CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

11020 Sun Center Drive, #200 Rancho Cordova, California 95670-6114
Phone (916) 464-3291 Ÿ Fax (916) 464-4645
http://www.waterboards.ca.gov/centralvalley

ORDER R5-2015-XXXX
NPDES NO. CA0079111

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF SACRAMENTO COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM SACRAMENTO COUNTY

The following Discharger is subject to waste discharge requirements (WDR's) set forth in this Order:

Table 1. Discharger Information

Discharger	City of Sacramento
Name of Facility	Combined Wastewater Collection and Treatment System
Facility Address	1395 35th Avenue
	Sacramento, CA 95822
	Sacramento County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
002	Combined Municipal and Industrial Wastewater and Stormwater	38º 31' 09"	121º 31' 26"	Sacramento River
003	Combined Municipal and Industrial Wastewater and Stormwater	38º 31' 23"	121º 31' 25"	Sacramento River
004	Combined Municipal and Industrial Wastewater and Stormwater	38º 32' 52"	121º 30' 37"	Sacramento River
005	Combined Municipal and Industrial Wastewater and Stormwater	38º 32' 51"	121º 30' 37"	Sacramento River
006	Combined Municipal and Industrial Wastewater and Stormwater	38º 34' 18"	121º 30' 48"	Sacramento River
007	Combined Municipal and Industrial Wastewater and Stormwater	38º 34' 19"	121º 30' 47"	Sacramento River

Table 3. Administrative Information

This Order was adopted on:	**<Adoption Date>**
This Order shall become effective on:	**<Effective Date>**
This Order shall expire on:	**<Expiration Date>**
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDR's in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	**[Choose: 180 days prior to the Order expiration date OR <insert date>]**
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Major discharge

I, Pamela Creedon, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **[DATE]**.

_____
PAMELA C. CREEDON, Executive Officer

CONTENTS

I. Facility Information 3
II. Findings 3
III. Discharge Prohibitions 4
IV. Effluent Limitations and Discharge Specifications 5
A. Effluent Limitations – Discharge Points 002 (CWTP), 003 (CWTP-Sump 104), and 006 (Pioneer Reservoir) 5
1. Final Effluent Limitations – Discharge Points 002, 003 and 006 5
2. Interim Effluent Limitations 6
B. Land Discharge Specifications – Not Applicable 6
C. Recycling Specifications – Not Applicable 6
V. Receiving Water Limitations 6
A. Surface Water Limitations 6
B. Groundwater Limitations – Not Applicable 8
VI. Provisions 8
A. Standard Provisions 8
B. Monitoring and Reporting Program (MRP) Requirements 12
C. Special Provisions 12
1. Reopener Provisions 12
2. Special Studies, Technical Reports and Additional Monitoring Requirements 13
3. Best Management Practices and Pollution Prevention 13
4. Construction, Operation and Maintenance Specifications 13
5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable 20
6. Other Special Provisions 20
7. Compliance Schedules 20
VII. Compliance Determination 21

TABLES

Table 1. Discharger Information 1
Table 2. Discharge Location 1
Table 3. Administrative Information 1
Table 4. Effluent Limitations 5

ATTACHMENTS

Attachment A – Definitions A-1
Attachment B – Map B-1
Attachment C – Flow Schematic C-1
Attachment D – Standard Provisions D-1
Attachment E – Monitoring and Reporting Program E-1
Attachment F – Fact Sheet F-1
Attachment G – Summary Of Reasonable Potential Analysis G-1

I. FACILITY INFORMATION

Information describing the City of Sacramento (Discharger), Combined Wastewater Collection and Treatment System (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Central Valley Water Board), finds:

A. Legal Authorities. This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

On 11 April 1994, USEPA adopted the Combined Sewer Overflow (CSO) Control Policy (59 FR 18688-18698). The CSO Control Policy was incorporated into the federal CWA by the Wet Weather Water Quality Act of 2000 [House Resolution (H.R.) 828) which is part of H.R. 4577, an omnibus funding bill. The CWA at Section 402(q)(1) now states: *"...Each permit ...pursuant to this Act…for a discharge from a municipal combined storm and sanitary sewer shall conform to the CSO Control Policy…"* The CSO policy establishes a consistent national approach for controlling discharges from CSOs to the nation's water through the NPDES permit program. CSOs are defined as the discharge from the combined sewer system at a point prior to the publicly-owned treatment works (POTW) treatment plant (see Federal Register, Vol. 59 No. 75, Tuesday, 19 April1994, Section LA.). The City's combined sewer system (CSS), including Pioneer Reservoir and the Combined Wastewater Treatment Plant (CWTP), is not a POTW and is not subject to requirements that apply only to POTWs. This Order implements the USEPA CSO Control Policy.

B. Background and Rationale for Requirements. The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, and V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Monitoring and Reporting. 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), *"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 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."*

The Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

E. Notification of Interested Parties. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

F. Consideration of Public Comment. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order R5-2010-0004 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for past violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in Section II.A, in a manner different from that described in this Order is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D). This Discharge Prohibition does not apply to discharges from Discharge Points 002, 003, 004, 005, 006, and 007 in accordance with Discharge Prohibitions III.D and III.E below.

C. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the Water Code.

D. The discharge to the Sacramento River is prohibited at the following discharge points unless the following specified conditions are met, or authorization has been granted[1]:

[1] The Discharger must obtain prior written approval from the Executive Officer to discharge from the CWTP, Pioneer Reservoir, or the combined sewer system (CSS) for maintenance or equipment testing, when the discharges would not be required by wet weather conditions.

1. **Sump 2 Bypass (Discharge Points 004 and 005), and Sump 1A Bypass (Discharge Point 007).** The treatment capacity of the Pioneer Reservoir (250 MGD) and the treatment capacity of the Combined Wastewater Treatment Plant (CWTP) (130 MGD) must be reached prior to discharge.

2. **Pioneer Reservoir (Discharge Point 006).** No discharge in excess of 250 million gallons per day (MGD) unless available storage at the CWTP has been maximized.

E. Unless approved by the Executive Officer[2], discharges from Discharge Points 002, 003, 004, 005, 006, and/or 007 to surface waters or surface water drainage courses is prohibited during non-storm events.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 002 (CWTP), 003 (CWTP-Sump 104), and 006 (Pioneer Reservoir)

1. Final Effluent Limitations – Discharge Points 002, 003 and 006

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 002, 003, and 006, with compliance measured at Monitoring Locations EFF-002, EFF-003, and EFF-006, respectively, as described in the Monitoring and Reporting Program:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4:

Table 4. Effluent Limitations

Constituent	Units	Effluent Limitations			
		Storm Year[1] Average	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	100[2,3]	--	--	--
Settleable Solids	ml/L	--	1.0[3]	--	--
Chlorine, Total Residual	mg/L	--	0.019	--	--
pH	standard units	--	--	6.0	8.5

[1] A storm year is defined as 1 October through 30 September of the following year.
[2] In addition, two consecutive samples shall not exceed 150 mg/L.
[3] Applicable to Discharge Point 006 (Pioneer Reservoir) for flows of 250 MGD or less and for all flows from Discharge Points 002 and 003.

b. The Discharger shall eliminate or capture for treatment at least 85 percent, by volume, of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis. Combined sewage captured for treatment shall receive, at a minimum, primary clarification or equivalent, solids and floatables disposal, and disinfection at the CWTP, Pioneer Reservoir, and/or the Sacramento Regional Wastewater Treatment Plant.

c. **Temperature.** The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.

[2] The Discharger must obtain prior written approval from the Executive Officer to discharge from the combined sewer system (CSS), including the CWTP and Pioneer Reservoir, for maintenance or equipment testing, when the discharges would not be required by wet weather conditions.

d. **Fecal Coliform Organisms.** Effluent fecal coliform organisms shall not exceed:

i. 1,000 MPN/100 mL in any three consecutive samples; and

ii. 200 MPN/100 mL, as a storm year median (1 October through 30 September).

e. **Chlorpyrifos and Diazinon.** Effluent chlorpyrifos and diazinon concentrations shall not exceed the sum of one as defined below:

i. **Average Monthly Effluent Limitation (AMEL)**

$$S_{AMEL} = \frac{C_{D\ M-AVG}}{0.08} + \frac{C_{C\ M-AVG}}{0.012} \leq 1.0$$

$C_{D\ M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.

$C_{C\ M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

ii. **Maximum Daily Effluent Limitation (MDEL)**

$$S_{AWEL} = \frac{C_{D\ D-MAX}}{0.14} + \frac{C_{C\ D-MAX}}{0.021} \leq 1.0$$

$C_{D\ D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L.

$C_{C\ D\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L.

f. **Methylmercury.** Effective 31 December 2030, for a calendar year, the total combined methylmercury loading from Discharge Points 002, 003, and 006 shall not exceed 0.53 grams, in accordance with the Delta Mercury Control Program.

2. Interim Effluent Limitations

a. **Mercury, Total.** Effective immediately, and until 31 December 2030, the storm-year total mercury loading from Discharge Points 002, 003, and 006 shall not exceed 341 grams. This interim effluent limitation shall apply in lieu of the final effluent limits for methylmercury (Section IV.A.1.f).

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the Sacramento River:

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.

4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.

5. **Dissolved Oxygen.** The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5**.**
9. **Pesticides:**
    a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
    b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
    c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer;
    d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);
    e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
    f. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCL's) set forth in CCR, Title 22, division 4, chapter 15; nor
    g. Thiobencarb to be present in excess of 1.0 µg/L.
10. **Radioactivity:**
    a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
    b. Radionuclides to be present in excess of the MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.
11. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
12. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
13. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
14. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.

15. **Temperature.** The discharge shall not cause the following in the Sacramento River:
    a. The creation of a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of the river channel at any point.
    b. A surface water temperature rise greater than 4°F above the natural temperature of the receiving water at any time or place.
16. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
17. **Turbidity:**
    a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;
    b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;
    c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;
    d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor
    e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.
2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
    a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26. (Applicable to POTWs only. The CSS is not a POTW, thus this provision is not applicable to the CSS.)
    b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
        i. violation of any term or condition contained in this Order;
        ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
        iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
        iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

i. *New regulations.* New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

ii. *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

iii. *Change in sludge use or disposal practice.* Under 40 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Central Valley Water Board may review and revise this Order at any time upon application of any affected person or the Central Valley Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Central Valley Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

ii. Controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system. (Applicable to POTWs only. The CSS is not a POTW, thus this provision is not applicable to the CSS.)

h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Safeguard to electric power failure:

i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

k. A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Central Valley Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report. (Applicable to POTWs only. The CSS is not a POTW, thus this provision is not applicable to the CSS.)

l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211). (Applicable to POTWs only. The CSS is not a POTW, thus this provision is not applicable to the CSS.)

o. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this Facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, or receiving water limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E.

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including, but not limited to:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

c. **Mercury.** The Basin Plan's Delta Mercury Control Program was designed to proceed in two phases. After Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers modification to the Delta Mercury Control Program. This Order may be reopened to address changes to the Delta Mercury Control Program.

d. **Compliance with State-Wide Sanitary Sewer System General Order.** The Facility is not currently subject to Order No. 2006-0003-DWQ, a Statewide General WDR for Sanitary Sewer Systems. If the State Water Board revises or reissues Order No. 2006-0003-DWQ during the term of this Order to extend coverage to the

Facility, this Order may be reopened and revised to ensure consistency with and eliminate duplication of any applicable provisions and/or requirements.

e. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution No. R5-2013-0098 amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Phase 1 Methylmercury Control Study.** In accordance with the Basin Plan's Delta Mercury Control Program and the compliance schedule included in this Order for methylmercury (Section VI.C.7.a), the Discharger shall continue to evaluate existing control methods and, as needed, develop additional control methods that could be implemented to achieve the methylmercury waste load allocation. A work plan was submitted by the Discharger on 19 April 2013. The study work plan was reviewed by a Technical Advisory Committee (TAC) and Central Valley Water Board staff. The Discharge submitted an updated work plan on 17 October 2013, and it was approved by the Executive Officer on 7 November 2013. The Discharger is currently implementing the study and a progress report shall be submitted by **20 October 2015**.

The Study Final Report shall include a description of methylmercury and/or inorganic (total) mercury management practices identified in Phase 1; an evaluation of the effectiveness, costs, potential environmental effects, and overall feasibility of the control actions. The Study Final Report shall also include proposed implementation plans and schedules to comply with methylmercury allocations as soon as possible but no later than 2030. The Study Final Report shall be submitted to the Central Valley Water Board by **20 October 2018**.

The Executive Officer may, after public notice, extend the due date up to 2 years if the Discharger demonstrates it is making significant progress towards developing, implementing and/or completing the Study and reasonable attempts have been made to secure funding for the Study, and the Discharger experienced severe budget shortfalls.

3. Best Management Practices and Pollution Prevention

a. **Mercury Exposure Reduction Program.** The Discharger shall participate in a Mercury Exposure Reduction Program (MERP) in accordance with the Basin Plan's Delta Mercury Control Program. The Discharger elected to provide financial support in the collective MERP with other Delta dischargers, rather than be individually responsible for any MERP activities. The objective of the MERP is to reduce mercury exposure of Delta fish consumers most likely affected by mercury. The October 2013 MERP Workplan was approved by the Executive Officer on 22 October 2013. The Discharger shall continue to participate financially in the group effort to implement the work plan.

4. Construction, Operation and Maintenance Specifications

The Discharger must adhere to the following provisions to constitute compliance with the U.S. EPA Combined Sewer Overflow (CSO) Control Policy requirements for control of discharges from the Facility.

a. **Combined Wastewater Control System Plan of Operations.** The Discharger shall revise and update as necessary their Combined Wastewater Control System Plan of Operations to ensure compliance with the Nine Minimum Controls and Long-Term Control Plan (LTCP) requirements specified in Sections VI.C.4.b and VI.C.4.c below. The Combined Wastewater Control System Plan of Operations shall specify the procedures to be used by the Discharger to manage the CSS. The Combined Wastewater Control System Plan of Operations shall clearly establish operation, maintenance, and inspection procedures to maximize the removal of pollutants during and after each precipitation event using all available facilities within the combined wastewater collection and treatment system, with the goal of achieving the maximum treatment possible and minimizing CSO's and CSS outflows.

The Discharger shall operate the Facility in conformance with the Combined Wastewater Control System Plan of Operations and shall report any variation from the Plan in the next annual monitoring report as required in Attachment E (Section X.B). Any significant modifications to the Combined Wastewater Control System Plan of Operations that could impact discharge quantity or discharge quality must be submitted for review and approval by the Executive Officer. If within 30 days the Discharger has not received a response from the Executive Officer, then the Discharger may implement the modifications as proposed. Minor modifications to the Plan of Operations will be included in the annual reports.

b. **Nine Minimum Controls and CSS Outflow Controls.** The Discharger shall implement and comply with the following requirements:

i. **Conduct Proper Operations and Regular Maintenance Programs**. The Discharger shall implement the Combined Wastewater Control System Plan of Operations that must include the elements listed in this section. The Discharger shall update the Combined Wastewater Control System Plan of Operations to include any changes to the system, or operation and maintenance procedures. The Discharger shall keep records to document the implementation of the Combined Wastewater Control System Plan of Operations and submit such documentation in accordance with the requirements specified in the Monitoring and Reporting Program (Attachment E) of this Order.

(a) **Organizational Structure for the Combined Sewer System**. The Combined Wastewater Control System Plan of Operations shall include an organizational structure (shown with an organizational chart or other documents) that provides the names and telephone numbers of key personnel, the chain of command, and the relationships among various program components (e.g., operations, maintenance). In addition, the organizational structure should establish clear lines of communication, authority, and responsibility.

The Discharger shall designate the key personnel responsible for the combined wastewater collection and treatment system. These key personnel shall serve as the contacts for the CSO's and CSS outflows from the combined wastewater collection and treatment system. The Discharger shall notify the Central Valley Water Board within 90 days of new key personnel and update the organizational structure as necessary.

(b) **Inspection and Maintenance of the CSS**. The Discharger shall:

(1) Describe in the Combined Wastewater Control System Plan of Operations, the combined wastewater collection and treatment system maintenance program to be implemented. The maintenance program shall list and address at a minimum, the most critical elements of the combined wastewater collection and treatment system. “Critical elements” are those facilities that affect the performance of the combined wastewater collection and treatment system, the number and extent of CSS outflows and CSO’s, or CSS outflow and CSO pollutant levels. The list should include as appropriate, regulator structures, pumping stations, diversion structures, retention basins, sections of the CSS prone to sedimentation, all CSO discharge points, and the Pioneer Reservoir and CWTP primary treatment facilities. The list should include a physical description of each facility and its location.

At a minimum, the inspection and maintenance program shall include:

- A schedule for regular inspection and maintenance of all overflow structures, regulator, and pumping stations to ensure that they are in good working condition and adjusted to minimize overflows and outflows.
- An inspection schedule for each potential overflow discharge point (i.e., Discharge Points 002, 003, 004, 005, 006, and 007) and critical combined wastewater collection and treatment system facilities. This schedule shall specify at least one inspection per month during the dry weather season (1 May to 30 September) and more frequent inspection during the wet season (1 October to 30 April). The inspections shall include, but are not limited to, entering regulator structures if accessible, determining the extent of debris and grit build-up, and removing any debris that may constrict flow, cause blockage, and result in dry weather overflows. For overflow discharge points that are inaccessible, the Discharger may perform a visual check.
- Documentation of the presence of debris during inspections of these facilities, and removal of these wastes to avoid blockages during precipitation events.

(2) Record the results of the inspections and routine maintenance activities in a maintenance log.

(c) **Provision for Trained Staff**. The Discharger shall describe in the Combined Wastewater Control System Plan of Operations the number of full-time equivalents needed to operate, maintain, repair, and perform testing functions required to ensure compliance with the terms and conditions of this Order. The Combined Wastewater Control System Plan of Operations shall also describe the appropriate training required of each staff member to perform his/her responsibilities.

(d) **Allocation of Funds for Operation and Maintenance**. The Discharger shall document the funds available for combined wastewater collection and treatment system operation and maintenance (O&M) activities and the procedures for budgeting.

(e) **Untreated Discharges**. The Discharger shall provide in the Combined Wastewater Control System Plan of Operations, the procedures for when and under what circumstances Discharge Points 004, 005 and 007 are used, as well as the treatment (if any) that is provided prior to discharge to the Sacramento River.

(f) **Fats, Oil, and Grease (FOG) Control Program.** The Discharger shall continue to implement a FOG control program to minimize the discharge of FOG wastes from households, restaurants and other food establishments.

ii. **Maximize Use of the Collection System for Storage**

(a) The Discharger shall maximize the use of the collection system for storage. The Discharger shall balance the storage needs with the goal of preventing outflows of sewage from the collection system to City streets.

(b) Based on the results of the LTCP update required in Section VI.C.4.c. of this Order, the Discharger shall evaluate the need for and feasibility of increasing the storage capacity of the existing combined sewer system. The Discharger shall continue to maximize the in-line and off-line storage capacity of the combined sewer system.

(c) The Discharger shall keep records to document implementation of this control measure and submit them as part of the Nine Minimum Controls Annual Report required in the Monitoring and Reporting Program (Attachment E, Section X.D.3).

iii. **Review and Modify Pretreatment Program.** The Discharger shall continue implementation of pollution prevention programs and outreach initiatives to minimize the potential impact of non-domestic discharges on the CSO's. Based on the results of the LTCP update required in Section VI.C.4.c. of this Order, the Discharger shall also evaluate whether additional modifications to its existing pollution prevention programs, as well as the Sacramento Regional County Sanitation District's pretreatment program, are required to minimize CSO impacts from non-domestic discharges to the CSS.

iv. **Maximize Flow to POTW Treatment Plant**

(a) The Discharger shall operate the Facility at a maximum treatable flow during wet weather events. The Discharger shall report rainfall and flow data to the Central Valley Water Board as part of the Nine Minimum Controls Annual Report required in the Monitoring and Reporting Program (Attachment E, Section X.D.3).

(b) **Combined Wastewater Control System Plan of Operations.** The Discharger shall implement the Combined Wastewater Control System Plan of Operations to achieve the following objectives:

(1) Maximize the volume of wastewater treated at the Sacramento Regional Wastewater Treatment Plant (SRWTP), Pioneer Reservoir,

and the CWTP, consistent with the hydraulic capacities of the Discharger's storage, transport, treatment and disposal facilities, and

(2) Assure that all discharges from the diversion structure are first baffled to reduce floatable volume.

The Discharger shall maintain records documenting the achievement of these objectives, and provide them as part of the Nine Minimum Controls Annual Report required in the Monitoring and Reporting Program (Attachment E, Section X.D.3).

v. **Prohibit Combined Sewer Overflows During Dry Weather**

(a) Dry weather overflows from Discharge Points 002 through 007 are prohibited. The Discharger shall inspect all CSS overflow points in accordance with the requirements in Section VI.C.4.b.i.(b) above. All dry weather overflows must be reported to the U.S. EPA and the Central Valley Water Board within 24 hours of the Discharger becoming aware of the dry weather overflow. When the Discharger becomes aware of a dry weather overflow, the Discharger shall begin corrective actions immediately.

(b) The Discharger shall inspect the dry weather overflow point each subsequent day after the overflow until the overflow has been eliminated. The Discharger shall record in the inspection log each dry weather overflow event, as well as the cause, the estimated volume of the dry weather overflow, the corrective action taken, and the dates on which the overflow began and ended.

vi. **Control Solid and Floatable Materials in CSO's**

(a) The Discharger shall continue to implement measures to control solid and floatable materials in its CSO's.

(b) The Discharger shall:

(1) Ensure that all overflows from the diversion structures are baffled or that other means are used to reduce the volume of solid and floatable materials discharged to the Sacramento River.

(2) Remove solid and floatable materials captured in the storage and transport facilities in an acceptable manner prior to discharge to the Sacramento River.

vii. **Develop and Implement Pollution Prevention Program**

(a) The Discharger shall continue to implement a pollution prevention program focused on reducing to the greatest extent possible, the amount of contaminants that enter the CSS and the impacts of CSO's on the Sacramento River.

(b) As a part of the LTCP update required in Section VI.C.4.c. of this Order, the Discharger shall evaluate if existing pollution prevention programs should be modified, or new programs are required, to reduce the potential discharge of pollutants during precipitation events when CSO's are likely to occur.

(c) The Discharger shall keep records to document pollution prevention implementation activities and provide them as part of the Nine Minimum Controls Annual Report required in the Monitoring and Reporting Program (Attachment E, Section X.D.3).

viii. **Notify the Public of Outflows and CSOs**

(a) The Discharger shall implement its "Standard Operating Procedures for Sewer Overflow/Outflow Emergency Response" for CSS outflow notifications and the "Combined Wastewater Collection and Treatment System Plan of Operations" for CSO notifications to ensure that the public is receiving adequate notification of CSS outflows and CSO's in accordance with the U.S. EPA's CSO Control Policy and the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order 2006-0003-DWQ), revised Monitoring and Reporting Program Order WQ 2013-0058-EXEC, or any revisions thereof.

(b) The Discharger shall include as part of the public notification process, notification to downstream drinking water agencies whenever there is a CSS discharge to surface waters. At a minimum, the following agencies shall be notified: the Sacramento County Water Agency, the California Urban Water Agencies, the Contra Costa Water District, the Santa Clara Valley Water District, the Zone 7 Water Agency, the Alameda County Water District, and the Metropolitan Water District of Southern California.

ix. **Monitor to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls**

(a) The Discharger shall regularly monitor CSO outfalls to effectively characterize overflow impacts and the efficacy of CSO controls. The specific monitoring requirements for CSO's are provided in Attachment E (Monitoring and Reporting Program).

(b) The Discharger shall submit as part of its Nine Minimum Controls Annual Progress Report that is due on 30 January of each year (see Attachment E, Section X.D.3), a summary of existing monitoring data and an evaluation of the efficacy of CSO controls (including pollution prevention efforts) to minimize and/or prevent impacts from CSO's. If necessary, the Discharger shall propose revisions to the CSO control element (including the Nine Minimum Controls) to improve the efficiency and effectiveness of controls.

(c) **CSS Outflow Volume Estimates**. The Discharger shall continue to provide accurate and reasonable estimates of outflows from the CSS. These methods shall be included in the Standard Operating Procedures for Sewer Overflow/Outflow Emergency Response.

c. **Combined Sewer System Improvement Plan and Long-Term Control Plan**

i. **Combined Sewer System Improvement Plan (CSSIP)**. The Discharger shall continue implementation of the updated CSSIP with the following interim goals to be met as progress is made towards the final goal of minimizing street flooding during a 10-year storm event and to prevent structure flooding during the 100-year storm event:

- Obtaining protection from a 5-year storm in the six areas of worst flooding (including downtown, north of Capital park; U.C. Medical Center area; immediately south of Highway 80 between Riverside and Freeport; the area northeast of Highway 99 and Highway 80 interchange; the area northwest of Highway 99 and Highway 80 interchange; and the Land Park area);
- Obtaining protection from a 5-year storm throughout the CSS area;
- Obtaining protection from a 10-year storm in the six areas of worst flooding; and
- Obtaining the goal of protection from a 10-year storm event throughout the CSS.

