program

e. Use area inspection program

f. Operations and Maintenance program

g. Compliance program

h. Employee and User Training

i. Emergency procedures and notification

SECTION IV - ADDITIONAL SITE SPECIFIC CONDITIONS

If existing orders have additional site specific conditions and/or restrictions not covered in the General Order, they shall be described here. If a CEQA document for the project was prepared, include a copy of the certified or adopted document(s).

SECTION V - WATER RECYCLING PROGRAM ADMINISTRATION

Describe organization and responsibilities of pertinent personnel involved in the water recycling program. Provide the name(s), title(s) and phone number(s) of contact person(s) who are charged with operation/oversight of the water recycling program. Identify all agencies or entities involved in the production, distribution, and use of recycled water, and include a description of legal arrangements, such as, but not limited to, charters, agreements, or Memorandum of Understanding. Copies of such legal documents and organizational charts may be useful.

ATTACHMENT B: MONITORING AND REPORTING PROGRAM
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

This monitoring and reporting program (MRP) describes requirements for monitoring a recycled water system. This MRP is issued pursuant to Water Code section 13267. The Administrator shall not implement any changes to this MRP unless and until a revised MRP is issued by the Regional Water Quality Control Board (Regional Water Board) Executive Officer.

The State Water Resources Control Board (State Water Board) and Regional Water Boards are transitioning to the paperless office system.

During the life of this General Order, the State Water Board or Regional Water Board may require the Administrator to electronically submit reports using the State Water Board's California Integrated Water Quality System (CIWQS) program or an alternative database. Electronic submittal procedures will be provided when directed to begin electronic submittals. Until directed to electronically submit reports, the Administrator shall submit hard copy reports.

In some regions, Administrators will be directed to submit reports (both technical and monitoring reports) to the State Water Board's GeoTracker database over the Internet in portable document format (pdf). In addition, analytical data shall be uploaded to the GeoTracker database under a site-specific global identification number. Information on the GeoTracker database is provided on the Internet at:

<http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml>

The Administrator has applied for and received coverage for the recycled water system that is subject to the notice of applicability (NOA) of Water Quality Order 2016-0068-DDW. The reports are necessary to ensure that the Administrator complies with the NOA and General Order. Pursuant to California Water Code section 13267, the Administrator shall implement this MRP and shall submit the monitoring reports described herein.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The name of the sampler, sample type (grab or composite), time, date, location, bottle type, and any preservative used for each sample shall be recorded on the sample chain of custody form. The chain of custody form must also contain all custody information including date, time, and to whom samples were relinquished. If composite samples are collected, the basis for sampling (time or flow weighted) shall be approved by Regional Water Board staff.

Field test instruments (such as those used to test pH, dissolved oxygen, and electrical conductivity) may be used provided that they are used by a California Environmental Laboratory Program (ELAP) certified laboratory or:

1. The user is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;
3. Instruments are serviced by the manufacturer or authorized representative at the recommended frequency; and
4. Field calibration reports are maintained and available for at least three years.

Monitoring requirements listed below may duplicate existing requirements under other orders including WDRs or waivers of WDRs that regulate agricultural discharges from irrigated lands. Duplication of sampling and monitoring activities are not required if the monitoring activity satisfies the requirements of this General Order. Collecting composite samples is acceptable in most cases. The facility may continue using existing sampling collection equipment that is consistent with the applicable facility order. However, due to short sample holding times, bacteriological samples collected to verify disinfection effectiveness must be grab samples. In addition to submitting the results under another order, the results shall be submitted in the reports required by this General Order.

All of the monitoring listed below may not be applicable to all recycled water projects. Consult the NOA or Regional Water Board staff to determine applicable requirements.

RECYCLED WATER MONITORING

If recycled water is used for irrigation of landscape areas[1], priority pollutant monitoring is required at the production facility. The frequency of monitoring corresponds to the flow rate of the recycled water use. Sampling shall be consistent with the following:

Constituent	Treatment System Flow Rate	Sample Frequency	Reporting Frequency
Priority Pollutants	< 1mgd	5 years	The next annual report.
	≥ 1mgd	Annually	Annually

mgd denotes million gallons per day.

