

April 23, 2010

North Coast Regional Water Quality Control Board
5550 Skyline Boulevard, Suite A
Santa Rosa, CA 95403

RE: Healdsburg NPDES Permit No CA0025135 – Order No. R1-2010-0034

The Westside Association to Save Agriculture (WASA) is a community organization formed to promote stewardship of the land and to protect both agricultural uses and natural resources of the Middle Reach of the Russian River. For nearly a decade, WASA has actively supported the Water Quality Control Board's objectives relative to Healdsburg's wastewater permits and disposal plans. We've participated in every public process, and appreciate the opportunity to provide input on the NPDES permit process.

Many WASA members are landowners in the vicinity of Healdsburg's treatment plant and are concerned about the lack of adequate studies on the impacts to domestic drinking water wells from Healdsburg's disposal plans. Of concern is both what we know about the small number of metals and chemical compounds that are regulated, and what we don't know about the thousands of chemicals that are not monitored. Current regulations require the California Department of Health to set mitigations to meet "drinking water" standards; however, there is general agreement that Title 22 standards are woefully out of date with regards to protecting groundwater wells from chemical contamination.

Of primary concern is the fact that the Middle Reach is the drinking water aquifer for over 700,000 people. WASA has consistently challenged projects in the Middle Reach that have the potential to impact the quantity of water and quality of the Middle Reach aquifer. Our position is that agricultural land re-use projects must be outside the drinking water aquifer. WASA has consistently supported urban re-use projects that provide potable water offsets.

As a member of the Clean Water Coalition (CWC), our mutual objectives are to protect both surface and groundwater quality. WASA supports CWC comments, and provides additional perspective below.

Should Healdsburg propose an agricultural-reuse project in the aquifer, WASA's perspective is that the NPDES/ Master Reclamation Permit must require an extensive studies, including but not limited to Water Balance and fate and transport studies, to ensure no irreparable damage to surface or groundwater. If the land area is around the Syar terrace pits, the studies must account for the unique hydrology in this area. WASA agrees that the Water Quality Control Board water reclamation requirements should be the controlling documents that define or aggregate the required surface and groundwater mitigations before any reuse project is approved. And, WASA supports groundwater monitoring in alluvial soils to assure the public that any reuse project will not degrade groundwater and domestic well water quality.

1. **Regardless of the status of a re-use project's environmental documentation, the permit language should be clear that Attachment G provisions apply to ALL reuse projects.** For an effective public and agency review process, the Master Reclamation Permit (wastewater reclamation requirements) should be definitive and contain the full set of studies and protective measures. The public should not have to find an out of date EIR or the Title 22 Engineering Report to piece together required mitigations.

Attachment G-I clearly states there are no approved recycled water use sites. Most provisions in the document state that new sites are to be approved through the process in Attachment G, which includes completion of the required studies, a Report of Waste Discharge, an Operation and Management Plan, and an Irrigation Management Plan. We recommend that Appendix G be the controlling document for any project.

2. **Remove or clarify the intent of the confusing and circular references for the Syar agricultural reuse project:** The majority of references are clear and unequivocal that all Appendix G provisions and Water Reclamation Requirements (WRR) apply to all reuse projects. The Order is clear that there are no approved recycled water use sites.

Of concern are the circular references associated with the potential agricultural reuse project on Syar's lands: Attachment G (C) (5) states environmental review is required, and that all mitigation measures are to be implemented, but then refers to the 2005 Wastewater Treatment Plant Upgrade EIR and the uncertified 2009 Mitigated Negative Declaration.

Significant analysis and public comment on both of Healdsburg's environmental documents, including the Water Quality Control Board's September 22, 2009 letter, reveals that the current environmental documents have virtually no analysis and relatively few mitigations to protect surface water or prevent groundwater contamination.

In fact, the only mitigation measure in the hydrology and water quality section of Healdsburg's Mitigated Negative Declaration clearly states that the NPDES Permit Water Reclamation Requirements (WRR's) will include all mitigations. Thus, the WRR's appear to be controlling, and there is no need for the circular reference.

"The project shall comply with all permit requirements as set forth by the Regional Water Quality Control Board (RWQCB) as set for in water reclamation requirements (WRRs) by this agency. Permit requirements are expected to include requirements for recycled water established in Title 22 of the California Code of Regulations, including requirements for treatment and use area restrictions, together with any other recommendations by the California Department of Public Health." (Mitigation Measure: Hydrology and Water Quality, 2009 Draft MND Page 31)

The 2005 WWTP EIR page 3.2-35 also states that regardless of disposal options, the effluent will comply with the NPDES permit.

