Central Valley Regional Water Quality Control Board
27/28 April 2023 Board Meeting

Response to Written Comments on
Tentative Waste Discharge Requirements for
City of Redding
Stillwater Wastewater Treatment Plant
Shasta County

At a public hearing scheduled for 27/28 April 2023, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of tentative Waste Discharge Requirements (NPDES No. CA0082589) for the City of Redding's Stillwater Wastewater Treatment Plant. This document contains responses to written comments received from interested persons and parties in response to the tentative Order. Written comments from interested parties were required to be received by the Central Valley Water Board by 15 March 2023 in order to receive full consideration. Comments were received prior to the deadline from:

1. City of Redding (Discharger) (received 6 March 2023)

Written comments from the above interested parties are summarized below, followed by the response of Central Valley Water Board staff.

DISCHARGER (CITY OF REDDING) COMMENTS

DISCHARGER COMMENT #1 – Cyanide Effluent Limit Compliance
The tentative Order contains effluent limits for cyanide of 14 µg/L as an average monthly effluent limit (AMEL) and 21 µg/L as a maximum daily effluent limit (MDEL). The Discharger contends that consistent compliance with the AMEL is uncertain based off their effluent cyanide data collected over the current permit term. The Discharger is requesting for the cyanide AMEL to be increased to 16 µg/L and for the cyanide MDEL to be increased to 24 µg/L.

RESPONSE:
Central Valley Water Board staff disagree with the Discharger's request to increase the cyanide effluent limits. The effluent limitations for cyanide were calculated in accordance with the *Policy for Implementation of Toxic Standards for Inland surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or "SIP") and were developed with a dilution credit associated with a mixing zone that has, in part, been determined to be as small as practicable and in compliance with other regulatory requirements, such as the State Antidegradation Policy.

The proposed AMEL of 14 µg/L is the same concentration for the cyanide AMEL in the existing Order. During the term of the existing Order, the Discharger's effluent cyanide concentrations never exceeded 14 µg/L, and as a result, there were no compliance issues associated with meeting the currently prescribed limit of 14 µg/L as an AMEL (or the MDEL of 28 µg/L). The tentative Order's proposed AMEL and MDEL are 14 µg/L and 21 µg/L, respectively. Central Valley Water Board staff conclude, therefore, that immediate compliance with these effluent limitations is feasible.

No changes are proposed to the tentative Order.

DISCHARGER COMMENT #2 – Pyrethroid Management Plan Trigger
The tentative Order has a pyrethroid management plan trigger. The Discharger is also the operator of the Clear Creek Wastewater Treatment Plant, which is regulated pursuant to NPDES Order R5-2022-0004; this Order also requires the Discharger to perform pyrethroid monitoring but it does not state that there is a pyrethroid management plan trigger. The Discharger is requesting that the pyrethroid management plan trigger be removed from the tentative Order so that it is consistent with the requirements of Order R5-2022-0004.

RESPONSE:
Central Valley Water Board staff disagree with the Discharger's request to remove the pyrethroid management plan trigger. Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges, Resolution R5-2017-0057, requires certain dischargers to develop a pyrethroid management plan if discharges exceed specific pyrethroid concentrations/triggers. Even though Order R5-2022-0004 does not explicitly state that there is a pyrethroid management plan trigger, it is still held to the requirements of the Basin Plan's conditional prohibition and thus, the pyrethroid management plan trigger. Since the adoption of Order R5-2022-0004, the pyrethroid management plan trigger language has been incorporated into similar, applicable NPDES permits.

No changes are proposed to the tentative Order.

DISCHARGER COMMENT #3 – Included All Monitoring Requirements in Tables
The Discharger requests that all monitoring requirements be specifically included in the relevant tables in the Monitoring and Reporting Program.

RESPONSE:

Central Valley Water Board staff disagree with the Discharger's request to include all monitoring requirements within the tables of the Monitoring and Reporting Program. Staff find that the current format is best for implementing the tentative Order's monitoring requirements and maintaining consistency across the region.

No changes are proposed to the tentative Order.

