CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION

ORDER NO. R1-2012-0069

REQUIRING THE CITY OF UKIAH WASTEWATER TREATMENT PLANT
TO CEASE AND DESIST FROM DISCHARGING OR THREATENING
TO DISCHARGE EFFLUENT IN VIOLATION OF
WASTE DISCHARGE REQUIREMENTS
ORDER NOS. R1-2006-0049 AND R1-2012-0068

NPDES NO. CA0022888
WDID NO. 1B84029OMEN

MENDOCINO COUNTY

The California Regional Water Quality Control Board, North Coast Region, (hereafter Regional Water Board) finds that:

1. The City of Ukiah (hereinafter Permittee) is the owner and operator of the City of Ukiah Wastewater Treatment Plant (hereinafter Facility) located in Ukiah, California. The Facility is located on the west bank of the Russian River at the southern end of Ukiah and treats wastewater from two entities, the City of Ukiah and the Ukiah Valley Sanitation District (UVSD). The Facility serves a population of approximately 20,700, including 15,700 within the City and 5,000 in the UVSD.

2. The Facility produces disinfected secondary effluent that is discharged to three percolation ponds adjacent to the Russian River and disinfected, dechlorinated advanced wastewater treatment (AWT) effluent that is discharged to the Russian River through an outfall pipe. The Facility is designed to treat an average daily dry weather flow of 3.01 mgd and a peak weekly wet weather flow of 24.5 mgd of secondary effluent and 7.0 mgd of advanced treated wastewater. The treatment system consists of primary sedimentation, trickling filters, secondary sedimentation, coagulation, filtration, chlorination, dechlorination, and biosolids digestion and dewatering. Solids handling facilities consist of anaerobic digesters and a belt press for dewatering.

3. The Facility has been regulated by Waste Discharge Requirements (WDRs), Regional Water Board Order No. R1-2006-0049, National Pollutant Discharge Elimination System (NPDES) No. CA0022888, WDID No. 1B84029OMEN, adopted by the Regional Water Board on September 20, 2006. The permit expired on November 9, 2011, and was administratively extended since the Permittee submitted a Report of Waste Discharge for its permit renewal in a timely manner. Order No. R1-2006-0049 contained interim and final effluent limits for copper, dichlorodibromomethane (DCBM), and nitrate. Order No. R1-2006-0049 also included a compliance schedule for the Permittee to comply with final effluent limitations for copper and DCBM by May 18, 2010 and nitrate by September 20, 2011.

4. Regional Water Board Order No. R1-2012-0068, WDRs and NPDES Permit No. CA0022888, WDID No. 1B84029OMEN is scheduled to be adopted by the

Regional Water Board concurrently with this Cease and Desist Order (CDO). Order No. R1-2012-0068 will become effective on October 1, 2012, at which time it will supersede Order No. R1-2006-0049. Order No. R1-2012-0068 establishes effluent limitations, including interim and final limitations and monitoring for ammonia and nitrate, as well as discharge prohibitions, receiving water limitations, and compliance provisions.

5. During the term of this Order, the Permittee will be subject to the terms of two separate WDRs - Order No. R1-2006-0049 through September 30, 2012, and Order No. R1-2012-0068 beginning on October 1, 2012. This Order uses the term "the Permit" when referring to both WDR orders and the order number when referring to a specific WDR order.

6. Section 13301 of the California Water Code (Water Code) states "When a regional board finds that a discharge of waste is taking place, or threatening to take place, in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventative action."

7. The Permit, as identified in Findings 3 and 4 above, implements provisions of the Water Quality Control Plan for the North Coast Region (Basin Plan) by requiring the Permittee to monitor its effluent for certain non-CTR constituents (e.g., ammonia and nitrate) that may have reasonable potential to cause or contribute to an excursion above a water quality criterion or objective applicable to the receiving water. The Basin Plan also includes a narrative toxicity objective that requires all waters to be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. This Basin Plan objective is applicable because ammonia is toxic to aquatic life and must be controlled in order to prevent toxicity.

