# TENTATIVE ORDER No. R2-2013-00XX

# AMENDMENT OF WASTE DISCHARGE REQUIREMENTS FOR FAIRFIELD-SUISUN SEWER DISTRICT FAIRFIELD-SUISUN WASTEWATER TREATMENT PLANT AND RESCISSION OF CEASE AND DESIST ORDER

**WHEREAS** the California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter "Regional Water Board"), finds the following:

1. The Regional Water Board issued Fairfield-Suisun Sewer District (hereinafter "Discharger") waste discharge requirements that serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to the Clean Water Act through Order No. R2-2009-0039. Order No. R2-2009-0039 authorizes the Discharger to discharge treated wastewater from the Fairfield-Suisun Wastewater Treatment Plant (Plant) to Boynton Slough, two duck ponds tributary to Boynton Slough, and Ledgewood Creek. The Regional Water Board amended some provisions of Order No. R2-2009-0039 through Order Nos. R2-2010-0054 and R2-2011-0009.

2. The Plant provides advanced secondary treatment for about 17 million gallons per day of wastewater from domestic, commercial, and industrial sources from Fairfield, Suisun City, Travis Air Force Base, and surrounding areas. About 95% of the treated wastewater is discharged to Boynton Slough at Discharge Point 001. The remaining 5% is discharged to the duck ponds (Discharge Points 002 and 003) and Ledgewood Creek (Discharge Point 005).

3. When Order No. R2-2009-0039 was adopted, a dilution credit of 4:1 (D=3) was used to calculate the cyanide effluent limits for Discharge Point 001 based on Basin Plan Table 4-6. The Basin Plan does not specify dilution credits for the other discharge points. Because information was unavailable at the time to support establishing a mixing zone and dilution credit, no dilution credit was used to calculate the cyanide effluent limits for the other discharge points. The cyanide effluent limitations in Order No. R2-2009-0039 are as follows:

| Parameter | Units | Final Effluent Limitations | |
|---|---|---|---|
| | | Average Monthly | Maximum Daily |
| Cyanide (001) | µg/L | 7.4 | 18 |
| Cyanide (002, 003, 005) | µg/L | 2.1 | 5.3 |

4. The Discharger could immediately comply with the cyanide effluent limits at Discharge Point 001, but not at the other locations. Similarly, the Discharger could not immediately comply with the copper, dichlorobromomethane, and chlorodibromomethane limits in Order No. R2-2009-0039. Therefore, the Regional Water Board issued Cease and Desist Order No. R2-2009-0040, establishing interim effluent limits for these pollutants and requiring specific actions to enable the Discharger to eventually comply with Order No. R2-2009-0039's limits.

5. For copper, dichlorobromomethane, and chlorodibromomethane, the Discharger implemented actions that lowered effluent concentrations. The Discharger can now meet Order No. R2-2009-0039's effluent limits for these pollutants.

6. For cyanide, the Discharger completed a mixing zone study (*Cyanide Dilution Credit for Duck Ponds and Ledgewood Creek*, September 12, 2012) to support establishing cyanide mixing zones for Discharge Points 002, 003, and 005 in accordance with the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (hereinafter "State Implementation Policy").

7. This Order amends Order No. R2-2009-0039 to replace its cyanide limits for Discharge Points 002, 003, and 005 with revised limits based on mixing zones and a corresponding dilution credit. The revised limits are less stringent than the previous limits, and the Discharger can comply with them.

8. This Order complies with anti-backsliding and antidegradation requirements pursuant to Clean Water Act sections 402(o) and 303(d), 40 Code of Federal Regulations sections 122.44(l) and 131.12, and State Water Board Resolution No. 68-16.

9. Because the Discharger can comply with all of the effluent limits in Order No. R2-2009-0039, as amended by this Order, Cease and Desist Order No. R2-2009-0040 is unnecessary and can be rescinded.

10. The Fact Sheet attached to this Order as Attachment F contains background information and rationale for this Order's revisions to Order No. R2-2009-0039. It is hereby incorporated into this Order and therefore constitutes part of the findings for this Order.

11. This Order is exempt from the provisions of Chapter 3 of the California Environmental Quality Act pursuant to California Water Code section13389.

12. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to consider adoption of this Order, and provided an opportunity to submit written comments.

13. In a public meeting, the Regional Water Board heard and considered all comments pertaining to this Order.

**IT IS HEREBY ORDERED,** pursuant to the provisions of California Water Code Division 7 and regulations adopted thereunder, and the provisions of the federal Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with Order No. R2-2009-0039 (the previous order), as amended by the requirements of this Order. Furthermore, Cease and Desist Order No. R2-2009-0040 is hereby rescinded, except for enforcement purposes.