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Neither the 2005 EIR nor the 2009 Negative Declaration included any site specific studies, and the 2009 Negative Declaration ignored the 2007 Middle Reach studies completed by Kennedy-Jenks Engineers. Of concern is that these environmental documents – in the absence of scientific analysis - make broad findings of no significance and do not include specific mitigations.

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3. Assuming the appropriate studies have been completed that demonstrate that there will be no impacts to groundwater and surface water by an ag-reuse project, WASA recommends that, at a minimum, the required 100 foot Buffer between wastewater application and surface water (Russian River and two intermittent streams) also apply to the terrace pits.

Attachment G (B) (11a) protections should apply to all lands along the River, along seasonal creeks and land surrounding the terrace pits. **Note Attachment I** to this letter: there are two intermittent creeks in the Syar lands area: 1) straitened creek to the west of terrace Pits V and VI, with adjacent wells supplying a large number of parcels; and 2) the creek running southeast between Pits IV and III.

WASA supports the recommendation for a buffer zone around all water bodies, including the terrace pits which represent a “direct discharge to groundwater.” The Water Quality Control Board’s September 22, 2009 letter clearly states:

“The MND should identify the shortest distances from the proposed recycled water irrigation system to the Russian River, seasonal creek and ponds. In addition, buffer zones must be established to ensure that recycled water does not discharge into these water bodies. ... Setbacks between the irrigation system and water bodies are necessary in the event of a system malfunction (line break or failure of system to shut down).”

All areas in the drinking water aquifer meet the “special site study” criteria due to high transmissivity soils; however, the areas in the vicinity of the terrace pits have even more unique site specific conditions given the groundwater mounding effects of terrace pits Phase V and VI. (Order Attachment G, pages 10-11). Unlike Basalt, the new terrace pits have not silted in, thus, the application of wastewater in and around the terrace pits could have a significant cumulative effect on groundwater levels and water quality -- impacts have not been addressed in the current environmental documents.

“...highly porous sand and gravel in these valleys does not effectively attenuate metals, nutrients or organic compounds.” (Kennedy – Jenks 2007 Technical Memoranda)

“There is higher and more prolonged springtime ground water levels on the adjacent vineyards to the north and west of the pits.” (Todd Engineers, December 2006 report Phase VI SEIR).

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In 2002, the Water Quality Control Board commissioned the GeoTrans study, in part due to concerns about the accuracy of previous hydrologic models of terrace pit impacts. Conditions have changed since Healdsburg's 2005 EIR; the excavation of the Phase VI gravel pit immediately south of Phase V has totally changed the assumptions in the wastewater flow models used in the 2005 EIR. In fact, numerous subsequent studies, conducted by Luhdorff & Scalmanini Engineers, Dr. Curry and Todd Engineers raise the concern of higher groundwater levels and the potential for cumulative impacts in the areas around the terrace pits.

The Phase VI Conditions of Approval put the "restricted area" that separates Phase V and VI from the intermittent creek shown on Attachment I in an agricultural easement. These conditions are still in effect, and place both Phase V and VI in a protective open space easement that prohibits discharge of treated effluent.

" In addition to the 28.06 acre open space easement to offset land removed from agriculture due to the terrace mining operation, the operator shall place the Phase V and VI mining areas under open space easements that protect the wildlife habitat created by site reclamation and prohibit the discharge of treated effluent to either pond." (Phase VI Conditions of Approval PLP03-0046 Provision 42)

1994 ARM Plan Section 4.4 "Groundwater" identifies both an aquifer – River interaction and an aquifer - terrace pit interaction. The ARM Plan and subsequent studies reveal that the pits capture water from the surrounding aquifer in summer and then release water to the downstream aquifer.

The hydrology report, substantiated by more recent studies, shows that the Middle Reach aquifer is unconfined with recharge from the north and west. The aquifer flows to the south/southeast and is hydraulically connected to the River, recharging the River for most of the year.

Likewise, monitoring well data show that the gravel pits act as a recharge pond in the winter with flow leaving the pits and recharging the aquifer and ultimately the River. This trend reverses in the summer when evaporation of the exposed groundwater results in the terrace pits becoming a sink, capturing water from the aquifer.

The Water Quality section then goes on to say that domestic water supply may be impacted by terrace mining activities which extract gravel. **"Groundwater moving through the terrace gravel benefits from the filtering effect while groundwater moving through an open body of water in a terrace pit receives no filtering."** (ARM Plan page 4.4:11-19). Any studies regarding the suitability of Healdsburg's ag-reuse project in the Middle Reach must take into account these hydrologic conditions resulting from these pits.

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4. A spill or over-irrigation in the drinking water aquifer could have irreparable impacts. WASA recommends the Operation and Maintenance and Irrigation Plans

4 | are based on accurate and site-specific agronomic studies, with adequate requirements for Discharger Monitoring and non-compliance fines.