As part of the Annual LTCP Progress Reports required in the Monitoring and Reporting Program (Attachment E, Section X.D.4), the Discharger shall report on the progress in achieving the interim goals listed above.

ii. **Long Term Control Plan (LTCP) Update**. The Discharger shall update its LTCP to ensure protection of the CSS and achieve the interim and final LTCP goals, as well as ensure that CSS discharges do not cause exceedance of applicable water quality objectives. The LTCP update shall be performed in accordance with the Discharger's July 2014 City of Sacramento Combined Sewer System Long Term Control Plan Update Work Plan and Schedule (Work Plan) provided as part of their ROWD and the U.S. EPA CSO Control Policy. The LCTP update must address the following elements:

(a) Characterization, Monitoring and Modeling

(b) Public Participation

(c) Consideration of Sensitive Areas

(d) Evaluation of Alternatives to Meet CWA Requirements

(e) Cost/Performance Considerations

(f) Operational Plan

(g) Maximizing Treatment at Existing POTW and Major CSS Facilities for Wet-Weather Flows

(h) Implementation Schedule

(i) Post-Construction Compliance Monitoring Program

(j) Evaluation and Assessment of Existing Wet-Weather Treatment and Conveyance Facilities

(k) Evaluation of the policies and procedures for allowing redevelopment and new development, including consideration for requiring new significant development/re-development projects to be serviced by a separate collection system for transport to a municipal wastewater treatment plant, to ensure protection of the CSS and achieve the interim and final LTCP goals, as well as ensure that CSS discharges do not cause exceedance of applicable water quality objectives.

The LTCP shall be completed and submitted to the Central Valley Region Board by **1 June 2018**.

5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable

6. Other Special Provisions

a. **Sludge/Biosolids Discharge Specifications**

i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy these specifications.

ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.

7. Compliance Schedules

a. **Compliance Schedule for Final Effluent Limitations for Methylmercury.** This Order requires compliance with the final effluent limitation for methylmercury by **31 December 2030**. The Discharger shall comply with the following time schedule to ensure compliance with the final effluent limitation:

Task	Date Due
Phase 1	
i. Submit Methylmercury Control Study Work Plan	**Complete**
ii. Implement Pollution Prevention Plan for Mercury[1]	**Complete**
iii. Implement Methylmercury Control Study Work Plan	**7 November 2013**
iv. Annual Progress Reports[2]	**30 January, annually**
v. Submit Methylmercury Control Study Progress Report	**20 October 2015**
vi. Submit Final Methylmercury Control Study	**20 October 2018[3]**
Phase 2	
vii. Implement methylmercury control programs	**TBD[4]**
viii. Full Compliance	**31 December 2030**

[1] As described in Section VI.B.4.b.vii of the Fact Sheet (Attachment F), the Discharger implements a mercury reduction strategy to reduce the discharge of mercury into the CSS. This pollution prevention program is implemented as part of the Nine Minimum Controls required by the U.S. EPA CSO Control Policy.

[2] Beginning **30 January 2016** and annually thereafter until the Facility achieves compliance with the final effluent limitations for methylmercury, the Discharger shall submit annual progress reports on pollution minimization activities implemented and evaluation of their effectiveness, including a summary of total mercury and methylmercury monitoring results.

[3] The Executive Officer may, after public notice, extend the due date for the Final Methylmercury Control Study up to 2 years if the Discharger demonstrates it is making significant progress towards developing,

implementing and/or completing the Study and reasonable attempts have been made to secure funding for the Study, and the Discharger experienced severe budget shortfalls.

[4] To be determined. Following Phase 1 the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations, final compliance date, etc. Consequently, the start of Phase 2 and the final compliance date is uncertain at the time this Order was adopted.

VII. COMPLIANCE DETERMINATION

A. Total Mercury Mass Loading Effluent Limitations (Section IV.A.2.a). The procedures for calculating mass loadings are as follows:

1. For Discharge Points 002, 003, and 006, the total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent monitoring data collected under the monitoring and reporting program, pretreatment program, and any special studies shall be used for these calculations. The total annual mass loading shall be the sum of the individual calendar months for Discharge Points 002, 003, and 006.

2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits or otherwise provide another statistical interpretation, which demonstrates compliance.

B. Total Residual Chlorine Effluent Limitations (Section IV.A.1.a). Monitoring for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination with the total residual chlorine effluent limitations. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the total residual chlorine effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations.

Any excursion above the maximum daily total residual chlorine effluent limitation is a violation. If the Discharger conducts monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a measured chlorine was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

C. Chlorpyrifos and Diazinon Effluent Limitations (Section IV.A.1.e). Compliance shall be determined by calculating the sum (S), as provided in this Order, with analytical results that are reported as “non-detectable” concentrations to be considered to be zero.

D. Temperature Effluent Limitation (Section IV.A.1.c). Compliance with the final effluent limitations for temperature shall be ascertained as follows:

1. For Discharge Point 002 or 003, using the effluent monitoring results at Monitoring Location EFF-002 or EFF-003 measured within one day of the receiving water monitoring results measured at Monitoring Location RSW-003.

2. For Discharge Point 006, using the effluent monitoring results at Monitoring Location EFF-006 measured within one day of the receiving water monitoring results measured at Monitoring Location RSW-001.

E. Use of Delta Regional Monitoring Program and Other Receiving Water Data to Determine Compliance with Receiving Water Limitations. Delta Regional Monitoring Program data and other receiving water monitoring data that is not specifically required to be conducted by the Discharger under this permit will not be used directly to determine that the discharge is in violation of this Order. The Discharger may, however, conduct any site-specific receiving water monitoring deemed appropriate by the Discharger that is not conducted by the Delta Regional Monitoring Program and submit that monitoring data. As described in section VIII of Attachment E, such data may be used, if scientifically defensible, in conjunction with other receiving water data, effluent data, receiving water flow data, and other pertinent information to determine whether or not a discharge is in compliance with this Order.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (m)
Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = m= Sx / n where: Sx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative
Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Combined Sewer System (CSS)
CSS is a wastewater collection system designed to carry sanitary sewage (consisting of domestic, commercial, and industrial wastewater) and storm water (surface drainage from rainfall or snowmelt) in a single pipe to a treatment facility. The City of Sacramento's CSS includes the collection system, pump stations, storage facilities, the CWTP/Pioneer Reservoir treatment facilities, and other miscellaneous ancillary facilities. The CSS is not a Publically Owned Treatment Works (POTW).

Combined Sewer Overflow (CSO)
A CSO is an authorized discharge to the Sacramento River from the CSS in accordance with this Order at Discharge Point(s) 002, 003, 004, 005, 006, and/or 007.

Combined Sewer System Outflow
CSS Outflows are releases of untreated sewage or combined sewage and storm water from the CSS due to backups/surcharging within the CSS (e.g., backups into buildings and on private property that are caused by blockages or flow conditions within the publicly-owned portion of the combined sewer system or surcharging that causes outflows from manholes). CSS outflows do not include combined sewer overflow (CSO) discharges from discharge points authorized under this Order (including Discharge Points 002 through 007).

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for

purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Fiscal Year
A fiscal year is defined as the period from 1 July through 30 June.

Inland Surface Waters
All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the n/2 and n/2+1).

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone
Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

Ocean Waters
The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent Pollutants
Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board (State Water Board) or Central Valley Water Board.

Satellite Collection System
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Central Valley Water Board Basin Plan.

Standard Deviation (s)
Standard Deviation is a measure of variability that is calculated as follows:

$$s = (å[(x - m)^2]/(n - 1))^{0.5}$$

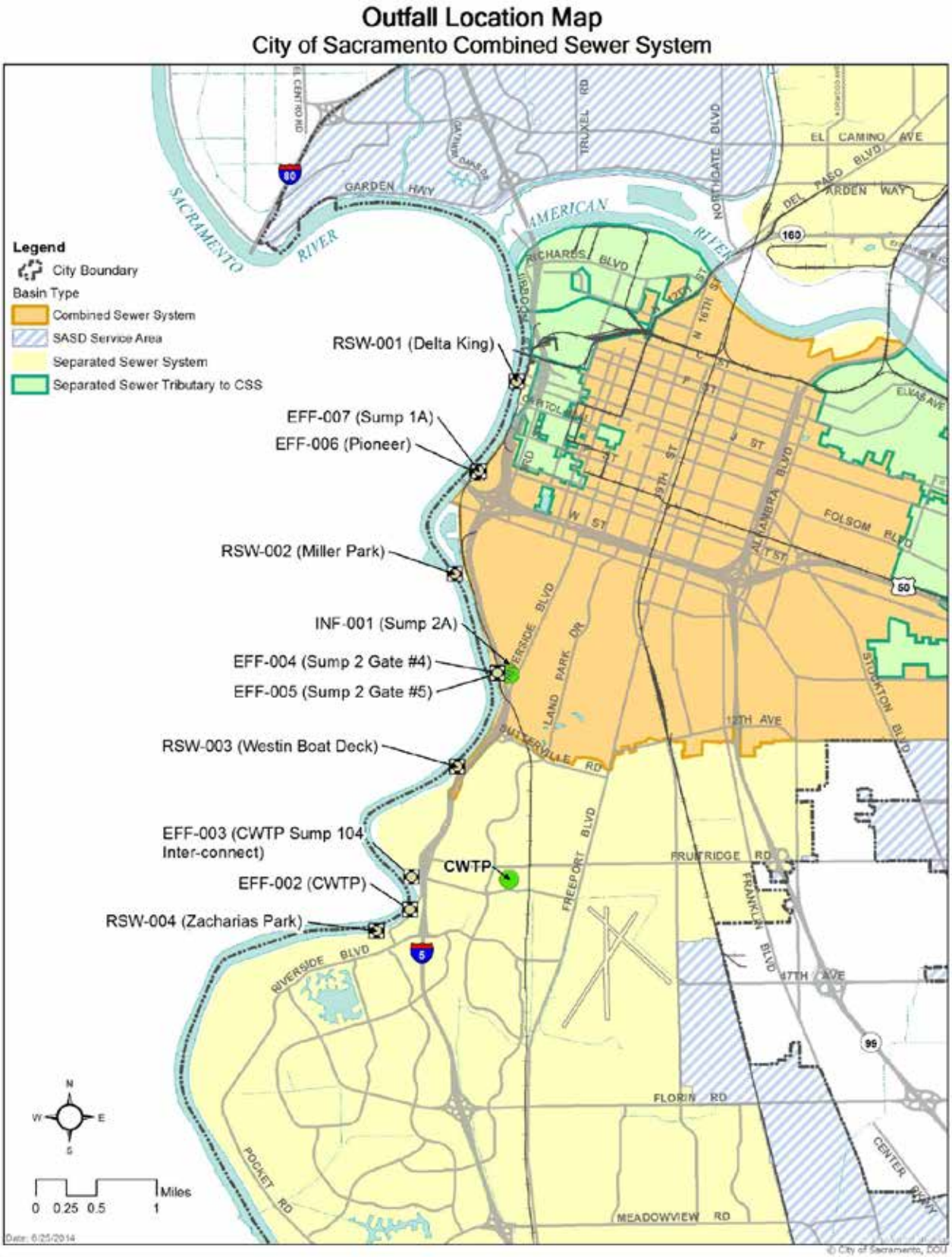
where:
x is the observed value;
m is the arithmetic mean of the observed values; and
n is the number of samples.

Storm Year
A storm year is defined as the period from 1 October through 30 September of the following year.

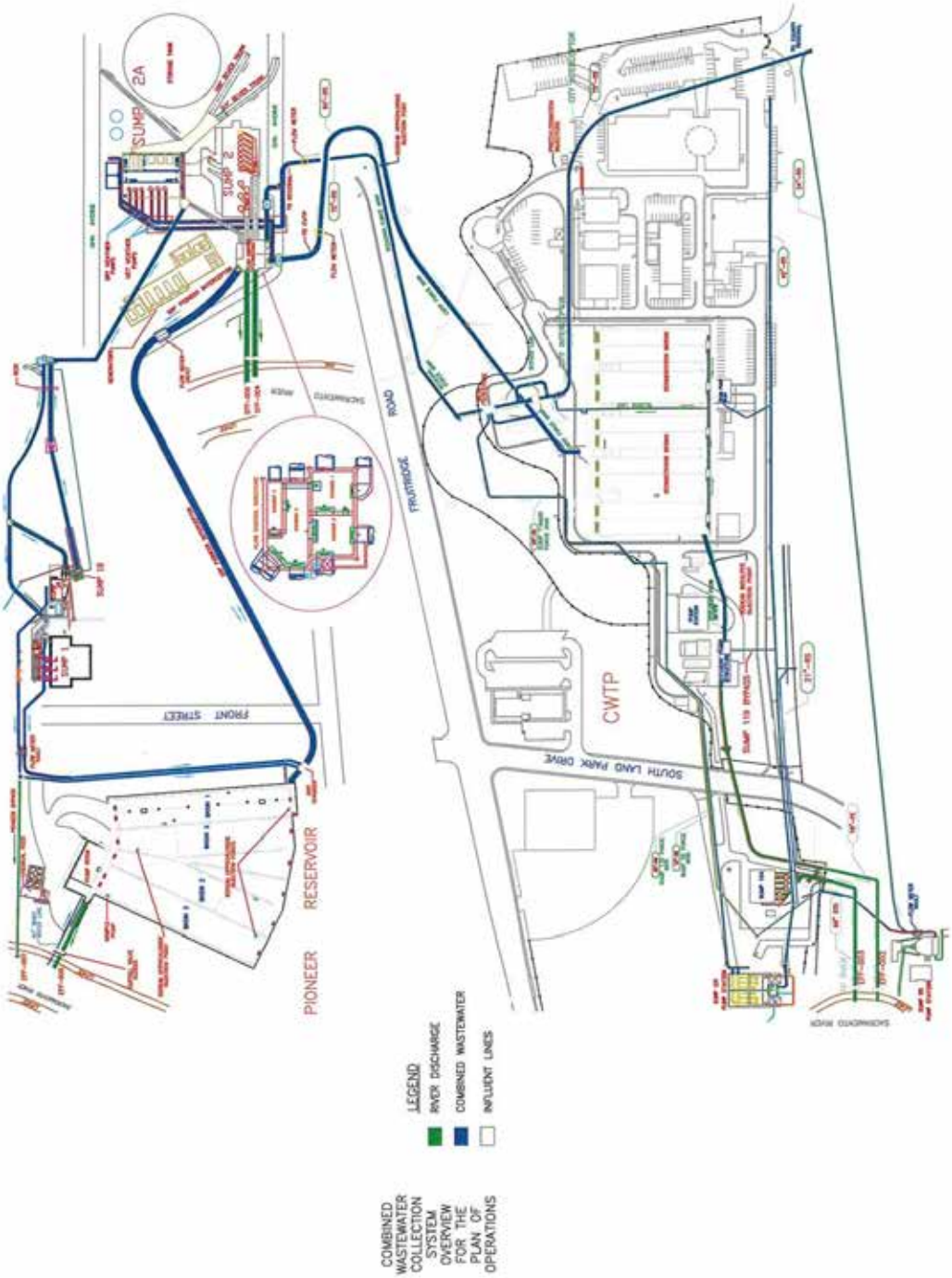
Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may

be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, § 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, § 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions
   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
   c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three

conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. Notice

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

   b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. § 122.41(j)(4); 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Central Valley Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, 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.) (40 C.F.R. § 122.22(b)(2)); and

   c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my

inquiry of the person or persons who manage 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." (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
   b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Central Valley Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board**,** State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTW's) – Not Applicable[1]

All POTW's shall provide adequate notice to the Central Valley Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

[1] Applicable to POTWs only. The CSS is not a POTW, thus this provision is not applicable to the CSS.

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Contents

I. General Monitoring Provisions E-2
II. Monitoring Locations E-3
III. Influent Monitoring Requirements E-4
A. Monitoring Location INF-001 ..... E-4
IV. Effluent Monitoring Requirements E-4
A. Monitoring Locations EFF-002 (CWTP), EFF-003 (CWTP - Sump104), and EFF-006 (Pioneer Reservoir) E-4
B. Monitoring Locations EFF-004, EFF-005, and EFF-007 ..... E-5
V. Whole Effluent Toxicity Testing Requirements E-6
VI. Land Discharge Monitoring Requirements – Not Applicable E-6
VII. Recycling Monitoring Requirements – Not Applicable E-6
VIII. Receiving Water Monitoring Requirements E-7
A. Monitoring Locations RSW-001, RSW-002, RSW-003, and RSW-004 ..... E-8
IX. Other Monitoring Requirements E-9
A. Effluent and Receiving Water Characterization E-9
X. Reporting Requirements E-13
A. General Monitoring and Reporting Requirements E-13
B. Self-Monitoring Reports (SMR's) E-13
C. Discharge Monitoring Reports (DMR's) E-16
D. Other Reports E-16
20 October 2018[1] E-19

Tables

Table E-1. Monitoring Station Locations E-3
Table E-2. Influent Monitoring E-4
Table E-3. Effluent Monitoring – Monitoring Locations EFF-002, EFF-003, and EFF-006 ..... E-4
Table E-4. Effluent Monitoring - Monitoring Locations EFF-004, EFF-005, and EFF-007 ..... E-5
Table E-5. Receiving Water Monitoring Requirements E-8
Table E-6. Effluent and Receiving Water Characterization Monitoring E-9
Table E-7. Monitoring Periods and Reporting Schedule E-14
Table E-8. Reporting Requirements for Special Provisions Reports E-19

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.

B. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen (DO), turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, DO, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

F. Laboratories analyzing monitoring samples shall be certified by DDW, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

G. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Resources Control Board at the following address:

State Water Resources Control Board Quality Assurance Program Officer
Office of Information Management and Analysis
State Water Resources Control Board
1001 I Street, Sacramento, CA 95814

H. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.

I. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	At a location that is representative of influent to the Pioneer Reservoir and Combined Wastewater Treatment Plant (CWTP) (Sump 2A) (Latitude 38° 32’ 54” N, Longitude 121° 30’ 29” W)
002	EFF-002	CWTP effluent downstream from last connection through which wastes can be admitted into the outfall (Latitude 38° 31’ 09” N, Longitude 121° 31’ 26” W)
003	EFF-003	CWTP (Storm Sump 104) effluent downstream from last connection through which wastes can be admitted into the outfall (Latitude 38° 31’ 23” N, Longitude 121° 31’ 25” W)
004	EFF-004	Sump 2/2A Gate #4 (Latitude 38° 32’ 52” N, Longitude 121° 30’ 37” W)
005	EFF-005	Sump 2/2A Gate #5 (Latitude 38° 32’ 51” N, Longitude 121° 30’ 37” W)
006	EFF-006	Pioneer Reservoir effluent downstream from last connection through which wastes can be admitted into outfall (Latitude 38° 34’ 18” N, Longitude 121° 30’ 48” W)
007	EFF-007	Pioneer Reservoir Combined Sump 1A Bypass (Latitude 38° 34’ 19” N, Longitude 121° 30’ 47” W)
--	RSW-001	Upstream of CSO Discharge Points 006 and 007, at the Delta King (Latitude 38° 34’ 58” N, Longitude 121° 30’ 26” W)
--	RSW-002	Downstream of Discharge Points 006 and 007, at Miller Park (Latitude 38° 33’ 35” N, Longitude 121° 31’ 01” W)
--	RSW-003	Downstream of Discharge Points 004 and 005, at Westin Boat Dock (Latitude 38° 32’ 12” N, Longitude 121° 30’ 60” W)
--	RSW-004	Downstream of Discharge Points 002 and 003, at Zacharias Park (Latitude 38° 31’ 01” N, Longitude 121° 31’ 45” W)

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Pioneer Reservoir and CWTP at Monitoring Location INF-001 as described in the following table. Samples shall be collected at approximately the same time as effluent samples (i.e., the same storm event or river discharge event) and should be representative of the influent for the period sampled. If no discharge from the CWTP (Discharge Points 002 or 003) and/or Pioneer Reservoir (Discharge Point 006) is occurring, no influent monitoring is required (and the Discharger shall indicate that no discharge occurred thus no monitoring was required in the monthly self-monitoring reports required in Section X.B. of this Monitoring and Reporting Program).

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous[1]	[3]
Total Suspended Solids	mg/L	Grab or flow-weighted Composite	1/Discharge Event[2]	[3]
Settleable Solids	ml/L	Grab or flow-weighted composite	1/Discharge Event[2]	[3]

[1] Flow monitoring is required continuously during the storm event that resulted in a discharge from Discharge Points 002, 003 and/or 006.
[2] At least one grab sample aliquot is required during the first 4 hours of a discharge from Discharge Points 002, 003 and/or 006. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. One or more grab or auto sampler aliquots should be composited based on the expected influent flow that is discharged when considering discharge duration and facility treatment. For the purpose of sample collection and reporting, an event is any discharge in a 24 hour period, including discharge interruptions. In cases where a discharge ceases for longer than six hours and begins again spanning more than one calendar day, a discharge event will be added.
[3] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations EFF-002 (CWTP), EFF-003 (CWTP - Sump104), and EFF-006 (Pioneer Reservoir)

1. The Discharger shall monitor CWTP effluent at Monitoring Locations EFF-002 and EFF-003, and Pioneer Reservoir effluent at Monitoring Location EFF-006, as follows. If no discharge from the CWTP (Discharge Points 002 and 003) and/or Pioneer Reservoir (Discharge Point 006) is occurring, no effluent monitoring is required (and the Discharger shall indicate that “no discharge occurred” in the monthly self-monitoring reports required in Section X.B. of this Monitoring and Reporting Program).

Table E-3. Effluent Monitoring – Monitoring Locations EFF-002, EFF-003, and EFF-006

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Maximum Event Flow Rate	MGD	Meter	Continuous[1]	[2]
Total Discharge Event Flow	Million gallons	Meter	Continuous[1]	[2]
Event Flow Duration	Hours	Calculate	Continuous[1]	[2]
Total Suspended Solids	mg/L	Flow-weighted Composite	1/Discharge Event[3]	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
	% Removal[4]	Calculate	1/Discharge Event[3]	[2]
Settleable Solids	mL/L	Grab	1/Discharge Event[3]	[2]
pH	standard units	Grab	1/Discharge Event[3]	[2]
Dissolved Oxygen	mg/L	Grab	1/Discharge Event[3]	[2]
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Discharge Event[3]	[2]
Chlorine, Total Residual	mg/L	Grab[7]	1/Discharge Event[3]	[2]
Dechlorination Agent Residual	mg/L	Grab[7]	1/Discharge Event[3]	[2]
Mercury, Total Recoverable	µg/L	Grab	1/Discharge Event[3]	[2,5]
Methylmercury	µg/L	Grab	1/Discharge Event[3]	[2,5]
Chlorpyrifos	µg/L	Grab	1/Discharge Event[3]	[2,6]
Diazinon	µg/L	Grab	1/Discharge Event[3]	[2,6]
Temperature	°F	Grab	1/Discharge Event[3]	[2]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Discharge Event[3]	[2]

[1] Flow monitoring is required continuously during the storm event that resulted in a discharge from Discharge Points 002, 003 and/or 006.
[2] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[3] At least one grab sample is required during the first 4 hours of a discharge. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. Composite samples can consist of one or more grab samples combined based on a discharge flow weighting. For the purpose of sample collection and reporting, an event is any discharge in a 24 hour period, including discharge interruptions. In cases where a discharge ceases for longer than six hours and begins again spanning more than one calendar day, a discharge event will be added.
[4] Report removal efficiency (%) for each storm event using influent (Monitoring Location INF-001) and effluent values for Discharge Points 002, 003 and 006.
[5] Unfiltered methylmercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1630/1631 (Revision E) with a reporting limit of 0.05 ng/L for methylmercury and 0.5 ng/L for total mercury.
[6] Diazinon and chlorpyrifos shall be analyzed using U.S. EPA Method 8141A, U.S. EPA Method 625M or equivalent GC/MS method to reporting limits of 0.020 µg/L and 0.010 µg/L, respectively.
[7] Total residual chlorine and dechlorination agent residual must be sampled at the same time.

B. Monitoring Locations EFF-004, EFF-005, and EFF-007

1. The Discharger shall monitor effluent from Sumps 2/2A effluent at Monitoring Location EFF-004 and EFF-005, and untreated effluent Pioneer Reservoir Combined Sump 1A at Monitoring Location EFF-007, as follows. If no discharge from Discharge Points 004, 005 and/or 007 is occurring, no effluent monitoring is required (and the Discharger shall indicate that “no discharge occurred” in the monthly self-monitoring reports required in Section X.B. of this Monitoring and Reporting Program).

Table E-4. Effluent Monitoring - Monitoring Locations EFF-004, EFF-005, and EFF-007

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Maximum Event Flow Rate	MGD	Meter	Continuous[1]	[2]
Total Discharge Event Flow	Million gallons	Meter	Continuous[1]	[2]
Event Flow Duration	Hours	Calculate	Continuous[1]	[2]
pH	standard units	Grab	1/Discharge Event[3]	[2]

Dissolved Oxygen	mg/L	Grab	1/Discharge Event[3]	[2]
Temperature	°F	Grab	1/Discharge Event[3]	[2]
Total Suspended Solids	mg/L	Flow-weighted Composite	1/Discharge Event[3]	[2]
Settleable Solids	mL/L	Grab	1/Discharge Event[3]	[2]
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Discharge Event[3]	[2]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Discharge Event[3]	[2]

[1] Flow monitoring is required continuously during the storm event that resulted in a discharge from Discharge Points 004, 005 and/or 007.
[2] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[3] At least one grab sample during the first 4 hours of a discharge. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. Composite samples can consist of one or more grab samples combined based on a discharge flow weighting. For the purpose of sample collection and reporting, an event is any discharge in a 24 hour period, including discharge interruptions. In cases where a discharge ceases for longer than six hours and begins again spanning more than one calendar day, a discharge event will be added.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing. Beginning with the 2015/2016 storm year (i.e. beginning 1 October 2015), the Discharger shall conduct annual acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform acute toxicity testing 1/storm year, concurrent with effluent ammonia sampling. The acute toxicity testing should be targeted for the first discharge event of the storm year.
2. *Sample Types* – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at at Monitoring Locations EFF-002, EFF-003, EFF-004, EFF-005, EFF-006 and EFF 007.
3. *Test Species* – Test species shall be fathead minnows (*Pimephales promelas*).
4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, preferably the next discharge event at the same location as the failed test.

