

City of Cloverdale
Wastewater Treatment Plant

**Comments Regarding Tentative Order for Reissuance of NPDES Permit No. CA0022977
Tentative Order R1-2018-0034**

June 22, 2018

The City of Cloverdale (City) appreciates the opportunity to submit the following comments on the Tentative Order reissuing NPDES Permit (Permit) No. CA0022977 for the discharge of treated wastewater from the City's Wastewater Treatment Plant and its collection system (collectively, the Facility) to the percolation ponds adjacent to the Russian River. The sections being commented on are shown in roughly the same order as they appear in the Tentative Order. To assist Regional Water Board staff, Tentative Order page numbers are provided prior to any markup of permit language, consistent with the comment being presented. Proposed language revisions are shown with blue underline text for additions and ~~strikethrough~~ text for deletions.

1. The City requests removal of the nitrate effluent limitations, which are based on an analytical error.

The inclusion of nitrate effluent limits is based on a single erroneous nitrate sample result of 370 mg/L as N, which the City purposefully did not include in the data set submitted with the Permit application because of its statistical implausibility.

The previous order contained a requirement to monitor effluent for nitrate four times per year. The City collected 23 samples for nitrate during the previous permit term, all of which were sent to Alpha Analytical Laboratory in Ukiah for analysis by EPA Method 300.0. Of these samples, 22 samples had a nitrate concentration in the range of 0.3 – 2.1 mg/L as N, exceeding the reporting limit of 0.2 mg/L and well below the 10 mg/L Maximum Contaminant Level (MCL) established for the protection of public health. These 22 samples were analyzed at the laboratory without dilution prior to analysis. One additional sample, collected November 19, 2015, was analyzed with a dilution factor of 50, and a reporting limit of 10 mg/L. The laboratory result indicated a sample result of 370 mg/L – a factor of 100 times larger than any other sample collected at the Facility. The City should have immediately invalidated this sample result, which is a clearly implausible and must be a result of either sample contamination or laboratory error.

The requested changes below reflect a revised finding of no reasonable potential for nitrate, with the effluent limitations correspondingly removed, and monitoring frequency correspondingly reduced from monthly to quarterly. All text and tables related to calculation of the effluent limit for nitrate in the Fact Sheet (pages F-25 through F-29) should also be deleted.

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Table 4. Effluent Limitations - Discharge Point 001

Parameter	Units	Effluent Limitations ¹				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
⋮	⋮	⋮	⋮	⋮	⋮	⋮
Nitrate, Total (as N)	mg/L	10	--	-34-	--	--

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Table 5. Effluent Limitations - Discharge Point 002

Parameter	Units	Effluent Limitations ¹				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
⋮	⋮	⋮	⋮	⋮	⋮	⋮
Nitrate, Total (as N)	mg/L	10	--	-34-	--	--

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Table E-5. Effluent Monitoring - EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
⋮	⋮	⋮	⋮	⋮
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Quarterly Monthly ¹⁵	Standard Methods

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(a) **Nitrate.** Nitrate is known to cause adverse health effects in humans. For waters designated as domestic or municipal supply, the Basin Plan (Chapter 3) adopts the MCLs, established by DDW for the protection of public water supplies at title 22 of the CCR, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals), as applicable water quality criteria. The MCL for nitrate (10 mg/L as N) is therefore applicable as a water quality criterion. The Permittee sampled its discharge at Monitoring Location EFF-002 four times per discharge season between November 2012 and January 2017. Monitoring results ranged from 0.62 mg/L to ~~370~~ 2.1 mg/L based on 17 samples. Because nitrate levels in the effluent have been measured at concentrations ~~above~~ lower than 10 mg/L, as N, the Regional Water Board concludes that discharges from the Facility do not have a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for the receiving water. ~~In order to protect water quality, an AMEL of 10 mg/L and an MDEL of 34 mg/L for nitrate have been established.~~

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~~c. Effluent monitoring data collected over the term of Order No. R1-2012-0048 demonstrated that the discharge exhibits reasonable potential to cause or contribute to an exceedance of water quality criteria for nitrate. Therefore, this Order increases monitoring requirements for nitrate from four times per~~

~~permit term to monthly, in order to determine compliance with the applicable effluent limitations.~~

(See Comment # 7 for additional edits to this section)

- 2. The City requests removal of the requirement to maintain a disinfection residual of 1.5 mg/L at the end of the chlorine contact chamber, as well as duplicative monitoring requirements for monitoring location EFF-002.**

The requirement to maintain a specific minimum chlorine residual in treated wastewater should be removed, as there is already an established effluent limitation for total coliform. The amount of chlorine residual needed to ensure proper coliform reduction varies based on the characteristics of the effluent and the design and management of the chlorination system. Requiring a specific minimum level may cause the City to create excess chlorine disinfection by-products such as dichlorobromomethane and chlorodibromomethane as a result of maintaining a higher chlorine residual than necessary to achieve adequate disinfection. Furthermore, the requirement is contradictory to Special Provision VI.C.3.b of the Tentative Order, which requires the City to study and implement ways to reduce the discharge of chloride (chlorine used for disinfection is expected to be a significant contribution to effluent chloride).

The proposed substitute Permit language below has been adapted from other discharge permits issued by the North Coast RWQCB, including those for the City of Fortuna (Order No. R1-2017-0005) and the City of Rio Dell (Order No. R1-2017-0007). The City plans to install continuous monitoring equipment for chlorine residual and chlorine dosing within the term of the Tentative Order, so the proposed monitoring plan allows for either daily grab samples or continuous monitoring with daily averages reported.

Several other comments related to chlorination are also shown below. The City's dechlorination facilities have been decommissioned, so references to dechlorination should be removed from the Tentative Order. Also, the duplicative requirement to monitor EFF-002 for chlorine residual (in addition to INT-001) should be removed.