8. The Permittee is violating, or threatening to violate, the following terms in Order No. R1-2006-0049:

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Final Effluent Limitations – Discharge Point 001 (Discharge to Russian River)

a. The discharge of advanced treated wastewater, as defined by the numerical limitations below, shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at

Monitoring Location M-001B as described in the attached Monitoring and Reporting Program (Attachment E). The advanced treated wastewater shall be adequately oxidized, filtered and disinfected as defined in Title 22, Division 4, Chapter 3, California Code of Regulations (CCR).

Parameter	Units	Effluent Limitations				
		Average Monthly[1]	Average Weekly[1]	Maximum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
Nitrate (as N)	mg/L	10	--	--	--	--

9. Beginning October 1, 2012, the Permittee will be violating, or threatening to violate, the following terms in Order No. R1-2012-0068:

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Final Effluent Limitations – Discharge Point 001 (Discharge to Russian River)

a. The discharge of advanced treated wastewater, as defined by the numerical limitations below, shall maintain compliance with the following effluent limitations at Discharge Point 001, during periods of discharge to the Russian River, with compliance measured at Monitoring Location EFF-001B as described in the attached MRP (Attachment E). The advanced treated wastewater shall be adequately oxidized, filtered, and disinfected as defined in title 22, division 4, chapter 3, of the CCR.

Table 4. Final Effluent Limitations – Discharge Point 001 (Discharge to Russian River)

Parameter	Units	Effluent Limitations				
		Average Monthly[1]	Average Weekly[1]	Maximum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
Nitrate (as N)	mg/L	10	--	--	--	--
Ammonia	mg/L	3.5	--	6.8	--	--

10. Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. Depending on the degree of nitrification and/or denitrification in a wastewater treatment process, there can be varying levels of ammonia and nitrate. There can also be concentrations of nitrite and organic nitrogen, however these are usually found at lower

[1] See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.

concentrations than nitrate or ammonia. The Permittee does not currently use nitrification to remove ammonia from the waste stream (by converting it to nitrate). Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia would violate the Basin Plan narrative toxicity objective. However, prior to 2007, the discharge also contained levels of nitrate that exceeded the primary drinking water maximum contaminant level of 10 mg/L established by the California Department of Health Services for the protection of human health.

11. In 2006, the Permittee began the most recent Facility upgrade project, which was completed in June 2009. The Permittee was not aware of the need to address treatment of ammonia and nitrate at the time that the Facility upgrade was designed. The Facility upgrade included a new influent pumping station, bar screen facility and grit removal; conversion of the former secondary clarifiers to primary clarifiers; new trickling filter pumping station and modifications to the trickling filter distribution arms; conversion of the former primary clarifiers to solids contact tanks; new secondary clarifiers; modifications to the secondary chlorine disinfection system and AWT chlorine contact system; new dissolved air flotation thickeners; and conversion of the floating covers on the anaerobic digesters to fixed covers.

12. During the term of Order No. R1-2006-0049, the Permittee achieved compliance with the final average monthly effluent limitation for nitrate from February 2007 through December 2011. It is not clear whether compliance was achieved through operational changes or in response to the Facility upgrade project since the Facility was not designed for nitrogen removal. The Permittee failed to comply with the monthly average nitrate effluent limitation in January 2012.

13. Data collected during the term of Order No. R1-2006-0049 demonstrated reasonable potential for ammonia to cause or contribute to an excursion above the ammonia water quality criterion.

14. Pursuant to federal regulations at section 122.44(d)(1)(i), title 40 of the Code of Federal Regulation (CFR), NPDES permit effluent limitations must control all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above any State water quality standard, including any narrative criteria for water quality. Beneficial uses, together with their corresponding water quality objectives or promulgated water quality criteria, can be defined per federal regulations as water quality standards.

15. Order No. R1-2012-0068 establishes new effluent limitations for ammonia. The Permittee will be required to evaluate the wastewater treatment system for removal of ammonia and nitrate. Since nitrate is formed during the treatment of ammonia (See Finding 10), the Permittee plans to study the potential for operational