1. **Replace Section IV.2 of Order No. R2-2009-0039, Effluent Limitations for Toxic Pollutants, including Tables 7 and 8, with the following** (changes are shown using underline for additions and ~~strikethrough~~ for deletions)**:**

   The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001, 002, 003, and 005, with compliance measured ~~for~~ at Monitoring Location E-001-D (except as specified), as described in the attached MRP (Attachment E). ~~Effluent limitations shall become effective at Discharge Point 005 immediately upon Executive Officer approval of discharge at this outfall.~~

**Table 7. Effluent Limitations for Toxic Pollutants**

| Parameter | Units | Final Effluent Limitations (1), (2) | |
|---|---|---|---|
| | | Average Monthly | Maximum Daily |
| Copper | µg/L | 7.9 | 15 |
| Cyanide ~~(E-001)~~ | µg/L | 7.4 | 18 |
| ~~Cyanide (E-002, E-003, E-005)~~ | ~~µg/L~~ | ~~2.1~~ | ~~5.3~~ |
| Dioxin-TEQ | µg/L | $1.4 \times 10^{-8}$ | $2.8 \times 10^{-8}$ |
| Chlorodibromomethane (2 ~~3~~) | µg/L | 34 | 68 |
| Dichlorobromomethane | µg/L | 46 | 92 |
| Total Ammonia | mg/L N | 2.0 | 4.0 |

**Footnotes to Table 7:**

(1) a. Limitations for toxic pollutants apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).

b. All metals limitations are expressed as total recoverable metal.

~~(2) A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limitation and the Reporting Level for that constituent. As outlined in SIP Section 2.4.5, Table 8, below, indicates the Minimum Level (ML) for compliance determination purposes. An ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.~~

(2 ~~3~~) Final effluent limitations shall become effective on May 18, 2010.

~~**Table 8. Minimum Levels for Pollutants with Effluent Limitations**~~

| ~~Parameter~~ | ~~Minimum Level~~ | ~~Units~~ |
|---|---|---|
| ~~Copper~~ | ~~0.5~~ | ~~µg/L~~ |
| ~~Cyanide~~ | ~~5~~ | ~~µg/L~~ |
| ~~Chlorodibromomethane~~ | ~~0.5~~ | ~~µg/L~~ |
| ~~Dichlorobromomethane~~ | ~~0.5~~ | |
| ~~Ammonia~~ | ~~0.2~~ | ~~mg/L~~ |
| ~~Dioxin-TEQ~~ | ~~As specified below~~ | |
| ~~2,3,7,8-TCDD~~ | ~~5~~ | ~~pg/L~~ |

| ~~Parameter~~ | ~~Minimum Level~~ | ~~Units~~ |
|---|---|---|
| ~~1,2,3,7,8 PeCDD~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,4,7,8 HxCDD~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,6,7,8 HxCDD~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,7,8,9 HxCDD~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,4,6,7,8 HpCDD~~ | ~~25~~ | ~~pg/L~~ |
| ~~OCDD~~ | ~~50~~ | ~~pg/L~~ |
| ~~2,3,7,8 TCDF~~ | ~~5~~ | ~~pg/L~~ |
| ~~1,2,3,7,8 PeCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~2,3,4,7,8 PeCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,4,7,8 HxCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,6,7,8 HxCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,7,8,9 HxCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~2,3,4,6,7,8 HxCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,4,6,7,8 HpCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~1,2,3,4,7,8,9 HpCDF~~ | ~~25~~ | ~~pg/L~~ |
| ~~OCDF~~ | ~~50~~ | ~~pg/L~~ |

2. **If conflicts exist between this Order's findings and provisions and those of Order No. R2-2009-0039, this Order's findings and provisions shall prevail.**

3. **This Order shall become effective March 1, 2013.**

I, Bruce Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on [DATE].

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Bruce H. Wolfe
Executive Officer

# ATTACHMENT F

# FACT SHEET

This Fact Sheet describes the legal requirements and technical rationale that serve as the basis for this Order's requirements. Where factual inconsistencies arise between the findings of this Fact Sheet and the findings of Order No. R2-2009-0039, the findings here supersede the findings of Order No. R2-2009-0039.

A. Purpose

This Order replaces the cyanide effluent limitations in Order No. R2-2009-0039 with limits based on new information presented in *Cyanide Dilution Credit for Duck Ponds and Ledgewood Creek* (September 12, 2012) (hereinafter "Mixing Zone Study"). The new limits reflect dilution credits based on mixing zones consistent with section 1.4.2 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (hereinafter "State Implementation Policy").