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D. Other Requirements

2. Filtration Process Requirements

- c. Disinfection Process Requirements for Chlorine Disinfection System.** As measured at the end of the chlorine contact chamber at Monitoring Location INT-001, the total residual chlorine concentration shall be maintained at a ~~minimum level of 1.5 mg/L at the end of the disinfection process~~ level that ensures the discharge meets the total coliform effluent limitation at the end of the disinfection process for discharges to Discharge Points 001 and 002.

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Table E-2 Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Untreated influent wastewater collected at the plant headworks at a representative point preceding primary treatment.
--	INT-001	Internal monitoring location for purposes of monitoring chlorine residual in chlorine treated wastewater within the contact chamber <u>prior to dechlorination</u> .

(Pages E-7 and E-8)

Table E-5. Effluent Monitoring – EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
⋮	⋮	⋮	⋮	⋮
<u>Chlorine, Total Residual^{H9}</u>	<u>mg/L</u>	<u>Grab</u>	<u>Daily</u>	<u>Standard Methods</u>
Table Notes: ... 10. Chlorine residual monitoring at Monitoring Location EFF-002 shall demonstrate that a chlorine residual is present after chlorination. This monitoring shall occur continuously when transferring from the point of chlorine introduction to the percolation ponds.				

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IX. OTHER MONITORING REQUIREMENTS

A. Monitoring Location INT-001

1. The Permittee shall monitor the discharge from the chlorine contact chamber prior to dechlorinating at Monitoring Location INT-001 as follows:

Table E-9. Internal Effluent Monitoring – Monitoring Location INT-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Chlorine, Total Residual	mg/L	Grab / <u>Meter</u>	Daily / <u>Continuous</u>	Standard Methods
Table Notes: 1. In accordance with the current edition of <i>Standard Methods for Examination of Water and Wastewater</i> (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136. 2. <u>If recorded continuously, the Permittee shall record readings of the continuous monitoring every hour on the hour and report the daily average. The Permittee shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate and reliable operation.</u>				

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~~The Facility has the ability to dechlorinate its disinfected effluent in the event of a discharge to the Russian River; however, as noted previously, t~~The Facility does not currently have advanced wastewater treatment facilities and is not authorized to discharge to the Russian River unless it is upgraded to provide advanced wastewater treatment.

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E. PLANNED CHANGES

...

[Within the term of this Order, the City plans to install continuous chlorine residual monitoring equipment at the end of the chlorine contact chamber.](#)

(Page F-35 and F-36)

H. Other Requirements

- ~~1. **Disinfection Process Requirements for Chlorine Disinfection System.** Consistent with Order No. R1-2012-0048, this Order requires the Permittee to maintain a minimum chlorine residual of 1.5 mg/L at the end of the disinfection process to ensure the disinfection process achieves adequate pathogen reduction.~~
1. **Residual Chlorine.** [This Order eliminates the minimum chlorine residual requirement from Order No. R1-2012-0048. Instead, this Order requires the Permittee to maintain a chlorine residual concentration that ensures the discharge meets the total coliform effluent limitations at the end of the disinfection process so that adequate pathogen reduction is continuously achieved at Discharge Points 001 and 002.](#)

3. The City requests the consolidation and streamlining of several overlapping Special Provisions and routine monitoring requirements.

The Tentative Order includes six new substantive requirements related to monitoring effluent and characterizing transport from the percolation ponds through the underlying groundwater basin, as follows:

- (a) A summary of 2 years of groundwater monitoring data collected from November 2018 – November 2020; (Provision VI.C.2.a, first half of paragraph)
- (b) A special study assessing the hydrogeological interaction of groundwater beneath the Facility with surface water in the Russian River, with a work plan due April 2019 (Provision VI.C.2.a, second half of paragraph);
- (c) An antidegradation re-evaluation assessing whether any groundwater degradation has occurred as a result of Facility operations, due with the Report of Waste Discharge (Provision VI.C.2.b);
- (d) A pollution prevention plan detailing possible steps to reduce chloride and electrical conductivity in the underlying groundwater, due in November 2019 (Provision VI.C.3.b);
- (e) A new requirement to conduct quarterly monitoring for copper, zinc, chlorodibromomethane, and dichlorobromomethane at 4 sites on the Russian River and 10 groundwater monitoring sites (Table E-7 and E-8); and
- (f) A new requirement to include groundwater elevation and iso-concentration contour maps for 10 constituents with each quarterly monitoring report (Page E-19 of Tentative Order).

The City agrees with the North Coast RWQCB that limited additional monitoring – accompanied by skillful interpretation of the resultant monitoring data – would be helpful in assessing potential impacts to the underlying groundwater basin. However, the Tentative Order requirements, as written, are overlapping and represent an undue burden on City staff. The City proposes the following changes to this suite of interlocking requirements:

- Consolidate the groundwater monitoring data summaries [(a) and (f) in the list above] into annual reports. The proposed requirement in the first half of Provision VI.C.2.a is very similar to the information requested in the Groundwater Monitoring Reports (page E-19). Under this approach, the City would include contour maps and data interpretation with each annual report, rather than quarterly. The City does not have a GIS software license, and producing contour maps will require the City to procure mapping services from a vendor. It will be more efficient for the City to complete this once a year rather than four times per year.
- Reduce the duration for monitoring copper, chlorodibromomethane, and dichlorobromomethane in the groundwater basin and Russian River to two years instead of the entire permit term. The proposed number of quarterly sampling events (8) should provide sufficient data for assessing impacts to the river and groundwater basin. It is not currently known whether these constituents are good tracers of the effluent within the groundwater basin and the Russian River. Despite this uncertainty, the Tentative Order requires at least 560 samples for these constituents (quarterly samples for metals and organics analysis, collected for five years at fourteen sites), which will cost the City approximately \$100,000 in additional laboratory costs, plus considerable staff time.