Again, the 2009 Mitigated Negative Declaration proposed wastewater application rates, but provided no analysis. Dennis Hill, WASA past-President with extensive experience in the wine industry, prepared an analysis for light, medium and heavy irrigation regimens based on experience in growing grapes in the Middle Reach aquifer area. This study showed the vineyards may only need 30-40% of the Mitigated Negative Declaration's proposed 35-50 million gallon discharge on Syar lands.

Like the Water Quality Control Board's September 22, 2009 letter, the September 30, 2009 comments on the Mitigated Negative Declaration have not been answered. In Attachment 2, the agronomic rate analysis is covered on pages 7-10.

Recent studies, such as the December 21, 2009 Science Daily article "Lost Water of the Napa Valley Vineyards," show that – even at agronomic rates – a percentage of applied irrigation water is not absorbed and percolates below the root zone. And, certain metals of concern, such as copper, remain in the soil.

5 | **5. Recommend more protective requirements for domestic wells, including groundwater monitoring:** Attachment G (B) (22) states that "The use of recycled water shall not cause degradation of any water supply." This is of special concern in the drinking water aquifer because the Kennedy – Jenks fate and transport studies in the Middle Reach clearly show that the high transmissivity soils do not attenuate metals, nutrients and chemicals. Thus, a 50-foot buffer between wastewater application and a well is clearly inadequate.

Attachment G (5) (a) states that wells within 200 feet of the wastewater irrigation boundary must be identified. WASA recommends that Healdsburg complete more extensive Water Balance and fate and transport studies, not only to determine the suitability of applying treated wastewater over the aquifer, but also to determine the adequate buffer between wastewater application and domestic wells.

It is WASA's belief that results of these studies would require any proposed project in the drinking water aquifer to have, at a minimum, a dual irrigation system and groundwater monitoring. Monitoring is required to ensure the theoretical models were correct, and to protect well owners from abnormal effluent discharges, such as the October 2008 event.

Sincerely,



Marc Bommersbach President, Westside Association to Save Agriculture

Attachment 1: Map with intermittent streams and additional wells identified

Attachment 2: September 30, 2009 Comment Letter

Attachment 1

NOTE • Intersecting Closures →

Legend

- Basalt
- Pond
- Water Right
- Water Right

Pipelines

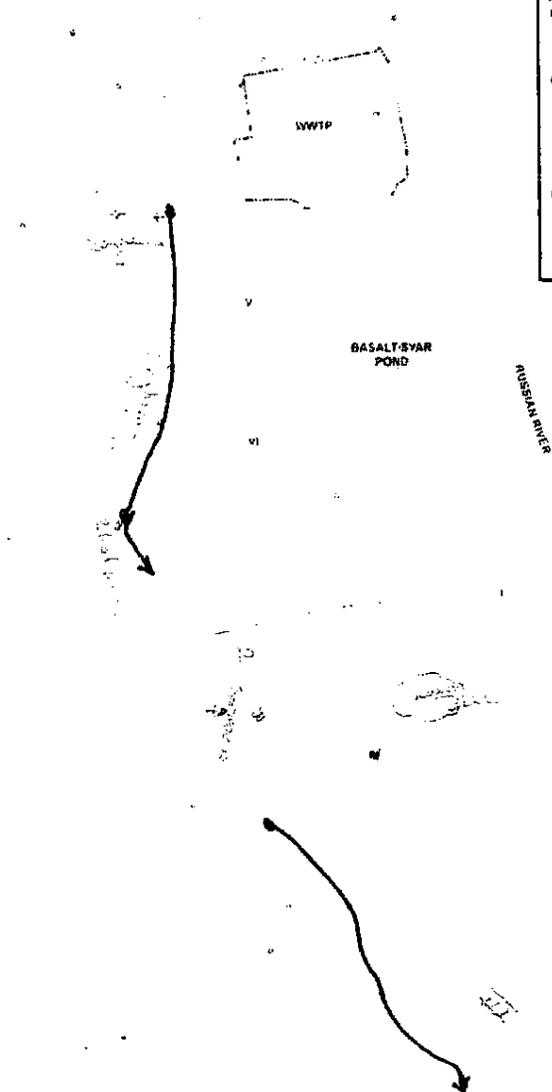
- Sanitation
- Water

Known Wells

- Well
- Well
- Well
- Well

Potential Irrigation Areas

- Potential Irrigation Area
- Potential Irrigation Area
- Potential Irrigation Area



Syar Properties Proposed for Seasonal Irrigation with Treated Wastewater



Exhibit 1

September 30, 2009

City of Healdsburg Planning and Building Department
401 Grove Street
Healdsburg, CA 95448

Re: Healdsburg Wastewater Disposal Project – Syar Lands
Lead Agency: City of Healdsburg Public Works Department

The Clean Water Coalition of Northern Sonoma County (CWC), founded in 2007, is an alliance of community groups and individuals representing a total membership of over 2,500 local residents, winemakers, environmentalists, farmers, elected officials and representatives from the business community in and around Healdsburg. Our mission is to provide a strong voice for local citizens and civic organizations in public discussions about water and wastewater projects proposed for northern Sonoma County.