1 Landscape areas are defined as parks; greenbelts, playgrounds; school yards; athletic fields; golf courses; cemeteries; residential landscaping; common areas; commercial landscaping (except eating areas); industrial landscaping (except eating areas); freeway, highway, and street landscaping.

DISINFECTION SYSTEM MONITORING

If disinfection is performed, samples shall be collected from downstream of the disinfection system and analyzed by an approved laboratory per Title 22, section 60321(a). Depending upon the level of disinfection and recycled water application to land, monitoring requirements vary. Disinfection monitoring shall be customized to the site-specific conditions from the following:

Constituent/Parameter	Units	Sample Type	Sample Frequency	Reporting Frequency
Total Coliform Bacteria	MPN/100 mL[(a)]	Grab	TBD [(b)]	TBD [(c)]
Turbidity	NTU[(a)]	Grab/Meter	TBD [(b)]	TBD [(c)]

[(a)] MPN/100 mL denotes most probable number per 100 mL sample. NTU denotes nephelometric turbidity unit.

[(b)] TBD (to be determined) shall be specified in the NOA or as required by California Code of Regulations, title 22 section 60321.

(c) TBD (to be determined) shall be specified in the NOA or as required by CCR, title 22, section 60329(c).

POND SYSTEM MONITORING

In some cases, recycled water storage ponds may be used to store recycled water when it is not needed. These monitoring requirements apply only to ponds permitted through this General Order. Ponds covered by an existing order shall continue to be monitored in accordance with that order. Pond(s) containing recycled water shall be monitored for the following:

Parameter	Units	Sample Type	Sample Frequency[(a)]	Reporting Frequency
Freeboard	0.1 feet	Measurement	Quarterly	Annually
Odors	--	Observation	Quarterly	Annually
Berm condition	--	Observation	Quarterly	Annually

[(a)] Or less frequently if approved by the Regional Water Board Executive Officer

USE AREA MONITORING

The Administrator shall monitor use areas(s) at a frequency appropriate to determine compliance with this General Order and the Administrator's recycled water use program requirements. An Administrator may assign monitoring responsibilities to a User as part of the Water Recycling Use Permit program; the Administrator retains responsibility to ensure the data is collected, as well as prepare and submit the annual report.

The following shall be recorded for each user with additional reporting for use areas as appropriate. The frequency of use area inspections shall be based on the complexity and risk of each use area. Use areas may be aggregated to combine acreage for calculation or observation purposes. Use area monitoring shall include the following parameters:

Parameter	Units	Sample Type	Sampling Frequency[a]	Reporting Frequency
Recycled Water User	--	--	--	Annually
Recycled Water Flow	gpd[b]	Meter[c]	Monthly	Annually
Acreage Applied[d]	Acres	Calculated	--	Annually
Application Rate	inches/acre/year	Calculated	--	Annually
Soil Saturation/Ponding	--	Observation	Quarterly	Annually
Nuisance Odors/Vectors	--	Observation	Quarterly	Annually
Discharge Off-Site	--	Observation	Quarterly	Annually
Notification Signs[e]	--	Observation	Quarterly	Annually

[a] Or less frequently if approved by the Regional Water Board Executive Officer.
[b] gpd denotes gallons per day.
[c] Meter requires meter reading, a pump run time meter, or other approved method.
[d] Acreage applied denotes the acreage to which recycled water is applied.
[e] Notification signs shall be consistent with the requirements of California Code of Regulations, title 22, section 60310 (g).

COOLING/INDUSTRIAL/OTHER USES OF RECYCLED WATER

If recycled water is used for industrial, commercial cooling, or air conditioning in which a mist is generated, the cooling system shall comply with California Code of Regulations, title 22, section 60306 (c).

DUAL PLUMBED RECYCLED WATER SYSTEMS

If dual plumbed recycled water systems are proposed, consult with State Water Board for additional reporting, design, and operation requirements. The frequency of testing for cross connection and backflow prevention devices shall be as listed below or more frequently if specified by State Water Board.