The monitoring requirement for zinc should be removed altogether (see Comment #5, below).

- Reframe the “Pollution Prevention Plan” for chloride and electrical conductivity as a Special Study. The framework of a “Pollution Prevention Plan” is too broad for the targeted Facility upgrades envisioned under this task. The focus of this study will be optimizing the disinfection system to assess the potential for reducing chlorine dosing while maintaining adequate disinfection. The City requests an additional six months to complete this study to allow time for installation and testing of the new continuous chlorine residual analyzer.

The description of the need for the study, as described in the Fact Sheet, has been modified to reflect more neutral language (“impact” rather than “negative impact”), consistent with other recently adopted permits such as Order No. R1-2018-0003 for Sonoma West Holdings. The City has already submitted ample monitoring data demonstrating that the highest groundwater concentrations downstream of the percolation ponds are lower than secondary MCLs (the recommended consumer acceptance level for chloride is 250 mg/L; the maximum observed concentration at any well was 120 mg/L. The MCL for specific conductance is 900 $\mu\text{S}/\text{cm}$; the maximum observed in any well and the in the effluent was 630 $\mu\text{S}/\text{cm}$). The City will continue to monitor groundwater for these constituents, as required by Table E-8.

- Revise the due date for the Antidegradation Re-evaluation so that it matches the due date for the Report of Waste Discharge (1 year prior to the expiration date of the Tentative Order, rather than 180 days prior).

Specific changes implementing the above consolidation and streamlining are reflected in the sections below.

(Pages 13-14)

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Groundwater Characterization.** ~~The Permittee shall conduct groundwater monitoring for each groundwater monitoring parameter/constituent identified in the MRP, Attachment E of this Order, and shall conduct monitoring necessary to perform a complete characterization of all constituents present in the groundwater. All groundwater monitoring wells upgradeint and downgradeint of the Facility shall be constructed and maintained to adequately capture seasonal variations in groundwater levels. After 2 years of monitoring, by **November 15, 2020**, the Permittee shall submit a groundwater quality characterization technical report presenting, at a minimum, a summary of monitoring data, calculation of the concentration of each monitored parameter/constituent in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the Facility for each monitored parameter/constituent. The technical report shall also identify any wastewater specific constituents, in addition to those provided in the MRP, Attachment E of this Order, that are present in the groundwater. Determinations presented in the technical report shall be made in accordance with requirements set forth in section VI.C.2.c and based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring. The groundwater characterization shall also include an~~

The Permittee shall conduct a groundwater characterization study that includes an analysis of the hydrogeological interaction of groundwater beneath the Facility with surface water in the Russian River. A work plan and schedule of implementation for groundwater characterization shall be submitted for approval by the Executive Officer by **April 1, 2019**. The work plan, due **April 1, 2019**, shall include a proposed methodology for assessing and analyzing the hydrogeological interaction of groundwater beneath the Facility with surface water in the Russian River. The Permittee shall implement the workplan per the approved schedule of implementation.

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. The technical report shall be prepared by or under the direction of appropriately qualified professional(s) and shall bear the professional's signature and stamp.

- b. **Antidegradation Reevaluation.** As part of an iterative evaluation of compliance with State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (State Anti-

Degradation Policy), the Permittee shall submit an Antidegradation Reevaluation with its Report of Waste Discharge at least one year 180 days prior to the expiration date of this Order. The Antidegradation Reevaluation must use information obtained from the expanded groundwater monitoring and characterization required in section **VI.C.2.ba**, in addition to results of discharge to the percolation ponds and groundwater monitoring, to determine whether any groundwater degradation that has occurred as a result of Facility operations has not resulted in any exceedances of applicable groundwater water quality objectives, or resulted in impacts to beneficial uses.

If the data indicate that exceedances of applicable groundwater water quality objectives or impacts to beneficial uses have occurred, the Permittee shall include a work plan (with an implementation schedule) to implement additional treatment or control measures to further limit any impacts from the ponds. Determination of background groundwater quality for use in the analysis shall be made using the methods described in title 27, section 20415(e)(10) of the California Code of Regulations or other method approved by the Executive Officer.

- c. Special Study of Chloride and Electrical Conductivity.** The Permittee shall conduct a comprehensive review of the chloride concentrations and electrical conductivity in the underlying groundwater basin, based on monitoring data collected for compliance with Order No. R1-2012-0048 and this Order. The Permittee shall review Facility processes that may result in the generation and discharge of these constituents within the effluent, including disinfection practices. The Special Study shall analyze the potential for reducing the generation of these constituents, and identify tasks and a time schedule for implementing proposed changes. The Special Study shall be completed by **May 1, 2020.**

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a. Pollution Prevention Plan

~~The Permittee shall prepare and implement a pollution prevention plan for chloride and electronic conductivity in accordance with Water Code section 13263.3(d)(2). The pollution prevention plan shall be completed and submitted to the Regional Water Board for review by **November 1, 2019.**~~

~~The Permittee shall provide progress reports annually on **Novem 1st** following submittal of the pollution prevention plan. The progress reports shall detail what steps have been implemented towards reducing chloride and electronic conductivity concentrations in the underlying groundwater.~~

~~The pollution prevention plan shall include, at a minimum, the following:~~

- ~~i. An analysis of chloride concentrations in groundwater, a description of the source(s) of this pollutants, and a comprehensive review of the processes used by the Permittee that may result in the generation and discharge of chloride within the effluent.~~
- ~~ii. An analysis of the potential for pollution prevention to reduce the generation of the pollutants, including the application of innovative and alternative technologies and any adverse environmental impacts resulting from the use of these methods.~~

