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North Coast Regional Water Quality Control Board

**Response to Comments**  
**City of Arcata Municipal Wastewater Treatment Facility**  
**WDID No. 1B82114OHUM**  
**Order No. R1-2012-0031**

One comment letter with an underline and strike-out version of the draft permit was timely received from the City of Arcata on the March 13, 2012 draft Waste Discharge Requirements/NPDES permit for the City of Arcata Municipal Wastewater Treatment Facility. In addition, staff received a follow-up e-mail clarifying previous comments and a letter containing information to follow-up a meeting with staff on May 7, 2012. All comments and clarifications received are incorporated into this document as Attachments A through D.

- A. City of Arcata, April 12, 2012 comment letter signed by Karen Diemer, Deputy Director Environmental Services Department
- B. City of Arcata, April 12, 2012 underline strike-out version of draft Order No. R1-2012-0031
- C. City of Arcata, May 4, 2012 clarifying e-mail from Karen Diemer, Deputy Director Environmental Services Department
- D. City of Arcata, May 11, 2012 follow-up letter signed by Karen Diemer, Deputy Director Environmental Services Department

The correspondence identified as A through D above has been attached to this response (Attachments A through D) and comments contained therein summarized below.

**A. City of Arcata – Letter dated April 12, 2012**

**Comment 1:** Application of MUN-based requirements should be removed as the brackish marsh portion of Humboldt Bay is not an existing drinking water or MUN use.

**Response:** MUN is identified as an existing beneficial use for Humboldt Bay. It is unclear if the tidal exchange incorporates the brackish marsh as part of the bay or if the brackish marsh is tributary to the Bay. In either case, the Basin Plan identifies that “The beneficial uses of any specifically identified water body generally apply to all its tributaries.” This is often referred to as the *Tributary Rule*, and means that beneficial uses of the Bay are also applied to its tributaries, unless otherwise identified, and supports the application of MUN as an existing beneficial use for the brackish marsh, the receiving water body of the City’s discharge.

**Comment 2:** Toxicity Testing for Discharge Point 001. The City requests that the existing toxicity testing requirements remain in effect until the new configuration at the WWTF is complete, at which time the new toxicity testing will be implemented at Discharge Point 003.

**Response:** The Regional Water Board staff has agreed to modify the toxicity monitoring requirements such that three species testing for identification of the most sensitive species can be conducted once discharges commence at Discharge Point 003. During the interim period, single species whole effluent toxicity testing will continue.

**Comment 3:** The provision that requires the inclusion of wet weather design flow assessed against the highest daily flow to calculate adequate capacity should either be removed or should allow the City to initiate this calculation at the point of implementation of Discharge Point 003, which will also ensure that the engineered report of the WWTP hydraulics is updated.

**Response:** Permitted flow and treatment capacity of a waste treatment system are not synonymous. The permit as written reflects the current flow permitted for the Arcata wastewater treatment facility (WWTF). Should the City wish to provide technical support for treatment capacity other than the permitted flow, Regional Water Board staff can evaluate and incorporate that information into the WWTF description as appropriate. Any increase requested for permitted flow would be considered a significant change and would need to be accompanied by an analysis showing that such an increase would be consistent with Resolution No 68-16, Statement of Policy With Respect to Maintaining High Quality of Waters in California (Antidegradation Policy).

**Comment 4:** The permit should include the potential for a re-opener of the permit to incorporate any appropriate dilution credit from the mixing zone analysis of the Brackish Marsh.

**Response:** The existing re-opener provisions in draft Order No. R1-2012-0031 provide legal authority to the Regional Water Board to re-open and modify the Order should information obtained through mixing zone analysis of the Brackish Marsh indicate modification is appropriate.

**Comment 5:** Water Quality Based Effluent Limitations should be removed from Discharge Point 002 because water quality is adequately protected through the requirement of the Arcata Marsh Wetland Sanctuary Evaluation.

**Response:** Water Quality Based Effluent Limitations have been applied based upon reasonable potential for the protection of beneficial uses identified within the Arcata Marsh Wildlife Sanctuary. No change has been made to the proposed Order in response to this comment.