This Order also removes from Order No. R2-2009-0039 some extraneous text superseded by Order No. 2010-0054 (amendment of waste discharge requirements to revise and update standard provisions).

B. Background

Fairfield-Suisun Sewer District (hereinafter "Discharger") owns and operates the Fairfield-Suisun Wastewater Treatment Plant (Plant), which provides advanced secondary treatment for about 17 million gallons per day of wastewater from domestic, commercial, and industrial sources in Fairfield, Suisun City, Travis Air Force Base, and surrounding areas. About 95 percent of the treated wastewater is discharged to Boynton Slough at Discharge Point 001. The remaining 5 percent is discharged to duck ponds (Discharge Points 002 and 003) and Ledgewood Creek (Discharge Point 005). The District has been discharging to the duck ponds since the early 1980s because the treated effluent produces conditions that facilitate growth of plants that provide food for waterfowl. The District uses the Ledgewood Creek outfall for system reliability and redundancy (for example, if the Boynton Slough outfall [Discharge Point 001] needs to be taken out of service for maintenance, repair, or construction). The Ledgewood Creek outfall also accommodates increased flows from a recently-constructed treatment plant expansion.

The previous order established the following effluent limits for cyanide, copper, chlorodibromomethane, and dichlorobromomethane at Discharge Points 001, 002, 003, and 005:

| Parameter | Units | Final Effluent Limitations | |
|---|---|---|---|
| | | Average Monthly | Maximum Daily |
| Cyanide (001) | µg/L | 7.4 | 18 |
| Cyanide (002, 003, and 005) | µg/L | 2.1 | 5.3 |
| Copper | µg/L | 7.9 | 15 |
| Chlorodibromomethane | µg/L | 34 | 68 |
| Dichlorobromomethane | µg/L | 46 | 92 |

Basin Plan Table 4-6 allows a cyanide dilution credit of 4:1 (i.e., the dilution credit, D, is 3; there are 3 parts ambient receiving water to each part effluent) when discharging to Boynton Slough (Discharge Point 001), but does not specify dilution credits for the other discharge points. Because information was unavailable at the time of the last permit reissuance to support establishing a cyanide mixing zone and dilution credit for these other points, no dilution credit was used to calculate the cyanide effluent limits for them. Therefore, Order No. R2-2009-0039 established two sets of cyanide effluent limits: one for discharging to Boynton Slough, calculated with 4:1 dilution, and one for discharging to the duck ponds and Ledgewood Creek, calculated with no dilution.

Because the Discharger's effluent data showed it could not immediately comply with the cyanide, copper, chlorodibromomethane, and dichlorobromomethane effluent limits (except for cyanide at Discharge Point 001), the Regional Water Board adopted Cease and Desist Order No. R2-2009-0040, which established interim effluent limits for these pollutants and time schedules for specific actions leading to compliance with the limits in Order No. R2-2009-0039.

For copper, the Discharger completed actions the Cease and Desist Order required and lowered effluent copper concentrations as shown in Figure 1. To reduce its copper discharges, the Discharger trained local inspectors to target facilities with a higher potential for discharging copper, including commercial car washes, corporation yards, automotive facilities, and metal finishing facilities. The Discharger also participated in regional outreach efforts to plumbers, contractors, and the public.

In addition to industrial sources to the treatment plant, cyanide, chlorodibromomethane, and dichlorobromomethane are byproducts of chlorine disinfection at the plant. In August 2011, the Discharger discontinued use of chlorine to disinfect its wastewater, replacing it with ultra-violet disinfection. Since then, chlorodibromomethane and dichlorobromomethane effluent concentrations have been below detection limits (typically 0.16 µg/L). As shown in Figure 2, cyanide effluent concentrations have been detected, but have been too low to quantify.