- iii.—~~A detailed description of the tasks and time schedules required to investigate and implement various elements of pollution prevention techniques.~~
- iv.—~~A statement of the Permittee’s pollution prevention goals and strategies, including priorities for short-term and long-term action.~~
- v.—~~A description of the Permittee’s intended pollution prevention activities for the immediate future.~~
- vi.—~~A description of the Permittee’s existing pollution prevention methods.~~
- vii.—~~A statement that the Permittee’s existing and planned pollution prevention strategies do not constitute cross-media pollution transfers, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Board or the Regional Water Board, and information that supports that statement.~~
- viii.—~~Proof of compliance with the Hazardous Waste Source Reduction and Management Review Act of 1989 [Article 11.9 (commencing with section 25244.12) of Chapter 6.5 of Division 20 of the Health and Safety Code] if the Permittee is also subject to that act.~~
- ix.—~~An analysis of the relative costs and benefits of the possible pollution prevention activities.~~

(Page E-17 and E-18)

Table E-7. Receiving Water Monitoring – Monitoring Locations RSW-003 through RSW-006

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
pH	standard units	Grab	Quarterly	Standard Methods
Copper, Total Recoverable	µg/L	Grab	Quarterly ^{2,6}	ICPMS (ML 0.5 µg/L) SPGFAA (ML 2 µg/L) ³
Hardness, Total (as CaCO ₃)	mg/L	Grab	Quarterly ²	Standard Methods
Chlorodibromomethane	µg/L	Grab	Quarterly ⁶	GC (ML 0.5 µg/L) ⁴
Dichlorobromomethane	µg/L	Grab	Quarterly ⁶	GC (ML 0.5 µg/L) ⁴
⋮	⋮	⋮	⋮	⋮
Table Notes:				
...				
6. Samples for copper, chlorodibromomethane, and dichlorobromomethane shall be collected quarterly for two years (8 samples total). Monitoring may be discontinued after fulfilling this requirement.				

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Table E-8. Groundwater Monitoring Locations

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method ²
Depth to Groundwater	feet	--	Quarterly	--
pH	standard units	Grab	Quarterly	Standard Methods
Copper, Total Recoverable	µg/L	Grab	Quarterly ⁷	ICPMS (ML 0.5 µg/L) SPGFAA (ML 2 µg/L) ³
Chlorodibromomethane	µg/L	Grab	Quarterly ⁷	GC (ML 0.5 µg/L) ⁴
Dichlorobromomethane	µg/L	Grab	Quarterly ⁷	GC (ML 0.5 µg/L) ⁴
⋮	⋮	⋮	⋮	⋮

Table Notes:
 7. Samples for copper, chlorodibromomethane, and dichlorobromomethane shall be collected quarterly for two years (8 samples total). Monitoring may be discontinued after fulfilling this requirement.

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3. **Groundwater Monitoring Reports.** Groundwater monitoring data, including monitoring location (latitude/longitude), groundwater elevation (as compared to mean sea level), boring logs, and well construction details shall be uploaded to Geotracker. In addition, the information below shall be included with the Annual Report due by March 1st of each year:
- a. Groundwater elevation and gradient contour maps ~~shall be~~ developed on a quarterly basis;
 - b. Tables and graphs of groundwater analytical data collected over the previous year; To better understand pollutant fate and transport and trends over time, all groundwater analytical data for the site should be tabulated and graphed.
 - c. Groundwater reports should include iso-concentration contour maps for the constituents being monitored for in ~~†~~Table E-8 above.

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Table E-11. Reporting Requirements for Special Provisions Reports

Order Section	Special Provision Requirement	Reporting Requirements
Special Provision VI.C.2.a	Groundwater Quality Characterization Technical Report, Work Plan	April February 1, 2019
Special Provision VI.C.3.b	Pollution Prevention Plan	November 1, 2019
Special Provision VI.C.2.a	Groundwater Quality Characterization Technical Report, Final Report	November 15, 2020
Special Provision VI.C.2.b	Antidegradation Reevaluation, Final Report	Within <u>one year 180 days</u> of the expiration date of this Order

Order Section	Special Provision Requirement	Reporting Requirements
Special Provision VI.C.2.c	Special Study of Chloride and Electrical Conductivity	May 1, 2020
⋮	⋮	⋮

(Page F-38 and F-39)

2. Special Studies and Additional Monitoring Requirements

a. **Special Study of Chloride and Electrical Conductivity (Special Provision VI.C.2.c) ~~Pollution Prevention Plan (Special Provision VI.C.3.b)~~**. The Secondary MCL for electrical conductivity, established by DDW for the protection of public water supplies at title 22 of the CCR, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals), is 900 ~~mg/L~~ µmhos/cm. The Permittee conducted groundwater monitoring for chloride, electrical conductivity, and nitrate amongst up gradient and down gradient of the percolation ponds from July 2012 to October 2017. The average chloride concentrations at the upgradient wells (MW-1, MW-15, & MW 16) was 17 mg/L whereas average chloride concentrations in the down gradient wells (MW-9, MW-10, & MW-11) was 57 mg/L. Similarly, average electrical conductivity at the up gradient wells (MW-1, MW-15, & MW 16) was 446 µmhos/cm, whereas the average electrical conductivity in the down gradient wells (MW-9, MW-10, & MW-11) was 497 µmhos/cm. These results show both chloride and electrical conductivity in groundwater increasing downgradient of the waste water treatment plant and percolation ponds, indicating that effluent discharged to the percolation ponds is having a ~~negative~~ an impact on groundwater. To ensure compliance with the State’s antidegradation policy (40 C.F.R section 131.12) as well as groundwater limitations V.B, the Permittee is required to conduct a Special Study to review Facility processes that may result in the generation and discharge of the constituents chloride and electrical conductivity, prepare and implement a pollution prevention plan for the constituents chloride and electrical conductivity, as specified in section ~~VI.C.2.c VI.C.3.b~~ VI.C.2.c of this Order.