The CWC would like to serve as a planning advisor, partnering with the City of Healdsburg on a long-term water strategy that protects and enhances the drinking water supply. To this end, the CWC will proactively work with Healdsburg and the Regional Water Quality Control Board to:

- Request a 5 year delay of the seasonal prohibition on wastewater disposal to Basalt Pond;
- Participate in the Regional Board's process of granting a new NPDES Permit and required Discharge and Master Reclamation Requirements for any agricultural and urban re-use projects;
- Participate in the State Water Resource Control Board mandated "Regional Salt/Nutrient Management Plan," requiring site specific information, anti-degradation analysis, and provisions for monitoring;
- Provide technical support to feasibility studies for a peak reverse osmosis plant to complete the wastewater treatment process, transforming wastewater into a valuable resource for the community.

The CWC believes that Healdsburg has the opportunity to initiate a model project – combining a package RO plant with its new micro-filtration plant - a project that produces a potable water offset and protects the drinking water aquifer. This model project may cost the ratepayers no more than the \$14M currently projected for urban and agricultural wastewater disposal projects, while creating a revenue source for the City.

Response to August 21, 2009: Mitigated Negative Declaration:

The August 21, 2009 Negative Declaration relies on (tiers off) the July 11, 2005 City of Healdsburg Environmental Impact Report for the City's Wastewater Treatment Plant (WWTP). CWC member organizations – Westside Association to Save Agriculture and Russian Riverkeeper – participated fully in the review and administrative processes leading to certification of the WWTP EIR.

Although requested at our September 14th meeting, the City of Healdsburg did not post the 2005 EIR on their website, limiting the public's review impacts from the proposed 300 acre agricultural reuse project. The 2009 Negative Declaration primarily reviews information for the new properties south of Pit IV, omitting analysis of wastewater irrigation to the west of Pits V and VI.

The 2009 Negative Declaration adds 214 acres of land for wastewater disposal and direct exposure of 10-12 private wells to wastewater influence, yet has many of the same deficiencies noted by respondents to the WWTP EIR:

- Incomplete Project Definition
- Insufficient wastewater quality data and analysis
- Lack of a Water Balance Study to model and analyze the accumulation of wastewater contaminants (TDS and Nitrate as markers) into groundwater
- Insufficient mitigation or analysis of down gradient well impacts
- Lack of sufficient mitigation and monitoring data for groundwater protection.

New concerns – raised by changes to the original project made in this Negative Declaration's project definition – include:

- Re-alignment of wastewater transmission pipe to the access road immediately adjacent to other land owners' property. This raises potential impacts to adjoining properties, and conflicts with Syar 2005 Use Permit commitments. (Per the August 2005, Westside Association to Save Agriculture v. Sonoma County Board of Supervisors Settlement Agreement.)
- Lack of controls on rate of application and runoff prevention to mitigate potential surface water impacts associated with wastewater disposal adjacent to intermittent creeks located a) to the west of Pits V

and VI and b) running through the new acreage between Pit IV (mismarked on Page 5 as Pit III) and Pit III.

- Insufficient data on Syar Vineyard’s historical irrigation water use – or analysis to support claim of application at “agronomic rates.”

Incomplete Project Definition:

The CWC supports the City’s decision to re-define the project to prohibit: a) use of wastewater for frost protection and b) off-site transfer on-site storage or re-sale by Syar Vineyards. These mitigations, however, are enforced through a Recycled Water Use Agreement – and this Agreement is not made available for public review.

The 2009 Negative Declaration triples the acreage proposed for irrigation extending the impact area to 12 Syar properties. The analysis tiers off the Urban and Seasonal Agricultural Reuse section of the 2005 EIR, yet the 2005 document was significantly deficient in its analysis of irrigation on the original 105 acres on 4 Syar properties. Given new acreage was added adjacent to the original 105 acres – the studies and background data for all 300 acres should have been included for a full analysis of the impacts. **Of significance is that the wells on adjacent properties, including two wells on the Sorrocco, property are not identified in the Negative Declaration.**

Many comments and concerns raised in the review of the 2005 WWTP EIR still have not been addressed – and conditions have changed. CEQA 15162/Section 21166 addresses requirements when there is a “substantial change with respect to circumstances under which the project is undertaken.” Neither of Healdsburg’s environmental documents take Syar Pit VI into consideration, and do not address the fact that there is only a 100 foot separator between Pits V and VI.

