California Regional Water Quality Control Board
North Coast Region

RESOLUTION NO. R1-2008-0061
Approving
Santa Rosa Nutrient Offset Program
for the

City of Santa Rosa
Santa Rosa Subregional Water Reclamation Facility
Sonoma County

FINDINGS

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

1. The City of Santa Rosa owns and operates the Santa Rosa Subregional Water Reclamation Facility (the "Facility"), a publicly owned treatment works. The Facility seasonally discharges into the Laguna de Santa Rosa and its tributaries. The Laguna de Santa Rosa is 303(d) listed for, among other constituents, low dissolved oxygen, nitrogen, and phosphorus.

2. The Regional Water Board adopted a renewed National Pollutant Discharge Elimination System ("NPDES") Permit for the City's Facility, Order No. R1-2006-0045, CA0022764, ("Permit") on September 20, 2006.

3. The Permit imposed the following final effluent limitations for nitrogen and phosphorous based on the Water Quality Control Plan's narrative water quality objective for biostimulatory substances:

   "The Regional Board plans to develop and adopt total maximum daily loads (TMDLs) for nitrogen and phosphorus which will specify wasteload allocations (WLAs) for point sources and load allocations (LA) for non-point sources, as appropriate. Following the adoption of these TMDLs by the Regional Water Board, this Order will be issued with final WQBELs based on applicable WLAs. Alternatively, in the absence of a TMDL, at the end of the compliance schedule authorized by this Order, the final effluent limitation for nitrogen and phosphorus will be zero, or no net loading."

See Permit at Effluent Limitations section IV.A.1.g.

4. Footnote 5 to Effluent Limitations section IV.A.1.g.states:
   "A 'no net loading' effluent limit may be met by: 1) reducing the effluent concentration below detectable levels through source control and/or treatment; 2) reducing loads through recycling/reclamation; and/or 3) reducing loads elsewhere in the watershed by an amount at least equal to the amount discharged (and of equivalent bioavailability) through an approved offset program."

5. Regional Water Board and City staff prepared the Santa Rosa Nutrient Offset Program ("Nutrient Offset Program"), attached hereto as Attachment 1, to qualify as the offset program referenced in footnote 5 to Effluent Limitations section IV.A.1.g. that the City can implement to comply with Effluent Limitations section IV.A.1.g. of the Permit.

6. The City of Santa Rosa has undertaken significant steps to reduce nitrogen concentrations in its effluent and to reduce nutrient loading to the Laguna de Santa Rosa. Activities currently underway or completed include improvements to its activated sludge treatment process to achieve partial denitrification, increased water recycling, increased diversion of effluent to the Geysers Steamfields, and development and implementation of programs involving source control, water conservation, biosolids application management and storm water control. The Nutrient Offset Program will provide a framework for achieving additional nutrient load reductions during the interim period before the nutrient TMDL for the Laguna de Santa Rosa is implemented.

7. The Nutrient Offset Program is designed to encourage the City to undertake nutrient reduction projects that improve habitat and ecosystem conditions, and to encourage the City to undertake nutrient reduction projects that reduce or eliminate non-point source or other discharges not currently subject to waste discharge requirements, waiver, or other permits. However, the Nutrient Offset Program prohibits the City from continuing to receive nutrient reduction credits for a project that later becomes subject to additional regulatory controls imposed by the Regional Water Board. The Offset Program shall in no way diminish the force and effect of any current or future controls on non-point source or other discharges imposed by the Regional Water Board. Non-point source or other discharges in violation of prohibitions or water quality standards remain subject to enforcement under the Water Code.

8. To ensure that no nutrient reduction project will overlap with best management practice activities required by the NPDES permit for the City's municipal separate storm water system ("MS4 Permit"), under the Nutrient Offset Program, the Executive Officer shall not approve project proposals for storm water best management practice activities that are required by the City's current MS4 Permit (Order No. R1-2003-0062, NPDES Permit CA0025054) or the renewed MS4 Permit (scheduled for adoption in late 2008).

9. The Nutrient Offset Program is consistent with the federal and state anti-degradation policies. The discharge to be offset is an existing point source, not a new discharge, and any source reduction efforts through the offset program most certainly will improve the receiving waters. To account for any uncertainties in granting reduction credits, all projects proposals must include an appropriate Margin of Safety (MOS), which can be described numerically, or by spatial and temporal aspects of a given proposal. The Executive Officer retains discretion to request reasonable modifications to the nutrient reduction credit ratio of a specific proposal or deny the proposal. In addition, the Executive Officer shall ensure

that any banked credits are distributed in a balanced manner to satisfy the no-net loading function, both spatially and temporally. In accepting credits proposed in the City's annual report, the first being submitted prior to the discharge season in 2011-2012, the Executive Officer shall ensure that the City's proposal distributes any banked credits in a manner that maximizes the benefit to water quality.