modifications to remove both forms of nitrogen simultaneously. Since treatment for ammonia will result in varying nitrate concentrations, the Permittee must evaluate and assess the feasibility of various alternatives to reduce ammonia and nitrate levels. Operational modifications that may be necessary to comply with the ammonia effluent limitations can be expected to temporarily increase nitrate concentrations until such time as the Facility is able to consistently nitrify and denitrify to remove both ammonia and nitrate to acceptable concentrations. In accordance with Water Code section 13385(j)(3), the Regional Water Board finds that, based upon the relationship between ammonia and nitrate, the Permittee will not able to consistently comply with the final effluent limitations for nitrate during treatment modifications to reduce ammonia discharges. The limitations for ammonia are new requirements that become applicable to the Order after the effective date of adoption of the waste discharge requirements, and after July 1, 2000, for which new or modified control measures are necessary in order to comply with the limitation, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days. The Permittee's evaluation of operational control measures to reduce ammonia will have a direct impact on nitrate concentrations in the treatment process and effluent and may result in temporary increases in nitrate concentrations above the final effluent limitations established in Order No. R1-2012-0068.

16. On December 12, 2011, the Permittee submitted an Infeasibility Study Report for ammonia which contains an analysis of the Permittee's inability to immediately comply with ammonia effluent limitations; identifies the need for some flexibility regarding nitrate compliance due to the direct relationship between ammonia and nitrate; and identifies proposed actions and time frames to comply with final ammonia and nitrate effluent limitations. The Infeasibility Study Report includes a request for a compliance schedule and interim effluent limitations to complete monitoring and treatment plant evaluations to determine the most effective way to comply with final effluent limitations for ammonia and nitrate at the same time.

17. Regional Water Board staff reviewed the Infeasibility Study Report and concurs with the Permittee's assessment that it is infeasible to comply with final effluent limitations for ammonia and that evaluation of operational changes for compliance with ammonia effluent limitations will have an impact on nitrate concentrations in the wastewater. Regional Water Board staff found that the Permittee's proposed compliance schedule is designed to bring the waste discharge into compliance with final effluent limitations for ammonia and nitrate in the shortest time frame possible

18. This Order provides a compliance schedule for the Permittee to develop, submit, and implement methods of compliance, including developing and implementing pollution prevention activities or constructing necessary treatment facilities to meet the new effluent limitation for ammonia and the existing effluent limitation for nitrate.

19. Pursuant to Water Code section 13385(j)(3), mandatory minimum penalties (MMPs) will not apply to future violations of the final effluent limitations for ammonia and nitrate if:

    a. A cease and desist order is issued on or after July 1, 2000, and specifies the actions that the discharger is required to take in order to correct the violations that would otherwise be subject to MMPs;

    b. The regional board finds that the discharger is not able to consistently comply with one or more of the effluent limitations established in the waste discharge requirements applicable to the waste discharge because the effluent limitation is a new or more stringent regulatory requirement that has become applicable to the waste discharge after the effective date of the waste discharge requirements and after July 1, 2000, new or modified control measures are necessary in order to comply with the effluent limitation, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days;

    c. The regional board establishes a time schedule for bringing the waste discharge into compliance with the effluent limitations that is as short as possible, taking into account the technological, operational, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitations, and where the time schedule exceeds one year, the time schedule includes interim requirements and actions and milestones leading to compliance; and

    d. The discharger has prepared and is implementing in a timely and proper manner, or is required by the regional board to prepare and implement, a pollution prevention plan pursuant to Water Code section 13263.3.

20. The Permittee meets the requirements of Water Code section 1385(j)(3), and therefore, during the term of this CDO, no MMPs will be assed for violations of final effluent limitations for ammonia and nitrate. Specifically, the Regional Water Board finds that:

    a. The CDO is being issued after July 1, 2000, and specifies the actions the Permittee is required to take to correct the violations of the Permit, as set out in Findings 8 and 9 respectively, above;

    b. Ammonia effluent limitations are being newly applied to the Permittee in Order No. R1-2012-0068. The Permittee is unable to consistently comply with final nitrate effluent limitations that are in effect when new or modified control measures are implemented for the Permittee to comply with new final ammonia effluent limitations, and the new or modified control measures for compliance with ammonia and nitrate are dependent on the completion of a series of

studies, thus the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days;

c. Requirement 1 of this Order establishes a compliance schedule for bringing the Facility into compliance with the final ammonia and nitrate effluent limitations that is as short as possible. The Permittee has until August 1, 2017 to achieve full compliance with the final effluent limitations for nitrate and ammonia.

d. The Permittee's Infeasibility Study Report identified several options for reducing the loading of nitrogen compounds in the Facility's discharge to the Russian River. These options include operational and treatment modifications, nutrient offsets, and additional process infrastructure.