4. The City requests the removal of the Industrial Waste Survey (IWS) Special Provision.

The City has on ongoing Sewer Use Permit Program which was recently extended to all commercial entities. Under this existing Program, the City already identifies industrial and commercial users and maintains records of their water usage, expected wastewater constituents of concern (such as oil and grease in food service establishments), and pretreatment systems (if any). A formal Industrial Waste Survey was completed in 2013, and no significant industrial users have been identified since that time. The City will continue to include relevant information in the Annual Report, as required under the Source Control Activity Reporting section of the Annual Report (page E-25 of the Tentative Order).

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~~(c) Industrial Waste Survey (IWS)~~

- ~~(1) The Permittee shall conduct an IWS of all the industrial users (IUs) in the service area of the Facility to determine whether any IUs are subject to pretreatment standards specified in 40 C.F.R. part 403. At a minimum, the IWS must identify the following for each industrial user and zero-discharging categorical industrial user: whether it qualifies as a significant user; the average and peak flow rates; the SIC code; any pretreatment being implemented by each industrial user; and whether or not the Permittee has issued a permit to any of the identified industrial users. The IWS is required during the 12-month period that begins on **January 1, 2019**.~~
- ~~(2) The results of the IWS shall be submitted to the Regional Water Board in a written report no later than **June 1, 2020**. The written report shall include a certification report indicating whether the Facility receives pollutants from any IU that would require the Permittee to establish a pretreatment program in accordance with 40 C.F.R. part 403.~~

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b. Source Control and Pretreatment Provisions (Special Provision VI.C.5.b).

Pursuant to Special Provision VI.C.5.b.i, the Permittee shall implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system, and inspect facilities connected to the system.

40 C.F.R. section 403.8(a) requires POTWs with a total design flow greater than 5 mgd and receiving pollutants which pass through or interfere with the operation of the POTW to establish a POTW Pretreatment Program. The Regional Water Board may also require that a POTW with a design flow of 5 mgd or less develop a POTW Pretreatment Program if the nature or volume of the industrial influent, treatment process upsets, violations of POTW effluent limitations, contamination of municipal sludge, or other circumstances warrant in order to prevent interference or pass through. The Permittee did not report any known industrial wastes subject to regulation under the NPDES Pretreatment Program being discharged to the Facility in Part F of EPA Application Form 2A and the permitted flow of the Facility is less than 5 mgd; therefore, the Order does not require the Permittee to develop a pretreatment program that conforms to federal regulations. However, in order to prevent interference with the POTW or pass through of pollutants to the receiving water, the Order requires the Permittee to implement a source control program. conduct an industrial waste survey to identify all non-domestic facilities in the service area that might discharge pollutants that could pass through or interfere with the operation or performance of the Facility and to monitor the influent for priority pollutants. If the results of the industrial waste survey or influent monitoring indicate that a pretreatment program is necessary, pursuant to 40 C.F.R. section 403.8(3), the Regional Water Board may reopen this permit to require the Permittee to develop a pretreatment program.

5. The City requests removal of zinc monitoring requirements from the Tentative Order.

Zinc did not demonstrate reasonable potential to exceed the water quality objective in the Russian River. The Tentative Order does not identify any rationale for quarterly zinc monitoring within the effluent, river, and groundwater basin, despite requiring a minimum of 300 zinc samples over 5 years.

There is one sample result available for effluent (43 µg/L), which is comparable to the maximum effluent concentration listed in the previous Order (53 µg/L). The background water quality of the Russian River listed in Order No. R2-2012-0048 is 55 µg/L. Both the effluent and Russian River sample are lower than the water quality objective of 98 µg/L. The effluent and background receiving water results are not significantly different from one another (43 µg/L vs 55 µg/L), indicating that zinc is unlikely to be a good tracer of effluent within the river.

There is no water quality objective for zinc in the groundwater basin, because there is no drinking water MCL for zinc. No zinc data is available for the groundwater basin.

For the reasons above, the City believes that zinc monitoring is not technically justified, nor is it likely to yield useful information for tracking the effluent discharged to the percolation ponds. The requested edits below reflect the removal of zinc monitoring from the Tentative Order.

(Page E-3)

Table E-1. Test Methods and Minimum Levels for Priority Pollutants

CTR #	Constituent	Types of Analytical Methods MLs (µg/L) ¹				
		Graphite Furnace Atomic Absorption	Inductively Coupled Plasma	Inductively Coupled Plasma/Mass Spectrometry	Stabilized Platform Graphite Furnace Atomic Absorption	Gas Chromatography
6	Copper, Total Recoverable	--	--	0.5	2	--
13	Zinc, Total Recoverable			1	10	--
⋮	⋮	⋮	⋮	⋮	⋮	⋮

(Page E-7 and E-8)

Table E-5. Effluent Monitoring – EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
⋮	⋮	⋮	⋮	⋮
Zinc, Total Recoverable	µg/L	Grab	Quarterly^{5,6}	ICPMS (ML 1 µg/L) SPGFAA (ML 10 µg/L)⁷
⋮	⋮	⋮	⋮	⋮

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
<u>Table Notes:</u>				
...				
5. Monitoring for copper, zinc , specific conductance, and chloride must coincide with quarterly groundwater and receiving water monitoring.				
6. Monitoring for effluent and receiving water hardness shall be conducted concurrently with effluent sampling for copper and zinc .				
...				