B. WET Testing Reporting Requirements. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall implement the Receiving Water Monitoring Requirements in Attachment E, Section VIII.A of this Order. However, the Central Valley Water Board hereby authorizes the Discharger to participate in the Delta Regional Monitoring Program[1] in lieu of conducting the individual monitoring specified in Attachment E, Section VIII.A of this Order (including visual observations). The Discharger may choose to conduct all or part of the receiving water monitoring through the Delta Regional Monitoring Program, as approved by the Executive Officer. If the Discharger elects to cease all or part of the individual receiving water monitoring and instead participates in the Delta Regional Monitoring Program, the Discharger shall submit a letter signed by an authorized representative informing the Board that the Discharger will participate in the Delta Regional Monitoring Program, and the date on which individual receiving water monitoring required under Attachment E, Section VIII.A will cease, or be modified, and specific monitoring locations and constituent combinations that will no longer be conducted individually. To ensure consistency with this Order, discontinuing part or all of individual receiving water monitoring requires the Executive Officer's prior written approval of the Discharger's request. However, approval by the Executive Officer is not required prior to participating in the Delta Regional Monitoring Program.

If the Discharger participates in the Delta Regional Monitoring Program in lieu of conducting individual receiving water monitoring, the Discharger shall continue to participate in the Delta Regional Monitoring Program until such time as the Discharger informs the Board that participation in the Delta Regional Monitoring Program will cease and individual monitoring is reinstituted. After receiving written approval from the Executive Officer, receiving water monitoring under Attachment E, Section VIII.A is not required under this Order so long as the Discharger adequately supports the Delta Regional Monitoring Program. If the Discharger fails to adequately support the Delta Regional Monitoring Program, as defined by the Delta Regional Monitoring Program Steering Committee, the Discharger shall reinstitute individual receiving water monitoring under Attachment E, Section VIII.A upon written notice from the Executive Officer. During participation in the Delta Regional Monitoring Program, the Discharger may conduct and submit any or part of the receiving water monitoring included in this Monitoring and Reporting Program that is deemed appropriate by the Discharger.

Delta Regional Monitoring Program data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Permit. Delta Regional Monitoring Program monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta Regional Monitoring Program monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. Delta Regional Monitoring Program monitoring data, along with individual Discharger data, may be used to help establish background receiving water quality for reasonable potential analyses in an NPDES permit after evaluation of the applicability of the data for that purpose. Delta Regional Monitoring Program data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger's discharge and other point and non-point source discharges, receiving water flow volume, speed

[1] If the Discharger elects to participate in the Delta Regional Monitoring Program, it shall continue to submit receiving water data for temperature. At minimum, one representative upstream receiving water temperature sample shall be submitted annually to evaluate compliance with the temperature effluent limitation. Temperature data may be collected by the Discharger for this purpose or the Discharger may submit representative temperature data from the Delta Regional Monitoring Program or other appropriate monitoring programs (e.g., Department of Water Resources, United States Geological Survey, etc.).

and direction, and other information to determine the likely source or sources of a constituent that resulted in exceedance of a receiving water quality objective.

During the period of participation in the Delta Regional Monitoring Program, the Discharger shall continue to report any individually conducted receiving water monitoring data in the Electronic Self-Monitoring Reports (eSMR) according to the Monitoring and Reporting Program. In addition, 1) with each submitted eSMR, the Discharger's eSMR cover letter shall state that the Discharger is participating in the Delta Regional Monitoring Program in lieu of conducting the individual receiving water monitoring program required by the permit, and 2) with each annual report, the Discharger shall attach a copy of the letter originally submitted to the Central Valley Water Board describing the monitoring location(s) and constituent combinations that will no longer be conducted individually.

A. Monitoring Locations RSW-001, RSW-002, RSW-003, and RSW-004

1. The Discharger shall monitor the Sacramento River at Monitoring Locations RSW-001, RSW-002, RSW-003, and RSW-004 as follows. Samples shall be collected at Monitoring Locations RSW-001 and RSW-002 when discharge is occurring at Discharge Point(s) 006 and/or 007. Samples shall be collected at Monitoring Locations RSW-002 and RSW-003 when discharge is occurring at Discharge Point(s) 004 and/or 005. Samples shall be collected at Monitoring Locations RSW-003 and RSW-004 when discharge is occurring at Discharge Point(s) 002 and/or 003.

Table E-5. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	1/Discharge Event[1]	[2]
Temperature	°F (°C)	Grab	1/Discharge Event[1]	[2]
Dissolved Oxygen	mg/L	Grab	1/Discharge Event[1]	[2]
Turbidity	NTUs	Grab	1/Discharge Event[1]	[2]
Fecal Coliform	MPN/100 mL	Grab	1/Discharge Event[1]	[2]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Discharge Event[1]	[2]

[1] Within the first 4 hours of beginning of storm causing discharge at any of the Discharge Points (002, 003, 004, 005, 006, and/or 007) should safety conditions be satisfied, and daily if the discharge event is greater than 24 hours. Consideration will be given for events lasting less than 2 hours in duration due to the difficulty involved in collecting receiving water samples during short discharge events. For events that last less than 2 hours the Discharger shall make an effort to collect samples. Receiving water monitoring is not required if hazardous conditions threaten the health and safety of the sampling crew's ability to collect samples utilizing the appropriate preventative measures, If this is the case, the monitoring report shall contain a complete description of the reason samples were not collected.

[2] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

2. In conducting the receiving water sampling, a log shall be kept, as safety conditions permit, of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001 and RSW-004. Attention shall be given to the presence or absence of:

   a. Floating or suspended matter
   b. Discoloration
   c. Bottom deposits
   d. Aquatic life
   e. Visible films, sheens or coatings
   f. Fungi, slimes, or objectionable growths

g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monthly self-monitoring report required in Section X.B of this Monitoring and Reporting Program.

IX. OTHER MONITORING REQUIREMENTS

A. Effluent and Receiving Water Characterization

If the Discharger is participating in the Delta Regional Monitoring Program as described in Attachment E, Section VIII, the receiving water portion of the Effluent and Receiving Water Characterization Monitoring described below, is not required.

1. **Annual Monitoring.** Annual samples shall be collected from the effluent (Monitoring Locations EFF-002, EFF-003, EFF-004, EFF-005, EFF-006, and EFF-007) and upstream receiving water (Monitoring Location RSW-001) and analyzed for the constituents listed in the table below. Annual monitoring shall be conducted and the results of such monitoring be submitted to the Central Valley Water Board with the monthly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

2. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, such that any receiving water data collected characterizes any influence from the effluent.

3. **Sample Type.** All effluent and receiving water samples shall be taken as grab samples. However, the discharge may collect effluent composite samples if effluent variability is high enough and a grab sample will not adequately characterize the effluent quality.

Table E-6. Effluent and Receiving Water Characterization Monitoring

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
2- Chloroethyl vinyl ether	µg/L	Grab	1
Acrolein	µg/L	Grab	2
Acrylonitrile	µg/L	Grab	2
Benzene	µg/L	Grab	0.5
Bromoform	µg/L	Grab	0.5
Carbon Tetrachloride	µg/L	Grab	0.5
Chlorobenzene	µg/L	Grab	0.5
Chloroethane	µg/L	Grab	0.5
Chloroform	µg/L	Grab	2
Chloromethane	µg/L	Grab	2
Dibromochloromethane	µg/L	Grab	0.5
Dichlorobromomethane	µg/L	Grab	0.5
Dichloromethane	µg/L	Grab	2
Ethylbenzene	µg/L	Grab	2
Hexachlorobenzene	µg/L	Grab	1
Hexachlorobutadiene	µg/L	Grab	1
Hexachloroethane	µg/L	Grab	1
Methyl bromide (Bromomethane)	µg/L	Grab	1
Naphthalene	µg/L	Grab	10
Parachlorometa cresol	µg/L	Grab	--
Tetrachloroethene	µg/L	Grab	0.5
Toluene	µg/L	Grab	2
trans-1,2-Dichloroethylene	µg/L	Grab	1

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Trichloroethene	µg/L	Grab	2
Vinyl chloride	µg/L	Grab	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	--
Trichlorofluoromethane	µg/L	Grab	--
1,1,1-Trichloroethane	µg/L	Grab	0.5
1,1-Dichloroethane	µg/L	Grab	0.5
1,1-Dichloroethylene	µg/L	Grab	0.5
1,2-Dichloropropane	µg/L	Grab	0.5
1,3-Dichloropropylene	µg/L	Grab	0.5
1,1,2,2-Tetrachloroethane	µg/L	Grab	0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	Grab	0.5
1,2,4-Trichlorobenzene	µg/L	Grab	1
1,2-Dichoroethane	µg/L	Grab	0.5
1,2-Dichlorobenzene	µg/L	Grab	0.5
1,3-Dichlorobenzene	µg/L	Grab	0.5
1,4-Dichlorobenzene	µg/L	Grab	0.5
Styrene	µg/L	Grab	--
Xylenes	µg/L	Grab	--
1,2-Benzanthracene	µg/L	Grab	5
1,2-Diphenylhydrazine	µg/L	Grab	1
2-Chlorophenol	µg/L	Grab	5
2,4-Dichlorophenol	µg/L	Grab	5
2,4-Dimethylphenol	µg/L	Grab	2
2,4-Dinitrophenol	µg/L	Grab	5
2,4-Dinitrotoluene	µg/L	Grab	5
2,4,6-Trichlorophenol	µg/L	Grab	10
2,6-Dinitrotoluene	µg/L	Grab	5
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4-Chloro-3-methylphenol	µg/L	Grab	5
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10
4-Chlorophenyl phenyl ether	µg/L	Grab	5
Acenaphthene	µg/L	Grab	1
Acenaphthylene	µg/L	Grab	10
Anthracene	µg/L	Grab	10
Benzidine	µg/L	Grab	5
Benzo(a)pyrene (3,4-Benzopyrene)	µg/L	Grab	2
Benzo(g,h,i)perylene	µg/L	Grab	5
Benzo(k)fluoranthene	µg/L	Grab	2
Bis(2-chloroethoxy) methane	µg/L	Grab	5
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10
Bis(2-ethylhexyl) phthalate[2,3]	µg/L	Grab	5
Butyl benzyl phthalate	µg/L	Grab	10
Chrysene	µg/L	Grab	5
Di-n-butylphthalate	µg/L	Grab	10

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Di-n-octylphthalate	µg/L	Grab	10
Dibenzo(a,h)-anthracene	µg/L	Grab	0.1
Diethyl phthalate	µg/L	Grab	10
Dimethyl phthalate	µg/L	Grab	10
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum	µg/L	Grab	--
Antimony	µg/L	Grab	5
Arsenic	µg/L	Grab	10
Asbestos	µg/L	Grab	--
Barium	µg/L	Grab	--
Beryllium	µg/L	Grab	--
Cadmium	µg/L	Grab	0.5
Chromium (III)	µg/L	Grab	50
Chromium (VI)	µg/L	Grab	10
Copper	µg/L	Grab	5
Cyanide	µg/L	Grab	5
Fluoride	µg/L	Grab	--
Iron	µg/L	Grab	--
Lead	µg/L	Grab	0.5
Mercury[3]	µg/L	Grab	0.5
Manganese	µg/L	Grab	--
Molybdenum	µg/L	Grab	--
Nickel	µg/L	Grab	20
Selenium	µg/L	Grab	5
Silver	µg/L	Grab	1
Thallium	µg/L	Grab	1
Tributyltin	µg/L	Grab	--
Zinc	µg/L	Grab	20
4,4'-DDD	µg/L	Grab	0.05
4,4'-DDE	µg/L	Grab	0.05
4,4'-DDT	µg/L	Grab	0.01
alpha-Endosulfan	µg/L	Grab	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	Grab	0.01
Alachlor	µg/L	Grab	--
Aldrin	µg/L	Grab	0.005
beta-Endosulfan	µg/L	Grab	0.01
beta-Hexachlorocyclohexane	µg/L	Grab	0.005
Chlordane	µg/L	Grab	0.1

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
delta-Hexachlorocyclohexane	µg/L	Grab	0.005
Dieldrin	µg/L	Grab	0.01
Endosulfan sulfate	µg/L	Grab	0.05
Endrin	µg/L	Grab	0.01
Endrin Aldehyde	µg/L	Grab	0.01
Heptachlor	µg/L	Grab	0.01
Heptachlor Epoxide	µg/L	Grab	0.01
Lindane (gamma-Hexachlorocyclohexane)	µg/L	Grab	0.02
PCB-1016	µg/L	Grab	0.5
PCB-1221	µg/L	Grab	0.5
PCB-1232	µg/L	Grab	0.5
PCB-1242	µg/L	Grab	0.5
PCB-1248	µg/L	Grab	0.5
PCB-1254	µg/L	Grab	0.5
PCB-1260	µg/L	Grab	0.5
Toxaphene	µg/L	Grab	0.5
Atrazine	µg/L	Grab	--
Bentazon	µg/L	Grab	--
Carbofuran	µg/L	Grab	--
2,4-D	µg/L	Grab	--
Dalapon	µg/L	Grab	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	Grab	--
Di(2-ethylhexyl)adipate	µg/L	Grab	--
Dinoseb	µg/L	Grab	--
Diquat	µg/L	Grab	4
Endothal	µg/L	Grab	--
Ethylene Dibromide	µg/L	Grab	--
Methoxychlor	µg/L	Grab	--
Molinate (Ordram)	µg/L	Grab	--
Oxamyl	µg/L	Grab	--
Picloram	µg/L	Grab	--
Simazine (Princep)	µg/L	Grab	--
Thiobencarb	µg/L	Grab	--
2,3,7,8-TCDD (Dioxin)	µg/L	Grab	--
2,4,5-TP (Silvex)	µg/L	Grab	--
Diazinon[3]	µg/L	Grab	--
Chlorpyrifos[3]	µg/L	Grab	--
Ammonia (as N)[3]	mg/L	Grab	--
Boron	µg/L	Grab	--
Chloride	mg/L	Grab	--
Flow[3]	MGD	Grab	--
Hardness (as $CaCO_3$)	mg/L	Grab	--
Foaming Agents (MBAS)	µg/L	Grab	--
Mercury, Methyl[3]	ng/L	Grab	--
Nitrate (as N)	mg/L	Grab	--
Nitrite (as N)	mg/L	Grab	--
pH[3]	Std Units	Grab	--
Phosphorus, Total (as P)	mg/L	Grab	--
Specific conductance (EC)	µmhos/cm	Grab	--

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Sulfate	mg/L	Grab	--
Sulfide (as S)	mg/L	Grab	--
Sulfite (as SO_3)	mg/L	Grab	--
Temperature[3]	^oC	Grab	--
Total Dissolved Solids (TDS)	mg/L	Grab	--

[1] The reporting levels required in this table for priority pollutant constituents are established based on Section 2.4.2 and Appendix 4 of the SIP.

[2] In order to verify if bis (2-ethylhexyl) phthalate is truly present, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

[3] The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Tables E-3 and E-4, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "*Emergency Planning and Community Right to Know Act*" of 1986.

B. Self-Monitoring Reports (SMR's)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMR's are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs are required even if there is no discharge. If no discharge occurs during month, the monitoring report must be submitted stating that there has been no discharge.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR[2]
1/Year	Permit effective date	1 October through 30 September	30 January
1/Discharge Event[1]	Permit effective date	First day of calendar month through last day of calendar month	Submit with monthly SMR[2]

[1] For the purpose of sample collection and reporting, an event is any discharge in a 24 hour period, including discharge interruptions. In cases where a discharge ceases for longer than six hours and begins again spanning more than one calendar day, a discharge event will be added.
[2] Monthly SMRs are due the first day of second calendar month following month of sampling.

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current laboratory's Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

      For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Multiple Sample Data.** When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

6. The Discharger shall submit SMR's in accordance with the following requirements:

a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDR's; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

c. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its SMRs for which sample analyses were performed.

7. The Discharger shall submit in the SMR's calculations and reports in accordance with the following requirements:

a. **Turbidity Receiving Water Limitations**. The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in Section V.A.17.a-e. of the Limitations and Discharge Requirements.

b. **Temperature Effluent and Receiving Water Limitations**. To determine compliance with Effluent Limitation IV.A.1.c, the Discharger shall calculate and report the difference in the daily average effluent temperature at Monitoring Locations EFF-006 and RSW-001, Monitoring Locations EFF-003 and RSW-003, and Monitoring Locations EFF-002 and RSW-003 consistent with the Compliance Determination Language in Section VII.D of the Limitations and Discharge Requirements.

To determine compliance with Receiving Water Limitation V.A.15.b, the Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002, Monitoring Locations RSW-002 and RSW-003, and RSW-003 and RSW-004.

c. **Chlorpyrifos and Diazinon Effluent Limitations**. The Discharger shall calculate and report the value of S_{AMEL} and S_{AWEL} for the effluent, using the equation in Effluent Limitations IV.A.1.e and consistent with the Compliance Determination Language in Section VII.C of the Limitations and Discharge Requirements.

d. **Untreated Discharge Evaluation Report**. Following any discharges from Sump 2 Bypass (Discharge Points 004 and 005) and/or Sump 1A Bypass (Discharge Point 007), the Discharger shall prepare and submit a report to the Central Valley Water Board with the monthly SMR, that describes the circumstances under which the overflow(s) occurred. As part of this report, the Discharger shall evaluate whether the overflows could have been avoided with operational measures and infrastructure improvements, and propose as necessary any modifications necessary to the Combined Wastewater Control System Plan of Operations.

C. Discharge Monitoring Reports (DMR's)

1. The Discharger shall electronically submit DMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional information for DMR submittal in the event there will be a planned service interruption for electronic submittal. Hard copy submittals are not required.

D. Other Reports

1. **Combined Sewer System Outflow Reporting.** The Discharger shall comply with reporting requirements for combined sewer system outflows in accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order 2006-0003-DWQ), revised Monitoring and Reporting Program Order WQ 2013-0058-EXEC, or any revisions thereof.

2. **Nine Minimum Controls Annual Progress Report**. The Discharger shall submit documentation that demonstrates implementation of each of the nine minimum controls that includes the elements contained in Sections X.D.3.a through X.3.i below. The report will include annual operational and maintenance data as well as summaries of updates that are made to operational plans for the reporting year. The Discharger shall submit this documentation to the Central Valley Water Board on or before 30 January each year.

   a. **Proper operation and regular maintenance programs.** The Discharger shall submit:

      i. A list identifying critical combined wastewater collection and treatment system components requiring routine maintenance and operation.

      ii. An evaluation of operation and maintenance procedures performed during the previous fiscal year.

      iii. Estimated resources (manpower, equipment, and training) required for maintenance of the CSS and CSO structures during the previous fiscal year.

      iv. An organizational chart or diagram detailing names and telephone numbers of key personnel to contact regarding the plant for emergency and routine situations, the chain of command, names and general responsibilities of all persons employed at the Facility, and the relationship among various program components.

      v. A record of overflows that occurred during the previous storm year, including the date, location, duration, and volume of each overflow.

      vi. A summary of completed inspections and maintenance performed.

      vii. A status report on implementation of the Fats, Oils and Grease (FOG) control program.

viii. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

ix. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

b. **Maximization of the sewer collection system storage.** The Discharger shall submit:

i. A description of the actions taken to maximize collection system storage during the previous year.

ii. Schedules for completing any construction necessary to implement storage projects the Discharger previously committed to implement, including the current status of projects underway, final completion dates, and dates by which interim steps will be completed.

iii. The status of any recommendations for improved or increased storage projects as a result of the Long Term Control Plan (LTCP) Update as required in Section VI.C.4.c.ii of this Order.

c. **Review and modify the pretreatment program.** The Discharger shall submit:

i. Any Discharger-initiated changes to the Sacramento Regional County Sanitation District pretreatment program.

d. **Maximize flow to the POTW Treatment Plant**. The Discharger shall submit:

i. Rainfall and flow data associated with the discharge event resulting in any discharge from Discharge Points 002 through 007 during the previous storm year.

ii. Documentation that flows were maximized in accordance with the Combined Wastewater Control System Plan of Operations.

e. **Elimination of CSO's during dry weather**. The Discharger shall submit:

i. A summary of dry weather overflows that have occurred since its last report.

ii. The cause of, the estimated volume of, and the corrective actions taken to eliminate, each dry weather overflow that occurred since the last report.

iii. Description of the procedures used to detect dry weather overflows and notify the U.S. EPA and the Central Valley Water Board within 24 hours of detecting a dry weather overflow.

f. **Control of solid and floatable materials in CSO's**. The Discharger shall submit:

i. A description of control measures currently in place for limiting the volume of solid and floatable materials in the CSO's.

ii. The status of any recommendations to be implemented as a result of the LTCP Update as required in Section VI.C.4.c.ii of this Order.

g. **Pollution prevention programs to reduce contaminants in CSO's**. The Discharger shall submit:

i. Documentation of pollution prevention program actions taken since its last report.

ii. The status of any recommendations to be implemented as a result of the LTCP Update as required in Section VI.C.4.c.ii of this Order.

h. **Public notification.** The Discharger shall submit:

i. Any updated procedures for notifying governmental entities of outflows and CSO's, including the names and titles of the specific officials to be notified, the names and titles of the persons responsible for making the notifications and the timeframes within which the notifications must be made.

ii. Documentation that Discharge Points 002 through 007 are posted with signs informing the public of potential health risks and adverse environmental impacts. If these discharge points are already posted, the Discharger shall submit the language that is on each sign.

iii. Any updates to the public notification procedures in the "Standard Operating Procedures for Sewer Overflow/Outflow Emergency Response" intended to provide the public with adequate notification of CSO's and CSS outflows, including appropriate warnings regarding potential exposure and public health hazards to be avoided.

i. **Monitoring to characterize CSO impacts and efficacy of CSO controls**. The Discharger shall submit:

i. A summary of CSO discharge occurrences during the previous storm year (total number of events and frequency, duration, volume and pollutant loadings of each event).

ii. Summary of water quality data collected during the previous storm year for impacted receiving water bodies.

iii. Summary of receiving water impacts during the previous storm year (e.g., beach closings, floatable material wash-ups, fish kills) as a result of any discharge from Discharge Points 002 through 007.

iv. If requested in writing by the Central Valley Regional Board, a summary of any violations that have occurred and the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements shall be included.

3. **Annual Long-Term Control Program Progress Reports.** By **30 January of each year**, the Discharger shall prepare and submit annual LTCP progress reports. The annual LTCP report shall include, at a minimum, the following for the reporting year:

a. Description of overall progress and proposed schedule for achieving each of the LTCP interim and final goals as described in Section VI.C.4.c. of this Order.

b. Status of current on-going CSS improvement and rehabilitation projects initiated in the previous fiscal year or earlier. For each project provide:

i. Type of Project (Rehabilitation and Repair; Inflow and Infiltration Reduction; Storage; Green Pilot Projects)

ii. Date Budgeted/Approved

iii. Date Started (Design and Construction)

iv. Current Status (In Design or in Construction)

v. Original Planned Completion Date

vi. Construction Completion Date (if applicable, include explanation for any delays from the original planned completion date)

vii. Description of Completed Projects (e.g., plant bar screens need modification due to additional wet weather flows and debris)

c. Planned improvement and rehabilitation projects to be implemented in the upcoming fiscal year. For each project provide:

i. Type of Project (Rehabilitation and Repair; Inflow and Infiltration Reduction; Storage; Green Pilot Projects)

ii. Date Budgeted/Approved

iii. Planned Start Date (Design)

iv. Planned Completion Date

v. Comments

d. Status of progress for the LTCP update required in Section VI.C.4.c.ii of this Order. As part of this status report on the LTCP update, the Discharger shall describe progress in accordance with each of the activities described in the proposed LTCP update schedule contained in the Discharger's work plan (as provided on page E-8 of the June 2014 City of Sacramento Combined Sewer System Long Term Control Plan Update Work Plan and Schedule).

4. **Special Study Reports and Progress Reports**. As specified in the compliance schedules required in the Special Provisions contained in section VI of the Order, special study and progress reports shall be submitted in accordance with the following reporting requirements. At a minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

Table E-8. Reporting Requirements for Special Provisions Reports

Special Provision	Reporting Requirements
Methylmercury Control Study, Progress Report (Special Provision VI.C.2.b)	20 October 2015[1]
Methylmercury Control Study, Final Report (Special Provision VI.C.2.b)	20 October 2018[1]

[1] Reporting requirements and due dates may be modified with Executive Officer approval.

5. Within 60 days of permit adoption, the Discharger shall submit a report outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables E-2, E-3, E-4 and E-5. In addition, no less than 6 months prior to conducting the effluent and receiving water characterization monitoring required in Section IX.A, the Discharger shall submit a report outlining RL's, MDL's, and analytical methods for the constituents listed in Table E-6. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for priority pollutant constituents shall be based on the Minimum Levels (ML's) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RL's, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical

methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-6 provides required maximum reporting levels in accordance with the SIP.