**B. City of Arcata, underline strike-out draft Order No. R1-2012-0031– dated April 12, 2012**

**Comment 6:** Numerous editorial and substantial requests throughout the draft Order.

**Response:** Due to the sheer number of changes requested in underline strike-out, Regional Water Board staff will not attempt to articulate the individual responses here. Some requests provided in underline strike-out overlap with comments provided in the April 12<sup>th</sup> letter, the May 4<sup>th</sup> e-mail, or the May 11<sup>th</sup> follow-up letter. Where this occurs, responses are articulated herein. Regional Water Board staff's responses to all comments, including underline strike-out comments, are reflected in underline strike-out in the proposed Order. Where language in the proposed Order has been retained contrary to a request from the City, that language has been highlighted in Attachment C.

**C. City of Arcata – e-mail dated May 4, 2012**

**Comment 7:** Application of MUN-based requirements (throughout).

**Response:** The Application of the MUN beneficial use has been addressed under comment 1 above.

**Comment 8:** Toxicity Testing for Discharge Point 001. (page E-7, E-8, E-9).

**Response:** Section V of Attachment E, the Monitoring and Reporting Program, has been modified to read as follows:

The three species selection process will be implemented upon the City's activation of the new disinfection system and implementation of discharges at Discharge Point 003. During the interim period, whole effluent toxicity testing will be performed with the most sensitive species identified during the most recent three species selection testing.

**Comment 9:** Adequate Capacity Calculations. (page 28)

**Response:** Based upon the additional information provided by the City on May 11, 2012, the proposed Order has been amended to reflect a  $Q_{max}$  for the WWTF of 16.5 mgd.

**Comment 10:** Dilution credit from the mixing zone analysis of the Brackish Marsh. (page 17).

**Response:** Should a mixing zone analysis be conducted by the City for the Brackish Marsh, staff will evaluate and incorporate the results as appropriate. The timing and results of the mixing zone study as well as any associated compliance implications will in part determine if the proposed Order will be re-opened to allow for incorporation of the study results, or if results would be most appropriately incorporated during the next permit cycle.

**Comment 11:** Water Quality Based Effluent Limitations at Discharge Point 002 (page 11).

**Response:** Water quality based effluent limitations at Discharge Point 002 have been applied in accordance with the Basin Plan for the protection of the beneficial uses associated with the Arcata Marsh Wildlife Sanctuary (AMWS).

**Comment 12:** Application of Mass Limits (starting on page 7, F-26).

**Response:** Section IV.B.2.e of the Fact Sheet has been augmented to include the following:

The Clean Water Act explicitly permits the inclusion of both mass and concentration limits for the same pollutants. Section 122.44(f)(2) states: "Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations." The use of both mass and concentration-based limitations is essential to protecting water quality. The US EPA has stressed the importance of using both mass-based and concentration-based limitations in tandem, stating its belief "that most permit limitations standards and prohibitions must be expressed quantitatively in terms of mass in order to preclude the use of dilution as a substitute for treatment." 44 Fed. Reg. 32864-32865. For example, unless a flow limit is included in an NPDES permit, the design capacity of a POTW could be increased by re-rating, which would allow an increase in overall discharge of pollutants without triggering a permit modification or antidegradation analysis.

**Comment 13:** Chlorine Limits upon implementation of new configuration (page 11, F-30)

**Response:** Although chlorine limitations apply at all times, the proposed Order specifically requires application of chlorine limits only during those times that chlorine is being used within the system. For clarification staff has modified the proposed Order. Table 8 Discharge Specifications for Outfall 002(AMWS) has been revised in the following manner:

**Table 8. Discharge Specifications for Outfall 002 (AMWS)**

| Parameter                               | Units | Discharge Specifications     |                             |               |
|---|-------|------------------------------|-----------------------------|---------------|
|   |       | Average Monthly <sup>3</sup> | Average Weekly <sup>4</sup> | Maximum Daily |
| BOD <sub>5</sub>                        | mg/L  | 45                           | 65                          | ---           |
| TSS                                     | mg/L  | 66                           | 95                          | ---           |
| pH                                      | s.u.  | 6.0 – 9.0 at all times       |                             |               |
| Settleable Solids                       | mL/L  | 0.1                          | ---                         | 0.2           |
| Copper                                  | ug/L  | 4.7                          | ---                         | 9.5           |
| Chlorine, Total Residual <sup>[a]</sup> | mg/L  | 0.01                         |                             | 0.02          |

[a] Limitations for chlorine residual apply at all times. However, upon activation of the upgraded configuration, in the absence of chlorine usage prior to Discharge Point 002, it is assumed that there will be no chlorine residual at this discharge location.