Studies done by the County and City of Healdsburg acknowledge that the gravel pits change the flow of groundwater, and that there are significant hydraulic connections between the groundwater, water in the pits, and River surface water. Note that leaching of wastewater into the gravel pits would be a direct discharge to groundwater.

Studies by Dr. Curry and Todd Engineers found that the Pit V and VI configuration will result in increasing the groundwater levels on adjacent properties.

“There is higher and more prolonged springtime ground water levels on adjacent vineyards to the north and west of the pits.”

(SEIR: Todd Engineers December 2006, Well monitoring data, Entrix Study (Pg 69: cites 2.78 foot rise), Curry 2005)

No analysis was conducted on the impact to the additional 4-6 domestic wells influenced by the lands to the west of Pits V and VI – new acreage identified in the Negative Declaration.

Need for Water Balance Study:

The CWC respectfully requests that the City of Healdsburg commission a hydrologist to conduct a Water Balance study for the Middle Reach disposal area. We recommend Gus Yates, as he completed analyses for the Dry Creek Water Balance study and was instrumental in the groundwater model analysis for Syar Pits V and VI.

It is our hope that this study shows that the groundwater flow through the Middle Reach coupled with the quality of Healdsburg’s wastewater will not lead to groundwater contamination – a significant impact identified by technical studies for Santa Rosa’s wastewater. These studies are attached to the Russian Riverkeeper’s comments to this 2009 Mitigated Negative Declaration.

We recommend that the focused Water Balance study include a fate and transport analysis of TDS and Nitrate, using Healdsburg plant wastewater quality data and realistic assumptions:

- Percentage of wastewater taken up by the vines (will not be 100%), and acknowledgement that certain chemicals in the wastewater are not attenuated by the soil, and certain chemicals build up in the soil.
- Current groundwater and River flows, as influenced by the gravel pits, south of Dry Creek; and
- Russian River “low flow” scenario, including reduced Dry Creek flows. Answer the question as to whether the rate of wastewater application on these 300 acres is sufficient to make this stretch of River a gaining stream in summer.

The CWC’s is concerned about the potential impacts of wastewater irrigation on groundwater and surface water quality and therefore on drinking water, public health and endangered fish.

The project site has “unique site specific conditions” as defined in the State Recycled Water Policy, and the Policy requires studies to address these unique conditions. The alluvial valley impacted by this project has unique characteristics. Like Alexander and Dry Creek Valley, the Middle Reach is formed by shallow basins of bedrock filled with highly porous sand and gravel. Groundwater and wells are shallow. Aquifers under the valleys contain about one million acre feet of high quality groundwater, more than double the capacity of Lake Sonoma.

Surface water/groundwater interactions are extensive and rapid; with the groundwater gradient flowing from the north and west toward the Russian River, which lies just to the east of the project area. The Middle Reach stretch of river delivers water to Windsor and the Sonoma County Water Agency systems.

In response to the County’s proposed NSCARP wastewater irrigation project, the CWC commissioned studies by two highly qualified professionals, Dr. Nick Johnson and Gus Yates. Water Balance studies by these technical experts conclude that:

- Under existing conditions when groundwater is pumped for irrigation, most of it is lost to evaporation and transpiration and it is regenerated primarily with summer percolation from surface water.
- When the pumped groundwater is replaced by delivered wastewater, there are three extremely important results.
 - First, contaminants in the wastewater not absorbed by the plants will remain in the soils and will be percolated to groundwater by winter rains. This conclusion is strongly supported by studies in the Santa Rosa Discharge Compliance Project EIR, which concluded that the highly porous sand and gravel in these valleys does not effectively attenuate metals, nutrients or organic compounds. (Kennedy – Jenks Technical Memoranda, 2007)
 - Second, the delivery of wastewater would represent a significant addition to water supply. Surface water would no longer percolate to groundwater in the summer to dilute contaminants and they would accumulate over time, in some cases to above drinking water standards.

- Third, the addition of a new water supply would actually cause contaminated groundwater to now percolate into the streams and River in the summer. This would clearly result in surface water contamination.

The potential for groundwater contamination was raised by multiple comments, and the RWQCB has specifically voiced concern about the potential for concentration, percolation and accumulation of contaminants in excess of drinking water standards. The RWQCB understands soil-water interactions as evidenced by the letter from John Short in response to the SCWA NSCARP DEIR (May 17, 2007) which states among other concerns:

“We are also concerned about the potential for concentrating pollutants in groundwater at levels above applicable public health criteria due to over irrigation and natural evaporation and transpiration processes.”

The 2005 EIR and 2009 Negative Declaration provide no site specific studies on the potential for such impacts; and in the absence of site specific studies, the public can only rely on the findings from other technical studies. The Kennedy-Jenks Technical Memoranda provide such data for the Middle Reach, but were missing from the impact analysis.