ATTACHMENT F – FACT SHEET

Contents

I. Permit Information F-3
II. Facility Description F-4
III. Applicable Plans, Policies, and Regulations F-12
A. Legal Authorities F-12
B. California Environmental Quality Act (CEQA) F-12
C. State and Federal Laws, Regulations, Policies, and Plans F-12
D. Impaired Water Bodies on CWA 303(d) List F-15
E. Other Plans, Polices and Regulations – Not Applicable F-16
IV. Rationale For Effluent Limitations and Discharge Specifications F-16
A. Discharge Prohibitions F-17
B. Technology-Based Effluent Limitations F-18
1. Scope and Authority F-18
2. Applicable Technology-Based Effluent Limitations F-19
C. Water Quality-Based Effluent Limitations (WQBEL's) F-19
1. Scope and Authority F-19
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-20
3. Determining the Need for WQBEL's F-20
4. WQBEL Calculations F-32
5. Whole Effluent Toxicity (WET) F-33
D. Final Effluent Limitation Considerations F-34
1. Mass-based Effluent Limitations F-34
2. Averaging Periods for Effluent Limitations F-34
3. Satisfaction of Anti-Backsliding Requirements F-34
4. Antidegradation Policies F-35
5. Stringency of Requirements for Individual Pollutants F-37
E. Interim Effluent Limitations F-39
F. Land Discharge Specifications – Not Applicable F-41
G. Recycling Specifications – Not Applicable F-41
V. Rationale for Receiving Water Limitations F-41
A. Surface Water F-41
B. Groundwater – Not Applicable F-44
VI. Rationale for Provisions F-44
A. Standard Provisions F-44
B. Special Provisions F-44
1. Reopener Provisions F-44
2. Special Studies and Additional Monitoring Requirements F-45
3. Best Management Practices and Pollution Prevention F-46
4. Construction, Operation, and Maintenance Specifications F-46
5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable F-54
6. Other Special Provisions F-54
7. Compliance Schedules F-54
VII. Rationale for Monitoring and Reporting Requirements F-56
A. Influent Monitoring F-56
B. Effluent Monitoring F-56
C. Whole Effluent Toxicity Testing Requirements F-57
D. Receiving Water Monitoring F-57

1. Surface Water F-57
E. Other Monitoring Requirements F-59
VIII. Public Participation F-59
A. Notification of Interested Parties F-60
B. Written Comments F-60
C. Public Hearing F-60
D. Reconsideration of Waste Discharge Requirements F-60
E. Information and Copying F-61
F. Register of Interested Persons F-61
G. Additional Information F-61

Tables

Table F-1. Facility Information F-3
Table F-2. CSS Remote Storage Facilities F-5
Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002 ..... F-10
Table F-4. Historic Effluent Limitations and Monitoring Data – Discharge Point 006 ..... F-10
Table F-5. Basin Plan Beneficial Uses F-13
Table F-6. 303 (d) List for the Sacramento River Delta Waterways, Northern Portion) F-16
Table F-7. Number of CSO Discharges Reported During the Term of Order R5-2010-0004 ..... F-21
Table F-8. Detailed Summary of Reported CSO Discharges Reported During the Term of Order R5-2010-0004 ..... F-22
Table F-9. Summary Statistics Related to CSO Discharges F-23
Table F-10. Example Capital Improvement Projects F-24
Table F-11. Summary of Water Quality-Based Effluent Limitations F-32
Table F-12. Reported Acute Whole Effluent Toxicity Data F-33
Table F-13. Final Effluent Limitations - Discharge Points 002, 003, and 006 ..... F-38
Table F-14. Summary of Facility Performance for Total Mercury F-40

ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger. Sections of the permit’s standard language that are specific to publicly-owned treatment works are not applicable to combined sewer systems.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5A340114001
CIWQS Facility Place ID	215236
Discharger	City of Sacramento
Name of Facility	Combined Wastewater Collection and Treatment System
Facility Address	1395 35th Avenue
	Sacramento, CA 95822
	Sacramento County
Facility Contact, Title and Phone	William O. Busath, Interim Director of Utilities, 916-808-1433
Authorized Person to Sign and Submit Reports	William O. Busath, Interim Director of Utilities, 916-808-1433
Mailing Address	Same as Facility Address
Billing Address	Same as Facility Address
Type of Facility	Combined Sewer System (CSS)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Not Applicable (Note: The pretreatment program for indirect users that discharge to the City’s CSS is implemented by the Sacramento Regional County Sanitation District)
Recycling Requirements	Not Applicable
Facility Permitted Flow	380 million gallons per day (MGD) of treated flow
Facility Design Flow	380 MGD of treated flow
Watershed	Sacramento-San Joaquin Delta
Receiving Water	Sacramento River
Receiving Water Type	Inland Surface Water

A. The City of Sacramento (hereinafter Discharger) is the owner and operator of the Combined Wastewater Collection and Treatment System (hereinafter Facility). The Facility includes a Combined Sewer System (CSS) that collects and treats domestic and industrial wastewater and storm runoff.

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

B. The Facility discharges treated and untreated combined wastewater and storm runoff to the Sacramento River, a water of the United States, and is currently regulated by Order R5-2010-0004 which was adopted on 28 January 2010 and expired on 1 January 2015. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its WDR's and NPDES permit on 1 July 2014. The application was deemed complete on 16 October 2014. A site visit was conducted on 9 December 2014 to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

II. FACILITY DESCRIPTION

The Discharger owns and operates a CSS that conveys domestic and commercial wastewater and storm water runoff from approximately 7,500 acres (approximately 270 miles of sewer pipe) in downtown Sacramento, East Sacramento, and Land Park areas. The Discharger also owns and operates a separate sanitary sewer system that conveys domestic and commercial wastewater. Approximately 3,800 acres (approximately 67 miles of sewer pipe) of the separated sanitary sewer system surrounding the CSS to the north, east, and south, contributes flows to the CSS. This portion of the separated system is regulated under a separate Order[1]. The remainder flows by gravity or is pumped to the Regional Interceptors to the Sacramento Regional Wastewater Treatment Plant (SRWTP). The entire collection system serves approximately 300,000 people.

A. Description of Wastewater and Biosolids Treatment and Controls

1. Facility Overview

The Facility consists of four main complexes to manage the collected combined sewage: Sumps 1/1A, Sumps 2/2A, the Pioneer Reservoir Treatment Plant (Pioneer Reservoir), and the Combined Wastewater Treatment Plant (CWTP). The CSS conveys domestic and industrial wastewater and storm runoff to Sumps 2/2A, where up to 60 MGD of flow is pumped via the Regional Force Main and City Interceptor to the SRWTP for secondary treatment prior to discharge to the Sacramento River. When flow to Sumps 2/2A exceeds 60 MGD, in system storage begins and, depending on the storm intensity and duration, flows may be routed to the CWTP (7 million gallons of storage capacity in the CWTP and approximately 2.5 million gallons of storage in the CWTP Force Main) and/or Pioneer Reservoir (23 million gallons of storage capacity in the Pioneer Reservoir and 5 million gallons of storage capacity in the Pioneer Interceptor). When the CWTP has optimized storage, flows continue to be sent to the Pioneer Reservoir for primary treatment

[1] State Water Board Order No. 2006-0003-DWQ, Statewide General WDR's for Sanitary Sewer Systems.

(including sedimentation and floatables removal, and disinfection using sodium hypochlorite) of up to 250 MGD and, after dechlorination (using sodium bisulfite), discharge to the Sacramento River at Discharge Point 006 and/or sent via the CWTP Force Main to the CWTP. In the CWTP, an additional 130 MGD of combined wastewater receives primary treatment (including sedimentation and floatables removal, and disinfection using sodium hypochlorite) and, after dechlorination (using sodium bisulfite), discharges to the Sacramento River at Discharge Points 002 or 003. The CWTP basins may also be used for storage of up to 9.5 million gallons (including the CWTP Force Main) of flow and diversion of flows back to the SRWTP. During major storms, Sumps 1/1A/1B can also pump up to 200 MGD of flow to Pioneer Reservoir. Collected sludge from the CWTP and Pioneer Reservoir is sent to the SRWTP.

During extreme high flow conditions after treatment has been maximized at the Pioneer Reservoir and the CWTP, discharges of untreated combined wastewater may occur at Sump 2/2A through Discharge Points 004 and 005 and at the Sump 1/1A Pioneer Bypass at Discharge Point 007. Each of the six permitted combined sewer overflow (CSO) Discharge Points (002 through 007) discharge directly to the Sacramento River.

The Facility also includes several remote storage facilities at strategic locations within the CSS to minimize the potential for localized flooding. The table below summarizes the Discharger's remote storage facilities. In addition to these designated storage facilities, the collection system is oversized to provide in-line storage throughout the service area.

Table F-2. CSS Remote Storage Facilities

Remote Storage Facility	Location	Capacity (Million Gallons)
42nd Street (Sump 77)	42nd Street and R Street	1.5
Medical Center (Sump 78)	49th Street and V Street	2.8
Tahoe Broadway (In-Line)	Broadway Blvd and Tahoe Park	1.5
Land Park (In-Line)	North of City Zoo	0.4
U&S Parallel Sewer	East of Sump 1 and 1A	0.4
Oak Park Regional Storage Facility	8th Avenue and San Carlos Way	4

2. **Combined Sewer System Improvement Plan (CSSIP)**

In the 1980s and early 1990s it was recognized that the combined stormwater and sewage system in downtown Sacramento posed health and safety problems beyond the periodic discharge of poorly treated or untreated sewage to the Sacramento River. Wet weather flooding was occurring within the City, either because combined system pipes were inadequate to drain away local runoff, or because those pipes were already filled to capacity by upstream runoff and there was nowhere for local runoff to go. Most seriously, at times upstream storm water and sewage would so overload the piping that the combined storm water and raw sewage would flow out of storm water inlets, flooding streets, yards, houses and commercial establishments with combined storm water and sewage.

The Central Valley Water Board initiated discussions with the Discharger and subsequently enforcement actions concerning the environmental and public health concerns associated with both the discharge to the Sacramento River and the outflow of sewage from the combined system pipes into the City. The initial discussions assumed that separate sewer and storm water systems would need to be constructed, but after considerable study, the City proposed enhancements to the combined system rather

than construction of separate systems. Those proposed enhancements were similar in cost to construction of separate sewage and storm water systems. The Central Valley Water Board, after careful consideration and hearings, accepted and approved the Discharger's proposal to enhance the combined system. The general areas of improvement were:

- Increased storage of combined system wastewater prior to discharge to the Sacramento River to capture the maximum volume of water feasible during wet weather events to optimize the pumping of combined system wastewater to the SRWTP.
- Improved pumping, piping and controls to allow maximum use of the increased wastewater storage.
- Improved treatment of combined system wastewater discharges to the Sacramento River.
- Selective replacement of bottlenecks in the combined system piping to provide adequate drainage for storm water and prevention of local flooding and sewage outflows.
- At locations where increased piping size alone would not eliminate flooding and outflows, storage volume was provided within the collection system to hold peak flows. This also increased the overall storage of the combined system, reducing discharges to the Sacramento River.
- Development of a hydraulic model of the combined system to allow identification of projects to optimize the system.
- Commitment of minimum annual expenditures for combined system improvements.

The advantages of enhancing the combined system over construction of separate systems included:

- Elimination of all dry weather discharges and most wet weather discharges of storm water to the Sacramento River from the combined system area. If a separate storm water system was constructed, the collected urban runoff and storm water would presumably be discharged untreated to the Sacramento River, rather than being treated at the SRWTP to secondary treatment standards.
- Reduction in flooding in the downtown area. The existing piping was not adequate to handle storm water flows, so would need to be replaced with larger piping and pumping facilities in many areas. The existing piping was also not well designed to handle only sewage, and would need significant improvement if the existing piping was to carry only sewage. It appeared that, in parts of the City, two new piping systems would need to be constructed.
- If a separated system was to be constructed, piping would need to be modified in essentially every street throughout the CSS service area, causing major disruption of traffic and safety issues for years. Enhancement of the existing combined system required construction in more limited areas of the City.

In July 1995, the Discharger adopted the CSSIP which constituted the Discharger's Long Term Control Plan (LTCP) as required under the U.S. EPA CSO Control Policy. The interim goals established in the CSSIP were as follows:

- Obtaining protection from a 5-year storm in the six areas of worst flooding (including downtown, north of Capital park; U.C. Medical Center area; immediately south of Highway 80 between Riverside and Freeport; the area northeast of Highway 99 and Highway 80 interchange; the area northwest of Highway 99 and Highway 80 interchange, and the Land Park area),
- Obtaining protection from a 5-year storm throughout the combined sewer system area,
- Obtaining protection from a 10-year storm in the six areas of worst flooding, and then
- Obtaining the goal of protection from a 10-year storm event throughout the combined sewer system.

The Discharger's program is based on the presumption approach. This approach is defined in the U.S. EPA CSO Control Policy as a "…*program that meets any of the criteria listed below would be presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA, provided the permitting authority determines that such presumption is reasonable in light of the data and analysis conducted in the characterization, monitoring, and modeling of the system and the consideration of sensitive areas described above. These criteria are provided because data and modeling of wet weather events often do not give a clear picture of the level of CSO controls necessary to protect WQS [*Water Quality Standards*]*".

The performance criteria for the presumption approach option selected by the Discharger specifies the elimination or the capture for treatment of no less than 85 percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis. In addition, CSO's remaining after implementation of the Nine Minimum Controls and that is captured for treatment should receive a minimum of:

- Primary clarification (removal of floatables and settleable solids may be achieved by any combination-of treatment technologies or methods that are shown to be equivalent to primary clarification.);
- Solids and floatables disposal; and
- Disinfection of effluent, if necessary, to meet WQS, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary.

The first phase of the 1995 Plan concluded that increasing the pumping capacities of Sumps 1/1A and 2/2A concurrent with rehabilitation of the CSS and development of local storage projects, was the most cost-effective initial approach for reducing flooding and outflows from the CSS. In accordance with requirements contained in their Order 5-01-258, the Discharger provided an update to the Plan in March 2002 to bring up to date the status of current projects and goals. This update described several efforts being undertaken by the City:

- Continuing assessment of the effectiveness of CSS improvements using the City Storm Water Management Model (SWMM) (completed);
- Replacing and increasing the sizes of a network of CSS trunks in the downtown area (in the 7th Street, S Street, and 15th Street areas) to increase capacity and provide additional in-line storage (under construction);

- Constructing an 84-inch interceptor across I-5 to serve as an additional inlet to Sump 1A and provide additional in-line storage (completed);
- Constructing a regional storage facility on the Union Pacific rail yard to relieve flooding in the areas around the rail yard (on hold due to site contamination issues);
- Initiating a pilot program related to the use of Real Time Control (RTC) to operate the regional storage facilities (study completed); and
- Continuing efforts to rehabilitate and replace the CSS collection system.

Also in accordance with requirements contained in Order 5-01-258, the Discharger provided in May 2003 a performance update as it relates to progress towards meeting the goals outlined in the 1995 Plan. The following summarizes the performance update provided by the Discharger:

- CSS Improvement Projects – Performance was improved based on the completion of a variety of CSS rehabilitation and improvement projects, including local and regional storage projects).
- CSS Performance over the Previous 2 Years – A reduction in complaint calls within the CSS (registered with the City's Rain Patrol system) as compared to the number of complaints received during previous storms of slightly greater size indicates the effectiveness of the improvement and rehabilitation projects.

  The Discharger utilized the City SWMM to analyze the effect of completed projects on system flooding, as well as projected system flooding based on future CSS projects. The Discharger concluded that significant reductions or elimination of flooding was occurring in the vicinity of the major projects.

  The Discharger also reported on field observations by their staff that indicated no outflows onto streets and properties, and out of system manholes.
- Future Plans and System Improvement Needs – Complete construction of an 84-inch interceptor across I-5 to serve as an additional inlet to Sump 1A and provide additional in-line storage (completed); continue pursuing the construction of a regional storage facility on the Union Pacific rail yard to relieve flooding in the areas around the rail yard; and continue efforts to rehabilitate and replace the CSS collection system.

In 2008, the Discharger initiated a two-phase update to the CSSIP to guide further improvements to the Facility. Completion of the two-phase CSSIP update was originally scheduled for fiscal year 2013/14.

The Final Administrative Draft was completed in June 2014 and summited with the ROWD. The report was finalized in August 2014 with no significant changes from the Final Administrative Draft.Phase 1 of the update was completed in July 2010 and included the following:

- Replacing the SWMM model with a new hydrologic and hydraulic model (InfoWorks ICM).
- Validating the new InfoWorks ICM model with actual storm data and comparing predicted model output values to actual recorded flows.

- Evaluation of outflow reduction for six mitigation improvement projects remaining from the 2008 update to the CSSIP .

The Discharger completed the efforts under Phase II as of August 2014. This task included the following elements:

- An update of the sewer flow projections, including refining the surface runoff subcatchment areas (sewer sheds) represented in the model, developing sewer design flow condition model representation for both existing and future conditions, and developing ground water inflow estimates.
- Re-evaluation of the 13 improvement projects that were sized with the old model to maximize their performance by ensuring weir lengths/sizes are appropriate, size and configuration of connections to the sewer system are set to optimize performance, and all storage fills completely during major storm events.
- Re-evaluation of the boundaries of the six areas of worst flooding using model simulations, topographic/mapping analysis, field checks of low-lying areas, and comparison to areas of known/reported property damage due to flooding.
- Quantification of the remaining outflows and flooding that will serve as baseline conditions for Phase 2 recommendations.
- Calibration of the operational controls for Sump 2/2A using recent wet-weather events.
- An update to the new model (InfoWorks ICM) to enable use of a two-dimensional module to more precisely represent overland surface routing of flows in the CSS drainage area.

The CSSIP Update will serve as a major component of the System Characterization portion of a Long-Term Control Plan (LTCP) Update proposed by the Discharge. According to information provided in the ROWD, and as described further in Section II.E of this Fact Sheet, the Discharger has proposed a 3-year schedule to complete the update of the LTCP.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 22, T8N, R4E, MDB&M, as shown in Attachment B, a part of this Order.
2. Domestic and industrial wastewater and storm runoff with primary treatment and disinfection is discharged from the CWTP at Discharge Point 002 (38º 31.164’ N and 121º 31.440’ W) or 003 (38º 31.397’ N and 121º 31.424’ W) to the Sacramento River, a water of the United States.
3. Untreated domestic and industrial wastewater and storm runoff from Sumps 2 and 2A is discharged at Discharge Points 004 (38º 32.869’ N and 121º 30.622’ W) or 005 (38º32.864’ N and 121º31.623’ W) to the Sacramento River, a water of the United States.
4. Domestic and industrial wastewater and storm runoff with primary treatment and disinfection is discharged from the Pioneer Reservoir at Discharge Point 006 (38º 34.308’ N and 121º 30.800’ W) to the Sacramento River, a water of the United States.
5. Untreated domestic and industrial wastewater and storm runoff from Sumps 1 and 1A is discharged at Discharge Point 007 (38º 34.322’ N and 121º 30.786’ W) to the Sacramento River, a water of the United States.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in Order R5-2010-0004 for discharges from Discharge Points 002 and 006 (Monitoring Locations EFF-002 and EFF-006, respectively) and representative monitoring data from the term of Order R5-2010-0004 are provided in the tables below. It should be noted that no discharges from Discharge Point 003 occurred during the term of Order R5-2010-0004.

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002

Parameter	Units	Effluent Limitation			Monitoring Data (February 2010 – December 2014)		
		Storm Year Average[1]	Storm Maximum	Instantaneous Minimum/ Maximum	Highest Storm Year Average[1]	Highest Storm Maximum	Instantaneous Minimum/ Maximum
Total Suspended Solids	mg/L	100[2]	--	--	87	--	--
Settleable Solids	ml/L	--	1.0	--	--	0.7	--
Chlorine Residual	mg/L	--	0.019	--	--	3.7	--
pH	standard units	--	--	6.5/8.5	--	--	6.19/7.59
Fecal Coliform	MPN/ 100 ml	200[3]	1,000[4]	--	4.5[5]	4.5	--
Temperature	°F	--	--	20°F[6]	--	--	7.56[7]

1 A storm year is defined as 1 October through 30 September.
2 In addition, two consecutive samples shall not exceed 150 mg/L.
3 Effluent fecal coliform organisms shall not exceed 200 MPN/100 mL, as a storm year (1 October through 30 September) median.
4 Effluent fecal coliform organisms shall not exceed 1,000 MPN/100 mL in any three consecutive samples.
5 Represents the maximum observed storm year median.
6 The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
7 Maximum temperature difference between upstream receiving water temperature and effluent temperature.

Table F-4. Historic Effluent Limitations and Monitoring Data – Discharge Point 006

Parameter	Units	Effluent Limitation			Monitoring Data (February 2010 – December 2014)		
		Storm Year Average[1]	Storm Maximum	Instantaneous Minimum/ Maximum	Highest Storm Year Average[1]	Highest Storm Maximum	Instantaneous Minimum/ Maximum
Total Suspended Solids	mg/L	100[2]	--	--	77.7	--	--
Settleable Solids	ml/L	--	1.0	--	--	2.8	--
Chlorine Residual	mg/L	--	0.019	--	--	<0.1[3]	--
pH	standard units	--	--	6.5/8.5	--	--	5.24/7.1
Fecal Coliform	MPN/ 100 ml	200[4]	1,000[5]	--	2[6]	49	--
Temperature	°F	--	--	20°F[7]	--	--	11.7[8]

1 A storm year is defined as 1 October through 30 September.
2 In addition, two consecutive samples shall not exceed 150 mg/L.
3 Reported as ND; value represents reported method detection level.

[4] Effluent fecal coliform organisms shall not exceed 200 MPN/100 mL, as a storm year (1 October through 30 September) median.
[5] Effluent fecal coliform organisms shall not exceed 1,000 MPN/100 mL in any three consecutive samples.
[6] Represents the maximum observed storm year median.
[7] The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
[8] Maximum temperature difference between upstream receiving water temperature and effluent temperature.

D. Compliance Summary

1. The Central Valley Water Board issued Administrative Civil Liability (ACL) Complaint R5-2013-0562 on 10 September 2013 which proposed to assess a civil liability of $6,000 against the Discharger for effluent violations of pH and settleable solids that occurred between 20 January 2010 and 1 December 2012. The Discharger paid the mandatory minimum penalty of $6,000.

E. Planned Changes

The Phase II update to the CSSIP included performance and discharge modeling using InfoWorks ICM to analyze discharges from the CSS to the Sacramento River and outflows in the system under baseline conditions and conditions representing various proposed improvement projects and programs. The assessment of the recommended projects and programs that would be considered by the Discharger is to be based on an adaptive management strategy. The following describes the specific recommendations for an adaptive management strategy as described in the ROWD:

1. Prepare a plan for implementation of the top 20 percent of recommended capital improvement projects, including any detailed feasibility studies followed by design and construction of these projects.
2. Develop a pilot program to evaluate different types of green infrastructure technologies and test their performance in different surface and sub-surface conditions, including soil type and slope; general public acceptability; maintenance issues; and other topics. Monitor the performance of the different technologies and establish the baseline performance of the different technologies. Update cost estimates for these programs based on the pilot programs.
3. Develop a pilot program, for the separated sewer system that contributes flow to the CSS, to evaluate the performance of rainfall-derived infiltration and inflow (RDII) technologies, including detailed characterization of areas contributing to RDII by flow monitoring, smoke-testing, and sewer inspections. Develop an RDII reduction pilot program for source control for disconnecting storm water connections and sewer/manhole relining. Establish a baseline performance of the source control measures, and update the cost estimates based on pilot programs.
4. Refine the hydrologic and hydraulic model (InfoWorks ICM) and relevant input datasets to further improve the accuracy of the evaluation tools. Develop a flow monitoring program for the next two wet weather seasons, and improve the calibration and validation of the InfoWorks ICM model using the flow monitoring data. Refine the surface elevation information in the InfoWorks ICM model using updated surveyor Light Detection and Ranging (LIDAR) data. Use updated building and curb boundaries to improve the characterization of surface flow routing system-wide. Use surface flooding datasets (pictures, YouTube videos, etc.) of any recent historical flooding events to further calibrate and validate the two-dimensional surface flooding results.
5. Confirm the performance of remaining projects in the CSSIP, and refine any projects or add new projects if necessary. Based on the pilot programs for green infrastructure and RDII technologies, develop a strategic longer-term program for implementation of these

technologies to achieve a more cost-effective solution to local and system-wide flooding problems.

As part of the ROWD, the Discharger also provided a work plan and schedule for a comprehensive update of their LTCP that, together with the Phase II CSSIP Update, will identify future needs for proper management of the CSS. The comprehensive LTCP update will include projects and programs that will improve the CSS operation in three main areas:

1. Water quality improvement including reduction of CSO's;
2. Reduction in outflows and flooding; and
3. Incorporation of "green infrastructure" and other programs that will reduce both wastewater and drainage flows in the CSS.