In addition, section IV.4.C.3.a.ii. of the Fact Sheet has been revised in the following manner:

The water quality criteria recommended by USEPA are, in effect, non-detectable concentrations by the common amperometric analytical method used for the measurement of chlorine, and therefore, in order to meet the Basin Plan's narrative water quality objective for toxicity, the Regional Water Board is establishing effluent limitations for chlorine that require concentrations of chlorine in the effluent at the point of discharge protective of aquatic life, which will apply at all times when chlorine is used within the system.

**Comment 14:** Requirements for UV Disinfection to come through the operation and maintenance plan (page 11-12)

**Response:** Staff concurs that the ultraviolet disinfection system requirements be managed through a site specific operations and management plan. Section IV.B.2 of the permit has been revised accordingly.

**Comment 15:** Requirement that a petition be filed pursuant to Water Code 1211 for Discharge #003 prior to making any change in the point of discharge, place of use or purpose of use of treated wastewater that results in decrease flow. (page 15)

**Response:** The obligation to comply with various sections of the Water Code, not specific to the proposed Order is unchanged whether or not specific reference to a code section is specifically identified. In order to simplify the pending action, both the proposed Order and Fact Sheet have been revised to remove reference to Water Code section 1211.

**Comment 16:** Development of the work plan for the ongoing evaluation of the AMWS (page 19-20)

**Response:** Section VI.C.2. of the proposed Order has been modified to indicate the following:

#### **Arcata Marsh Wildlife Sanctuary (AMWS) Evaluation.**

**By November 1, 2012**, the Permittee shall prepare and submit for Executive Officer approval, a workplan for ongoing evaluation of the beneficial uses identified by the Regional Water Board under section III of the Fact Sheet for the AMWS. The workplan shall be developed in accordance with guidance from, but not limited to 1) *Methods for Evaluating Wetland Condition*; 2) *Study Design for Monitoring Wetlands*, EPA-822-R-02-015, *Methods for Evaluating Wetland Condition: Developing an Invertebrate Index of Biological Integrity for Wetlands*. Office of Water, U.S. Environmental Protection Agency, Washington, DC. EPA-822-R-02-019, and 3) *Methods for Evaluating Wetland Condition: Using Amphibians in Bioassessments of Wetlands*. Office of Water, U.S. Environmental

Protection Agency, Washington, DC. EPA-822-R-02-022, standard acceptable assessment tools and be of sufficient scope to demonstrate that the discharge of treated wastewater at Outfall 002 is protective of the beneficial uses of the AMWS. The workplan shall include, but not be limited to, an ongoing study to determine the following:

- i. Overall ecological condition of AMWS using biological assessments;
- ii. Nutrient levels/enrichment of the AMWS;
- iii. Whether AMWS condition is improving, degrading, or staying the same over time;
- iv. Seasonal patterns in AMWS conditions;
- v. System stressors and associated thresholds (ie. how much the AMWS system can be disturbed without causing unacceptable changes in wetland system quality or degradation of beneficial uses).

The findings from these studies will be used for adaptive management to ensure the AMWS retains maximum treatment function while protecting beneficial uses.

**Comment 17:** Clarification that the NPDES permit does not incorporate by reference the requirements of other WDRs that the City is also subject to (SSO WDRS page 22, sludge/bio solids (page 27)

**Response:** Changes requested by the City have been incorporated into the proposed Order.

**Comment 18:** Pretreatment pollutant scans (page 24)

**Response:** Section VI.Cb.iv.(a) of the proposed Order has been modified to incorporate the following language:

A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent performed with the techniques prescribed in 40 CFR Part 136 for those pollutants EPA has identified under section 307(a) of the Act, which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan, with quarterly samples analyzed only for those pollutants detected in the full scan. Sampling and analysis for specific industrial users may be modified pursuant to federal pretreatment regulations at 40 CFR 12(e)(2), which allows an industrial user to forego sampling of a pollutant regulated by the categorical pretreatment standard if the industrial user demonstrates that the pollutant is neither present in the discharge nor expected to be present in the discharge. The City is not required to sample and analyze for asbestos. Sludge sampling and analysis are covered in the sludge section of this permit. The City shall also provide any influent or effluent monitoring data performed with the techniques prescribed in 40 CFR

Part 136 for non-priority pollutants which the City believes may be causing or contributing to interference or pass through.