10. No CEQA documentation is required at this time. The program implements provisions of the NPDES permit, which are statutorily exempt from CEQA under Water Code section 13389. Individual proposals must comply with CEQA as explicitly provided for on page 3 of the Program. In the absence of specific proposals, any environmental analysis would be too remote and speculative to analyze. Moreover, because Regional Water Board staff maintains discretion to disapprove any proposal, the Program does not commit the Regional Water Board to any implementation. The Regional Water Board's approval of the Offset Program is a decision to establish procedural rules on how an individual proposal might be approved, and is independent of any proposal that might be approved and have an environmental effect. (See Cal. Code Regs., tit. 14, §15061(b)(3).)

11. Regional Water Board staff recommends Regional Water Board approval of the Santa Rosa Nutrient Offset Program.

RESOLUTION

THEREFORE, it is hereby resolved that:

The Regional Water Board approves the Santa Rosa Nutrient Offset Program, attached hereto as Attachment 1, as the approved offset program referenced in footnote 5 to Effluent Limitations section IV.A.1.g. of the Permit, that the City of Santa Rosa can implement to comply with Effluent Limitations section IV.A.1.g. of the Permit.

CERTIFICATION

I, Catherine E. Kuhlman, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, North Coast Region, on July 24, 2008.

_____

Catherine E. Kuhlman
Executive Officer

ATTACHMENT 1

To

RESOLUTION NO. R1-2008-0061
Approving the Santa Rosa Nutrient Offset Program for the Santa Rosa Subregional Water Reclamation System

SANTA ROSA NUTRIENT OFFSET PROGRAM

Program Framework
Key elements of the Santa Rosa Nutrient Offset Program include the following:

- **City's nutrient load to be offset**. The City would identify the anticipated total annual discharge and average total N and P concentrations to be offset when the load limit goes into effect (currently scheduled to take effect before the 2011-12 discharge season) as a basis for sizing initial nutrient control project(s). This would be calculated using the water balance model estimate of the average year recycled water discharge, which would be based on the most recent average dry weather flow estimate and average year reuse capacity at the time the estimate is complete. The actual load would be calculated using the actual discharge volume and the average nutrient concentration during discharge periods. The actual load would be used as described below to determine compliance with the no net loading provision.

- **Nutrient reduction credits to be gained by performance of selected removal/reduction actions**. The nutrient reduction quantity from removal/reduction actions implemented by the City to control source of nutrients to the Laguna other than its recycled water discharge shall be calculated using one of the two following approaches:

    - Direct measurement of nutrient reduction. The City shall receive 1 pound of nutrient reduction credit for each pound of nutrient reduced that would have been discharged to the Laguna de Santa Rosa resulting from nutrient removal/reduction actions amenable to direct measurement. A plan for measuring or estimating the nutrient quantity control would be proposed for each nutrient control project as described in the *Program Implementation* section below.

    - Estimated nutrient reduction. The effectiveness of some nutrient removal/ reduction actions are not amenable to direct measurement. For nutrient removal/reduction actions not amenable to direct measurement, the City shall receive nutrient reduction credit calculated based on the median effectiveness estimate in literature or other lines of study or evidence for project most similar to the City's proposed actions. For example, if literature values from relevant studies indicate a particular pasture management method reduces nutrient loss

by 9, 10, 12, 20, and 25 percent respectively (as reported in five studies), the City would calculate and receive nutrient reduction credit using the 12 percent value.

- Margin of Safety. All project proposals shall include a technically supportable Margin of Safety (MOS) to address uncertainties associated with nutrient reduction ratios and to ensure that the project will result in demonstrable water quality benefits. In reviewing direct and estimated nutrient reduction ratios for each proposal, the Executive Officer shall have discretion to request modification of the ratio based on the characteristics of a given proposal.

- Storm water management projects. No nutrient reduction project will overlap with best management practice activities required by the NPDES permit for the City's municipal separate storm water system ("MS4 Permit"). Under the Nutrient Offset Program, the Executive Officer shall not approve project proposals for storm water best management practice activities that are required by the City's current MS4 Permit (Order No. R1-2003-0062, NPDES Permit CA0025054) or the renewed MS4 Permit (scheduled for adoption in late 2008).

- **Nutrient reduction credit accounting**. Compliance with the no net loading requirement shall be calculated using a three-year averaging period. Each year the City will strive to offset the full amount of each year's anticipated discharge and will implement the approved projects as described in the annual report. At the end of each year, the City shall subtract the nutrient load reduction (pounds) from the City's actual nutrient discharge load, and may average the difference in the past three years. The City shall be deemed in compliance if the City has offset the full amount of actual discharge for the three year period if the three-year average difference is less than or equal to zero mass units.

- The no net nutrient loading requirement is scheduled to take effect at the beginning of the 2011-2012 discharge seasons. The City may choose to implement nutrient removal/reduction actions prior to the 2011-2012 discharge season. Credit (in pounds) for any nutrient removal/reduction actions implemented after 2007 and prior to the 2011-2012 discharge season shall be available to apply to the City's first three years of nutrient reduction. Any "banked" credits shall be distributed in a balanced manner so that water quality benefits from the Program are maximized. Factors to consider in this regard include the proportion of credits to new or ongoing projects in any given year, and the spatial temporal qualities of each credit. This issue will be considered when reviewing the nutrient reduction ratio of a given project and/or the City's annual report describing how the City plans to offset its anticipated discharge.