Requirement	Frequency	Reporting Frequency
Cross Connection Testing	Four Years[a]	30 days/Annually[b]
Backflow Incident	--	24 hours from discovery
Backflow Prevention Device Testing and Maintenance	Annually[c]	Annually

[a] Testing shall be performed at least every four years, or more frequently at the discretion of the State Water Board Division of Drinking Water.

[b] Cross connection testing shall be reported pursuant to California Code of Regulations, title 22, section 60314. The report shall be submitted to State Water Board within 30 days and included in the annual report to the Regional Water Board.

[c] Backflow prevention device maintenance shall be tested by a qualified person as described in California Code of Regulations, title 17, section 7605.

REPORTING

In reporting monitoring data, the Administrator shall arrange the data in tabular form so that the date, data type (e.g., flow rate, bacteriological, etc.), and reported analytical or visual inspection results are readily discernible. The data shall be summarized to illustrate compliance with this General Order and NOA as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall be reported in the next regularly scheduled monitoring report and shall be included in calculations as appropriate.

During the life of this General Order, the State Water Board or Regional Water Board may require the Administrator to electronically submit reports using the State Water Board's California Integrated Water Quality System (CIWQS) program or an alternative database. Electronic submittal procedures will be provided when directed to begin electronic submittals. Until directed to electronically submit reports, the Administrator shall submit hard copy reports.

A. Annual Report

Annual Reports shall be submitted to the Regional Water Board by **April 1st following the monitoring year**. The Annual Report shall include the following:

1. A summary table of all recycled water Users and use areas. Maps may be included to identify use areas. Newly permitted recycled water Users and use areas shall be identified. When applicable, supplement to the Title 22 Engineering Report and the State Water Board approval letter supporting those additions shall be included.
2. A summary table of all inspections and enforcement activities initiated by the Administrator. Include a discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the NOA and/or General Order. Copies of documentation of any enforcement actions taken by the Administrator shall be provided.
3. 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.

4. Tabular and graphical summaries of all monitoring data collected during the year, including priority pollutant monitoring, if required.
5. The name and contact information for the recycled water operator responsible for operation, maintenance, and system monitoring.

A letter transmitting the annual report shall accompany each report. The letter shall summarize the numbers and severity of violations found during the reporting period, and actions taken or planned to correct the violations and prevent future violations. The transmittal letter shall contain the following penalty of perjury statement and shall be signed by the Administrator or the Administrator's authorized agent:

"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 the 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 fine and imprisonment."

The Administrator shall implement the above monitoring program.

ATTACHMENT C: STANDARD PROVISIONS AND REPORTING REQUIREMENTS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

A. GENERAL PROVISIONS

1. Duty to Comply

   a. An Administrator must comply with all of the conditions of this General Order and the MRP. Any General Order or MRP non-compliance constitutes a violation of the Water Code and/or Basin Plan and is subject to enforcement action.

   b. The filing of a request by the Administrator for a modification, revocation and reissuance, termination, a notification of planned changes, or anticipated non-compliance does not stay any General Order or MRP condition.

2. Duty to Mitigate

   The Administrator shall take all reasonable steps to minimize or prevent any discharge in violation of this General Order which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the State or Regional Water Board to determine the nature and impact of the violation.

3. Property Rights

   This General Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state, or local laws.

4. Duty to Provide Information

   The Administrator shall furnish, within a reasonable time, any information the Regional Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the General Order coverage. The Administrator shall also furnish to the Regional Water Board, upon request, copies of records required to be kept by its General Order.

5. Availability

   A copy of this General Order, the NOA, and the MRP shall be maintained at the Administrator facilities and be available at all times to operating personnel.

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

   a. All reports required by this General Order and other information requested by the Regional Water Board shall be signed by the Administrator principal owner or operator, or by a duly authorized representative of that person.