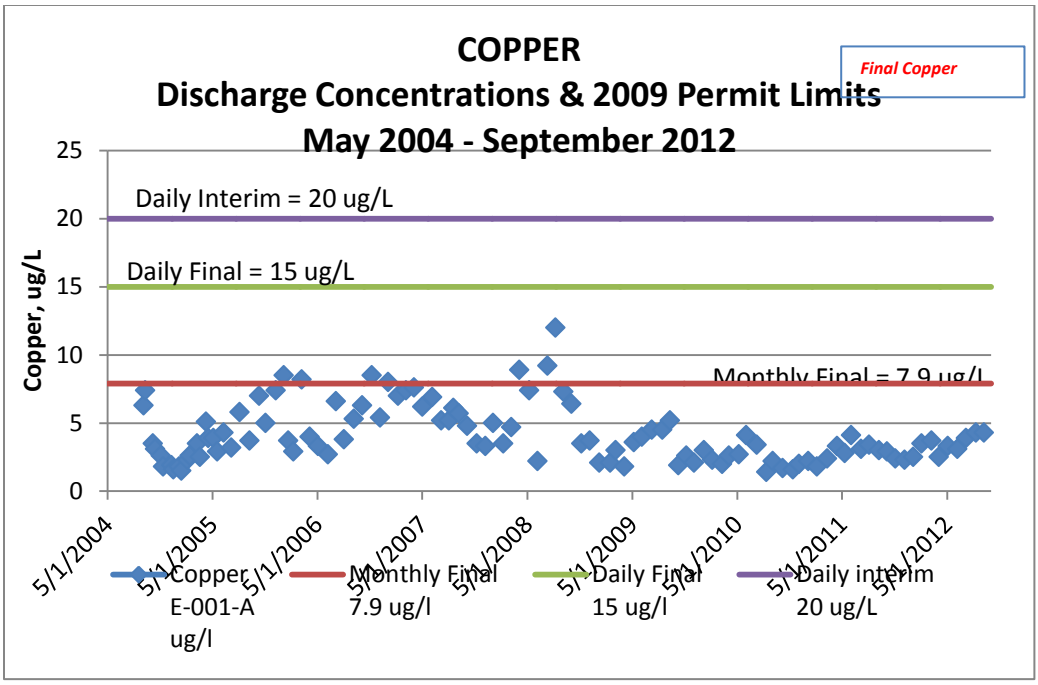


**Figure 1. Copper Effluent Concentrations**

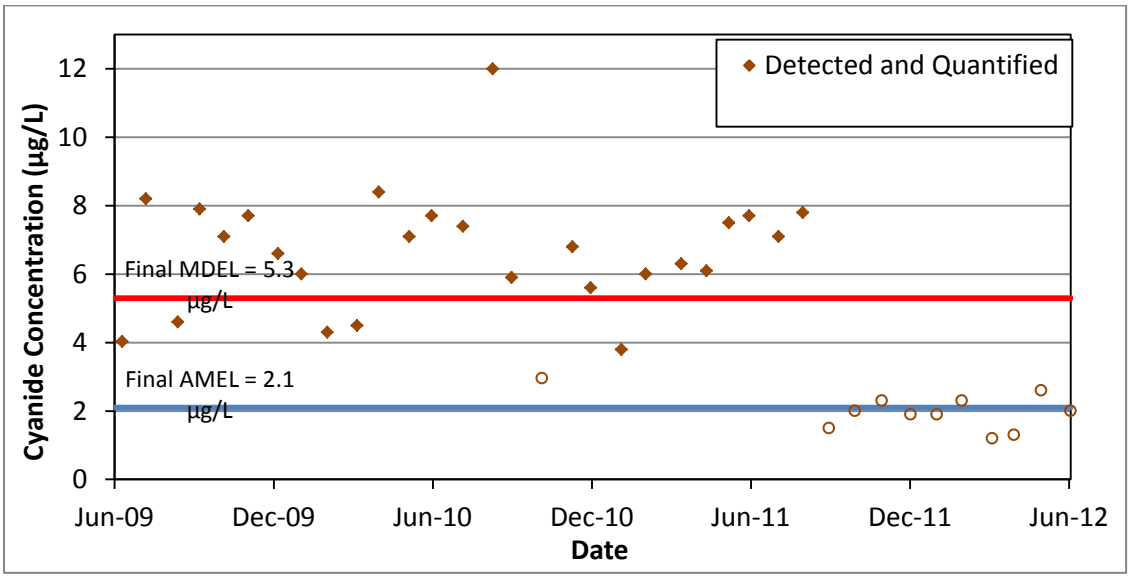


**Figure 2. Cyanide Effluent Concentrations**

C. Cyanide Mixing Zones

State Implementation Policy section 1.4.2 allows the Regional Water Board to grant mixing zones and dilution credits. The Discharger completed the Mixing Zone Study to provide a basis for establishing cyanide mixing zones for Discharge Points 002, 003, and 005. Its analysis is based on methods similar to those used to develop the Basin Plan Table 4-6

dilution credit for Boynton Slough. The duck ponds and Ledgewood Creek are close to Boynton Slough and have similar characteristics. The duck ponds drain to Boynton Slough. Ledgewood Creek is a nearby freshwater stream that is tidally influenced at the discharge location. The duck pond and Ledgewood Creek discharges are "incompletely mixed" discharges based on State Implementation Policy section 1.4.2.1 because of their shallow nature and because Ledgewood Creek is tidally influenced at the discharge location.