The City of Santa Rosa hired Kennedy/Jenks as Expert Consultants to determine the level of treatment or attenuation of nutrients and certain California Toxic Rule (CTR) metals in wastewater through application through the soil alluvial soil layer and groundwater aquifer south of Healdsburg.

Kennedy/Jenks used a model to study the complex groundwater-surface water interactions and to simulate solute sub-surface transport in the Russian River alluvial valley soils and groundwater. Then, they conducted field studies, showing that the aquifer is shallow and that the gravelly soils have high transmission rates. The studies calculated the concentrations of wastewater, nutrients and metals flowing through the groundwater and ultimately into the Russian River.

The Kennedy/Jenks study, conducted with Santa Rosa’s wastewater, focused on California Toxic Rule (CTR) constituents, and the lateral distance required for soil and groundwater treatment to reduce the contaminants to a level that meets surface water regulations. **The study found that CTR**

constituents (lead, copper, etc) require 150-300 feet of subsurface travel, and even then treatment goals could not be assured. And, nutrients (such as ammonia and phosphorus) require 150 feet or 28 days of subsurface travel for attenuation.

Source: Kennedy/Jenks Consultants: January 2007 Technical Memorandum I-9 Groundwater Modeling and I-5 “Santa Rosa IRWP – Discharge Compliance Project: Indirect Discharge Water Quality Constituent Attenuation Summary”

Our valley soils and subsurface groundwater do not cleanse California Toxic Rule regulated constituents (such as lead, copper, nutrients) to the extent needed to meet surface water standards. (Note that in January 2007, the City of Santa Rosa removed indirect discharge from further consideration - IRWP Program.)

This data emphasizes the fact that the proposed 50 foot perimeter around the private wells in the discharge area is insufficient. The mitigation measures need to address the true lateral distance required for soil and groundwater treatment of metals and chemical constituents.

The findings from these studies are not adequately addressed in Healdsburg’s environmental analyses for this project, and this Negative Declaration may not be able to stand without support of a Water Balance and fate and transport studies.

Agronomic Rate Analysis:

The project benefit statement relies on irrigating existing vineyards at agronomic rates – thereby, in theory, reducing the amount of wastewater percolating into the groundwater.

“The project will have a beneficial impact on water supply since the use of treated wastewater for irrigating existing vineyards, applied at agronomic rates, will result in significantly less water discharged to the Basalt Pond, which in turn will reduce recycled water percolating to the aquifer. In addition, the substitution of recycled water for irrigation will reduce the need to pump water from the groundwater adjacent to the Russian River.” (Negative Declaration Page 39)

Healdsburg proposes to deliver wastewater at a rate of 800,000 gallons/day from May 15 to September 30, for an annual total of 35-50 million gallons (from the total 140 million gallons produced at the plant) of wastewater disposed in the drinking water aquifer.

The Negative Declaration (page 31) states that groundwater monitoring data indicate that groundwater level in the new project area is below 12 feet, and in summer is below 21 feet. This assertion is based on “Annual Reports, Syar Industries, Groundwater Monitoring, Phase II and Phase IV Ponds, Grace Ranch Terrace, Brunsing Associates 1997-2008” – yet this data set was not included in the 2005 EIR or the 2009 Negative Declaration – depriving the public of the opportunity to review this critical data.

No analysis of groundwater levels in the original project area or in the added areas to the west of Pits V and VI – this is an area more influenced by gravel pit groundwater mounding and where groundwater levels are rising to the detriment of high quality grape production.

The 2005 EIR and the 2009 Negative Declaration do not provide any data on Syar Vineyards historic or projected irrigation rates, or an analysis of groundwater transport. Experience of other grape growers in the area is that vines in the alluvial valley do not require much irrigation.

- *What is the agronomic rate for vineyards in the alluvial valleys?*
- *Are there any records of Syar's irrigation rates? Any data available from Syar Vineyard's Moisture Stress PMS System?*
- *What type of rootstock is planted in the alluvial valley vineyards?*

Neighboring grape growers find water usage is lower than these amounts proposed to be used by Syar. The proposed rates of usage of recycled water for irrigation on Syar Industries 214 acres of vineyard is somewhat unclear and has no data on historic or proposed usage rates. The report states that Syar's vineyards will use 35 Million to 50 Million gallons per year for irrigation. The initial study suggests that it will all be applied by drip irrigation and all between within the period of May15th and September 30 of each year.