The Discharger has proposed to complete the comprehensive LTCP update within 36 months after the initiation of efforts.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.

   a. **Basin Plan.** The Central Valley Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised October 2011), for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plan in Table II-1, Section II, identifies present and potential uses for the Sacramento – San Joaquin Delta, which includes the San Joaquin River at the point of discharge. Beneficial uses applicable to Sacramento River are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
002, 003, 004, 005, 006, and 007	Sacramento River	Existing: Municipal and domestic supply (MUN); agricultural supply, including stock watering (AGR); industrial process supply (PROC); industrial service supply (IND); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater aquatic habitat (WARM); cold freshwater aquatic habitat (COLD); warm migration, cold migration of aquatic organisms (MIGR); warm spawning , reproduction, and/or early development (SPWN); wildlife habitat (WILD); and navigation (NAV).

b. **Bay-Delta Plan**. The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999, and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

c. **Thermal Plan.** The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on 7 January 1971, and amended this plan on 18 September 1975. This plan contains temperature objectives for surface waters. The Thermal Plan is applicable to the discharges from the Facility. For the purposes of the Thermal Plan, the discharges are considered to be an Existing Discharge of Elevated Temperature Waste to an Estuary, as defined in the Thermal Plan. Therefore, the Discharger must meet the water quality objective at Section 5.A(1) of the Thermal Plan, which requires compliance with the following:

i. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

ii. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.

iii. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.

iv. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

Requirements of this Order implement the Thermal Plan.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA adopted

the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.

3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control.

   The SIP states that it "…*does not apply to discharges of toxic pollutants from combined sewer overflow. These discharges will continue to be regulated in accordance with the federal "Combined Sewer Overflow (CSO) Control Policy*," published April 19, 1994 (59 FR 18688-18698)."

4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Domestic Water Quality.** In compliance with Water Code section 106.3, 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 Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

8. **U.S. EPA Combined Sewer Overflow (CSO) Control Policy.** On 11 April 1994, U.S. EPA adopted the Combined Sewer Overflow (CSO) Control Policy (59 FR 18688-18698). The CSO Control Policy was incorporated into the federal CWA by the Wet Weather Water Quality Act of 2000 [House .Resolution (H.R.) 828] which is part of H.R. 4577, an omnibus funding bill. The CWA at Section 402(q)(1) states: "…*Each permit…pursuant to this Act…for a discharge from a municipal combined storm and sanitary sewer shall conform to the CSO Control Policy*…" The CSO policy establishes a consistent national approach for controlling discharges from CSO's to the nation's water through the NPDES permit program. CSO's are defined as the discharge from the combined sewer system at a point prior to the POTW Treatment Plant (see Federal Register, Vol 59 No. 75, Tuesday, April 19, 1994, Section I.A.). A discharger's long-term CSO control plan includes the design and construction of additional facilities which constitute the CSO controls envisioned by the CSO Control Policy.

   The CSO Policy initiates a two-phased process with higher priority given to more environmentally sensitive areas. During the first phase, the Discharger is required to implement the nine minimum controls (NMC's) and develop a long-term control plan. NMC's constitute the technology-based requirements of the CWA as applied to combined sewer facilities: best practicable control technology currently available (BPT), best conventional pollutant control technology, (BCT), and best available technology economically achievable (BAT) based on the permit writer's best professional judgment (BPJ). These NMC's can reduce the frequency of CSO's and reduce their effects on receiving water quality. During the second phase, the Discharger is required to implement a long-term CSO control plan and continue implementation of the NMC's. The long-term CSO control plan includes the design and construction of additional facilities which constitute the CSO controls envisioned by the CSO Control Policy. In addition, the Discharger is required to continue the implementation of the NMC's, properly operate and maintain the completed CSO controls in accordance with the operational plan, and continue to implement the post-construction monitoring program (e.g., CSO monitoring).

D. Impaired Water Bodies on CWA 303(d) List

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 October 2011 U.S. EPA gave final approval to California's 2008-2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." The listing for the Sacramento River (Delta Waterways - northern portion) includes: chlordane, chlorpyrifos, DDT, diazinon, dieldrin, Group A pesticides, invasive species, mercury, PCB's (polychlorinated biphenyls), and unknown toxicity. Of these parameters, only chlorpyrifos and diazinon are listed based on urban runoff/storm sewer sources.

2. **Total Maximum Daily Loads (TMDL's).** U.S. EPA requires the Central Valley Water Board to develop TMDL's for each 303(d) listed pollutant and water body combination. Table F-6, below, identifies the 303(d) listings and the status of each TMDL.

Table F-6. 303 (d) List for the Sacramento River Delta Waterways, Northern Portion)

Pollutant	Potential Sources	TMDL Completion[1]
Chlordane	Agriculture	TBD[2]
Chlorpyrifos	Agriculture and Urban Runoff/Storm Sewers	2007
DDT	Agriculture	TBD
Diazinon	Agriculture and Urban Runoff/Storm Sewers	2007
Dieldrin	Agriculture	TBD
Group A Pesticides	Agriculture	TBD
Invasive Species	Unknown	(2019)
Mercury	Resource Extraction	2010
PCBs	Unknown	(2019)
Unknown Toxicity	Unknown	(2019)

[1] Dates in parenthesis are proposed TMDL completion dates.
[2] To be determined.

3. The 303(d) listings and TMDL's have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in Section IV.C.3 of this Fact Sheet.

E. Other Plans, Polices and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 C.F.R. § 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal regulations, 40 C.F.R. section 122.44(d)(1)(vi), further provide that *"[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits*."

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include WQBEL's to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been

established. The Basin Plan at page IV-17.00, contains an implementation policy, "Policy for Application of Water Quality Objectives", that specifies that the Central Valley Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.*" This Policy complies with 40 C.F.R. section 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "Policy for Application of Water Quality Objectives")(40 C.F.R. §122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at 40 CFR section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Central Valley Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation. The exception to this Discharge Prohibition is discharges from Discharge Points 002, 003, 004, 005, 006, and 007 in accordance with Discharge Prohibitions III.D and III.E (as described in IV.A.4 and IV.A.5 below).

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.

4. **Prohibition III.D (Specified conditions that must be met for discharge from the combined sewer system).** This prohibition is continued from Order R5-2010-0004 and requires (1) full use of the treatment capacity of the Pioneer Reservoir (250 MGD) and the CWTP (130 MGD) prior to discharge from the Sump 2 Bypass (Discharge Points 004 and 005) and/or Sump 1A Bypass (Discharge Point 007); and (2) full use of the storage capacity of the CWTP prior to discharge in excess of the Pioneer Reservoir treatment capacity of 250 MGD from Discharge Point 006.

5. **Prohibition III.E (No discharges except as a result of wet weather unless authorized by the Executive Officer).** This prohibition is continued from Order R5-2010-0004 and prohibits the discharge from Discharge Points 002 through 007 other than as a result of a storm event, or if needed for maintenance or equipment testing after approval by the Executive Officer.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on BPJ in accordance with 40 C.F.R. section 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. BPT represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. BAT represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. BCT represents the control from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELG's) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

2. Applicable Technology-Based Effluent Limitations

U.S. EPA establishes some technology-based requirements by issuing industry-wide effluent guidelines. For CSO's, no effluent guidelines have been promulgated for BPT, BCT, or BAT. In the absence of effluent guidelines, the permit writer must use BPJ to determine the level of treatment that BPT, BCT, and BAT represent.

a. **Nine Minimum Controls (NMC's).** According to the U.S. EPA CSO Control Policy, all permits for CSO's should require implementation of the NMC's as a minimum BAT/BCT, established on a BPJ basis. Implementation of the NMC's are required as special provisions in this Order. A discussion of implementation of NMC's by the Discharger to date, as well as the proposed NMC requirements contained in this Order, is provided in Section VI.B.4.b of this Fact Sheet.

b. **Effluent Limits to Monitor Facility Performance.** As described in Section II.A of this Fact Sheet, the Facility provides primary treatment (including sedimentation and floatables removal, and disinfection using sodium hypochlorite) for flows up to 250 MGD in the Pioneer Reservoir and up to 130 MGD in the CWTP. Compliance with technology-based effluent limitations are being used to monitor the treatment performance of the Facility and the effectiveness of the implementation of the U.S. EPA CSO Control Policy NMC's.

i. Order R5-2010-0004 contained effluent limitations for TSS that represent reasonable performance of the sedimentation and floatables treatment processes at the Pioneer Reservoir and CWTP. This Order retains the TSS effluent limitations (100 mg/L storm year average and no two consecutive samples shall exceed 150 mg/L) to monitor the performance of the Pioneer Reservoir and CWTP in removing solids prior to discharge to the Sacramento River.

ii. Order R5-2010-0004 contained effluent limitations for fecal coliform organisms that represent reasonable performance of the Facility disinfection treatment process. This Order retains the fecal coliform organisms effluent limitations (not to exceed 1,000 MPN/100 mL in any three consecutive samples and 200 MPN/100 mL as a storm year median) to monitor the performance of the Pioneer Reservoir and CWTP in reducing bacteria prior to discharge to the Sacramento River.

iii. As described further in Section IV.C.3.d of this Fact Sheet, there is no reasonable potential for discharges from the Facility to exceed applicable water quality objectives for pH. However, due to the potential impact on pH that the chemicals added for disinfection and dechlorination pose, technology-based effluent limitations for pH (within the range of 6.0 to 8.5 standard units) will be included in this Order to monitor the performance of the Pioneer Reservoir and CWTP in controlling pH prior to discharge to the Sacramento River.

C. Water Quality-Based Effluent Limitations (WQBEL's)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric

and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBEL's must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBEL's when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983*." Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 C.F.R., defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States. Refer to section III.C.1. above for a complete description of the receiving water and beneficial uses.

3. Determining the Need for WQBEL's

a. **Federal and State Requirements for Discharges from CSO's**

The State Implementation Policy (SIP) explicitly states that it is not applicable to CSO's. Therefore, a RPA was not performed for the CTR parameters. However, as described further below, the U.S. EPA CSO Control Policy and related guidance suggests the eventual establishment of numeric effluent limitations would be necessary to ensure that CSO's achieve applicable water quality objectives.

Specifically, U.S. EPA's CSO Control Policy (59 FR 18688, 19 April 1994) states that "*CSO permittees … develop long-term CSO control plans which evaluate alternatives for attaining compliance with the CWA, including compliance with water quality standards and protection of designated uses*." It further states that, once LTCP's are completed, permittees will be responsible for implementing the plan's recommendations as soon as practicable. The U.S. EPA CSO Control Policy also provides that *"…[d]evelopment of the long-term plan should be coordinated with the review and appropriate revision of water quality standards (WQS) and implementation procedures on CSO-impacted receiving waters to ensure that the long-term controls will be sufficient to meet water quality standards*" (59 FR 18694).

b. **Status of Long-Term Control Plan (LTCP) Implementation**

Based on data reported by the Discharger, the Discharger's LTCP (i.e., CSSIP) generally exceeds the specifications of the U.S. EPA's CSO Control Policy's presumption approach. The majority of the time the Discharger captures and provides treatment for up to 100 percent of the combined sewer flows, compared to the minimum 85 percent requirement (there have been infrequent instances where small volumes of untreated overflows have occurred from Discharge Points 004, 005, and 007). Therefore, almost all CSO's that occur from the Facility receive treatment (within the storage/transports) consisting of removal of floatable and settleable solids, disinfection and de-chlorination.

The following tables summarize the CSO discharges that were reported during the term of the Order R5-2010-0004.

Table F-7. Number of CSO Discharges Reported During the Term of Order R5-2010-0004

Storm Year	Number of Discharge Events from CSO Discharge Points						Total No. System Events(Treated)[1]	Total No. System Events(Untreated)[2]
	002	003	004	005	006	007		
10/10 – 9/11	3	0	1	1	4	1	7	3
10/11 – 9/12	0	0	0	0	5	0	5	0
10/12 – 9/13	2	0	1	0	5	0	7	1
10/13 – 9/14	1	0	0	0	1	0	2	0

[1] The total number of system events represents the number of distinct storm events that resulted in a treated discharge from one or more of the authorized discharge points (Discharge Points 002, 003, and 006).

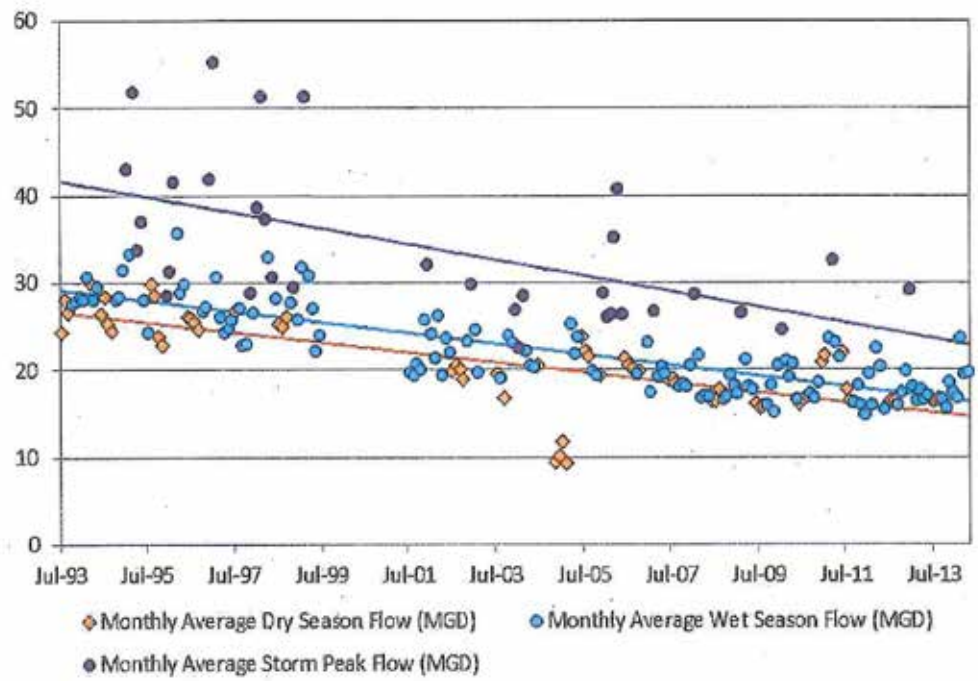
[2] The total number of system events represents the number of distinct storm events that resulted in an untreated discharge from one or more of the authorized discharge points (Discharge Points 004, 005, and 007).

Table F-8. Detailed Summary of Reported CSO Discharges Reported During the Term of Order R5-2010-0004

Date	Discharge Location	Treated or Untreated Discharge	24 hr Rainfall[1] (inches)	48 hr Rainfall (inches)	Daily River Flow[2] (cfs)	Daily River Flow[2] (MGD)	Discharge Duration (hours)	Discharge Volume (MG)
12/19/2010	Pioneer (EFF-006)	Treated	0.97	1.86	59,725	38,600	5:18	57
2/25/2011	Pioneer (EFF-006)	Treated	1.43	1.43	27,049	17,482	2:45	27.9
3/14/2011	Pioneer (EFF-006)	Treated	1.51	1.51	34,728	22,445	3:35	35
	CWTP (EFF-002)	Treated					3:30	25
3/24/2011	Pioneer (EFF-006)	Treated	1.07	1.35	81,324	52,560	4:25	56.5
	CWTP (EFF-002)	Treated					2:50	35
1/21/2012	Pioneer (EFF-006)	Treated	1.33	1.48	13,347	8,626	2:25	24.7
1/23/2012	Pioneer (EFF-006)	Treated	1.02	1.02	23,748	15,348	2:07	16.4
3/28/2012	Pioneer (EFF-006)	Treated	1.02	1.02	20,367	13,163	3:00	47.5
4/13/2012	Pioneer (EFF-006)	Treated	0.94	1.45	23,840	15,408	2:35	28.3
	Pioneer (EFF-006)	Treated	1.16	1.68			3:00	
11/30/2012	Pioneer (EFF-006)	Treated	1.21	1.68	17,451	11,279	8:00	37.6
	CWTP (EFF-002)	Treated	1.28	1.75			9:30	27.8
12/1/2012-12/2/2012	CWTP (EFF-002)	Treated	1.63	2.50	39,001[3]	25,206[3]	20:30	64.0
12/2/2012	Pioneer (EFF-006)	Treated	0.70	2.67	46,908	30,317	5:00	53.4
	Sump 2 (EFF-004)	Untreated	1.69	2.54			2:20	3.8
12/22/2012	Pioneer (EFF-006)	Treated	1.10	1.14	33,569	21,696	2:10	17.7
12/23/2012	Pioneer (EFF-006)	Treated	0.90	1.88	46,199	29,858	2:15	42.6
12/25/2012	Pioneer (EFF-006)	Treated	0.78	0.80	65,311	42,210	4:05	23.5
2/8/2014	Pioneer (EFF-006)	Treated	1.19	1.41	8,440	5,455	3:45	28.4
2/9/2014	CWTP (EFF-002)	Treated	1.65	2.11	12,693	8,203	4:15	23.0

[1] Rainfall totals from the California Data Exchange Center (CDEC) prior to the start of discharge at the CSU site.
[2] Daily average Sacramento River flow data from CDEC at Freeport (FPT).
[3] Average of two days.

The Discharger's efforts have resulted in consistent and significant reductions in dry weather and wet weather flows over the last 20 years. The figure below shows the consistent downward trend and demonstrates that the CSS service area is not generating new flows. The overall annual average CSO discharge volume decreased by over 60 percent over the past 24 years. Water conservation, new plumbing codes for redevelopment, and ongoing collection system improvements are all factors in the gradual decrease in dry and wet weather flows over time.



As shown in the table below, the average number of days that untreated CSO's were discharged per year has also decreased from seven per year in the early 90's, prior to implementation of the CSSIP, to less than once per year in the past 10 years. The treated CSO discharges have also decreased from 15 times per year on average to an average of four times per year during the same time period.

Table F-9. Summary Statistics Related to CSO Discharges

Date Range	Annual Average Number of Days Untreated CSO Discharges Were Reported	Total Volume of Untreated CSO Discharge (Million Gallons)	Annual Average Number of Days Treated CSO Discharges Were Reported	Total Volume of Treated CSO Discharge (Million Gallons)
1990 – 1995	7	119	15	455
2004 – 2014	0.2	1.4	4	217

c. **CSS Rehabilitation and Replacement Efforts**

With respect to achievement of 1995 Interim goals for reduction of CSS outflows and flooding consistent with the 1995 CSSIP interim goals, the Discharger continues to focus on providing peak flow storage and relief for six priority locations throughout the CSS that were prone to flooding and outflows. The Discharger uses the Capital Improvement Program (CIP) and an asset management approach to prioritize projects based on a combination of their relative criticality and condition. During the

term of Order R5-2010-0004, the Discharger completed more than 34 capital improvement projects totaling over $32 million. Additionally, at least six capital improvement projects are in progress and under various stages of design, development and/or construction. Examples of select major projects that have been completed or in-process are provided in the table below.

Table F-10. Example Capital Improvement Projects

Project Name	Scope	Completion Date	Project Cost
5th Street Upsizing	Replaced combined sewer system with 72" line on 5th between P and S Streets, 60" between S and U Streets	12/7/2010	$2,372,505
S Street Brick Sewer Replacement – 7th to 14th	Replaced and installed parallel pipe of historic brick mains to reduce flooding, improve reliability, accommodate in-fill	1/12/2011	$2,462,072
Sump 2A Pump Replacement – Phase 2	Replaced 2 pumps for the dry weather side of Sump 2A	9/14/2011	$1,187,000
S Street Brick Sewer Replacement – 14th to 17th	Replaced with a new 60 – 66" interceptor pipe	11/16/2012	$1,100,000
P Street Sewer Upsizing – 5th to 7th Street	Constructed new 72" combined sewer pipeline (EPA grant $485,000)	12/12/2013	$1,314,135
Oak Park Regional Storage Facility	Combined system regional storage – 4 Million Gallons	8/30/2014	$12,520,121

d. **Water Quality Assessment (WQA)**

The U.S. EPA CSO Control Policy presumes that compliance with performance criteria generally will be sufficient to meet applicable water quality objectives. As described above, the Discharger has selected the presumption approach, and the Discharger's CSSIP exceeds the performance specifications. However selection of the presumption approach does not relieve the Discharger from the need to develop and implement a post-construction compliance monitoring program for the remaining CSO's to verify compliance with water quality standards and protection of designated uses. If the monitoring program indicates nonattainment with water quality objectives due to CSO's or CSS outflows, the Discharger may need to implement a greater level of control.

The Discharger completed a WQA in 1995 (Effluent and Receiving Water Quality and Toxicity Summary) that demonstrated compliance with water quality-based objectives. However, due to the limited number of parameters assessed, Order R5-2010-0004 required the Discharger to complete another WQA to evaluate whether implementation of their LTCP under the U.S. EPA CSO Control Policy presumption approach is ensuring continued compliance with applicable water quality standards and are adequately protecting beneficial uses.

The Discharger submitted the updated WQA in June 2013 (City of Sacramento Combined Sewer System Water Quality Assessment, prepared by Larry Walker Associates). As part of this assessment, the Discharger performed effluent and receiving water monitoring during periods of overflow discharge to the Sacramento River during the 2010/2011, 2011/2012, and 2012/2013 storm years. The approach

used by the Discharger to assess potential water quality impacts based on the monitoring data collected is summarized below:

- An initial screening was performed on the pollutant parameters that were detected to determine which parameters would be evaluated further. Further evaluation was performed of the pollutant parameter:
  - Had a water quality objective (Basin Plan) or CTR criterion applicable to the receiving water;
  - Had an effluent limitation in Order R5-2010-0004;
  - Was included on the 2010 303(d) list of impaired waters or was covered under an existing applicable TMDL; and
  - Was listed as a "Specific Parameter of Concern" in Order R5-2010-0004.
- For the pollutant parameters that met the screening criteria for further evaluation, median concentrations were calculated to represent the CSS effluent concentrations. Effluent mass loadings of the pollutant parameters were then estimated using CSS discharge event volumes and the median effluent concentrations.
- Upstream receiving water mass loadings were calculated using median receiving water concentrations and upstream flow volumes that represented the averaging period for the applicable objective or criterion. In the absence of actual upstream receiving water data, surrogate values were derived and used.
- Mass loadings that represent assimilative capacity of the receiving water were calculated using the water quality objective or criterion and upstream flow volumes that represented the averaging period for the applicable objective or criterion (e.g., annual averages for human carcinogen criteria, monthly average for nitrate+nitrite, and 1-hour average for acute aquatic life criteria).
- CSS effluent mass discharge loadings were combined with the upstream receiving water mass loadings and then compared to the mass loadings if the receiving water reached full assimilative capacity. This comparison was designed to place the CSS effluent mass loadings in the context with the total receiving water load observed at the time of a discharge event, as well as with the available assimilative capacity in the receiving water.

In summary, the Discharger concluded that the infrequent and short duration of CSS overflow discharges and pollutant loadings do not impact applicable receiving water beneficial uses.

In general, the comparative mass-loading approach used by the Discharger is considered appropriate for evaluation of the potential impact of CSS overflow discharges on the receiving water. However, several issues with the methodology and assumptions used were identified that could influence the assessment of impacts of the CSS overflow discharges on the receiving water:

- The Discharger did not consider the REC-1 and REC-2 beneficial uses in the evaluation, because the discharges occur during wet weather when the Discharger believes these uses do not exist. In the WQA the Discharger refers to a statement in Order R5-2010-0004 that states, "*Because CSO discharges typically occur for relatively short durations and only during*

extreme storm events, it is unlikely that recreational activities will occur concurrently with the CSO discharges." Although the REC-1 and REC-2 beneficial uses can be limited during wet weather, they are still applicable to the receiving water and must be protected.

- Similarly, the Discharger excluded chronic aquatic life protection criterion because CSS discharge events do not extend past 1-day in length. Both the acute and chronic criterion apply to the aquatic life protection beneficial use and should have been considered in the analysis.
- In calculating upstream and assimilative capacity mass loadings in the receiving water, the Discharger used receiving water flows consistent with the averaging period for the applicable objective and criterion rather than critical low flow values (e.g., the CTR requires use of the 1Q10 for acute aquatic life protection).
- The Discharger used median effluent concentration values rather than maximum effluent concentrations.

These identified issues affected the certainty of the Discharger's conclusion that no impact to receiving waters occurs as a result of the CSS overflow discharges. To verify that the CSS overflow discharges do not affect receiving water quality (i.e., impact applicable beneficial uses by causing exceedances of applicable water quality objectives and standards), a reasonable potential analysis (RPA) was performed. As the SIP does not apply to CSO's (see footnote 1, page 3, of the SIP), the approach described in the U.S. EPA *Technical Support Document for Water Quality-based Toxics Control* (hereinafter TSD) was used to evaluate whether any priority pollutants or constituents of concern in the CSS overflow discharges had a reasonable potential to cause or contribute to exceedances of water quality objectives and criteria. The general approach used in the TSD for determining reasonable potential is to project a maximum effluent concentration (MEC), and based on this MEC and background (i.e., upstream) receiving water concentrations, calculate the downstream receiving water concentration to determine if applicable water quality objectives and criteria are exceeded. The assumptions used in performing the RPA included the following:

- The analysis was performed for each of the three discharge points to the Sacramento River for which pollutant parameter data was provided by the Discharger (Discharge Points 002, 004 and 006).
- The projected MEC is calculated using the maximum effluent concentration and a multiplication factor that accounts for effluent variability. In calculating a projected MEC, the TSD multiplication factors were based on the TSD and a 95% confidence level and 95% probability basis. In cases where there were less than 10 data points, a default coefficient of variation of 0.6 was used.
- The maximum reported effluent flows for each discharge point were based on data reported for the period from December 2010 through December 2014 to be consistent with the period in which effluent sampling was performed by the Discharger.
- For metals, both total and dissolved data was provided by the Discharger. Since the water quality criteria/objectives for the metals of concern are

expressed in dissolved metals concentrations, the RPA was performed using the dissolved data for each metal.