The Mixing Zone Study found that mixing zones extending about 2,700 feet downstream of the duck pond discharge points and about 1,100 feet downstream of the Ledgewood Creek discharge point comply with State Implementation Policy requirements. These mixing zones correspond to a dilution ratio of 4:1 (D=3). The Mixing Zone Study determined cyanide degradation curves using field data to show how cyanide concentrations degrade with distance from the outfalls. The mixing zones reflect cyanide sampling at the outfalls and locations away from the outfalls during conservative conditions (e.g., minimum pond levels and maximum effluent flows, and older effluent cyanide concentrations higher than those observed now). More typical conditions would result in greater dilution.

As required by State Implementation Policy section 1.4.2.2, the mixing zones are as small as practicable. Their sizes correspond to the same dilution credit as Basin Plan Table 4-6 lists for Boynton Slough and result in the same cyanide effluent limits as those for the Boynton Slough discharge. Since the same effluent is discharged at Discharge Points 001, 002, 003, and 005, it would be more efficient to subject the Discharger to one set of limits for the same effluent, particularly when relatively little effluent is discharged to Discharge Points 002, 003, and 005 compared to Discharge Point 001. Denying dilution credits at Discharge Points 002, 003, and 005 would effectively impose duplicative and more stringent limitations on Discharge Point 001 than anticipated by the Basin Plan. More stringent limits at Discharge Points 002, 003, and 005 are unnecessary to protect water quality. The mixing zones for Discharge Points 002, 003, and 005 meet the requirements of State Implementation Policy section 1.4.2.2.

In accordance with State Implementation Policy section 1.4.2.2.A, the mixing zones do not do any of the following:

1. *Compromise the integrity of the water body*

   The mixing zones will not compromise the integrity of the receiving waters because cyanide is expected to attenuate rapidly to safe levels, and the mixing zones are small relative to the size of the receiving waters, which are part of the Suisun Marsh system. Together, the mixing zones comprise only about 0.07 percent of Suisun Marsh, including only about 11 percent of the length of Ledgewood Creek.

2. *Cause acute toxicity to aquatic life passing through the mixing zone*

   Acutely toxic conditions will not exist inside the mixing zones because Order No. R2-2009-0039 requires whole effluent toxicity testing to demonstrate compliance with acute toxicity effluent limitations. These limits do not account for any dilution; therefore,

compliance with these limits protects areas within the mixing zones. Bioassay monitoring conducted on rainbow trout from January 2004 through June 2012 demonstrates compliance with the acute toxicity effluent limits. The high survival rate indicates that organisms passing through the mixing zone are unlikely to experience acute toxicity.

3. *Restrict the passage of aquatic life*

   The mixing zones will not interfere with the movement of aquatic species or restrict the passage of aquatic life because receiving water cyanide concentrations will not exceed the acute cyanide water quality objective (9.4 µg/L). The highest effluent concentration observed since the Discharger converted to ultra-violet disinfection in 2011 was estimated to be about 2.6 µg/L. Cyanide concentrations within the mixing zone and throughout the receiving waters will be lower because cyanide readily degrades to a non-toxic state and does not persist in the environment. Cyanide concentrations are not expected to increase as a result of this Order because, pursuant to Basin Plan section 4.7.2.2, Provision VI.C.7 of Order No. R2-2009-0039 requires a Cyanide Action Plan to maintain or improve current performance. Therefore, cyanide in the mixing zone will not restrict the movement or passage of aquatic life.

4. *Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitats of species under federal or State endangered species laws*

   The receiving waters are critical habitat for the Delta smelt (50 CFR 17.95[e]), but the mixing zones will not adversely affect Delta smelt habitat, nor the habitat of any other species under federal or State endangered species laws, because receiving water cyanide concentrations will not exceed the acute and chronic cyanide water quality objectives (9.4 µg/L and 2.9 µg/L). The highest effluent concentration observed since the Discharger converted to ultra-violet disinfection was estimated to be about 2.6 µg/L. Cyanide concentrations within the mixing zone and throughout the receiving waters will be lower because cyanide readily degrades to a non-toxic state and does not persist in the environment. Cyanide concentrations are not expected to increase as a result of this Order because, pursuant to Basin Plan section 4.7.2.2, Provision VI.C.7 of Order No. R2-2009-0039 requires a cyanide action plan to maintain or improve current performance. Because cyanide concentrations will be below water quality objectives, cyanide will not adversely affect sensitive or critical habitats.