If 35 Million to 50 Million gallons of water was used for the 19 weeks from May 15 to September 30 that would be 163,551 to 233,645 gallons, or 6 to 8.6 inches rainfall equivalent, in this period. To calculate the expected usage, Dennis Hill observed that most of Syar's vineyards are spaces at 8 ft. x 7 ft., with some newer plantings at 8 ft. x 6 ft. That is an average of

approximately 800 vines per acre. Thus, the proposed irrigation rate would be 10.8 to 15.4 gallons per vine per week.

Syar's Usage 35 to 50 Million gallons per year			
Assuming: average 800 vines/acre			
	214 acres	171200 vines	
35 M gallons/ year	March - October = 33 WEEKS	6.2	GALLONS/VINE/WEEK
35 M gallons/ year	May 15 - September = 19 WEEKS	10.8	GALLONS/VINE/WEEK
50 M gallons/ year	March - October = 33 WEEKS	8.9	GALLONS/VINE/WEEK
50 M gallons/ year	May 15 - September = 19 WEEKS	15.4	GALLONS/VINE/WEEK

Irrigation water usage rates for growing premium quality wine grapes in this area is considerably less. Reviewing records for the last 3 decades, Dennis Hill summarized light, medium and heavy irrigation regimens corresponding to wet, medium and dry spring rainfalls, as shown in the table below.

Findings: Light irrigation regimens utilize 24 gallons per vine between May 15 and Sept. 30. Medium irrigation regimens utilize 88 gallons per vine per this time period, and heavy irrigation regimens utilize 202 gallons per vine per this time period. These scenarios use, respectively 20,000, 70,000 and 162,000 gallons per acre per this time period, or 0.7, 2.6 and 6.0 inches of rainfall equivalent. On Syar's 214 acres of vineyards that would use 4.1, 15.1 and 34.6 million gallons per this period respectively.

These amounts are only 25% to 60% of the initial study's forecast of 35 to 50 million gallons. Thus, the application of wastewater appears to be above agronomic rates, and may result in wastewater percolating to groundwater.

Typical Water usage on vineyards in the vicinity of Syar's Vineyards with calculations for 214 acres of application						
Irrigation of 800 vines/acre	gallons/vine/week	gallons/vine	gallons/acre/year	M.gallons/214 acres/year	inches of rainfall	averaged gal/week/vine
Light Irrigation						
Mar. 15 - May 15 (9 weeks)	0	0				
May 15 - Aug 15 (13 weeks)	0	0				
Aug 15 - Sept 30 (6 weeks)	4	24				
after Sept 30 (5 weeks)		8				
Total Usage Mar-Oct. (33 weeks)		32	25600			
Total Usage May 15 - Sept 30 (22 weeks)		24	19200	4.11	0.71	1.3
Medium Irrigation						
Mar. 15 - May 15		8				
May 15 - Aug 15	4	48				
Aug 15 - Sept 30	6	36				
after Sept 30		20				
Total Usage Mar-Oct.		112	89600			
Total Usage May 15 - Sept 30		84	67200	14.38	2.47	4.7
Heavy Irrigation						
Mar. 15 - May 15	4	32				
May 15 - Aug 15	10	120				
Aug 15 - Sept 30	12	72				
after Sept 30		32				
Total Usage Mar-Oct.		256	204800			
Total Usage May 15 - Sept 30		192	153600	32.87	5.66	10.7

It is possible that Syar's Vineyards have considerably less top soil than neighboring vineyards that could require considerably more irrigation requirements. This needs to be assessed – and leads to the following unanswered questions:

- *Have the historical usage and forecasted usage of Syar's Vineyards irrigation water been assessed?*
- *Have soil profiles (available from well drilling reports) been reviewed to assess the irrigation requirements?*

GROUND WATER CONTAMINATION:

Recycled waste water is high in pollutants and may enter the drinking water aquifer and contaminate water supply. One of the biggest threats to the aquifer from recycled waste water is excess nitrogen. High nitrogen is also a threat the wine grape quality. It is common knowledge and supported by a vast amount of research that excessive nitrogen, as well as excessive irrigation, is detrimental to wine quality.

The Initial Study and Mitigated Negative Declaration discusses nitrogen loading in the soils and nitrogen use by the grapevines with reference to the Napa Sanitation District's study in Napa Valley. It concludes that most excess nitrogen will be utilized by the vines. Both the Napa study and the initial study erroneously assume that all the nitrogen in the water will be absorbed and utilized by the vines. This is not necessarily the case.

The absorption depends on the soil moisture at the time, the vine metabolism, rootstock, the soil type and the ambient temperature and humidity. These conditions were only indirectly considered in the Napa and the Healdsburg-Syar studies.