Duly authorized representative is one whose:

1) Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position), and

2) Written authorization is submitted to the Regional Water Board. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Regional Water Board prior to or together with any reports, information, or applications to be signed by an authorized representative.

b. Certification

All reports signed by a duly authorized representative under Provision C.1 shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2. Should the responsible reporting party discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. All violations of any requirements in this General Order, including Uniform Statewide Recycling Criteria requirements shall be submitted in the annual self-monitoring reports.

3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this General Order, including monitoring reports or reports of compliance or non-compliance shall be subject to enforcement procedures as identified in Section C of these Provisions.

C. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the State and Regional Water Board.
2. Any violation of this General Order constitutes violation of the Water Code and regulations adopted thereunder, and are the basis for enforcement action, General Order termination, General Order revocation and reissuance, denial of an application for General Order reissuance, or a combination thereof.
3. The State and Regional Water Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the Water Code for violation of this General Order.

ATTACHMENT D: DEFINITION OF TERMS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

Definitions noted with (*) are from the Uniform Statewide Recycling Criteria. The definitions are provided in this Attachment for convenience and are subject to revisions should the codes are formally revised. Please refer to the formal published codes [Health & Safety Code or Title 22 of the California Code Regulations] to obtain the latest version.

Administrator: An Administrator is an entity (Producer, Distributor, User, or legal entity) that submits an NOI and application fee to the Regional Water Board for coverage under this General Order. An Administrator may issue use permits for uses of recycled water consistent with the Uniform Statewide Recycling Criteria. An Administrator is responsible for coordinating, collecting data, and reporting the monitoring reports to the Regional Water Board.

Agronomic Rates: The rate 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.

Coagulated Wastewater *: Oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

Conventional Treatment *: A treatment chain that utilizes a sedimentation unit process between the coagulation and filtration processes and produces an effluent that meets the definition for disinfected tertiary recycled water.

Disinfected Secondary-23 *: Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters using the bacteriological results of the last seven days for which analyses have been completed, and the number of coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.

Disinfected Secondary-2.2 *: Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of coliform organisms does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.

Disinfected Tertiary Recycled Water *: A filtered and subsequently disinfected wastewater that meets the following criteria:

(a) The filtered wastewater which has been disinfected by either:

(1) A chlorine disinfection process following filtration that provides a contact time (CT, the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

(2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

(b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 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 does not exceed an MPN of 23 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.

Disinfected Wastewater *: Wastewater in which the pathogenic organisms have been reduced by chemical, physical or biological means. For the purposes of this General Order, disinfected wastewater is safe for use when applied consistent with the requirements of the Uniform Statewide Recycling Criteria.

Distributor: A private or public agency which receives recycled water from a Producer for the purpose of distribution to Users. In some cases, a distributor may provide additional treatment (such as disinfection) to meet the Uniform Statewide Recycling Criteria for its intended use, and distributes it to Users. A Distributor may not take physical possession of the recycled water and may act simply as an Administrator.

Dual Plumbed System *: A system that utilizes separate piping systems for recycled water and potable water within a facility and where the recycled water is used for either of the following purposes:

a) To serve plumbing outlets (excluding fire suppression systems) within a building or

b) Outdoor landscape irrigation at individual residences.

Filtered Wastewater *: An oxidized wastewater that meets the criteria in the subsection 1 or 2:

(1) Has been coagulated and passed through natural undisturbed soils or a bed of filter media pursuant to the following:

a. At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in travelling automatic backwash filters; and

b. So that the turbidity of the filtered wastewater does not exceed any of the following:

i. An average 2 NTU within a 24-hour period;

ii. 5 NTU more than 5 percent of the time within a 24-hour period; and

iii. 10 NTU at any time

(2) Has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:

a. 0.2 NTU more than 5 percent of the time within a 24-hour period; and

b. 0.5 NTU at any time

F-specific bacteriophage MS-2 *: A strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of E. Coli (ATCC 15597).

Incidental Runoff: Unintended small amounts (volume) of runoff from recycled water use areas, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area. Water leaving a recycled water use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it due to intentional overflow or application, or if it is due to negligence.