- The City may need to invest in capital facilities to comply with the no net nutrient loading requirement. Load reduction benefits from any such long-term capital facilities will continue to accrue to the City for the full life of such capital facilities until or unless additional regulatory controls are imposed by the RWQCB (for example, waste discharge requirements, waiver of waste discharge requirements, NPDES permit requirements, or 401 certifications) to control the same nutrient discharges the capital facilities are designed to control.

Program Implementation
Program implementation would occur according to the following steps:

1. City identifies nutrient reduction project(s)
2. City submits description of nutrient reduction project(s) to RWQCB documenting consistency with adopted Santa Rosa Nutrient Offset Program
3. RWQCB accepts proposed nutrient reduction project(s)
4. City implements project(s)
5. City submits annual report documenting nutrient discharged and controlled

Each step is described below.

1. City identifies nutrient reduction project(s)

The City shall preliminarily estimate the mass of N and P that could be removed or prevented from discharging to the Laguna and its tributaries as needed to achieve no net loading (*i.e.* an amount equal to the annual N and P mass emission from the Laguna Plant).

After assessing the options, the City shall identify one or more preferred nutrient reduction projects for implementation. The City would contact other parties (*e.g*. land owners, RCD, etc.) with which the City would need to partner to implement the project(s) to determine interest, cost and feasibility.

2. City submits description of nutrient reduction project(s) to RWQCB

The City shall prepare a description of the project(s) identified in step 1 above that includes the following:

- Project location
- Description of N and P control facilities or practices
- Quantity of N and P removed or controlled to be calculated as described in the *Program Framework* section above.
- Expected life of facility or duration of practice. This description shall include a description of the facility and/or practice, plus any written agreements related to construction and maintenance of the facility or implementation of the practice.
- Monitoring and reporting plan to document continued N and P removal. N and P removal shall be measured or estimated according to the type of removal/reduction actions identified in the *Nutrient reduction credits to be gained by performance of selected removal/reduction actions* section above.
- Description of anticipated or actual CEQA documentation.

3. *RWQCB accepts proposed nutrient reduction project(s)*

   The Executive Officer of the RWQCB shall accept or reject the nutrient reduction project(s) submitted by the City in writing within 60 days of submittal or the project(s) are deemed accepted. The actual load reduction shall be determined according to the monitoring and reporting plan. The Executive Officer shall provide notice and the opportunity for the public to comment on the project(s). After consideration of any public comments and all available information, the Executive Officer may suggest modifications to the project(s) as necessary for acceptance. The Executive Officer of the RQWCB shall maintain discretion over accepted projects to request reasonable modifications based upon significant new information.

4. *City implements load reduction project(s) as proposed and accepted*

   The City, with any partners, shall implement the nutrient reduction project(s) as proposed and accepted.

5. *City submits annual report documenting nutrient discharged and controlled*

   Beginning in 2011, by July 1st each year, the City shall provide a report to RWQCB documenting the following:

   - Mass of N and P anticipated to be discharged to the Laguna de Santa Rosa (and tributaries) for the upcoming discharge season and a description of how the City plans to offset the anticipated discharge.
   - Mass of N and P actually discharged to the Laguna de Santa Rosa (and tributaries) during the previous discharge season, and the two prior discharge seasons if applicable.
   - Mass of N and P controlled during the previous twelve months (i.e., July 1st through June 30th, of the previous twelve months), and the two (2) prior twelve month periods years if applicable.
   - Calculation of the two and three year averaging, if applicable.
   - Detailed report for each of the accepted nutrient reduction projects according to projects' respective monitoring and reporting plan.
   - The report shall be signed and certified in accordance with 40 CFR 122.22(d).

   The annual report will be posted on the RWQCB website. A RWQCB staff contact will be listed for any questions or comments regarding the report.

Exhibit 1 below is an example where the City would be in compliance in all years (i.e., the Three-Year Average" value is less than 0 kg). The example in Exhibit 1 demonstrates that compliance with the requirement of the 0 kg three-year average requirement is achieved in 2013-14 by using some of the pre-2011 credit.

EXHIBIT 1

To

SANTA ROSA NUTRIENT OFFSET PROGRAM

	Kg Phosphorus					
	Pre-2011	2011-12	2012-13	2013-14	2014-15	2015-16
Anticipated City Discharge		4824	5400	5977	6554	7131
Actual City Discharge		4968	5238	7113	6030	8129
Control Project 1		3900	3950	3610	3290	4580
Control Project 2		900	1200	1200	1200	1200
Control Project 3			100	2000	2000	2200
Control Project 4						
Total Control		4800	5250	6810	6490	7980
Net Load		168	-12	303	-460	149
Pre-2011 credit available	500	500	332	332	0	0
Pre-2011 credit used		168	0	303		
Annual Load For Compliance		0	-12	0	-460	149
Three-Year Average				-4	-157	-104