**Comment 19:** General Monitoring Provisions to allow for certain analysis at our on-site lab (page E-2)

**Response:** Regional Water Board staff recognize that certain parameters required for compliance monitoring have analytical hold times as short as 15 minutes, rendering analysis of these constituents impractical at an offsite certified laboratory. Analytical results for parameters meeting this criteria are accepted for compliance purposes provided that the City uses and documents standard operating procedures appropriate to present reliable and consistent results from the method of testing used at the facility. No change has been made to the proposed Order in response to this comment.

**Comment 20:** Dioxin TEQ and the TEF and Biological Effective Factor provision (page E-3, F-36 and other tables where dioxin TEQ is listed)

**Response:** Humboldt Bay is on the Clean Water Act 303(d) list of impaired water bodies for dioxin toxic equivalents. The City has requested that Biological Effective Factors (BEFs) be applied to effluent limitations when calculating compliance with effluent limitations for dioxin equivalents. While staff concurs that application of BEFs is a methodology that warrants evaluation during the assessment of factors and may be considered during development of total maximum daily load allocations for discharges of dioxin equivalents to Humboldt Bay, the application of this methodology in the proposed Order would result in a policy decision with implications beyond the scope of this single point source discharge. Therefore, BEFs have not been incorporated into the proposed Order.

Instead, staff has adapted section VII, Compliance Determination of the proposed Order to reflect that same level of compliance determination, applicable for dioxin equivalents in the previous Order. Section VII.A. of the proposed Order has been modified to incorporate the following language:

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Permittee shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL). For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Permittee shall be deemed out of compliance with effluent limitations if the concentration of 2,3,7,8-TCDD Equivalents in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported minimum level (ML).

**Comment 21:** Development of a new table E-4 for after the WWTP reconfiguration and when Discharge Point #003 is active. (page E-6) At what point would complete effluent monitoring be required at emergency discharge point (#001 after we have switched to #003)

**Response:** Table E-4 has been modified with the following footnote applicable to Copper, Hardness, Total (as CaCO<sub>3</sub>), Cyanide, TCDD Equivalents, Carbon Tetrachloride, Dichlorobromomethane, Bis(2-Ethylhexyl)Phthalate, Acute Toxicity, and Chronic Toxicity:

3. When Discharge Point 001 is used for high flows exceeding 5.9 mgd, effluent monitoring at EFF-001 shall be conducted annually.

**Comment 22:** Removal of Phosphorus and quarterly monitoring of nutrients. (page E-6, F-45)

**Response:** Revisions to Attachment E of the proposed Order include adapting monitoring for nitrate nitrogen and ammonia nitrogen to a quarterly frequency rather than monthly. Phosphorus monitoring may be conducted in conjunction with the special study required under section VI.C.d of the proposed Order.

**Comment 23:** Title 22 Pollutant monitoring in the Brackish Marsh. (page E-14)

**Response:** Revisions to Attachment E of the proposed Order include adapting monitoring for title 22 constituent monitoring from annually to 2 times within the permit cycle to occur after implementation of the treatment upgrades.

**Comment 24:** Review of Cyanide requirement in Table F-2 where the numbers are below the ML. (page F-8)

**Response:** In development of effluent limitations, the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State implementation Policy, SIP) requires that The Regional Water Board use all available, valid, relevant, representative information, as described in section 1.2 [of the SIP], to determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective. No change has been made to the proposed Order in response to this comment.

**Comment 25:** Discharge Prohibition III.A to be consistent with State Board Order No. 79-20 and RWQCB Resolution 83-9 to allow for UV disinfection. (page F-17)

**Response:** Regional Water Board staff concurs that the intent of State Board Order No. 79-20 and Regional Water Board Resolution 83-9 was to require disinfected secondary treated water to be discharged in accordance with other criteria identified under the exception, to Humboldt Bay. At the time of adoption, both of these Orders contemplated

disinfection using chlorine and therefore required chlorination and de-chlorination prior to discharge to the Bay. The upgraded configuration of the treatment facility incorporates ultraviolet disinfection, which meets the intent of State Board Order No. 79-20 and Regional Water Board Resolution 83-9. For additional clarification, the Fact Sheet at section II.B has been modified in the following manner:

Equivalent to secondary treated effluent will discharge at Outfall No. 002 to the AMWS for enhanced water quality treatment consistent with Resolution Nos. 79-20 and 83-9. Water flows through Allen, Gearheart and Hauser marshes in succession. At the design average dry weather flow, detention time in the AMWS will be approximately 60 days and results in full standard secondary treated effluent. The Permittee plans to construct a new ultraviolet (UV) disinfection system at the end of Hauser marsh. Key components of enhanced treatment provided by the AMWS are settling and clarification. Placement of the new UV disinfection system after AMWS treatment is fundamental to the efficiency and dependability of the new system, because UV disinfection relies upon transmission of the ultraviolet light throughout the water column. Although not contemplated at the time of adoption, the Regional Water Board finds the application of UV disinfection consistent with Resolution Nos. 79-20 and 83-9.