DISCHARGER COMMENT #4 – Composite Samples for Semi-Volatile Organics
The Discharger requests that the effluent sample type for semi-volatile organics be 24-hour composite.

RESPONSE:
Central Valley Water Board staff concur and has amended the tentative Order to include a 24-hour composite effluent sampling type for semi-volatile organics.

DISCHARGER COMMENT #5 – Monitoring and Reporting
The Discharger provided the following comments and requests for revisions related to the tentative Order's monitoring and reporting program:

a. Please change the acute and chronic toxicity monitoring frequencies to twice per year. The tentative Order has annual monitoring for acute toxicity and quarterly monitoring for chronic toxicity.

   RESPONSE:
   Please see Correction #3 below for the explanation and detailed changes to the requirements and monitoring and reporting provisions related to acute and chronic toxicity. Similar to the Discharger's current NPDES permit, Attachment E, Monitoring and Reporting Program proposes annual chronic toxicity monitoring and quarterly acute toxicity monitoring.

b. The Title 22 regulations state that undisinfected secondary recycled water can be used to irrigate fodder and fiber crops and pasture for animals not producing milk for human consumption, which is the use of the Stillwater WWTP's recycled water. Therefore, total coliform monitoring at REC-001 has no useful purpose. Please remove the requirement for weekly total coliform monitoring in recycled water.

   RESPONSE:
   Central Valley Water Board staff disagree with the Discharger's request to remove the total coliform requirements for REC-001. The distribution of recycled water from the Facility is regulated by Water Reclamation Requirements Order

98-016, which has recycled water limitations that, in part, state, "The median concentration of total coliform bacteria measured in the recycled water shall not exceed an MPN of 23 per 100 ml utilizing the bacteriological results of the last 7 days for which analyses have been completed". Therefore, since the tentative Order regulates the production of recycled water, total coliform monitoring at REC-001 is required to evaluate compliance with Order 98-016. If the Discharger wants to purse an update to their Water Reclamation Requirements, they can submit an application package for *ORDER WQ 2016-0068-DDW WATER RECLAMATION REQUIREMENTS FOR RECYCLED WATER USE*.

No changes are proposed to the tentative Order.

c. The Discharger is requesting clarity regarding pretreatment and biosolids monitoring requirements for asbestos.

RESPONSE:
Central Valley Water Board staff find that pretreatment and biosolids monitoring for asbestos is not warranted as a requirement of Section X.D.5 of Attachment E, Monitoring and Reporting Program. No changes are proposed to the tentative Order.

d. Sludge is aerobically digested at the Stillwater WWTP. It is currently described as "anaerobically" in the Description of Wastewater and Biosolids Treatment and Controls.

RESPONSE:
Central Valley Water Board staff concur with the Discharger's request and has revised the Section II.A of the Fact Sheet to the tentative Order accordingly.

MISCELLANEOUS EDITS

CORRECTION #1 – CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Added language regarding CEQA compliance to Findings II.B of the proposed Permit.

CORRECTION #2 – GROUNDWATER PROVISIONS

Revised Section II.D of the proposed Permit to clarify provisions/requirements included to implement state law only.

CORRECTION #3- WHOLE EFFLUENT TOXICITY

The Tentative NPDES Permit contained Chronic Whole Effluent Toxicity requirements as per the State Water Resources Control Board's Statewide Toxicity Provisions.

Central Valley Water Board staff was recently informed by the United States Environmental Protection Agency that the Statewide Toxicity Provisions will not be approved (and therefore will not take effect) prior to the Central Valley Water Board's April 2023 Board meeting. Central Valley Water Board staff revised the proposed NPDES Permit by reverting back to site-specific Whole Effluent Toxicity limitations, monitoring trigger, and testing requirements similar to the Discharger's current NPDES Permit, Order R5-2018-0042. Changes are shown below:

Waste Discharge Requirements sections IV.A.1.d has been revised as follows to add acute whole effluent toxicity limitations:

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

i. 70%, minimum for any one bioassay; and

ii. 90%, median for any three consecutive bioassays.