Legal Entity: A legal entity is an entity formed by a legal document (such as a joint powers agreement or equivalent contractual agreement) between a Producer, Distributor, irrigation district, or other entity. Similar to a Distributor, a legal entity may not take physical possession of the recycled water and may act simply as an Administrator.

Modal Contact Time *: The amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the effluent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

Nonrestricted Recreational Impoundment *: An impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.

NTU (Nephelometric Turbidity Unit) *: A measurement of turbidity as determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light scattered by the sample to the intensity of incident light as measured by method 2130 B. in Standard Methods for the Examination of Water and Wastewater, 20th ed.; Eaton, A.D., Clesceri, L.S., and Greenberg, A.E., Eds; American Public Health Association: Washington, DC, 1995; p.2-8.

Oxidized Wastewater *: Wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

Recycled Water Producer: Any entity that produces recycled water.

Recycled Water: Means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur therefore considered a valuable resource. (Wat. Code, § 13050(n).) Coverage under these Water Reclamation Requirements for Recycled Water Use (General Order) is limited to treated municipal wastewater for non-potable uses.

Recycled Water Supervisor: A person designated, by the Administrator that acts as the coordinator between the supplier and User. The Recycled Water Supervisor shall have authority to ensure recycled water use complies with the General Order, NOA, and the Uniform Statewide Recycling Criteria.

Regional Water Board: All references to a Regional Water Board include the Executive Officer, who may act for the Regional Water Board in carrying out this General Order. See Water Code section 13223.

Restricted access golf course *: A golf course where public access is controlled so that areas irrigated with recycled water cannot be used as if they were part of a park, playground, or school yard and where irrigation is conducted only in areas and during periods when the golf course is not being used by golfers.

Restricted Recreational Impoundment *: An impoundment of recycled water in which recreation is limited to fishing, boating, and other non-body-contact water recreational activities.

Spray Irrigation *: The application of recycled water to plants to maintain vegetation or support growth of vegetation by applying it from sprinklers.

State Water Board: All references to the State Water Board refer to divisions within the State Water Board whose roles in carrying out this General Order are as following:

- Division of Drinking Water reviews and approves (Title 22 Engineering Report and provide recommendations to the Regional Water Boards to address protection of public health. Division of Drinking Water is also processes any Notice of Intent submitted by a potential enrollee needing coverage from multiple Regional Water Boards.
- Division of Water Rights is responsible for approval of wastewater change petitions for water recycling projects that will decrease the amount of water in a stream or other waterway.

Surface Irrigation: Application of recycled water by means other than spraying such that contact between the edible portion of any food crop and recycled water is prevented (i.e., drip or flood irrigation).

Title 22 Engineering Report : Engineering report prepared to describe the manner by which a project or a water recycling program will comply with the Uniform Statewide Recycling Criteria.

Undisinfected Secondary *: Means oxidized wastewater.

Use Area: An area of recycled water use with defined boundaries. Agricultural use areas may contain one or more facilities (ditch, irrigated fields, pumping stations, etc.); use areas may also consist of an aggregate of small lots (e.g., residential/ industrial developments, roadway median irrigation, etc.).

Use Area Supervisor: A person designated, by the owner or manager of the property upon which recycled water will be applied, to discharge the responsibility of the owner or manager of the property for: (a) installation, operation and maintenance of a system that enables recycled water to be used; (b) for prevention of potential hazards; (c) implementing and complying with conditions of all Water Recycling Use Permits and associated documents; (d) coordination with the cross-connection control program of the supplier of drinking water and the local health/environmental health agency; (e) control of on-site piping to prevent any cross connections with potable water supplies; (f) routine inspection and maintenance of backflow prevention devices. (A Recycled Water Supervisor and Use Area Supervisor may be one in the same in some instances).

User: Users take physical possession of the recycled water from Producer and/or Distributor for an approved beneficial recycled water use consistent with the Uniform Statewide Recycling Criteria. Users may use the recycled water under either a Water Recycling Use Permit from an Administrator or act as an Administrator under this General Order.

Water Recycling Use Permit: A permit issued by the Administrator to the Recycled Water User, which is consistent with the requirements specified in this General Order.