- In those instances where all background receiving water data was reported as below analytical detection levels, the reported method detection level (MDL) was used.
- For hardness-dependent water quality criteria, a median receiving water hardness of 51 mg/L as $CaCO_3$ was used to derive the applicable criteria, which represents the typical hardness condition in the receiving water during discharges from the Facility.
- The background receiving water flow values were based on the recommendations contained in the TSD:
  - 1Q10 for acute aquatic life protection (3,432 MGD)
  - 7Q10 for chronic aquatic life protection (3,659 MGD)
  - 30Q5 for human health protection from non-carcinogens (10,211 MGD)
  - Harmonic mean for human health protection from carcinogens (5,026 MGD)

  Critical low flows were derived based on data from the United States Geological Survey (USGS) Sacramento River at Freeport gage.

Attachment G presents the results of the RPA analysis for the pollutant parameters that were detected in the effluent monitoring performed and have applicable water quality objectives or criteria (including aluminum, bis (2-ethylhexyl) phthalate, bromodichloromethane, carbon tetrachloride, chloroform, copper, cyanide, iron, lead, manganese, pentachlorophenol, surfactants (MBAS), tetrachloroethene (PCE), and zinc). As shown in Attachment G, no reasonable potential to exceed applicable water quality standards was found for any pollutant parameter.

e. **Other Constituents of Concern**

i. **Chlorine Residual**

U.S. EPA developed National Ambient Water Quality Criteria (NAWQC) for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

The Discharger uses chlorine (sodium hypochlorite) for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses a sodium bisulfite process to dechlorinate the effluent prior to discharge to the Sacramento River.

Consistent with Order R5-2010-0004, and due to the infrequent and short-term nature of CSO discharges from the Facility, the chlorine residual effluent limit (0.019 mg/L) will be carried over to this Order. The effluent limit, however, has been changed from a storm maximum to a daily maximum. This change was made because discharge events can last more than 24 hours, so compliance with the effluent limit should be on a daily basis. The effluent limitation is based on the NAWQC for protection of freshwater aquatic life for chlorine residual, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life. This effluent limitation will apply to discharge from Discharge Points 002 (CWTP), 003 (CWTP Sump 104) and 006 (Pioneer Reservoir).

Analysis of the effluent data shows that the MEC of 3.7 mg/L for chlorine residual, for a sample taken from Discharge Point 002 (CWTP) on 2 December 2012, which exceeds the proposed MDEL. According to the cover letter for the 1 February 2013 SMR, "*The positive chlorine residual corresponded with a positive dechlorinating agent residual (sodium bisulfate), suggesting that this may have been a false-positive result. This was the only positive chlrorine residual value over twenty-one and a half hour discharge spanning 12/1-12/2/2012*." Further, this detected chlorine residual was the only detected value reported for chlorine from all discharge points during the term of Order R5-2010-0004. In light of the fact that the Facility is designed to dechlorinate, the Central Valley Water Board concludes that immediate compliance with the effluent limitations is therefore feasible.

ii. **Pathogens**

The applicable water quality objective that applies to surface waters is the bacteria objective in the Basin Plan, which states, "*In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml*." There are no numeric water quality objectives for pathogens in the Basin Plan applicable to the receiving water for the protection of the municipal and domestic supply (MUN) and agricultural supply (AGR) beneficial uses.

In an effort to control the discharge of coliform bacteria in CSO discharges, Order R5-2010-0004 included effluent limitations for fecal coliform bacteria at 200 MPN/100 mL for a storm year median, and no higher than 1,000 MPN/100 mL in three consecutive samples. Order R5-2010-0004 also required that the Discharger continuously operate the chlorination equipment when discharging to the Sacramento River. As was shown in Tables F-3 and F-4, the storm year maximum reported fecal coliform concentrations during the previous permit term was 4.5 MPN/100 mL for Discharge Point 002 (CWTP) and 49 MPN/100 mL for Discharge Point 006 (Pioneer Reservoir).

Based on a review of data submitted by the Discharger and the period of record for the USGS monitoring stations on the Sacramento River, and the fact that CSO discharges typically occur during the rainy season, 20:1 (river flow to design effluent flow) dilution is always available. Therefore, given the low concentrations of fecal coliform reported by the Discharger, effluent limitations based on the Basin Plan numeric objectives will not be included in this Order. However, as discussed further in Section IV.B.2 of this Fact Sheet, the existing effluent limitations and discharge requirements are retained in this Order to ensure continued control of coliform bacteria discharges from the CWTP and Pioneer Reservoir.

During the term of Order R5-2010-0004, there were two reported discharges from Discharge Point 004 (untreated combined wastewater from Sump 2/2A through the flow control structure). For the untreated discharge that occurred on 2 December 2012, the fecal coliform concentration was reported as >16,000 MPN/100 mL.

iii. **pH**

The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "…*pH shall not be depressed below 6.5 nor raised above 8.5*." Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum were included in Order R5-2010-0004 based on the Basin Plan objectives for pH.

As shown in Tables F-3 and F-4, pH values for several discharge events from Discharge Points 002 and 006 have exceeded the instantaneous minimum pH effluent limitation. According to the Discharger's ROWD, these low pH values may be due in part to the addition of chemicals to ensure proper chlorination and dechlorination. In addition, the Discharger has provided as part of e-SMR submittals, pH data for the influent to the Facility at levels consistently below 6.5 standard units that may also contribute to the low pH values in the effluent. Finally, as part of their June 2013 WQA, the Discharger performed receiving water monitoring for pH using continuous sensor monitoring. This monitoring was upstream and downstream of Discharge Point 006 (Pioneer Reservoir) during 12 discharge events from 2010 through 2013. The results of the continuous monitoring indicate that the observed impact of discharges from Discharge Point 006 (Pioneer Reservoir) is relatively consistent at approximately -0.1 standard units (i.e., the pH of the receiving water was lowered by an average of 0.1 standard units downstream of the discharge from Pioneer Reservoir). However, the downstream pH was always in compliance with the applicable Basin Plan objectives (i.e., within the range of 6.5 – 8.5).

Based on the data and information provided by the Discharger, excursions below the existing pH effluent limitations (6.5 to 8.5 standard units) do not have the reasonable potential to cause exceedances of downstream receiving water quality objectives. Therefore, WQBEL's for pH are not included in this Order. However, as discussed further in Section IV.B.2 of this Fact Sheet, technology-based effluent limitations for pH will be included in this Order to ensure the Facility is operated properly.

iv. **Settleable Solids**

For inland surface waters, the Basin Plan states that *"…[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses*." This Order retains from Order R5-2010-0004 the MDEL for settleable solids (1.0 ml/L) to ensure that the Pioneer Reservoir and CWTP treatment works operate in accordance with design capabilities. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order.

As described in Tables F-3, reported settleable solids concentrations representing Discharge Point 002 during the term of Order R5-2010-0004 are within the applicable water quality objectives. For Discharge Point 006, 1 of 12 samples exceeded the effluent limitation during the term of Order R5-2010-0004. The concentrations for the remaining 11 samples were all reported below the effluent limitation. Therefore, immediate compliance with these effluent limitations is considered feasible.

v. **Temperature**

The Thermal Plan requires that, "*The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F*." CSO discharges are considered an existing elevated temperature waste, as the temperature of the discharge is higher than the natural temperature of the Sacramento River. To ensure compliance with the Thermal Plan, the effluent limitation for temperature from Order R5-2010-0004 (the maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F) is retained in this Order.

As shown in Tables F-3 and F-4, reported effluent data shows that the temperature levels of discharges during the term of Order R5-2010-0004 are within the applicable water quality objectives. Therefore immediate compliance with these effluent limitations is feasible.

vi. **Diazinon and Chlorpyrifos**

The Central Valley Water Board completed a TMDL for diazinon and chlorpyrifos in the Sacramento – San Joaquin Delta Waterways and amended the Basin Plan to include diazinon and chlorpyrifos waste load allocations and water quality objectives. The Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento – San Joaquin Delta was adopted by the Central Valley Water Board on 23 June 2006 and became effective on 10 October 2007.

The amendment "…*modifies Basin Plan Chapter III (Water Quality Objectives) to establish site specific number objectives for diazinon and chlorpyrifos in the Delta Waterways*." The amendment also "…*identifies the requirements to meet the additive formula already in Basin Plan Chapter IV (Implementation), for the additive toxicity of diazinon and chlorpyrifos*."

The amendment states that "*The waste load allocations for all NPDES-permitted dischargers…shall not exceed the sum (S) of one (1) as defined below.*

$$S = \frac{C_d}{WQO_d} + \frac{C_c}{WQO_c} \leq 1.0$$

Where:

C_d *= diazinon concentration in µg/L of point source discharge*

C_c *= chlorpyrifos concentration in µg/L of point source discharge*

WQO_d *= acute or chronic diazinon water quality objective in µg/L*

WQO_c *= acute or chronic chlorpyrifos water quality objective in µg/L*

Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. For purposes of calculating the sum (S) above, analytical results that are reported as 'non-detectable' concentrations are considered to be zero."

Appendix A of the Diazinon and Chlorpyrifos TMDL lists waterways subject to the TMDL and includes the Sacramento River.

Diazinon was not detected in the effluent for the period January 2010 through December 2014 from Discharge Points 002 (5 samples; MDL 0.007 µg/L, RL 0.02 µg/L), 004 (1 sample; MDL 0.007 µg/L, RL 0.02 µg/L), and 006 (14 samples; MDL 0.007 µg/L, RL 0.02 µg/L). Diazinon was also not detected in 10 upstream receiving water samples collected for the same period (MDL 0.007 µg/L, RL 0.02 µg/L).

Chlorpyrifos was not detected in the effluent for the period January 2010 through December 2014 from Discharge Points 002 (5 samples; MDL 0.003 µg/L, RL 0.01 µg/L), 004 (1 sample; MDL 0.003 µg/L, RL 0.01 µg/L), and 006 (14 samples; MDL 0.003 µg/L, RL 0.01 µg/L). Chlorpyrifos was also not detected in 10 upstream receiving water samples collected for the same period (MDL 0.003 µg/L, RL 0.01 µg/L).

Although there were no detections of either diazinon or chlorpyrifos during the term of Order R5-2010-0004, due to the TMDL for diazinon and chlorpyrifos in the Delta, WQBEL's for these constituents are required. The TMDL waste load allocation applies to all NPDES dischargers to Delta waterways and will serve as the basis for WQBEL's for this Facility. Therefore, this Order includes effluent limits calculated based on the waste load allocations contained in the TMDL, as follows:

Average Monthly Effluent Limitation (AMEL)

$$S_{AMEL} = \frac{C_{D\ M-AVG}}{0.08} + \frac{C_{C\ M-AVG}}{0.012} \leq 1.0$$

$C_{D\ M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.

$C_{C\ M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

Maximum Daily Effluent Limitation (MDEL)

$$S_{AWEL} = \frac{C_{D\ D-MAX}}{0.14} + \frac{C_{C\ D-MAX}}{0.021} \leq 1.0$$

$C_{D\ D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L.

$C_{C\ D\text{-}maxg}$ = maximum daily chlorpyrifos effluent concentration in µg/L.

Diazinon and chlorpyrifos were not detected in the effluent from Discharge Points 002, 004, and 006. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

The Discharger, as part of their Public Outreach Program component of their Stormwater Quality Improvement Plan (as required under Municipal Separate Storm Sewer System Order R5-2008-0142), implements a variety of educational stormwater and urban runoff outreach programs. These programs are designed in part to reduce to the maximum extent practicable, pollutants in stormwater discharges associated with the application of pesticides, herbicides, and fertilizer. As these programs are implemented City-wide, the programs should also assist in reducing the likely presence of diazinon and chlorpyrifos when CSO discharges occur.

vii. **Mercury**

The Basin Plan contains fish tissue objectives for all Delta waterways listed in Appendix 43 of the Basin Plan that states "... *the average methylmercury concentrations shall not exceed 0.08 and 0.24 mg methylmercury/kg, wet weight, in muscle tissue of trophic level 3 and 4 fish, respectively (150 - 500*

mm total length). The average methylmercury concentrations shall not exceed 0.03 mg methylmercury/kg, wet weight, in whole fish less than 50 mm in length." The Delta Mercury Control Program contains aqueous methylmercury waste load allocations that are calculated to achieve these fish tissue objectives. Methylmercury reductions are assigned to dischargers with concentrations of methylmercury greater than 0.06 ng/L (the concentration of methylmercury in water to meet the fish tissue objective). The Facility is allocated 0.53 g/year of methylmercury, as listed in Table IV-7B of the Basin Plan. This Order contains a final mass-based WQBEL for methylmercury based on the waste load allocation.

Although effluent and receiving water methylmercury data were collected during the term of Order R5-2010-0004, it is uncertain whether the Discharger can immediately comply with the final WQBEL for methylmercury as the mass loading from the Facility is dependent on the number and extent of storm events that trigger discharges. Therefore, a compliance schedule in accordance with the State Water Board's Compliance Schedule Policy and the Delta Mercury Control Program has been established in this Order.

4. WQBEL Calculations

a. This Order includes WQBEL's for chlorine residual, settleable solids, temperature, chlorpyrifos, diazinon, and methylmercury. The general methodology for calculating WQBEL's are based on the different criteria/objectives.

Summary of Water Quality-Based Effluent Limitations
Discharge Points 002, 003, and 006

Table F-11. Summary of Water Quality-Based Effluent Limitations

Constituent	Units	Effluent Limitations	
		Monthly Average	Maximum Daily
Chlorine, Total Residual	mg/L	--	0.019
Settleable Solids	ml/L	--	1.0[1]
Temperature	°F	--	[2]
Diazinon and Chlorpyrifos	µg/L	[3]	[4]
Methylmercury	g/year	--	[5]

[1] Applicable to Discharge Point 006 (Pioneer Reservoir) for flows of 250 MGD or less and for all flows from Discharge Points 002 and 003.

[2] The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.

[3] Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\ M-AVG}}{0.08} + \frac{C_{C\ M-AVG}}{0.012} \leq 1.0$$

$C_{D\ M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\ M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

[4] Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\ M-AVG}}{0.14} + \frac{C_{C\ M-AVG}}{0.021} \leq 1.0$$

$C_{D\ D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L.
$C_{C\ D\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L.

[5] The calendar year methylmercury combined loading from Discharge Points 002, 003, and 006 shall not exceed 0.53 grams.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V.).

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00.) The Basin Plan also states that, *"…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*".

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Accordingly, the following were used to determine whether the acute toxicity data reported by the Discharger during the term of Order R5-2010-0004 have the potential to impact the receiving water in the vicinity of the discharges from the CSS:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay ---------- 70%
Median for any three consecutive bioassays ---------- 90%

The following table presents the acute toxicity testing results reported by the Discharger during the term of Order R5-2010-0004.

Table F-12. Reported Acute Whole Effluent Toxicity Data

Discharge Point	Date	Test Type	Species	Survival (%)
002	3/14/2011	Survival	*Pimephales promelas*	87.5
	11/30/2012	Survival	*Pimephales promelas*	100
	2/9/2014	Survival	*Pimephales promelas*	95
004	12/2/2012	Survival	*Pimephales promelas*	100
006	12/19/2010	Survival	*Pimephales promelas*	100
	1/21/2012	Survival	*Pimephales promelas*	92.5
	11/30/2012	Survival	*Pimephales promelas*	100
	2/8/14	Survival	*Pimephales promelas*	92.5

As shown above, acute toxicity data representing discharges from the Facility do not indicate the potential to cause acute toxicity in the receiving water. Therefore whole effluent toxicity effluent limitations are not justified at this time. However, due to the operations at the Facility (i.e., chlorination and dechlorination of discharges from the CWTP and Pioneer Reservoir, and the possibility for the discharge of untreated combined sewage during extreme wet weather events), this Order will retain the

annual acute toxicity testing requirements when discharges from the Facility do occur.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. Pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as temperature, and when the applicable standards are expressed in terms of concentration (e.g., NAWQC for chlorine residual, and concentration-based waste load allocations for diazinon and chlorpyrifos) and mass limitations are not necessary to protect the beneficial uses of the receiving water. Due to the intermittent and infrequent nature of the discharge, and except for methylmercury mass limitations based on the Delta Mercury Control Program TMDL WLA, mass-based effluent limitations have not been developed.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. Due to the periodic and short-term nature of CSO discharges from the CSS, the application of average monthly effluent limitations is not considered necessary for chlorine residual and TSS.

The annual mass loading effluent limitation for methylmercury is based on direct application of the applicable TMDL waste load allocation. Since it is necessary to determine compliance with the TMDL waste load allocation on an annual basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

The effluent limitations for settleable solids and temperature are based on the averaging periods specified in the Basin Plan.

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. section 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for pH. The effluent limitations for pH are less stringent than those in Order R5-2010-0004. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent WQBELs "*except in compliance with Section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

   i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLAs will assure the attainment of such water quality standards.

ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

The Sacramento River is considered an attainment water for pH because the receiving water is not listed as impaired on the 303(d) list for this constituent.[2] As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of the effluent limitations for pH in Order R5-2010-0004 meets the exception in CWA section 303(d)(4)(B).

b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

As described further in section IV.C.3.e.iii of this Fact Sheet, updated information that was not available at the time Order R5-2010-0004 was issued indicates that pH does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for pH includes the continuous sensor monitoring data compiled by the Discharger for the receiving water as part of the June 2013 WQA. The results of the continuous monitoring indicate that the pH downstream of discharges from the Pioneer Reservoir (EFF-006) was always in compliance with the applicable Basin Plan objectives (i.e., within the range of 6.5 – 8.5).

4. Antidegradation Policies

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBEL's where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

There was no reasonable potential for discharges from the Facility to cause or contribute to exceedances of the pH water quality objectives in the receiving water. Although no WQBELs are included in this Order, technology-based effluent limitations are included to ensure proper performance of the Facility treatment systems. The technology-based effluent limitations include a less stringent instantaneous minimum effluent limitation for pH than what was required in Order R5-2010-0004. The relaxation of the effluent limitation for pH will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the relaxation of the effluent limitations for pH does not result in an allowed increase in pollutants or any additional degradation of the

[2] "The exceptions in Section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

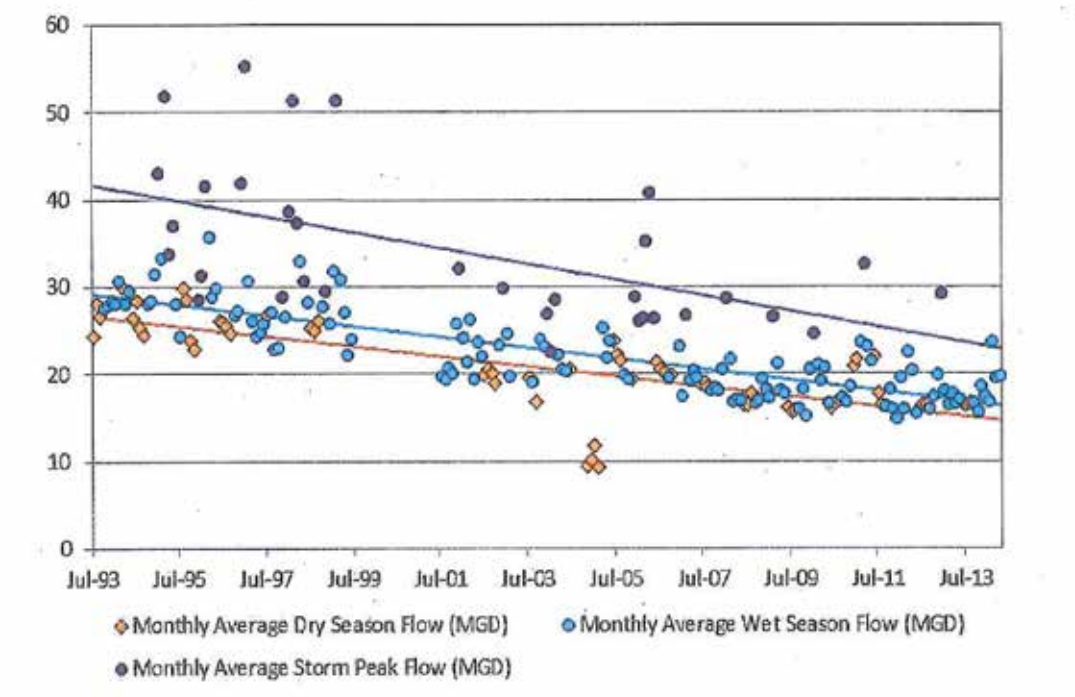
receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

The CSO Control Policy requires implementation of a long-term control plan (LTCP) to comply with water quality-based requirements of the CWA. The Discharger adopted their LTCP, also known as the Combined Sewer System Improvement Plan (CSSIP), in 1995, which contained the infrastructure improvement portion of the LTCP. The Discharger's LTCP is based on the CSO Control Policy's presumption approach. This approach means that if the program meets certain performance criteria it is presumed that the discharge meets water quality standards. The performance criteria for the presumption approach option selected by the Discharger specifies the elimination or the capture for treatment of no less than 85 percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis. In addition, CSOs remaining after implementation of the Nine Minimum Controls and that are captured for treatment should receive a minimum of primary clarification, solids and flotables disposal, and disinfection.

The majority of the time the Discharger captures and provides treatment for up to 100 percent of the combined sewer flows, compared to minimum the 85 percent requirement (there have been infrequent instances where small volumes of untreated overflows have occurred from Discharge Points 004, 005, and 007). Therefore, almost all CSO's that occur from the Facility receive treatment (within the storage/transports) consisting of removal of floatable and settleable solids. The Discharger's efforts have resulted in consistent and significant reductions in dry weather and dry season flows over the last 20 years. The figure below shows the consistent downward trend and demonstrates that the CSS service area is not generating new flows. The overall annual average CSO discharge volume decreased by over 60 percent over the past 24 years. Water conservation, new plumbing codes for redevelopment, and ongoing collection system improvements are all factors in the gradual decrease in dry and wet weather flows over time.

The average number of days that untreated CSO's were discharged per year has also decreased from seven per year in the early 90's, prior to implementation of the CSSIP, to less than once per year in the past 10 years. The treated CSO discharges have also decreased from 15 times per year on average to an average of four times per year during the same time period.

This Order requires that the Discharger prepare a LTCP update to ensure compliance with the U.S. EPA CSO Control Policy requirements. Specifically, the update must address the increased sewage flows from planned urban growth and high density infill projects (e.g., Railyard Development and Downtown Arena project). In addition, updated LTCP should considered the Delta as a "sensitive area" as defined in the U.S. EPA CSO Control Policy. In such sensitive areas, the U.S. EPA CSO Control Policy recommends that a LTCP prohibit new or significantly increased overflows. The U.S. EPA CSO Control Policy also recommends that overflows discharging to sensitive areas be eliminated or relocated wherever physically possible and economically achievable. The CSS characterization which the Discharger's existing LTCP relied on is changing due to urban growth. Further, the Discharger's LTCP does not specifically address sensitive areas as conditions now exist, and the sensitive areas have changed over time due to State and federal listed endangered or threatened species, as well as pelagic organism decline in the Delta.



The Discharger provided with their ROWD, a description of the policies and procedures used to mitigate the impact of redevelopment and new development in the CSS service area. Generally, CSS development fees are used to mitigate impacts to the CSS through either onsite flow mitigation or infrastructure projects to reduce flows. Due to the potential detrimental impacts redevelopment and new development can have on the management of the CSS and ultimately the potential for CSS overflows or outflows, the Discharger will be required to address the concerns raised as part of their LTCP update that will required under this Order.

In addition to these elements, the Discharger will be required to evaluate as part of the LTCP update their policies and procedures for allowing redevelopment and new development to ensure protection of the CSS and achieve the interim and final LTCP goals, as well as ensure that CSS discharges do not cause exceedance of applicable water quality objectives. This evaluation will include considering requiring all new and significant re-development to be serviced by a separate collection system for transport to a municipal wastewater treatment plant.

Continued implementation of a LTCP will ensure the permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on TSS, pH, and fecal coliform organisms. Restrictions on TSS, pH, and fecal coliform organisms are discussed in Section IV.B.2 of this Fact Sheet. This Order's technology-

based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

WQBEL's have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to 30 May, 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to 30 May, 2000, but not approved by U.S. EPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 C.F.R. section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations
Discharge Points 002, 003, and 006

Table F-13. Final Effluent Limitations - Discharge Points 002, 003, and 006

Constituent	Units	Effluent Limitations				Basis[2]
		Storm Year[1] Average	Storm Year[1] Median	Average Monthly	Maximum Daily	
Total Suspended Solids	mg/L	100[3,4]	--	--	--	BPJ
Settleable Solids	ml/L	--	--	--	1.0	BP
Chlorine, Total Residual[5]	mg/L	--	--	--	0.019	NAWQC
Fecal Coliform Organisms	MPN/100 mL	--	200[6]	--	--	BPJ
pH	standard units	--	--	--	[7]	BPJ
Temperature	°F	--	--	--	[8]	TP
Diazinon and Chlorpyrifos	µg/L	--	--	[9]	[10]	TMDL
Methylmercury	g/year	--	--	--	[11]	TMDL

[1] 1 October through 30 September
[2] BPJ – Based on best professional judgment.
BP – Based on water quality objectives contained in the Basin Plan.
NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
TP – Based on water quality objectives contained in the Thermal Plan.
TMDL – Based on the applicable TMDL's for the Sacramento River.
[3] In addition, two consecutive samples shall not exceed 150 mg/L.
[4] Applicable to Pioneer Reservoir for flows of 250 MGD or less and all flows from the CWTP.
[5] The Discharger shall continuously operate the chlorination equipment when discharging to the Sacramento River.
[6] In addition, no three consecutive samples shall exceed 1,000 MPN/100 mL.
[7] The discharge shall not have a pH less than 6.0 nor greater than 8.5.
[8] The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
[9] Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\ M-AVG}}{0.08} + \frac{C_{C\ M-AVG}}{0.012} \leq 1.0$$

$C_{D\ M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\ M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

[10] Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\ D-MAX}}{0.14} + \frac{C_{C\ D-MAX}}{0.021} \leq 1.0$$

$C_{D\ D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L.
$C_{C\ D\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L.