Waste Discharge Requirements sections VI.C.1.g has been revised as follows to add a whole effluent toxicity reopener provision:

g. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a new chronic toxicity effluent limitation, a revised acute toxicity effluent limitation, and/or an effluent limitation for a specific toxicant identified in a TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions, this Order may be reopened to implement the new provisions.

Waste Discharge Requirements sections VI.C.2 has been revised as follows to include Toxicity Reduction Evaluation Requirements:

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation Requirements.** This Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity. If the discharge exceeds the chronic toxicity thresholds defined in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are

designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. Alternatively, under certain conditions as described in this provision below, the Discharger may participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE.

i. **Numeric Toxicity Monitoring Trigger.** The numeric Toxicity Unit (TUc) monitoring trigger is 2 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold above which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.

ii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic whole effluent toxicity result during routine monitoring exceeds the chronic toxicity monitoring trigger, the Discharger shall proceed as follows:

(a) **Initial Toxicity Check**. If the result is less than or equal to 2 TUc (as $100/EC_{25}$) OR the percent effect is less than 25 percent at 50 percent effluent, check for any operation or sample collection issues and return to routine chronic toxicity monitoring. Otherwise, proceed to step (b).

(b) **Evaluate 6-week Median**. The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 2 TUc (as $100/EC_{25}$) and the percent effect is greater than 25 percent at 50 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring. See Compliance Determination Section VII.D for procedures for calculating 6-week median.

(c) **Toxicity Source Easily Identified.** If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall resume routine chronic toxicity monitoring; If the source of toxicity is not easily identified the Discharger shall conduct a site-specific TRE or participate in an approved TES as described in the following subsections.

(d) **Toxicity Evaluation Study.** If the percent effect is ≤ 50 percent at 50 percent effluent, as the median of up to three consecutive chronic toxicity tests within a 6-week period, the Discharger may participate in an approved TES in lieu of a site-specific TRE. The TES may be conducted individually or as part of a coordinated group effort with other similar dischargers. If the Discharger chooses not to participate in an approved TES, a site-specific TRE shall be initiated in accordance with subsection (e)(1), below. Nevertheless, the Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a site-specific TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

(e) **Toxicity Reduction Evaluation.** If the percent effect is > 50 percent at 50 percent effluent, as the median of three consecutive chronic toxicity tests within a 6-week period, the Discharger shall initiate a site-specific TRE as follows:

(i) **Within thirty (30) days** of exceeding the chronic toxicity monitoring trigger, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

- Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
- Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
- A schedule for these actions.

<u>Compliance determination for chronic toxicity has been added to Waste Discharge Requirements section VII.G and has been revised, as follows:</u>

G. Chronic Whole Effluent Toxicity Effluent Trigger (Section VI.C.2.a.i). To evaluate compliance with the chronic whole effluent toxicity effluent trigger, the median chronic toxicity units (TUc) shall be the median of up to three consecutive chronic toxicity bioassays during a six- week period. This includes a routine chronic toxicity monitoring event and two subsequent optional compliance monitoring events. If additional compliance monitoring events are not conducted, the median is equal to the result for routine chronic toxicity monitoring event. If only one additional compliance monitoring event is conducted, the median will be

established as the arithmetic mean of the routine monitoring event and compliance monitoring event.

Where the median chronic toxicity units exceed 2 TUc (as 100/NOEC) for any end point, the Discharger will be deemed as exceeding the chronic toxicity effluent trigger if the median chronic toxicity units for any endpoint also exceed a reporting level of 2 TUc (as 100/EC25) AND the percent effect at 50% effluent exceeds 25 percent. The percent effect used to evaluate compliance with the chronic toxicity effluent trigger shall be based on the chronic toxicity bioassay result(s) from the sample(s) used to establish the median TUc result. If the median TUc is based on two equal chronic toxicity bioassay results, the percent effect of the sample with the greatest percent effect shall be used to evaluate compliance with the chronic toxicity effluent trigger.