5. *Produce undesirable or nuisance aquatic life*

   The mixing zones will not produce undesirable or nuisance aquatic life. Cyanide is not a biostimulant or plant nutrient so it will not cause growth of aquatic nuisance species. Moreover, Order No. R2-2009-0039 specifically imposes receiving water limitations that prohibit bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

6. *Result in floating debris, oil, or scum*

The mixing zones will not result in floating debris, oil, or scum because cyanide is not an oil, does not float, and does not cause scum. The Plant is equipped with scum baffles to collect and dispose of oils, grease, debris, and scum. In addition, Order No. R2-2009-0039 specifically imposes receiving water limitations that prohibit floating debris, oil, or scum at any place and at any time.

7. *Produce objectionable color, odor, taste, or turbidity*

   The mixing zones will not produce objectionable color, odor, taste, or turbidity because the effluent receives advanced secondary treatment and is disinfected prior to discharge. Advanced secondary treatment generally addresses objectionable odor, taste, and turbidity through the biological degradation of organic compounds and clarification. In addition, Order No. R2-2009-0039 specifically prohibits alteration of color or turbidity beyond natural background levels. The Discharger conducts regular effluent monitoring that includes standard observations to ensure that objectionable color, odor, and turbidity are not present.

8. *Cause objectionable bottom deposits*

   The mixing zones will not cause objectionable bottom deposits because cyanide does not readily bind to sediment or persist in the environment. The State Implementation Policy defines objectionable bottom deposits as an accumulation of materials or substances on or near the bottom of a water body that creates conditions adversely affecting aquatic life, human health, beneficial uses, or aesthetics. These conditions include, but are not limited to, the accumulation of pollutants in sediments and other conditions that result in harm to benthic organisms, production of food chain organisms, or fish egg development. The effluent receives advanced secondary treatment, which biologically degrades and removes suspended particles that could contribute to receiving water bottom deposits. In addition, Order No. R2-2009-0039 specifically prohibits bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

9. *Cause nuisance*

   The mixing zones will not cause a nuisance because the effluent receives advanced secondary treatment and is disinfected prior to discharge. California Water Code Section 13050(m) defines "nuisance" to mean anything that meets all three of the following criteria:

   - is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;

   - affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and

- occurs during, or as a result of, the treatment or disposal of wastes.

The previous order specifically prohibits discharges from causing a nuisance. The Discharger conducts regular effluent monitoring that includes standard observations to confirm that nuisance conditions are not present.

10. *Dominate the receiving water body or overlap a mixing zone from a different outfall*

The cyanide mixing zones for Discharge Points 002, 003, and 005 will not dominate the receiving waters or overlap any other mixing zones. As discussed above, these mixing zones represent relatively small portions of the receiving waters, Suisun Marsh and Suisun Bay. Because the mixing zones occupy relatively small portions of the receiving waters, they will not dominate them. Moreover, the Regional Water Board has not established any other mixing zones nearby.

11. *Be located at or near any drinking water intake*

There are no drinking water intakes near the proposed mixing zones. The discharge is to a brackish marsh not generally suitable for drinking water supplies.

State Implementation Policy section 1.4.2.2.B requires that mixing zones protect beneficial uses. According to the Basin Plan, the duck pond and Ledgewood Creek beneficial uses are as follows:

| Discharge Point | Receiving Water Name | Beneficial Uses |
|---|---|---|
| 002 and 003 | Duck Ponds 1 and 2 (Both tributary to Suisun Marsh) | Estuarine Habitat (EST)<br>Preservation of Rare and Endangered Species (RARE)<br>Fish Migration (MIGR)<br>Fish Spawning (SPWN)<br>Wildlife Habitat (WILD)<br>Water Contact Recreation (REC1)<br>Non-Contact Water Recreation (REC2) |
| 005 | Ledgewood Creek | Freshwater Replenishment (FRSH)<br>Cold Freshwater Habitat (COLD)<br>Warm Freshwater Habitat (WARM)<br>Fish Migration (MIGR)<br>Fish Spawning (SPWN)<br>Wildlife Habitat (WILD)<br>Water Contact Recreation (REC1)<br>Non-contact Water Recreation (REC2) |

Of these beneficial uses, cyanide would potentially affect only those related to aquatic life. However, the Discharger's cyanide is unlikely to threaten aquatic life uses because the highest effluent concentration observed since the Discharger converted to ultra-violet disinfection was estimated to be about 2.6 µg/L, which is less than the acute and chronic cyanide water quality objectives (9.4 µg/L and 2.9 µg/L) intended to protect such uses. Cyanide concentrations within the mixing zone and throughout the receiving waters will be

lower because cyanide readily degrades to a non-toxic state and does not persist in the environment. Cyanide concentrations are not expected to increase as a result of this Order because, pursuant to Basin Plan section 4.7.2.2, Provision VI.C.7 of Order No. R2-2009-0039 requires a cyanide action plan to maintain current performance.