(Page E-17 and E-18)

Table E-7. Receiving Water Monitoring – Monitoring Locations RSW-003 through RSW-006

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
⋮	⋮	⋮	⋮	⋮
Zinc, Total Recoverable	µg/L	Grab	Quarterly ²	GFAA (ML 5 µg/L) ICP (10 µg/L) ICPMS (ML 0.5 µg/L) SPGFAA (ML 2 µg/L) ³
⋮	⋮	⋮	⋮	⋮
<u>Table Notes:</u>				
1. In accordance with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.				
2. Monitoring for effluent and receiving water hardness shall be conducted concurrently with effluent monitoring for copper at Monitoring Location EFF-002 and receiving water sampling for copper and zinc .				
3. GFAA – Graphite Furnace Atomic Absorption ICP – Inductively Coupled Plasma ICPMS = Inductively Coupled Plasma / Mass Spectrometry SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption				
...				

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Table E-8. Groundwater Monitoring Locations

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method ²
⋮	⋮	⋮	⋮	⋮
Zinc, Total Recoverable	µg/L	Grab	Quarterly	ICPMS (ML 1 µg/L) SPGFAA (ML 10 µg/L)
⋮	⋮	⋮	⋮	⋮

(Page F-43)

- e. This Order establishes new quarterly monitoring requirements for ~~zinc~~, specific conductance, and chloride, and modifies the monitoring frequency for copper from four times per discharge season to quarterly, in order to gather data needed to evaluate

whether the effluent, groundwater, and surface water monitoring data indicate a direct hydrologic connection between the groundwater underlying the percolation ponds and the Russian River.

(Page F-44)

- iii. This Order establishes new quarterly monitoring requirements for chlorodibromethane, dichlorobromethane, ~~and~~ copper, ~~and zinc~~ in order to gather data needed to evaluate whether the effluent, groundwater, and surface water monitoring data indicate a direct hydrologic connection between the percolation ponds and the Russian River.

(Page F-45)

- b. This Order establishes new quarterly monitoring requirements for chlorodibromethane, dichlorobromethane, ~~and~~ copper, ~~and zinc~~ based on the reasonable potential analysis, and in order to assess the impact of the effluent on groundwater, and evaluate whether the effluent, groundwater and surface water monitoring data indicate a direct hydrologic connection between the percolation ponds and the Russian River.

6. The City requests discontinuation of monitoring at Well #7, and discontinuation of water quality monitoring at Well #15.

Well 7 was installed in 1990, while nearby Well 14 was installed in 1994. Both wells were installed for the specific purpose of monitoring the groundwater basin in the vicinity of the wastewater treatment plant. The construction of Highway 101 Bypass and Asti Road in 1994 resulted in drainage changes on the west side of the Facility. As a result, the area around Well 7 is often extremely wet in the winter. The site is difficult to access due to the wet conditions, which may also contribute to well contamination. The City requests discontinuation of monitoring requirements at Well 7. Well 14 provides similar information about groundwater elevations and water quality, and both sites are not needed.

Well 15 was installed in 1994. The Highway 101 Bypass and Asti Road construction also impacted the drainage in this area, and Well 15 is suspected to be heavily influenced by surface water conditions in Heron Creek – for example, Well 15 shows significantly lower chloride levels than Well 16, which is located further away from Heron Creek. Well 15 also shows highly variable nitrate concentrations compared to the other upgradient wells (Well 1 and Well 16). The City proposes to continue monitoring groundwater elevations at Well 15, but to suspend groundwater quality monitoring, since it appears that surface water may be drawn into the well.

The requested revisions are shown on the next page.

(Page E-4)

Table E-2 Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
⋮	⋮	⋮
--	GW-001 ¹	Groundwater monitoring well northeast of the percolation ponds.
--	GW-007	Groundwater monitoring well southwest of the percolation ponds.
⋮	⋮	⋮

(Page E-18)

C. Groundwater Monitoring Locations

1. The Permittee shall monitor groundwater at Monitoring Locations GW-001, ~~GW-007~~, GW-009, GW-010, GW-011, GW-012, GW-013, GW-014, GW-015, and GW-016 as follows:

Table E-8. Groundwater Monitoring Locations

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method ²
Depth to Groundwater	feet	--	Quarterly ⁸	--
⋮	⋮	⋮	⋮	⋮
<u>Table Notes:</u>				
<u>7. Sampling at GW-015 shall include depth to groundwater only.</u>				

(Page F-45)

2. Groundwater

- a. Monitoring requirements at Monitoring Locations GW-001, ~~GW-007~~, GW-009, GW-010, GW-011, GW-012, GW-013, GW-014, GW-015, and GW-016 for depth to groundwater, pH, total coliform bacteria, specific conductance, chloride, and nitrate have been retained from Order No. R1-2012-0048. Monitoring requirements at GW-007 were not retained due to site access constraints.

7. The City requests modification of the minimum sampling frequency for certain constituents at Monitoring Location EFF-002 from “Four times per discharge season” to “Quarterly.”

The requested change in frequency applies to monitoring for chlorodibromomethane, dichlorobromomethane, hardness, temperature, and nutrients, which are specified in Table E-5 to be collected at a frequency of four times per discharge season (January, March, May, and November). Other constituents listed in Table E-5, such as copper, specific conductance, and chloride, are required to be monitored quarterly (February, May, August, and November). This combination of minimum sampling frequencies is unnecessarily complicated.

Discharge to the percolation ponds occurs year-round, so a quarterly minimum sampling frequency requirement offers a more straightforward approach than the “Four times per discharge season” requirement as written for Monitoring Location EFF-002. The modification of minimum sampling frequency from “Four times per discharge season” to “Quarterly” would streamline the monitoring effort, without compromising quantity or quality of information obtained through collection. The requested revision is shown below.