Attachment A, Definitions has been revised as follows to include the following definitions:

Effect Concentration (EC)
A point estimate of the toxicant concentration that would cause an observable adverse effect (e.g. death, immobilization, or serious incapacitation) in a given percent of the test organisms, calculated from a continuous model (e.g. Probit Model). EC_{25} is a point estimate of the toxicant concentration that would cause an observable adverse effect in 25 percent of the test organisms.

Inhibition Concentration
Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method). IC_{25} is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

No-Observed-Effect-Concentration (NOEC)
The highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).

Water-Effect Ratio (WER)
An appropriate measure of the toxicity of a material obtained in a site water divided by the same measure of the toxicity of the same material obtained simultaneously in a laboratory dilution water.

Attachment E, Monitoring and Reporting Program (MRP) section V.A is revised as follows to include acute toxicity requirements:

A. Acute Toxicity Testing. The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the acute toxicity testing requirement:

1. **Monitoring Frequency** – The Discharger shall perform **quarterly** acute toxicity testing, concurrent with effluent ammonia sampling.

2. **Sample Types** – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location REC-001.

3. **Test Species** – Test species shall be **rainbow trout** (*Oncorhynchus mykiss*).

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, not to exceed 7 days following notification of test failure.

Chronic toxicity testing requirements in the MRP have been moved to MRP section V.B and have been revised as follows:

B. Chronic Toxicity Testing. The Discharger shall meet the chronic toxicity testing requirements:

1. **Monitoring Frequency** – The Discharger shall perform routine **annual** chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 2 TUc (as $100/EC_{25}$) AND a percent effect greater than 25 percent at 50 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and perform chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity. See Compliance Determination section VII.G for procedures for calculating 6-week median.

2. **Sample Types** – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the

discharge. The effluent samples shall be taken at Monitoring Location EFF-002. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, as identified in the MRP.

3. **Sample Volumes** – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. **Test Species** – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

   b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

   c. The green alga*, Pseudokirchneriella subcapitata* (growth test).

5. **Methods** – The presence of chronic toxicity shall be estimated as specified in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002.

6. **Reference Toxicant** – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. **Dilutions** – For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-1. Chronic Toxicity Testing Dilution Series

Samples	Dilution%	Dilution%	Dilution%	Dilution%	Dilution%	Controls
% Effluent	100	75	50	25	12.5	0
% Control Water	0	25	50	75	87.5	100

8. **Test Failure** – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

    a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

    b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in the Method Manual.

MRP sections V.C, V.D, and V.E and have been revised as follows to update the whole effluent toxicity reporting requirements:

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board within 24-hours after the receipt of test results exceeding the chronic toxicity monitoring trigger, or an exceedance of the acute toxicity effluent limitation.

D. 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. **Chronic WET Reporting.** Routine and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the quarterly self-monitoring report, and shall contain, at minimum:

    a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

    b. The percent effect for each endpoint at the IWC.

    c. The statistical methods used to calculate endpoints;

    d. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

    e. The dates of sample collection and initiation of each toxicity test; and

f. The results compared to the numeric toxicity monitoring trigger.

Additionally, the quarterly self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring type, i.e., routine, compliance, TES, or TRE monitoring.

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

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan, or as amended by the Discharger's TRE Action Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

   c. Any information on deviations or problems encountered and how they were dealt with.

E. Most Sensitive Species Screening. The Discharger shall perform rescreening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge.

1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed using 100 percent effluent and one control. If the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.

2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing exceeds 2 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 2 TUc (as 100/NOEC), then of the species exceeding 2 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening exceeds 2 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 25 percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

Attachment F, Fact Sheet (Fact Sheet) section IV.C.2.c.vii has been revised to remove reference to a chronic WET mixing zone and chronic WET effluent limitations.

Attachment F, Fact Sheet (Fact Sheet) section IV.C.5 has been revised as follows to include the Basin Plan's narrative toxicity objectives for acute and chronic toxicity:

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 and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E section V.). This Order also contains effluent limitations for acute toxicity, a monitoring trigger for chronic toxicity, and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

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 section 3.1.20) The Basin Plan also states that, "…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…".