**Comment 26:** MDEL for protection of human health. (page F-35)

**Response:** Section of the SIP, 1.4 Calculation of Effluent Limitations requires that when a Regional Water Board determines that water quality-based effluent limitations are necessary to control a priority pollutant in a discharge, the permit shall contain effluent limitations developed using one or more of the following methods..."*Step 5: Calculate water quality-based effluent limitations (an \*average monthly effluent limitation, AMEL, and a \*maximum daily effluent limitation, MDEL)...*" The procedures required in accordance with the SIP have been applied to the proposed Order. No change has been made to the proposed order in response to this comment.

**D. City of Arcata – Letter dated May 11, 2012 – Follow-up to May 7 Meeting**

Regional Water Board staff met with City staff on May 7, 2012 to review comments 1 through 26 identified above. Comments 27 through 33 below reiterate the comments already discussed in this memorandum and where appropriate, incorporate additional information provided by the City.

**Comment 27:** The City provided a suggested table for toxicity species testing, which is comprised of a subset of the complete EPA list.

**Response:** The following suggested table of species for selection to perform whole effluent toxicity testing toxicity testing has been incorporated into Attachment E of the proposed Order at section V.

| <u>Species</u>     | <u>Common Name</u>    |
|--------------------|-----------------------|
| A. bahia           | Mysids                |
| T. pseudonana      | Brown algae           |
| C. variegatus      | Sheepshead minnows    |
| E. estuarius       | Pill bugs             |
| M. beryllina       | Inland silverside     |
| C. dubia           | Water fleas           |
| C. dilutus         | Fly larvae            |
| C. fluminea        | Freshwater clam       |
| D. magna           | Daphnia               |
| D. pulex           | Daphnia               |
| H. azteca          | Side swimmers         |
| L. variegatus      | Freshwater polycheate |
| P. promelas        | Fatheads              |
| S. capricornutum   | Green algae           |
| A. abdida          | Amphipod              |
| A. affinis         | Topsmelt              |
| C. gigas           | Oysters               |
| H. costata         | Mysids                |
| H. rufescens       | Red abalone           |
| M. edulis          | Mussels               |
| M. pyrifera        | Kelp                  |
| N. arenaceodentata | Polycheate            |

**Comment 28:** Adequate Capacity Calculations

**Response:** See comment 9 above.

**Comment 29:** Reduce the frequency of effluent monitoring of EFF-001 when it is used only for emergency high flows.

**Response:** See comment 21 above.

**Comment 30:** Requirements for triggering implementation of whole effluent toxicity accelerated monitoring and a Toxicity Reduction Evaluation were unclear.

**Response:** References within both the proposed Order and Attachment E have been corrected to uniformly require a single sample chronic toxicity trigger of 2 TUc or a three sample median of 1 TUc (where TUc =100/NOEC).

**Comment 31:** The City requested the deadline for Completion of Reconfiguration and upgrades to be December 1, 2016.

**Response:** Changes have been made throughout the proposed Order to reflect the December 1, 2016 date.

**Comment 32:** The City requested additional flexibility in the application of guidance used to develop the AMWS special study.

**Response:** See comment and response 16 above.

**Comment 33:** Unresolved Issues of City Concern in Draft Permit

1. Dioxin TEQ and the TEF and Biological Effective Factor provision.
2. Current Cyanide Regulation based upon reasonable potential calculated from data below the ML and based on inclusion of an Eastern crab species not found along the West Coast.
3. Daily limits for Human Health Criteria and for non-priority pollutants (settleable solids, chlorine and fecal coliform)
4. Inclusion of Mass Limits for BOD and TSS which are technology based limits.

**Response:** The City and Regional Water Board staff have worked together to resolve many items within the proposed Order. Although the City and Regional Water Board staff were unable to agree upon these four issues, the City has agreed to move forward with the draft Order as proposed and continue working with staff over the upcoming permit cycle on the remaining issues. The Regional Water Board staff understands that the City retains this list of issues as a record of these outstanding concerns for future reference.