[11] The calendar year methylmercury combined loading from Discharge Points 002, 003, and 006 shall not exceed 0.53 grams.

E. Interim Effluent Limitations

The State Water Board's Resolution 2008-0025 "Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits" (Compliance Schedule Policy) requires the Central Valley Water Board to establish interim numeric effluent limitations in this Order for compliance schedules longer than 1 year. As discussed in section VI.B.7 of this Fact Sheet, the Central Valley Water Board is approving a compliance schedule longer than 1 year for methylmercury. The Compliance Schedule Policy requires that interim effluent limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. Consistent with the Delta Mercury Control Program, this Order includes interim effluent limitations for total mercury based on Facility performance.

1. **Methylmercury Compliance Schedule.** This Order contains a new final effluent limitation for methylmercury based on the new objective that became effective on 20 October 2011. The Discharger has complied with the application requirements in paragraph 4 of the State Water Board's Compliance Schedule Policy, and the Discharger's application demonstrates the need for additional time to implement actions to comply with the new limitations, as described below. Therefore, a compliance schedule for compliance with the effluent limitations for methylmercury is established in the Order.

   In October 2013, the Discharger submitted to the Central Valley Water Board their Delta Methylmercury Total Maximum Daily Load Control Program Implementation Phase I Control Study Work Plan that laid out their proposed approach for evaluating potential methylmercury discharge control measures. A compliance schedule is necessary to allow the Discharger the time needed to evaluate and implement their proposed actions to comply with the final effluent limitations. The Discharger is evaluating both methylation due to solids residence time in treatment facilities, as well as the potential variability associated with implementation of green infrastructure as a means to reduce discharge volumes. The Discharger initiated data collection in 2013/2014, and plans on completing the data collection in June 2015. In the interim, and in coordination with the Sacramento Stormwater Quality Partnership, the Discharger continues to implement a number of source control activities aimed at minimizing the potential for the discharge of mercury (e.g., sediment removal, household hazardous waste program). The Discharger also participates in the Central Valley Clean Water Association (CVCWA) Delta Methylmercury TMDL Control Study Workgroup, which is evaluating methylmercury control opportunities as well as supporting the Delta Mercury Exposure Reduction Program (MERP).

   The compliance schedule is as short as possible. The Central Valley Water Board will use the Phase 1 Control Studies' results and other information to consider amendments to the Delta Mercury Control Program during the Phase 1 Delta Mercury Control Program Review. Therefore, at this time it is uncertain what measures must be taken to consistently comply with the waste load allocation for methylmercury. The interim effluent limits and final compliance date may be modified at the completion of Phase 1.

   Interim performance-based limitations have been established in this Order. The interim limitations were determined as described in section IV.E.2. below, and are in effect until the final limitations take effect. The interim numeric effluent limitations and on-going

source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

2. **Interim Limits for Methylmercury.** The Compliance Schedule Policy requires the Central Valley Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than 1 year. Interim effluent limitations must be based on treatment plant performance or previous final permit limitations, whichever is more stringent. When feasible, interim limitations must correspond with final permit effluent limitations with respect to averaging bases (e.g., AMEL, MDEL) for effluent limitations for which compliance protection is intended.

For mercury, the Delta Mercury Control Program requires point source discharges limit their discharges of inorganic (total) mercury to Facility performance-based levels during Phase 1 and for intermittent dischargers such as the CSS, the interim inorganic (total) mercury effluent mass limit shall consider site-specific discharge conditions. At the end of Phase 1, the interim inorganic (total) mercury mass limit will be re-evaluated and modified as appropriate. The Delta Mercury Control Program also requires interim limits established during Phase 1 and allocations will not be reduced as a result of early actions that result in reduced inorganic (total) mercury and/or methylmercury in discharges.

The following table summarizes the storm year total mercury loadings based on the Facility's current performance (January 2010 thru December 2014). During this period the State has been in a drought which has resulted in few CSO discharges from the CSS. Therefore, the current data may underestimate facility performance. The interim limitations for total mercury in this Order are based on the estimated mercury loadings from the CSS described in the April 2010 Sacramento – San Joaquin Delta Estuary TMDL for Methylmercury Staff Report.[3] The April 2010 Staff Report estimated the maximum annual total mercury loading from the CSS discharges to be 341 grams/year. Establishing the interim limitations for total mercury at 341 grams/year is consistent with the intent of the TMDL to not penalize dischargers for early actions to reduce mercury. Effective immediately, and until 31 December 2030, the effluent storm year total mercury load shall not exceed 341 grams/year. These interim effluent limitations shall apply in lieu of the final effluent limits for methylmercury.

Table F-14. Summary of Facility Performance for Total Mercury

Storm Year[1]	Total Mercury Loading (grams/storm year)[2]
2010/2011	29.9
2011/2012	41.0
2012/2013	72.1
2013/2014	10.6

1 Storm year is defined as 1 October – 30 September of the following year.
2 Represents the total mercury loading for discharges from Discharge Points 002 and 006.

The Central Valley Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with final effluent limitations cannot be achieved by the existing discharge. Discharge of

[3] See specifically Table G.2b: City of Sacramento Combined Stormwater/Sewer System Annual Water Volumes & Total Mercury Load Estimates

constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. **Delta Regional Monitoring Program.** The Central Valley Water Board requires individual dischargers and discharger groups to conduct monitoring of Delta waters and Delta tributary waters in the vicinity of their discharge, known as ambient (or receiving) water quality monitoring. This monitoring provides information on the impacts of waste discharges on Delta waters, and on the extant condition of the Delta waters. However, the equivalent funds spent on current monitoring efforts could be used more efficiently and productively, and provide a better understanding of geographic and temporal distributions of contaminants and physical conditions in the Delta, and of other Delta water quality issues, if those funds were used for a coordinated ambient monitoring effort, rather than continue to be used in individual, uncoordinated ambient water quality monitoring programs. The Delta Regional Monitoring Program will provide data to better inform management and policy decisions regarding the Delta.

   This Order allows the Discharger to elect to participate in the Delta Regional Monitoring Program in lieu of conducting all or part of the individual receiving water monitoring required in the Monitoring and Reporting Program. If the Discharger elects to cease individual receiving water monitoring and participate in the Delta Regional Monitoring Program, the Discharger shall submit a letter signed by an authorized representative to the Executive Officer informing the Central Valley Water Board that the Discharger will participate in the Delta Regional Monitoring Program and the date on which individual receiving water monitoring under Attachment E, Section VIII.A, will cease or be modified. Approval by the Executive Officer is required, and contingent on Delta Regional Monitoring Program Steering Committee action on the forthcoming Regional Monitoring Program monitoring plan.

   Delta Regional Monitoring Program data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Order. Delta Regional Monitoring Program monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta Regional Monitoring Program monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. Delta Regional Monitoring Program monitoring data may be used to help establish background receiving water quality for an RPA in an NPDES permit after evaluation of the applicability of the data for that purpose. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. Delta Regional Monitoring Program data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data,

spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger's discharge points and other point and non-point source discharges, receiving water flow volume, speed and direction, and other information to determine the likely source or sources of a constituent that resulted in exceedance of a receiving water quality objective.

If the Discharger begins to participate in the Delta Regional Monitoring Program in lieu of individual receiving water monitoring, the Discharger shall continue to participate in the Delta Regional Monitoring Program until such time as the Discharger informs the Board that participation in the Delta Regional Monitoring Program will cease and individual monitoring is reinstituted. Receiving water monitoring under Attachment E, Section VIII.A, is not required under this Order so long as the Discharger adequately supports the Delta Regional Monitoring Program. Participation in the Delta Regional Monitoring Program by a Discharger shall consist of providing funds and/or in-kind services to the Delta Regional Monitoring Program at least equivalent to discontinued individual monitoring and study efforts. If a discharger or discharger group fails to maintain adequate participation in the Delta Regional Monitoring Program, as determined through criteria to be developed by the Delta Regional Monitoring Program Steering Committee, the Steering Committee will recommend to the Central Valley Water Board that an individual monitoring program be reinstated for that discharger or discharger group.

If the Discharger participates in the Delta Regional Monitoring Program as described in Attachment E, Section VIII, the receiving water portion of the required Characterization Monitoring need not be conducted by the Discharger. Instead, data from the Delta Regional Monitoring Program will be utilized to characterize the receiving water in the permit renewal. The Discharger may, however, conduct any site-specific receiving water monitoring deemed appropriate by the Discharger and submit that monitoring data with this Characterization Monitoring. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. Historic receiving water monitoring data taken by the Discharger and from other sources may also be evaluated to determine whether or not that data is representative of current receiving water conditions. If found to be representative of current conditions, then that historic data may be used in characterizing receiving water quality for the purposes of Reasonable Potential analysis.

2. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

   a. **Temperature.** The Thermal Plan is applicable to the discharge from the Facility. For the purposes of the Thermal Plan, the discharge is considered to be an *Existing Discharge of Elevated Temperature Waste to an Estuary*, as defined in the Thermal Plan. Therefore, the Discharger must meet the water quality objective at Section 5.A(1) of the Thermal Plan, which requires compliance with the following:

i. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

ii. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.

iii. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.

iv. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

This Order contains receiving water limitations for temperature based on the Thermal Plan.

b. **Turbidity.** Order R5-2010-0004 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and U.S. EPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution R5-2007-0136 the Central Valley Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 C.F.R. §131.12).

The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the turbidity receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 C.F.R. §131.12).

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under

the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

B. Groundwater – Not Applicable

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Mercury.** The Delta Mercury Control Program was designed to proceed in two phases. Phase 1 spans a period of approximately 9 years. Phase 1 emphasizes studies and pilot projects to develop and evaluate management practices to control methylmercury. At the end of Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations and/or the Final Compliance Date; implementation of management practices and schedules for methylmercury controls; and adoption of a mercury offset program for dischargers who cannot meet their load and waste load allocations after implementing all reasonable load reduction strategies. The fish tissue objectives, the linkage analysis between objectives and sources, and the attainability of the allocations will be re-evaluated based on the findings of Phase 1 control studies and other information. The linkage analysis, fish tissue objectives, allocations, and time schedules may be adjusted at the end of Phase 1, or subsequent program reviews, as appropriate. Therefore, this Order may be reopened to address changes to the Delta Mercury Control Program.

b. **Compliance with State-Wide Sanitary Sewer System General Order.** The CSS is not currently subject to Order 2006-0003-DWQ, a Statewide General WDR for Sanitary Sewer Systems. If the State Water Board revises or reissues Order 2006-0003-DWQ during the term of this Order to extend coverage to the CSS, this Order may be reopened and revised to ensure consistency with and eliminate duplication of any applicable provisions and/or requirements.

c. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution R5-2013-0098 amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

2. Special Studies and Additional Monitoring Requirements

a. **Phase 1 Methylmercury Control Study.** The Basin Plan's Delta Mercury Control Program requires NPDES dischargers, working with other stakeholders, to conduct methylmercury control studies (Control Studies) to evaluate existing control methods and, as needed, develop additional control methods that could be implemented to achieve their methylmercury load and waste load allocations. Control studies can be developed through a stakeholder group approach or other collaborative mechanism, or by individual dischargers.

The Central Valley Water Board will use the Phase 1 Control Studies' results and other information to consider amendments to the Delta Mercury Control Program during the Phase 1 Delta Mercury Control Program Review. The objective of the Control Studies is to evaluate existing control methods and, as needed, develop additional control methods that could be implemented to achieve the methylmercury load and wasteload allocations. In accordance with the Delta Mercury Control Plan, a work plan was submitted in April 2013. The Central Valley Water Board commits to supporting an adaptive management approach. The adaptive management approach includes the formation of a Stakeholder Group(s) and a Technical Advisory Committee (TAC).

The study work plan was reviewed and approval by the TAC and subsequently approved by the Executive Officer. The Discharger shall immediately implement the work plan upon Executive Officer approval, and a progress report shall be submitted by **20 October 2015**.

The Study shall evaluate the feasibility of reducing sources more than the minimum amount needed to achieve the methylmercury allocation. The Study also may include an evaluation of innovative actions, watershed approaches, offsets projects, and other short and long-term actions that result in reducing inorganic (total) mercury and methylmercury to address the accumulation of methylmercury in fish tissue and to reduce methylmercury exposure. The Study may evaluate the effectiveness of using inorganic (total) mercury controls to control methylmercury discharges. The Study shall include a description of methylmercury and/or inorganic (total) mercury management practices identified in Phase 1; an evaluation of the effectiveness; and costs, potential environmental effects, and overall feasibility of the control actions. The Study shall also include proposed implementation plans and schedules to comply with methylmercury allocations as soon as possible. The Study shall be submitted by **20 October 2018**.

The Executive Officer may authorize extending the Study due date. The Executive Officer may, after public notice, extend the due date up to 2 years if the Discharger demonstrates it is making significant progress towards developing, implementing and/or completing the Study and reasonable attempts have been made to secure funding for the Study, but the Discharger has experienced severe budget shortfalls.

3. Best Management Practices and Pollution Prevention

a. **Mercury Exposure Reduction Program.** The Basin Plan's Delta Mercury Control Program requires dischargers to participate in a Mercury Exposure Reduction Program. The Exposure Reduction Program is needed to address public health impacts of mercury in Delta fish, including activities that reduce actual and potential exposure of and mitigate health impacts to those people and communities most likely to be affected by mercury in Delta caught fish, such as subsistence fishers and their families. The Exposure Reduction Program must include elements directed toward:

i. Developing and implementing community-driven activities to reduce mercury exposure;

ii. Raising awareness of fish contamination issues among people and communities most likely affected by mercury in Delta-caught fish such as subsistence fishers and their families;

iii. Integrating community-based organizations that serve Delta fish consumers, Delta fish consumers, tribes, and public health agencies in the design and implementation of an exposure reduction program;

iv. Identifying resources, as needed, for community-based organizations and tribes to participate in the Program;

v. Utilizing and expanding upon existing programs and materials or activities in place to reduce mercury, and as needed, create new materials or activities; and

vi. Developing measures for program effectiveness.

This Order requires the Discharger to participate in a Mercury Exposure Reduction Program (MERP) in accordance with the Delta Mercury Control Program. The Discharger elected to provide financial support in the collective MERP with other Delta dischargers, rather than be individually responsible for any MERP activities. The objective of the Exposure Reduction Program is to reduce mercury exposure of Delta fish consumers most likely affected by mercury. The MERP work plan has been completed, and the Discharger shall continue to participate financially in the group effort to implement the work plan.

4. Construction, Operation, and Maintenance Specifications

a. **Combined Wastewater Control System Plan of Operations**. The Discharger will be required to revise and update as necessary their Combined Wastewater Control System Plan of Operations to ensure compliance with the NMC's and/or LTCP requirements in this Order. The existing Combined Wastewater Control System Plan of Operations was updated in December 2013 to specify the procedures that will be used to manage the CSS and establish operation, maintenance, and inspection procedures to maximize the removal of pollutants during and after each precipitation event using all available facilities within the combined wastewater collection and treatment system, with the goal of achieving the highest treatment possible and minimizing CSO's and CSS outflows.[4]

[4] The Combined Wastewater Control System Plan of Operations includes the elements of a Sewer System Management Plan (SSMP) that is required of separate sanitary sewer collection systems under State Water Board Order 2006-0003-DWQ, Statewide General WDR's for Sanitary Sewer Systems.

The Discharger is required to operate the combined wastewater collection and treatment system in conformance with the approved Combined Wastewater Control System Plan of Operations and shall report any variation from the Plan in the monthly monitoring reports provided to the Central Valley Water Board. Further modifications to the Combined Wastewater Control System Plan of Operations must be submitted for review and approval by the Executive Officer before they may become effective.

Also, due to the potential impact to the Sacramento River related to the discharge of untreated wastewater from Sump 2 Bypass (Discharge Points 004 and 005), and Sump 1A Bypass (Discharge Point 007), the Discharger is required to prepare and submit a report to the Central Valley Water Board that describes the circumstances under which the overflow(s) occurred. As part of this report, the Discharger shall evaluate whether the overflows could have been avoided with operational measures and infrastructure improvements, and propose as necessary any modifications necessary to the Combined Wastewater Control System Plan of Operations.

b. **Implementation of the NMC's.** The NMC's are technology-based requirements for CSO's. In response to concerns raised by U.S. EPA as a result of a compliance inspection performed in July 2005, Order R5-2010-0004 required several program updates by the Discharger to ensure compliance with the NMC's. In addition, Order R5-2010-0004 required implementation of the NMC's by the Discharger, as well as annual progress reports that document implementation of each of the NMC's. The following describes the status of implementation of the NMC's by the Discharger based on the information provided in the annual progress reports. In general, the Discharger has updated many NMC program elements to address the issues raised by U.S. EPA.

i. **Nine Minimum Controls No. 1. Conduct Proper Operations and Regular Maintenance Programs**

Order R5-2010-0004 required the Discharger to update its Combined Wastewater Control System Plan of Operations to provide more detail on the organization and people responsible for implementing the plan and the resources allocated to implementing the plan. Additionally, Order R5-2010-0004 required the Discharger to address issues that U.S. EPA identified during the compliance evaluation inspection, including specifying an inspection and maintenance schedule and procedures for the CSS, as well as requires a description for when and under what circumstances Discharge Points 004, 005 and 007 are used (and treatment if any that is provided prior to discharge). The Discharger's December 2013 update to its Combined Wastewater Control System Plan of Operations addressed the issues raised by U.S. EPA.

The Discharger uses a Computerized Maintenance Management System (CMMS) to track, schedule and record necessary maintenance tasks required for proper operation of the CSS facilities. The Discharger also continued to enhance the cleaning program for the CSS, using an asset based approach for determining the optimal frequency for cleaning each asset in the CSS.

The Discharger continued training staff on CSS maintenance procedures. In 2012/2013, 16.75 full-time equivalents were assigned to the Facility, and are responsible for providing the necessary operation and maintenance of the critical CSS components.

The Discharger continued implementation of its Fats, Oils, and Grease (FOG) Control Program. During the term of Order R5-2010-0004, the Discharger developed new restaurant inspection and enforcement procedures and Discharger designated two full-time inspectors responsible for inspections of all food service establishments in the CSS service area. The Discharger also enhanced the FOG program outreach efforts, including the development and deployment of a new website and multi-lingual video regarding the FOG program and best management practices for grease source control.

This Order will carry forward the same requirements contained in Order R5-2010-0004 to properly operate and maintain the CSS.

ii. **Nine Minimum Controls No. 2. Maximize Use of the Collection System for Storage**

Order R5-2010-0004 required the Discharger to maximize the in-line storage capacity of the collection system in light of the need to balance the storage needs with the goal of preventing outflows of sewage from the collection system to City streets. Order R5-2010-0004 also required the Discharger to keep records documenting implementation.

The procedures for management of flows in the CSS are provided in the Combined Wastewater Control System Plan of Operations and a series of Standard Operating Procedures (SOP's). The underlying approach to managing the CSS is to limit the number of overflows and ouflows from the CSS by using a combination of storage and treatment facilities (as described previously in Section II.A of this Fact Sheet).

As described in Section IV.C.3.c of this Fact Sheet, the Discharger has completed a number of capital improvement projects designed to reduce discharges from the CSS, and maximize the CSS storage capacity. For example, the Discharger recently completed construction of the Oak Park Regional Storage Facility that provides an additional 4 million gallons of regional storage to the CSS. In addition, part of the CSSIP update project (see Section II.A of this Fact Sheet) involves use of a new hydraulic model by the Discharger to optimize system performance and ensure all storage fills completely during major storm events.

This Order will carry forward the same requirements contained in Order R5-2010-0004 to properly implement this NMC.

iii. **Nine Minimum Controls No. 3. Review and Modify Pretreatment Program**

The Discharger is not required to have an approved pretreatment program to regulate non-domestic users of the CSS; the SRCSD operates a pretreatment program and regulates the discharges from non-domestic users in the City. Order R5-2010-0004 required the Discharger to prepare a report that evaluates the potential impact of non-domestic discharges to the CSS and the up-stream sanitary system during precipitation events. Additionally, Order R5-2010-0004 required the Discharger to investigate the feasibility of limiting batch discharges by significant industrial users to the combined sewer system and the up-stream sanitary system during wet weather events and to study the feasibility of requiring industrial users to retain wastewater during wet weather events.

The Discharger submitted a 2010/2011 Pretreatment Program Assessment Report on 30 January 2012. According to the report, during the 2010/2011

storm year, non-domestic users contributed less than 0.4 percent of the total flow discharged by the CSS to the receiving water. The associated pollutant loading from non-domestic users was also estimated to be insignificant in comparison to the total pollutant loading from CSS discharges. For most pollutants, loadings from non-domestic users were less than 0.4 percent of the total loading from the CSS.

The Discharger also evaluated the possibility of prohibiting discharges from non-domestic users during precipitation events. The Discharger concluded that it was not feasible due to high-cost associated with providing for additional on-site retention facilities. In light of the relatively small contribution to total flow and pollutant loadings, these high-costs are not considered cost-effective. The Discharger pledged to work with non-domestic users through the SRCSD pretreatment program to minimize impacts during storm events.

This Order requires the Discharger to continue implementation of pollution prevention programs and outreach initiatives to minimize the potential impact of non-domestic discharges on the CSO's. It also requires the Discharger to continue to evaluate whether additional modifications to its existing programs, as well as the SRCSD pretreatment program, are required to minimize CSO impacts from non-domestic discharges to the CSS.

iv. **Nine Minimum Controls No. 4. Maximize Flow to the POTW Treatment Plant**

Order R5-2010-0004 required the Discharger to convey 60 mgd to the SRWTP for secondary treatment and to maximize treatable flows during wet weather events consistent with the hydraulic capacities of the storage, transport, treatment and disposal facilities. The Discharger was required to maintain records to document these actions.

During the 2010/2011, 2011/2012, and 2012/2013 storm years, approximately 97 percent of the total CSS flow was diverted to the SRWTP to receive secondary treatment. Discharges from the CSS are primarily based on the available storage volume, storm intensity, and total storm volume. As shown in Table F-8, overflow discharges from the CSS typically occurred during periods with daily rainfall totals of approximately 1 inch or greater.

This Order requires the Discharger to continue operating the combined wastewater treatment system at maximum treatable flow during wet weather events and to report rainfall and flow data to the Central Valley Water Board.

v. **Nine Minimum Controls No. 5. Prohibit CSO's During Dry Weather**

Order R5-2010-0004 prohibited dry weather overflows from the CSO outfalls and required the Discharger to report these overflows to the Central Valley Water Board within 24 hours of discovery. When such an overflow occurs, the Order required the Discharger to initiate corrective action immediately, inspect the overflow daily until it is eliminated, and record the overflow, its cause, the corrective actions taken, and the dates on which the overflow began and ended.

The CSS discharge points to the river include discharges from Sumps 1 and 1A, Sumps 2 and 2A, Pioneer Reservoir and CWTP. Discharges from these locations are controlled by valves, gates, pumps and effluent structures at the CWTP and Sump 2/2A prior to flows entering the discharge points to the

receiving water. During dry weather, flows within the CSS are routed to the SRWTP via pumps and directed by valves that are manually and/or electronically controlled. CSS facilities and flow conditions are managed via a supervisory control and data acquisition (SCADA) system. Regular visual inspections confirm the proper setting for CSS valves prior and during dry weather conditions. Specific operator intervention would have to occur to route flows to the CSS discharge points during dry weather conditions. According to the Discharger, it is highly unlikely and would require human error and system failure for a dry weather overflow to the receiving water to occur through the CSS discharge locations and without detection via the continuous monitoring of the SCADA system.

This Order requires the Discharger to continue to monitor and report dry weather overflows, to take corrective action in the event that there is a dry weather overflow, and record the necessary information.

vi. **Nine Minimum Controls No. 6. Control of Solid and Floatable Materials in CSO's**

Order R5-2010-0004 required the Discharger to implement its current measures to control solid and floatable materials, as well as to identify and study possible additional measures to restrict the entry of solid and floatable materials into the CSS.

Based on the annual progress reports submitted during the term of Order R5-2010-0004, the Discharger stated that it has operated its structural controls at the CWTP, Sump 2A, and Pioneer Reservoir, and employed all reasonable methods (clean-out and street sweeping), to control the release of solid and floatable materials from its CSS. In addition, a variety of pollution prevention programs have assisted in preventing gross solid pollutants from entering the CSS collection system.

This Order requires the Discharger to continue to implement its current measures to control solid and floatable materials.

vii. **Nine Minimum Controls No. 7. Pollution Prevention Programs to Reduce Contaminants in CSO's**

Order R5-2010-0004 required the Discharger to implement a pollution prevention program to reduce the impact of CSO's on receiving waters and to keep records documenting pollution prevention activities.