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Acute whole effluent toxicity is not a priority pollutant. Therefore, due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the

RPA. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." Although the discharge has been consistently in compliance with the acute effluent limitations, the Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

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, effluent limitations for acute toxicity have been included in this Order as follows:

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

70%, minimum for any one bioassay; and

90%, median for any three consecutive bioassays.

a. **Chronic 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 section 3.1.20) The table below is chronic WET testing performed by the Discharger from March 2019 through February 2022. This data was used to determine if the discharge

has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

Table F-15. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow Pimephales promelas Survival (TUc)	Fathead Minnow Pimephales promelas Growth (TUc)	Water Flea Ceriodaphnia dubia Survival (TUc)	Water Flea Ceriodaphnia dubia Reproduction (TUc)	Green Algae *Selenastrum capricornutum* Growth (TUc)
11/20/2018	1	1	1	2	1
11/19/2019	1	1	1	<1	1
11/17/2020	1	1	1	1	2
12/30/2021	1	1	1	1	1

Table F-15 Notes:

1. For the Water Flea Reproduction test performed on 11/19/2019, lab reports indicate >2 TUc for lab water control comparison but 1 TUc for receiving water control comparison.

i. **RPA.** A dilution ratio of 2:1 is available for chronic WET. Chronic toxicity testing results exceeding 2 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 50 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective.

Based on chronic WET testing conducted between November 2018 and December 2021, the maximum chronic toxicity result was 2 TUc on 20 November 2018 with a percent effect of 24 percent. Therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective.

Fact Sheet section VI.B.1.g has been revised as follows to add a whole effluent toxicity reopener provision:

g. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

Fact Sheet section VI.B.2. has been revised as follows to include Chronic Whole Effluent Toxicity Requirements:

a. **Chronic Whole Effluent Toxicity Requirements.** 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) Based on whole effluent chronic toxicity testing performed by the Discharger from November 2018 and December 2021, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the Basin Plan's narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger this provision requires the Discharger either participate in an approved Toxicity Evaluation Study (TES) or conduct a site-specific Toxicity Reduction Evaluation (TRE).

A TES may be conducted in lieu of a TRE if the percent effect at 50 percent effluent is less than or equal to 50 percent. Determining the cause of toxicity can be challenging when the toxicity signal is low. Several Central Valley facilities with similar treatment systems have been experiencing intermittent low level toxicity. The dischargers have not been successful identifying the cause of the toxicity because of the low toxicity signal and the intermittent nature of the toxicity. Due to these challenges, the Central Valley Clean Water Association (CVCWA), in collaboration with staff from the Central Valley Water Board, has initiated a Special Study to Investigate Low Level Toxicity Indications (Group Toxicity Study). This Order allows the Discharger to participate in an approved TES, which may be conducted individually or as part of a coordinated group effort with other similar dischargers that are exhibiting toxicity. Although the current CVCWA Group Toxicity Study is related to low-level toxicity, participation in an approved TES is not limited to only low-level toxicity issues.

See the WET Monitoring Flow Chart (Figure F-1), below, for further clarification of the decision points for determining the need for TES/TRE initiation.