(Page E-7 and E-8)

Table E-5. Effluent Monitoring – EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Copper, Total Recoverable	µg/L	Grab	Quarterly ^{5,6}	ICPMS (ML 0.5 µg/L) SPGFAA (ML 2 µg/L) ⁷
Zinc, Total Recoverable	µg/L	Grab	Quarterly^{5,6}	ICPMS (ML 1 µg/L) SPGFAA (ML 10 µg/L)⁷
Chlorodibromomethane	µg/L	Grab	Quarterly Four times per discharge season⁸	GC (ML 0.5 µg/L) ⁹
Dichlorobromomethane	µg/L	Grab	Quarterly Four times per discharge season⁸	GC (ML 0.5 µg/L) ⁹
Chlorine, Total Residual ¹⁰	mg/L	Grab	Daily	Standard Methods
Hardness, Total (as CaCO ₃)	mg/L	Grab	Quarterly Four times per discharge season⁸	Standard Methods
Specific Conductance @ 77°F	µmhos/cm	Grab	Quarterly ⁵	Standard Methods
Temperature	°C or °F	Grab	Quarterly⁴ Four times per discharge season^{4,8}	Standard Methods
CTR Priority Pollutants ¹¹	µg/L	24-hr Composite ¹²	Once per permit term ¹³	Standard Methods ¹⁴
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Quarterly⁴ Four times per discharge season^{4,8}	Standard Methods
Ammonia Nitrogen, Unionized (as N)	mg/L	Calculate	Quarterly⁴ Four times per discharge season^{4,8}	--
Chloride	mg/L	Grab	Quarterly ⁵	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Quarterly⁵ Monthly¹⁵	Standard Methods

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Nitrite Nitrogen, Total (as N)	mg/L	Grab	<u>Quarterly</u> Four times per discharge season⁸	Standard Methods
Organic Nitrogen	mg/L	Grab	<u>Quarterly</u> Four times per discharge season⁸	Standard Methods
Phosphorus, Total (as P)	mg/L	Grab	<u>Quarterly</u> Four times per discharge season⁸	Standard Methods

Table Notes:

1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. Each quarter, the Permittee shall report the daily average and monthly average flows.
3. Accelerated monitoring (weekly monitoring frequency). If two consecutive weekly test results exceed an effluent limitation, the Permittee shall take two samples each of the 2 weeks following receipt of the second sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
4. pH and temperature monitoring must coincide with quarterly ~~four times per discharge season~~ monitoring for ammonia.
5. Monitoring for copper, zinc, specific conductance, and chloride must coincide with quarterly groundwater and receiving water monitoring.
6. Monitoring for effluent and receiving water hardness shall be conducted concurrently with effluent sampling for copper and zinc.
7. GFAA = Graphite Furnace Atomic Absorption
 ICP = Inductively Coupled Plasma
 ICPMS = Inductively Coupled Plasma / Mass Spectrometry
 SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption
8. ~~Monitoring shall be conducted four times per discharge season in November, January, March, and May.~~

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Table E-10. Monitoring Periods and Reporting Schedule¹

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
⋮	⋮	⋮	⋮
Quarterly	First day of calendar quarter following permit effective date or on permit effective date if that date is first day of the month	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Four times per discharge season	November 1 following permit effective date	November 1-30, January 1-31, March 1-31, May 1-14	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
⋮	⋮	⋮	⋮

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
<u>Table Notes:</u>			
1. Quarterly monitoring periods are as follows: January 1 through March 31; April 1 through June 30; July 1 through September 30; and October 1 through December 31.			

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2. Monitoring Location EFF-002

a. Effluent monitoring frequencies and sample types for flow, BOD₅, pH, total coliform bacteria, and TSS have been retained from Order No. R1-2012-0048. Effluent monitoring frequencies for chlorodibromomethane, dichlorobromomethane, ~~total residual chlorine~~, hardness, temperature, CTR priority pollutants, ammonia (total and unionized), nitrite, nitrate, organic nitrogen, and phosphorus have also been retained from Order No. R1-2012-0048, but with the frequency adjusted slightly from four times per discharge season to quarterly.

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5. **Accelerated Monitoring Requirements.** Tables E-4 and E-5 of the MRP include accelerated monitoring requirements for parameters that are required to be monitored daily, weekly, monthly, and quarterly, and four times per discharge season.

7. The City requests minor modifications to the Fact Sheet to correct the ammonia effluent limit calculations.

The final effluent limitations listed in Table 4 of the Tentative Order were calculated assuming the presence of mussels. Some tables in the Fact Sheet appear to reflect an assumption of no mussels. The corrections below are intended to have the calculations of the Water Quality-Based Effluent Limitation (WQBEL) for ammonia (pages F-28 and F-29 of the Tentative Order) make use of the water quality objectives listed on page F-23 of the permit.

(Page F-28)

Table F-6. Determination of Long Term Averages

Pollutant	Units	ECA			ECA Multiplier			LTA		
		Acute	Chronic 4-Day	Chronic 30-Day	Acute	Chronic 4-Day	Chronic 30-Day	Acute	Chronic 4-Day	Chronic 30-Day
Ammonia (as N)	mg/L	5.62	6.70 <u>2.70</u>	2.68 <u>1.08</u>	0.312	0.517	0.774	1.75	3.46 <u>1.39</u>	2.07 <u>0.84</u>
Copper, Total Recoverable	µg/L	11.2	7.60	--	0.245	0.434	--	2.75	3.30	--

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Table F-8. Determination of Final WQBELs Based on Aquatic Life Criteria

Pollutant	Unit	LTA	MDEL Multiplier	AMEL Multiplier	MDEL	AMEL
Ammonia (as N)	mg/L	2.07 0.84	3.21	1.57	5.6 2.7	2.8 1.3
Copper, Total Recoverable	µg/L	2.75	4.08	1.77	11	4.8

8. The City requests the inclusion of rationale for land discharge requirements in Section IV.F of the Fact Sheet.

Land discharge specifications and requirements are included in Section IV.B of the Tentative Order (pages 7-8). Land discharge monitoring requirements are identified in Section V of the Monitoring and Reporting Program (Attachment E, page E-6). Given the prescribed land discharge requirements, the omission of a rationale for such requirements should be corrected.