D. Water Quality-Based Effluent Limit Calculations

The new cyanide water quality-based effluent limitations are an average monthly effluent limitation (AMEL) of 7.4 µg/L and a maximum daily effluent limitation (MDEL) of 18 µg/L. These limits are based on the water quality objectives in Basin Plan Table 3-3 and State Implementation Policy procedures. The acute cyanide water quality objective is 9.4 µg/L and the chronic objective is 2.9 µg/L. The calculations account for the mixing zones described above, the dilution within the mixing zones (D=3), and an effluent data coefficient of variation of 1.0. The details of the calculation are shown below.

| PRIORITY POLLUTANT | Cyanide |
|---|---|
| Units | ug/L |
| Basis and Criteria type | BP SSOs |
| Lowest WQO | 2.9 |
| Dilution Factor (D) (if applicable) | 3 |
| No. of samples per month | 4 |
| Aquatic life criteria analysis required? (Y/N) | Y |
| HH criteria analysis required? (Y/N) | Y |
| | |
| Applicable Acute WQO | 9.4 |
| Applicable Chronic WQO | 2.9 |
| HH criteria | 220000 |
| Background (Maximum Conc for Aquatic Life calc) | 0.5 |
| Background (Average Conc for Human Health calc) | 0.5 |
| Is the pollutant Bioaccumulative (Y/N)? (e.g., Hg) | N |
| | |
| ECA acute | 36 |
| ECA chronic | 10 |
| ECA HH | 879999 |
| | |
| No. of data points <10 or at least 80% of data reported non detect? (Y/N) | N |
| Avg of effluent data points | 3.0 |
| Std Dev of effluent data points | 2.9 |
| CV calculated | 1.0 |
| CV (Selected) - Final | 1.0 |
| | |
| ECA acute mult99 | 0.21 |
| ECA chronic mult99 | 0.38 |
| LTA acute | 7.5 |
| LTA chronic | 3.8 |
| minimum of LTAs | 3.8 |
| | |
| AMEL mult95 | 1.9 |
| MDEL mult99 | 4.8 |
| AMEL (aq life) | 7.4 |

| | |
|---|---|
| MDEL(aq life) | 18 |
| | |
| MDEL/AMEL Multiplier | 2.5 |
| AMEL (human hlth) | 880000 |
| MDEL (human hlth) | 2200000 |
| | |
| minimum of AMEL for Aq. life vs HH | 7.4 |
| minimum of MDEL for Aq. Life vs HH | 18 |
| | |
| Final limit - AMEL | 7.4 |
| Final limit - MDEL | 18 |

The Discharger changed its chlorination practices in August 2011, which reduced its cyanide effluent concentrations below quantification levels. Therefore, the Discharger can comply with these new limits, and Cease and Desist Order No. R2-2009-0040 is no longer necessary.

E. Anti-backsliding

Clean Water Act sections 402(o) and 303(d), and 40 Code of Federal Regulations 122.44(l), generally prohibit backsliding in NPDES permits. These anti-backsliding provisions require revised effluent limitations to be at least as stringent as those previously in place, with some exceptions under which they may be relaxed. Because the revised cyanide limits for the duck pond and Ledgewood Creek discharges meet the following exceptions, they comply with anti-backsliding requirements.

- Clean Water Act section 402(o)(2)(B)(i) permits a less stringent effluent limitation if new information is available that was unavailable at the time of permit issuance and would have justified a less stringent limit when the previous limit was established. The Mixing Zone Study provides new information on the fate and transport of cyanide in the duck ponds and Ledgewood Creek that was unavailable when Order No. R2-2009-0039 was issued. Had this information been available, it would have justified granting a dilution credit in accordance with State Implementation Policy section 1.4.2, which would in turn have resulted in less stringent effluent limits.

- Clean Water Act section 303(b)(4)(B) states that, when receiving waters meet water quality standards, an effluent limit may be relaxed if such revision is consistent with antidegradation requirements. As discussed below, the cyanide limits in this Order are consistent with antidegradation requirements because no degradation is expected to occur as a result of this action. The receiving waters meet water quality standards as demonstrated by the Regional Monitoring Program, which has not detected cyanide at any Suisun Bay monitoring station. Moreover, neither the State Water Board nor the U.S. Environmental Protection Agency has designated Suisun Bay, Suisun Marsh, Ledgewood Creek, or the duck ponds as impaired waters in accordance with CWA section 303(d).