21. Accordingly, the Regional Water Board finds that MMPs for violations of effluent limitations for ammonia and nitrate when discharging to the Russian River do not apply, so long as the Permittee complies with the interim effluent limitations, compliance schedules, and other requirements included in this Order.

22. The compliance schedule established for ammonia and nitrate in this Order is intended to be as short as possible. The compliance schedule for ammonia and nitrate accounts for the interrelationship between ammonia and nitrate, the time necessary to evaluate Facility performance with respect to ammonia and nitrate removal, and the time necessary to evaluate and assess other alternatives. The Regional Water Board may wish to revisit these timeframes as more information becomes available.

23. This Order requires the Permittee to comply with interim effluent limitations for ammonia and nitrate. Interim effluent limitations for ammonia are based on the highest individual and average monthly concentrations recorded during the period of February 2007 and January 2012. Interim effluent limitations for nitrate are retained from Order No. R1-2006-0049. As operational modifications take place for compliance with the final ammonia effluent limitations contained in Order No. R1-2012-0068, it is not yet known how much nitrate concentrations will increase. Retaining the interim effluent limitations established in Order No. R1-2006-0049 is intended to provide flexibility to the Permittee while maintaining acceptable performance. Interim effluent limitations for nitrate will not be necessary until such time as the Facility begins to implement testing and modifications to address compliance with the final effluent limitations for ammonia.

24. Pursuant to Water Code section 13389 and section 15321 of title 14 of the CCR, this is an enforcement action for violations and threatened violations of waste discharge requirements, and as such is exempt from the requirements of the California Environmental Quality Act (Public Resources Code sections 21000-21177). Section 15321 of the CEQA Guidelines provides a categorical exemption for actions by regulatory agencies to enforce a permit, but does not exempt construction activities related to that enforcement. The Permittee is the lead

agency for CEQA compliance for adoption and implementation of the CIP. In addition, this CDO action is exempt from CEQA pursuant to Water Code § 13389. That section exempts from the requirements of CEQA the Regional Water Board's adoption of waste discharge requirements. In *Pacific Water Conditioning Association v. City Council of the City of Riverside*, 73 Cal. App. 3d 546, 556 (1977), the court held that the CEQA exemption provided by 13389 also applies to CDOs that are enforcing NPDES permits. In addition, an environmental analysis is not required for this CDO action because there is no possibility that the activity in question may have a significant effect on the environment. (CCR., title 14, section 15061(b)(3).) The CDO extends deadlines to meet the effluent limitations in the existing WDRs/NPDES Permit, but this CDO action does not change currently existing baseline conditions. The CDO is intended to require the Permittee to achieve compliance with the NPDES requirements. It can, therefore, be seen with certainty that the adoption of the CDO does not have any possibility of having a significant adverse effect on water quality.

25. On August 23, 2012, after due notice to the Permittee and all other interested persons, the Regional Water Board conducted a public hearing and received evidence regarding this Order.

26. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and title 23, section 2050 of the CCR. The petition must be received by the State Water Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request. In addition to filing a petition with the State Water Board, any person affected by this Order may request the Regional Water Board to reconsider this Order. Note that even if reconsideration by the Regional Water Board is sought, filing a petition with the State Water Board within the 30-day period is necessary to preserve the petitioner's legal rights. If you choose to request reconsideration of this Order or file a petition with the State Water Board, be advised that you must comply with the Order while your request for reconsideration and/or petition is being considered.

THEREFORE, IT IS HEREBY ORDERED, that pursuant to Water Code sections 13300 and 13301, the Permittee shall cease and desist from discharging waste contrary to the prohibitions and effluent limitations contained in Findings 8 and 9 above, and comply with the following requirements:

1. The Permittee shall achieve compliance with ammonia and nitrate effluent limitations at the earliest possible date in accordance with the following compliance schedule:

Compliance Schedule for Final Effluent Limitations for Ammonia and Nitrate:

Task	Task Description	Compliance Date
1	Submit Nitrogen Study Work Plan for Executive Officer Approval (Compliance Schedule assumes Executive Officer approval within 30 days of workplan submittal).	October 1, 2012
2	Submit a pollution prevention plan (PPP) that meets the requirements of Water Code section 13263.3(d)(3). The PPP shall be designed to identify and control pollution at the Facility during the interim period of time until the Facility achieves full compliance with final effluent limitations for ammonia and nitrate.	December 31, 2012
3	Begin enhanced monitoring program for nitrogen species throughout Facility at key locations.	November 15, 2012
4	Submit Preliminary Assessment Report for Executive Officer Approval (Compliance Schedule assumes Executive Officer approval within 30 days of Report submittal). The Report will include: a) Summary of data collected to date b) Evaluation of the upgraded Facility performance with regard to ammonia and nitrate removal c) Evaluation of the potential for operational modifications to achieve desired nitrogen removal d) Evaluation of nutrient offsets to achieve reduced total loading in the Russian River. e) Feasibility Study for additional process infrastructure required to achieve desired nitrogen removal. This evaluation will include a comparison of alternative technologies, development of ranking criteria, and a recommendation for a preferred alternative to achieve compliance with ammonia and nitrate effluent limitations if operational modifications and offsets are unsuccessful	June 30, 2013
5	Submit Work Plan for Mixing Zone Compliance and Anti-Degradation Study for Executive Officer approval (Compliance Schedule assumes Executive Officer approval within 60 days of work plan submittal).	July 31, 2013
6	The Permittee shall submit annual reports identifying progress toward compliance with final ammonia and nitrate effluent limitations.	Beginning October 1, 2013
7	Submit Mixing Zone Compliance and Anti-Degradation Study Report for Executive Officer approval (Compliance Schedule	June 30, 2014

Task	Task Description	Compliance Date
	assumes Executive Officer approval within six months of Report submittal)	
8	Implement, monitor and report on operational modifications identified under Task 4	July 31, 2014
9	Complete and submit CEQA document and construction contract documents for the recommended alternative	June 30, 2015
10	Secure project funding	July 14, 2015
11	Award construction contract	September 30, 2015
12	Finalize construction of improvements	April 30, 2017
13	Startup and performance testing of completed Facility upgrades	July 31, 2017
14	Achieve full compliance with final ammonia and nitrate effluent limitations	August 1, 2017

2. The Permittee shall comply with the following interim effluent limitations for ammonia and nitrate at Discharge Point 001 (Monitoring Location EFF-001B) during the interim period established by this Order for the Permittee to reach compliance with the final effluent limitations set forth in Order No. R1-2012-0068:

Interim Effluent Limitations for Discharge Point 001, Discharge to Russian River

Parameter	Units	Average Monthly Effluent Limitation	Maximum Daily Effluent Limitation
Ammonia Nitrogen, as N	mg/L	14	20
Nitrate Nitrogen, Total(as N)	mg/L	26.6	---

3. Interim effluent limitations for nitrate shall not become effective until the Permittee submits a request, in writing, to the Regional Water Board stating that interim effluent limitations for nitrate are necessary in relation to operational modifications or testing at the Facility to achieve compliance with the final effluent limitations for ammonia and nitrate as described in Finding 23 above.

4. During the time period described in Requirement 1 above, the Permittee shall operate and maintain, as efficiently as possible, all facilities and systems necessary to comply with all prohibitions, effluent limitations, and requirements identified in the Permit or any future waste discharge requirements issued for the Facility.

5. If, for any reason, the Permittee is unable to perform any activity or submit any documentation in compliance with the deadlines set forth in Requirement 1 above, the Permittee may request, in writing, that the Regional Water Board grant an extension of time. The extension request shall include justification for the delay and shall be submitted at least 30 days prior to the deadline the

Permittee is requesting to extend. An extension may be granted by the Regional Water Board Executive Officer for good cause, in which case this Order will be accordingly revised in writing.

6. If the Executive Officer of the Regional Water Board finds that the Permittee fails to comply with the provisions of this Order, the Executive Officer may take all actions authorized by law, including referring the matter to the Attorney General for judicial enforcement or issuing a complaint for administrative civil liability pursuant to Water Code sections 13350 and 13385. The Regional Water Board reserves the right to take any enforcement actions authorized by law.

CERTIFICATION

I, Matthias St. John, 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, North Coast Region, on August 23, 2012.

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Matthias St. John
Executive Officer