During the term of Order R5-2010-0004, the Discharger continued to implement a pollution prevention program focused on reducing to the greatest extent possible, the amount of pollutants that enter the CSS and the impacts of CSO's on the receiving water. In the 2012/2013 Nine Minimum Controls Annual Progress Report, the Discharger described a number of pollution prevention activities that were being conducted, including the following:

- Various programs and initiatives associated with the Sacramento Stormwater Quality Partnership, including the Pesticide Reduction Strategy, the Metals Reduction Strategy, the Mercury Strategy, the Fecal Waste Strategy, and the regional public outreach program.
- A Water Conservation Strategy comprising a number of water conservation measures and initiatives. One such measure is the installation of water meters. The Discharger is under a State-mandated

requirement for the installation of water meters on all water service connections by 1 January 2025 (AB 2572). Due to the severe drought in California, however, the Sacramento City Council adopted a resolution in February 2015 to accelerate the water meter installation program in an effort to improve water conservation. The projected completion date for full water meter implementation is 2020, with 88% completion by 2017.

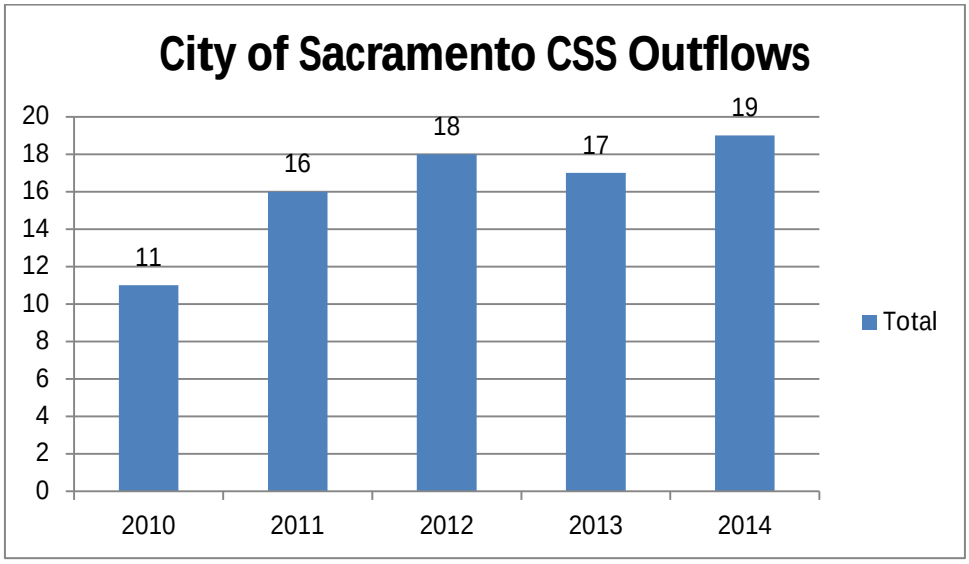
- Various programs associated with the City of Sacramento Recycling and Solid Waste Division, including a Containerized Yard Waste Collection program, street sweeping, a Bulky Item Collection program, an Illegal Dumping Strategy, a Household Hazardous Waste Collection program, and a Don't Rush to Flush Campaign.

This Order requires the Discharger to continue its pollution prevention program and to continue to keep appropriate records to document implementation of the program.

viii. **Nine Minimum Controls No. 8. Notify the Public of CSO's**

Order R5-2010-0004 required the Discharger to implement a public notification program to inform the public of when and where outflows from the CSS to streets occur and when and where CSO's occur. Order R5-2010-0004 also required the Discharger to initiate reporting consistent with the State Water Resources Control Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

The figure below summarizes the number of CSS outflows as reported by the Discharger in the State SSO Database.



The State Water Board has expressed concern that there may have been CSS outflows that have not been reported nor had the public been notified in accordance with the Discharger's Wastewater Collection Standard Operating Procedures for Emergency Response (Response Plan). The State Water Board issued a notice of violation (NOV) on 28 June 2011 for an alleged outflow which was observed to have occurred on 26 May 2011 based on observations made by Office of Enforcement staff. The Discharger's

subsequent investigation determined the alleged outflow did not contain sewage and did not fall into any of the CSS outflow categories that required notification. Based on the response provided by the Discharger, no further actions were taken against the Discharger by State Water Board and Central Valley Water Board enforcement staff.

Order R5-2010-0004 also required the Discharger to include as part of the public notification process, notification to downstream drinking water agencies whenever there is a discharge to surface waters. The Discharger modified its Response Plan procedures and now implements procedures for notifying downstream water purveyors of CSS discharges to the receiving water

This Order requires the Discharger to continue to implement the procedures contained in their Response Plan for notification of the public when overflows occur from the CSS and comply with the reporting requirements of the General Waste Discharge Requirements for Sanitary Sewer Systems.

ix. **Nine Minimum Controls No. 9. Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls**

Order R5-2010-0004 required the Discharger to regularly monitor CSO outfalls to effectively characterize overflow impacts and the efficacy of CSO controls. It further required that the Discharger update its procedures as necessary for monitoring and documenting the location of CSS flooding and outflows and for providing a reasonable estimate of overflow and outflow volumes.

Based on the data reported by the Discharger during the term of Order R5-2010-0004, as well as the results of the Water Quality Assessment performed by the Discharger (as described further in Section IV.C.3 of this Fact Sheet), no impacts to the receiving water resulting from CSS discharges were documented. There also were no known beach closings, fish kills, or floatable wash-ups reported. The data and assessments did not indicate a need for revisions to the NMC's or CSSIP.

This Order continues to require the Discharger to regularly monitor CSO outfalls to effectively characterize overflow impacts and the efficacy of CSO controls.

c. **Implementation of the CSSIP and LTCP.** The CSSIP is designed to achieve the following interim goals as progress is made towards the final goal of minimizing street flooding during a 10-year storm event and to prevent structure flooding during the 100-year storm event:

- Obtaining protection from a 5-year storm in the six areas of worst flooding (including downtown, north of Capital park; U.C. Medical Center area; immediately south of Highway 80 between Riverside and Freeport; the area northeast of Highway 99 and Highway 80 interchange; the area northwest of Highway 99 and Highway 80 interchange, and the Land Park area),
- Obtaining protection from a 5-year storm throughout the combined sewer system area,
- Obtaining protection from a 10-year storm in the six areas of worst flooding, and then
- Obtaining the goal of protection from a 10-year storm event throughout the combined sewer system.

This Order requires the continued implementation of the Discharger's CSSIP (including the Phase II Update). However, because the CSSIP specifically addresses how the Discharger will continue to manage the flow volume within the CSS to meet the interim and final goals described above, it does not in and of itself address all the LTCP requirements as specified in the U.S. EPA CSO Control Policy. Therefore, this Order requires that the Discharger prepare a LTCP update to ensure compliance with the U.S. EPA CSO Control Policy requirements.

In regards to the Discharger's CSSIP and LTCP concerns were recently raised by the Central Valley Water Board staff about increased flows to the CSS due to infill and new development. In a letter from the Central Valley Water Board Executive Officer to the Discharger dated 7 April 2014, concern was raised whether the CSS is (or will be) capable of accepting increased sewage flows from planned urban growth and high density infill projects (e.g., Railyard Development and Downtown Arena project). In addition, concern was expressed that the Delta should be considered a "sensitive area" as defined in the U.S. EPA CSO Control Policy. In such sensitive areas, the U.S. EPA CSO Control Policy recommends that a LTCP prohibit new or significantly increased overflows. The U.S. EPA CSO Control Policy also recommends that overflows discharging to sensitive areas be eliminated or relocated wherever physically possible and economically achievable. The CSS characterization which the Discharger's existing LTCP relied on is changing due to urban growth. Further, the City's LTCP does not specifically address sensitive areas as conditions now exist, and the sensitive areas have changed over time due to State and federal listed endangered or threatened species, as well as pelagic organism decline in the Delta. As a result of these concerns, the Central Valley Water Board Executive Officer requested that the Discharger address these concerns as part of the ROWD.

The Discharger provided with their ROWD, a description of the policies and procedures used to mitigate the impact of redevelopment and new development in the CSS service area. Generally, CSS development fees are used to mitigate impacts to the CSS through either onsite flow mitigation or infrastructure projects to reduce flows. Due to the potential detrimental impacts redevelopment and new development can have on the management of the CSS and ultimately the potential for CSS overflows or outflows, the Discharger is required to address the concerns raised as part of their LTCP update.

This Order requires that the Discharger update their LTCP during the term of this Order. As part of the ROWD, the Discharger provided a LTCP Update Work Plan and Schedule that included a proposed 3-year schedule to complete the update of the LTCP. Therefore, this Order requires an updated LTCP in accordance with the Discharger's Work Plan by 1 June 2018. Consistent with the LTCP elements described in the U.S. EPA CSO Control Policy, this LCTP update must address the following elements:

1) Characterization, Monitoring and Modeling
2) Public Participation
3) Consideration of Sensitive Areas
4) Evaluation of Alternatives to Meet CWA Requirements
5) Cost/Performance Considerations
6) Operational Plan

7) Maximizing Treatment at Existing POTW and Major CSS Facilities for Wet-Weather Flows

8) Implementation Schedule

9) Post-Construction Compliance Monitoring Program

10) Evaluation and Assessment of Existing Wet-Weather Treatment and Conveyance Facilities

In addition to these elements, the Discharger is required to evaluate as part of the LTCP update their policies and procedures for allowing redevelopment and new development to ensure protection of the CSS and achieve the interim and final LTCP goals, as well as ensure that CSS discharges do not cause exceedance of applicable water quality objectives. This evaluation will include considering requiring new and significant development/re-development projects to be serviced by a separate collection system for transport to a municipal wastewater treatment plant.

5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable

6. Other Special Provisions

a. Requirements are included in the Order to ensure that the Discharger complies with applicable regulations for the disposal of collected screenings, sludge, and other solids removed from the CSS treatment systems.

7. Compliance Schedules

In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 C.F.R. section 122.44(d). There are exceptions to this general rule. The State Water Board's Resolution 2008-0025 "*Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*" (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed 10 years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric effluent limitations for that constituent or parameter, interim requirements and dates toward achieving compliance, and compliance reporting within 14 days after each interim date. The Order may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures.

In accordance with the Compliance Schedule Policy and 40 C.F.R. section 122.47, a discharger who seeks a compliance schedule must demonstrate additional time is necessary to implement actions to comply with a more stringent permit limitation. The discharger must provide the following documentation as part of the application requirements:

- Diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts;
- Source control efforts are currently underway or completed, including compliance with any pollution prevention programs that have established;
- A proposed schedule for additional source control measures or waste treatment;

- Data demonstrating current treatment facility performance to compare against existing permit effluent limits, as necessary to determine which is the more stringent interim, permit effluent limit to apply if a schedule of compliance is granted;
- The highest discharge quality that can reasonably be achieved until final compliance is attained;
- The proposed compliance schedule is as short as possible, given the type of facilities being constructed or programs being implemented, and industry experience with the time typically required to construct similar facilities or implement similar programs; and
- Additional information and analyses to be determined by the Regional Water Board on a case-by-case basis.

Based on information submitted with the ROWD, SMR's, and other miscellaneous submittals, it has been demonstrated to the satisfaction of the Central Valley Water Board that the Discharger needs time to implement actions to comply with the new effluent limitations for methylmercury.

a. **Methylmercury.** The Delta Mercury Control Program is composed of two phases. Phase 1 spans from 20 October 2011 through the Phase I Delta Mercury Control Program Review, expected to conclude by October 2020. Phase 1 emphasizes studies and pilot projects to develop and evaluate management practices to control methylmercury. Phase 1 includes provisions for: implementing pollution minimization programs and interim mass limits for inorganic (total) mercury point sources in the Delta and Yolo Bypass; controlling sediment-bound mercury in the Delta and Yolo Bypass that may become methylated in agricultural lands, wetland, and open-water habitats; and reducing total mercury loading to San Francisco Bay, as required by the *Water Quality Control Plan for the San Francisco Bay Basin*.

   At the end of Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations and/or the Final Compliance Date; implementation of management practices and schedules for methylmercury controls; and adoption of a mercury offset program for dischargers who cannot meet their load and waste load allocations after implementing all reasonable load reduction strategies. The review also will consider other potential public and environmental benefits and negative impacts (e.g., habitat restoration, flood protection, water supply, and fish consumption) of attaining the allocations. The fish tissue objectives, the linkage analysis between objectives and sources, and the attainability of the allocations will be re-evaluated based on the findings of Phase 1 control studies and other information. The linkage analysis, fish tissue objectives, allocations, and time schedules shall be adjusted at the end of Phase 1, or subsequent program reviews, if appropriate.

   Phase 2 begins after the Phase 1 Delta Mercury Control Program Review or by 20 October 2022, whichever occurs first, and ends in 2030. During Phase 2, dischargers shall implement methylmercury control programs and continue inorganic (total) mercury reduction programs. Compliance monitoring and implementation of upstream control programs also shall occur in Phase 2. Any compliance schedule contained in an NPDES permit must be "... a*n enforceable sequence of actions or operations leading to compliance with an effluent limitation*..." per the definition of a compliance schedule in CWA Section 502(17).

See also 40 C.F.R. section 122.2 (definition of schedule of compliance). The compliance schedule for methylmercury meets these requirements.

Federal Regulations at 40 C.F.R. section 122.47(a)(1) requires that, "*Any schedules of compliance under this section shall require compliance as soon as possible*..." The Compliance Schedule Policy also requires that compliance schedules are as short as possible and may not exceed 10 years, except when "...*a permit limitation that implements or is consistent with the waste load allocations specified in a TMDL that is established through a Basin Plan amendment, provided that the TMDL implementation plan contains a compliance schedule or implementation schedule*." As discussed above, the Basin Plan's Delta Mercury Control Program includes compliance schedule provisions and allows compliance with the waste load allocations for methylmercury by 2030. Until the Phase 1 Control Studies are complete and the Central Valley Water Board conducts the Phase 1 Delta Mercury Control Program Review, it is not possible to determine the appropriate compliance date for the Discharger that is as soon as possible. Therefore, this Order establishes a compliance schedule for the new, final WQBEL's for methylmercury with full compliance required by 31 December 2030, which is consistent with the Final Compliance Date of the TMDL. At completion of the Phase 1 Delta Mercury Control Program Review, the final compliance date for this compliance schedule will be re-evaluated to ensure compliance is required as soon as possible. Considering the available information, the compliance schedule is as short as possible in accordance with federal regulations and the Compliance Schedule Policy.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess the performance of the Pioneer Reservoir and CWTP treatment systems. The monitoring frequencies for flow, TSS and settleable solids (once per discharge event) have been retained from Order R5-2010-0004.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. Monitoring for those pollutants expected to be present in discharges from Discharge Point 002 (Monitoring Location EFF-002), 003 (Monitoring Location EFF-003), and 006 (Monitoring Location EFF-006) will be required as shown in the proposed MRP (Attachment E). To determine compliance with effluent limitations, this Order retains the monitoring requirements (grab samples during each discharge event) for chlorine residual, fecal coliform organisms, temperature, pH, settleable solids, and TSS from Order R5-2010-0004. Also, consistent with Order R5-2010-0004, flow is required to be

monitored continuously. Due to continuing concerns related to ammonia toxicity in CSO discharges, monitoring for ammonia nitrogen also continues to be required (grab samples during each discharge event).

This Order added final effluent limitations for methylmercury, diazinon, and chlorpyrifos, and interim effluent limitations for total mercury. Monitoring for each of these parameters was required in Order R5-2010-0004, and these requirements (grab samples during each discharge event) are retained in this Order to determine compliance with the new effluent limitations.

3. The Discharger raised concerns related to potential analytical method interference at low concentrations associated with monitoring chlorine residual in accordance with EPA approved methods. These interferences may result in false positives. As described in Section II.A of this Fact Sheet, the Discharger uses sodium bisulfite to dechlorinate discharges from Discharge Points 002, 003 and 006 prior to discharge, and has requested that the Order allow compliance with the chlorine residual effluent limitations to be demonstrated through the detection of the dechlorination agents used. Monitoring for dechlorination agent residual has been added and the compliance determination language included in Section VII.G of the Limitations and Discharge Requirements of this Order allow compliance to be determined based on data representing the presence of dechlorination agents in discharges.

4. Although discharges from Discharge Points 004, 005 and 007 rarely occur, this Order continues to require monitoring when a discharge does occur for several indicator parameters (flow, pH, dissolved oxygen, temperature, total suspended solids, settleable solids, fecal coliform, and ammonia). This data will be used to assess the potential impact(s) to the receiving water when a CSO discharge does occur from any of these discharge points.

5. Water Code section 13176, subdivision (a), states: "*The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code.*" The DDW certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

   Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II)

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Due to the continued concerns over the potential short-term toxicity that may result from CSO discharges, the annual acute whole effluent toxicity testing requirements contained in Order R5-2010-0004 are retained in this Order.

D. Receiving Water Monitoring

1. Surface Water

a. **Delta Regional Monitoring Program**. The Central Valley Water Board requires individual dischargers and discharger groups to conduct monitoring of Delta waters and Delta tributary waters in the vicinity of their discharge, known as ambient (or receiving) water quality monitoring. This monitoring provides information on the impacts of waste discharges on Delta waters, and on the extant condition of the

Delta waters. However, the equivalent funds spent on current monitoring efforts could be used more efficiently and productively, and provide a better understanding of geographic and temporal distributions of contaminants and physical conditions in the Delta, and of other Delta water quality issues, if those funds were used for a coordinated ambient monitoring effort, rather than continue to be used in individual, uncoordinated ambient water quality monitoring programs. The Delta Regional Monitoring Program will provide data to better inform management and policy decisions regarding the Delta.

This Order allows the Discharger to elect to participate in the Delta Regional Monitoring Program in lieu of conducting all or part of the individual receiving water monitoring required in the Monitoring and Reporting Program. If the Discharger elects to cease individual receiving water monitoring and participate in the Delta Regional Monitoring Program, the Discharger shall submit a letter signed by an authorized representative to the Executive Officer informing the Central Valley Water Board that the Discharger will participate in the Delta Regional Monitoring Program and the date on which individual receiving water monitoring under Attachment E, Section VIII.A, will cease or be modified. Approval by the Executive Officer is required, and contingent on Delta Regional Monitoring Program Steering Committee action on the forthcoming Regional Monitoring Program monitoring plan.

Delta Regional Monitoring Program data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Permit. Delta Regional Monitoring Program monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta Regional Monitoring Program monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. Delta Regional Monitoring Program monitoring data may be used to help establish background receiving water quality for an RPA in an NPDES permit after evaluation of the applicability of the data for that purpose. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. Delta Regional Monitoring Program data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger’s discharge and other point and non-point source discharges, receiving water flow volume, speed and direction, and other information to determine the likely source or sources of a constituent that resulted in exceedance of a receiving water quality objective.

If the Discharger begins to participate in the Delta Regional Monitoring Program in lieu of individual receiving water monitoring, the Discharger shall continue to participate in the Delta Regional Monitoring Program until such time as the Discharger informs the Board that participation in the Delta Regional Monitoring Program will cease and individual monitoring is reinstituted. Receiving water monitoring under Attachment E, Section VIII.A, is not required under this Order so long as the Discharger adequately supports the Delta Regional Monitoring Program. Participation in the Delta Regional Monitoring Program by a Discharger shall consist of providing funds and/or in-kind services to the Delta Regional Monitoring Program at least equivalent to discontinued individual monitoring and study efforts. If a

discharger or discharger group fails to maintain adequate participation in the Delta Regional Monitoring Program, as determined through criteria to be developed by the Delta Regional Monitoring Program Steering Committee, the Steering Committee will recommend to the Central Valley Water Board that an individual monitoring program be reinstated for that discharger or discharger group.

If the Discharger is participating in the Delta Regional Monitoring Program as described in Attachment E, Section VIII, the receiving water portion of the required Characterization Monitoring need not be conducted by the Discharger. Instead, data from the Delta Regional Monitoring Program will be utilized to characterize the receiving water in the permit renewal. The Discharger may, however, conduct any site-specific receiving water monitoring deemed appropriate by the Discharger and submit that monitoring data with this Characterization Monitoring. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. Historic receiving water monitoring data taken by the Discharger and from other sources may also be evaluated to determine whether or not that data is representative of current receiving water conditions. If found to be representative of current conditions, then that historic data may be used in characterizing receiving water quality for the purposes of Reasonable Potential analysis.

b. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

E. Other Monitoring Requirements

1. Effluent and Receiving Water Characterization

Routine monitoring for priority pollutants will allow for the characterization of any CSO discharges that occur to the Sacramento River during the permit term. This Order continues to require annual monitoring for priority pollutants and several other constituents of concern. See Section IX.A of the MRP for more detailed requirements related to performing priority pollutant monitoring.

2. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires major permittees under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S.EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for The City of Sacramento, Combined Wastewater Collection and Treatment System. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the posting of a notice of public hearing on the Central Valley Water Board's website, posting at the Sacramento City Hall, and publishing the notice in the Sacramento Bee on 18 February 2015.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:
http://www.waterboards.ca.gov/centralvalley/board_info/meetings/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on <**Date**>.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date:	16/17 April 2015
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region Fresno Office 1685 E Street Fresno, CA 93706

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDR's. The petition must be received by the State Water Board at the following address within 30 calendar days of the Central Valley Water Board's action:

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

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Jim Marshall at (916) 464-4772.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Discharge Point 002

Constituent	Units	Projected MEC	Maximum Ambient Background (Upstream)	Maximum Ambient Background (Downstream)	Most Stringent Water Quality Objective/Criterion		Reasonable Potential?
					Concentration	Basis[1]	
Aluminum (Dissolved)	µg/L	101	100	100	200	MCL	No
Ammonia	µg/L	1.12	0.11	0.13	1.85	NAWQC	No
Bis (2-ethylhexylphthalate)	µg/L	9.88	0.95	1.06	1.80	CTR	No
Bromodichloromethane	µg/L	8.06	0.16	0.21	0.56	CTR	No
Chloroform	µg/L	572	0.19	4	80	CTR	No
Copper (Dissolved)	µg/L	17.94	2.2	2.5	5	CTR	No
Cyanide	µg/L	39	0.6	1	5.2	CTR	No
Iron (Dissolved)	µg/L	234	190	191	300	MCL	No
Lead (Dissolved)	µg/L	1.33	0.08	0.10	1.08	CTR	No
Manganese (Dissolved)	µg/L	65	7.3	8	50	MCL	No
MBAS	µg/L	1.4	0.038	0.06	0.5	Basin Plan	No
Zinc (Dissolved)	µg/L	104	2.7	4.55	66	CTR	No

[1] MCL – Maximum Contaminate Level; NAWQC- National Ambient Water Quality Criteria; CTR – California Toxics Rule

Discharge Point 004

Constituent	Units	Projected MEC	Maximum Ambient Background (Upstream)	Maximum Ambient Background (Downstream)	Most Stringent Water Quality Objective/Criterion		Reasonable Potential?
					Concentration	Basis[1]	
Aluminum (Dissolved)	µg/L	676	39.0	39.5	200	MCL	No
Ammonia	µg/L	1.64	0.24	0.24	1.99	NAWQC	No
Bis (2-ethylhexylphthalate)	µg/L	8.32	0.95	0.96	1.80	CTR	No
Copper (Dissolved)	µg/L	12.74	2.1	2.1	5.04	CTR	No
Iron (Dissolved)	µg/L	754	60	61	300	MCL	No
Lead (Dissolved)	µg/L	13.52	0.1	0.11	1.08	CTR	No
Manganese (Dissolved)	µg/L	52	13	13	50	MCL	No
Pentachlorophenol	µg/L	0.988	0.005	0.01	0.28	CTR	No
Tetrachloroethene (PCE)	µg/L	2.08	0.19	0.19	0.69	CTR	No
Zinc (Dissolved)	µg/L	150.8	5.7	5.86	66	CTR	No

[1] MCL – Maximum Contaminate Level; NAWQC- National Ambient Water Quality Criteria; CTR – California Toxics Rule

Discharge Point 006

Constituent	Units	Projected MEC	Maximum Ambient Background (Upstream)	Maximum Ambient Background (Downstream)	Most Stringent Water Quality Objective/Criterion		Reasonable Potential?
					Concentration	Basis[1]	
Aluminum (Dissolved)	µg/L	148.2	49	50	200	MCL	No
Ammonia	µg/L	1.07	0.15	0.17	1.81	NAWQC	No
Bis (2-ethylhexylphthalate)	µg/L	22.36	0.95	1.19	1.80	CTR	No
Bromodichloromethane	µg/L	18.98	0.16	0.26	0.56	CTR	No
Carbon tetrachloride	µg/L	3.12	0.16	0.18	0.25	CTR	No
Chloroform	µg/L	1066	0.19	6	80	CTR	No
Copper (Dissolved)	µg/L	22.88	2.3	2.6	5.04	CTR	No
Cyanide	µg/L	62.4	0.6	2	5.2	CTR	No
Iron (Dissolved)	µg/L	286	90	92	300	MCL	No
Lead (Dissolved)	µg/L	2.0	0.07	0.10	1.08	CTR	No
Manganese (Dissolved)	µg/L	67.6	6.6	7	50	MCL	No
Zinc (Dissolved)	µg/L	163.8	2.7	5.33	66	CTR	No

[1] MCL – Maximum Contaminate Level; NAWQC- National Ambient Water Quality Criteria; CTR – California Toxics Rule