F. Antidegradation

Antidegradation policies require that existing water quality be maintained unless degradation is justified based on specific findings. State Water Board Resolution No. 68-16 sets forth California's antidegradation policy. Consistent with 40 CFR 131.12, Resolution No. 68-16 incorporates the federal antidegradation policy. The Basin Plan implements, and incorporates by reference, State and federal antidegradation policies. Permitted discharges must be consistent with these antidegradation policies.

This Order establishes less stringent cyanide effluent limits than Order No. R2-2009-0039 that are consistent with antidegradation policies because, as explained below, no degradation will occur. Administrative Procedures Update (APU) No. 90-004 provides guidance for implementing the State and federal antidegradation requirements in State Water Board Resolution No. 68-16 and 40 CFR 131.12. It states that an antidegradation analysis is not required if there is no reason to believe that existing water quality will be reduced due to the proposed action.

This Order would cause no degradation compared to the water quality baseline specified by antidegradation policies. Because the Regional Water Board adopted Order No. R2-2009-0039 in accordance with antidegradation policies, the water quality baseline is the receiving water condition that Order No. R2-2009-0039 allowed. Order No. R2-2009-0039 allowed an average monthly cyanide discharge of 2.1 µg/L and a maximum daily discharge of 5.3 µg/L. Provision VII.A of Order No. R2-2009-0039 also established that that the discharge would only be deemed out of compliance with the limits if the discharge concentration also exceeded the cyanide minimum level (ML) of 5 µg/L. The highest estimated effluent concentration observed since the Discharger converted to ultra-violet disinfection was only about 2.6 µg/L. Therefore, the discharge complies with Order No. R2-2009-0039, and existing conditions reflect Order No. R2-2009-0039's requirements. In comparing this baseline to conditions that will result from this Order, no degradation is expected because Provision VI.C.7 of Order No. R2-2009-0039 requires implementation of a Cyanide Action Plan in accordance with Basin Plan section 4.7.2.2. The plan is intended specifically to avoid degradation and ensure compliance with antidegradation policies by maintaining or reducing cyanide discharges. Because this Order is not expected to increase cyanide discharges, it is not expected to degrade receiving water quality compared to baseline conditions.

G. Authority for Permit Modification

Federal regulations at 40 Code of Federal Regulations 122.62(a)(2) authorize the Regional Water Board to amend Order No. R2-2009-0039 because new information exists that was unavailable and not considered when Order No. R2-2009-0039 was adopted. In addition, Provision VI.C.1 of Order No. R2-2009-0039 allows the Regional Water Board to modify or reopen the permit prior to its expiration if water quality studies provide a basis for determining that a permit condition should be modified. The Discharger requested this modification and provided the Mixing Zone Study to support its request.

H. Notification of Interested Parties

The Regional Water Board notified the Discharger and other interested agencies and persons of its intent to amend the waste discharge requirements for this discharge as set forth in Order No. R2-2009-0039 and to rescind Cease and Desist Order No. R2-2009-0040. The Regional Water Board provided an opportunity to submit written comments and recommendations. Notification was provided through the Vallejo Times-Herald.

I. Written Comments

Staff determinations are tentative. Interested persons were invited to submit written comments concerning the tentative amendment and rescission order. Comments were to be submitted either in person or by mail to the Regional Water Board at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of Vincent Christian.

To receive full consideration and a written response, written comments were to be received at the Regional Water Board offices by 5:00 p.m. on February 1, 2013.

J. Public Hearing

The Regional Water Board held a public hearing on the tentative amendment and rescission order during its regular meeting at the following date and time, and at the following location:

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| Date: | March 13, 2013 |
| Time: | 9:00 a.m. |
| Location: | Elihu Harris State Office Building<br>1515 Clay Street, 1st Floor Auditorium<br>Oakland, CA 94612 |
| Contact: | Vincent Christian, (510) 622- 2336, email vchristian@waterboards.ca.gov |

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard all testimony pertinent to the discharge, amendment of waste discharge requirements, and rescission of cease and desist order. An opportunity for oral testimony was provided; however, for accuracy of the record, important testimony was requested to be in writing. The current Regional Water Board agenda and any changes in dates or locations were posted at its web address, http://www.waterboards.ca.gov/sanfranciscobay.

K. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review this decision of the Regional Water Board. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

L. Information and Copying

Supporting documents, comments received, and other information related to this action are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling 510-622-2300.

M. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding this action should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

N. Additional Information

Requests for additional information or questions regarding this Order should be directed to Vincent Christian at 510-622-2336 or by e-mail at vchristian@waterboards.ca.gov.