Proposed language is shown below and is adapted from the permit for Redway Community Services District (Order No. R1-2017-0006), which similarly includes discharges to both a surface water body and a percolation pond. Simplified language such as that found in the NPDES Permit for the City of Chico (Order No. R5-2016-0023) would also be acceptable to the City.

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F. Land Discharge Specifications and Requirements – ~~Not Applicable~~

~~This Order does not authorize discharges to land.~~

1. Scope and Authority

Section 13263 of the Water Code requires the Regional Water Board to prescribe requirements for proposed discharges, existing discharges, or material changes in an existing discharge based upon the conditions of the disposal area or receiving waters upon or into which the discharge is made or proposed. The prescribed requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241. In prescribing requirements, the Regional Water Board is not obligated to authorize the full waste assimilation capacities of the receiving water.

Here, the Regional Water Board considered all of these factors when developing the WDRs for the land discharge. Limitations for BOD5, TSS, and pH were scientifically derived to implement water quality objectives that protect beneficial uses. Both beneficial uses and the water quality objectives have been approved pursuant to state law. In addition, discharge prohibitions were included to prohibit the land discharge of untreated or partially treated waste, in order to protect public health and prevent nuisance. In addition, the Regional Water Board considered the factors set forth in Water Code section 13241, including the consideration of past, present, and probable future beneficial uses of the receiving water, which the Regional Water Board anticipates to be the same as set forth in the Basin Plan. The Regional Water Board considered the environmental characteristics,

[including water quality of the Middle Russian River Hydrologic Area, the water bearing capacity of groundwater basins in the vicinity of the discharge, and the need to maintain a land discharge.](#)

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Beneficial Uses. Beneficial use designations for groundwater established in the Basin Plan include MUN, AGR, IND, and PRO.

b. Basin Plan Water Quality Objectives. The Basin Plan contains narrative objectives for [taste and odor, bacteria, radioactivity, and chemical constituents \(including those chemicals that adversely affect agricultural water supply\) that apply to groundwater.](#)

3. Determining the Need for Requirements for Discharges to Land

The following land discharge specifications apply to land discharges to the percolation ponds.

a. BOD₅, TSS, pH, and coliform bacteria. This Order includes technology-based effluent limitations for BOD₅, TSS, pH, and coliform bacteria as described in Section IV.B.2.b of the [Fact Sheet.](#)

b. Nitrate. Nitrate is known to cause adverse health effects in humans. For waters designated as domestic or municipal supply, the Basin Plan (Chapter 3) adopts the MCLs, established by DDW for the protection of public water supplies at title 22 of the CCR, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals), as applicable water quality criteria. The MCL for nitrate (10 mg/L as N) is therefore applicable as a water quality criterion. The Permittee sampled its discharge at Monitoring Location EFF-002 four times per discharge season between November 2012 and January 2017. Monitoring results ranged from 0.62 mg/L to 2.1 mg/L based on 17 samples. Because nitrate levels in the effluent have been measured at concentrations lower than 10 mg/L, as N, the Regional Water Board concludes that discharges from the Facility do not have a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for the receiving water.

9. The City requests revisions to the contact information listed in Table F-1.

The requested change will help the City more easily interpret the permit.

Table F-1. Facility Information

WDID	1B840320SON
Permittee	City of Cloverdale
Name of Facility	Wastewater Treatment Plant
Facility Address	700 Asti Road
	Cloverdale, CA 95425
	Sonoma County
Facility Contact, Title and Phone	Jay Robinson, Senior Wastewater Treatment Plant Operator, (707) 894-1719
Authorized Person to Sign and Submit Reports	Mark Rincón, Public Works Director, (707) 894-1722 Jay Robinson, Senior Wastewater Treatment Plant Operator, (707) 894-1719

Mailing Address	124 North Cloverdale Boulevard, Cloverdale, CA 95425
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10. The following minor errors were found in the Tentative Order, and requested corrections are indicated below.

Page Number	Requested Revision
4	H. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections III.E, III.F, IV.A.2 IV.B.1 , V.B, and VI.C.5.a of this Order and sections VIII.C and X.E of the Monitoring and Reporting Program are included to implement state law only.
D-3	4. Burden of Proof. In any enforcement proceeding, the permittee seed seeking to establish the bypass defense has the burden of proof.
E-18	In Table E-8, the footnote numbering in the main body of the table (Notes 1 through 6) does not match numbering below the table (Notes 6 through 11).
F-8	...indicate a need for recycled u water
F-38	The Secondary MCL for electrical conductivity... is 900 mg/L µmhos/cm .
F-40	Please remove the erroneous reference to influent monitoring for priority pollutants, a requirement that is not included in the Tentative Order.
F-39, F-44	Please remove tracked changes in the Tentative Order
F-46	...publication in the Santa Rosa Press Democrat Democrat on May 25, 2018.

11. The City requests that Figure B-2 be replaced with the updated map on the next page, which shows monitoring locations RSW-003, RSW-004, RSW-005, and RSW-006.



Data Sources: Sonoma County Vegetation
Mapping and LIDAR Program