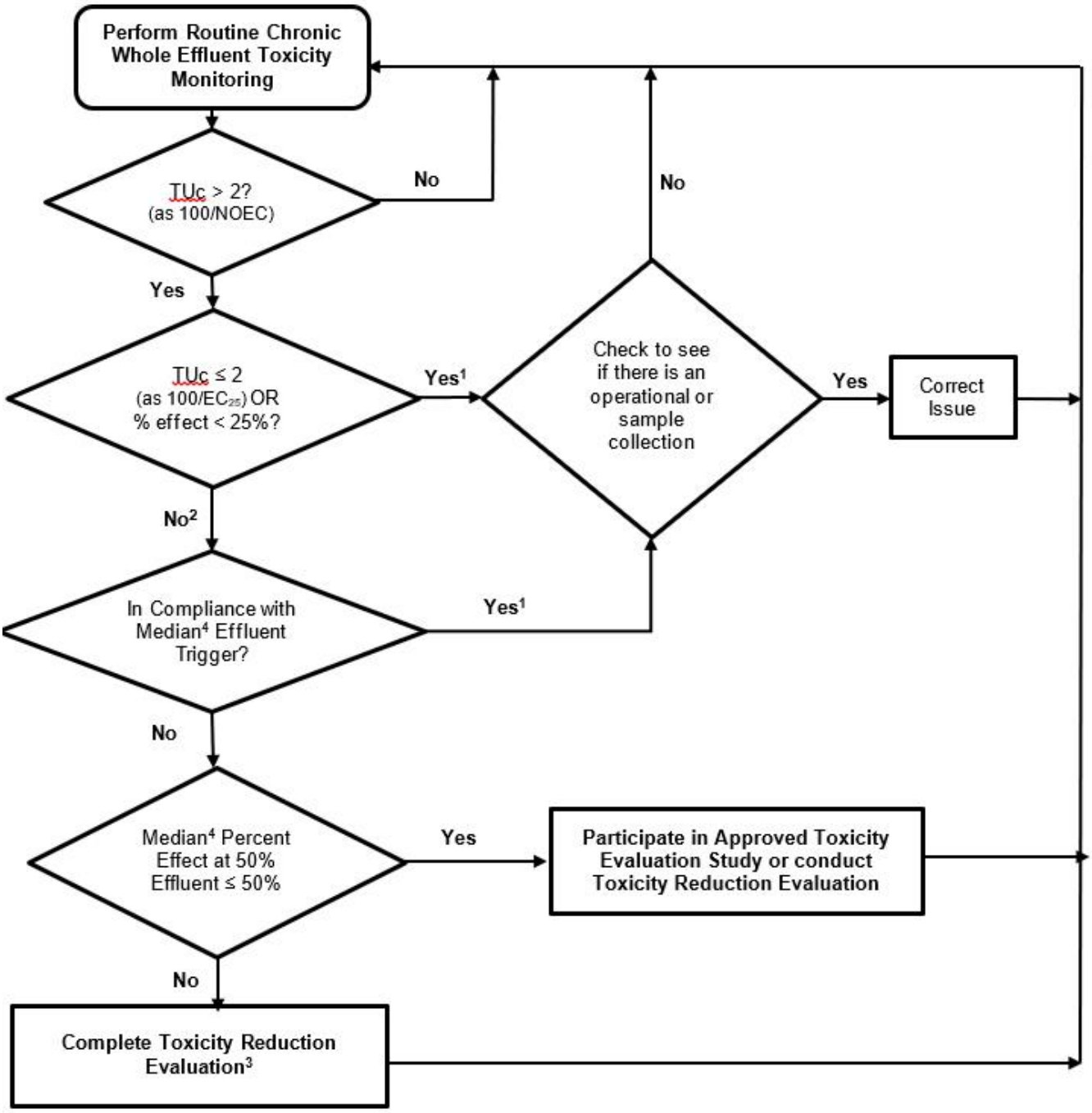

Figure F-1 Notes:

1. The Discharger may participate in an approved TES if the discharge has exceeded the chronic toxicity monitoring trigger twice or more in the past 12-month period and the cause is not identified and/or addressed.
2. The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

3. The Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a TRE within the past 12 months and has been unsuccessful in identifying the toxicant.
4. See Compliance Determination section VII.D for procedures for calculating 6-week median.

Whole effluent toxicity testing requirements rationale in Fact Sheet section VII.D has been revised as follows:

D. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity**. Consistent with Order 2018-0042, quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity**. Consistent with Order 2018-0042, semiannual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

3. **Sensitive Species Screening.** The Discharger shall perform rescreening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge. Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (Ceriodaphnia dubia), fathead minnow (Pimephales promelas), and green alga (Pseudokirchneriella subcapitata). The tests shall be performed using 50 percent effluent and one control. For rescreening, if the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.