The Napa Sanitation District study also says:

"By comparison, the amount of nitrogen potentially delivered to vineyards annually using NSD recycled water is not exceptionally high (14 - 21 pounds per acre), but may be enough to be of concern to some growers and winemakers, especially on sites that are already fairly vigorous. Many vineyards in Carneros and the MST region are currently fertilized with nitrogen at rates approaching or exceeding these levels, but others are not, or they may be fertilized with nitrogen

every year. There are some vineyards that rarely (if ever) receive nitrogen additions. ...growers should consider the use of cover crops to help mitigate the potential effects of excess vigor. ... Another mitigation measure for growers concerned about nitrogen in the NSD recycled water is to have a secondary source of water available for irrigation. This water could be blended with the NSD water, or used alternatively, in order to control the amount of nitrogen applied to the vineyard in the course of the season. "

Excess nitrogen is not the only threat to contamination of the aquifer. Other nutrients, metals, and known and unknown contaminants will percolate into the soils and readily to the groundwater. The soils in the vicinity of Syar's vineyards are very porous, sandy and gravelly and have little capability of reacting with and attenuating compounds in the recycled treated waste water.

Fortunately, Healdsburg's treated waste water is somewhat lower in nitrogen contaminants than other recycled water in the county. [Nitrogen measured as nitrates: Napa Sanitation district 12.1 mg/L (2006) average; Santa Rosa Treatment Plant 7.3 mg/L (2005) mean; Healdsburg 4.8 mg/L (2009) mean.] It may very well be able to be used on these soils for limited irrigation, but that needs to be studied with respect to the particular soils, the geology and hydrology of this area, and the composition of the waste water, not just speculated, or based on studies in other areas or other soil types.

Wastewater Quality Data and Analysis:

The Negative Declaration provided wastewater quality analyses in Appendices A and analyses of certain California Toxics Rule constituents in Appendix B. The required data includes all routine sampling from May 1, 2008 to show variations throughout the seasons, as well as data showing the total levels of TOC (total organic carbon).

The CWC appreciates the use of the model that compares pollutant concentrations in discharge to physical and chemical properties of the receiving water to determine compliance, and notes that the Basin Plan standard for groundwater is "non-degradation". The Negative Declaration used the following tests for the 126 priority pollutants:

"reasonable potential analysis (RPA) which takes into account several factors that affect toxicity, including dilution, variability of the effluent pollutant concentration, the proportion of dissolved to total

metals, the background concentration of the pollutant in the receiving water, and other receiving water characteristics such as pH and temperature.” (Page 26)

On Page 28, it is revealed that Atrazine (Herbicide) is a target compound detected at highest concentration in drinking water sources.

- *What herbicides and pesticides are used on the 300 acres proposed for wastewater irrigation?*
- *What are the results of Healdsburg studies of the interaction of wastewater with the herbicides and pesticides used in Syar Vineyards practices?*
- *Does the Healdsburg-Syar Recycled Water Use Agreement prohibit the application of gravel washing materials as a soil amendment in or around the wastewater discharge area?*

The Water Quality Control Board and the Statewide Anti-Degradation Policy controls impacts to groundwater – it states:

“...lesser quality water cannot be discharged into higher quality water absent compliance with best practicable treatment or control of the discharge in order to avoid pollution and maintain the highest water quality.”

And, in their March 8, 2005 letter, the Water Quality Control Board voiced their concerns about the impact on nearby drinking and agricultural wells from the discharge of wastewater into the high quality groundwater aquifer.

The CWC has attached the letter written by Dr. Richard Kagel – a technical expert with over 30 years experience in the areas of groundwater and wastewater analysis and water quality, especially as it pertains to hazardous chemicals. Dr. Kagel addresses 3 key issues – unstudied in NSCARP and equally unstudied in Healdsburg’s environmental documents – thus his findings and cautionary warnings are applicable to review of this Negative Declaration for the Syar Agricultural Reuse Project:

1. Likelihood that groundwater quality will be degraded by chemical contamination – thus, project should be regulated as a Waste Discharge or Groundwater Recharge Project;
2. Key regulated chemicals of concern have either been completely un-addressed or inadequately considered;
3. Unregulated chemicals of concern and other wastewater quality parameters have been completely un-addressed or inadequately

considered.

Dr. Kagel issues the warning that limited analyses or mitigations based on the claim that a chemical constituent lacks a regulation or relying on regulations that are known to be clearly out of date can have long-term, irreparable and very expensive consequences for project proponents. He cites the example that the chemicals that so tragically contaminated Love Canal, New York and Times Beach, Missouri – making these towns still uninhabitable 20 years later – were disposed of completely in line with the regulations at the time.

At a time when other communities are spending millions cleaning up their prior mistakes, Healdsburg can choose to protect, not degrade the drinking water aquifer.

Impacts on Domestic Wells:

Syar Vineyards proposes a single irrigation piping system – thus wastewater and pumped groundwater (for frost protection and other needs) will be piped through the same facilities. Not all the domestic wells in the entire 300 acre project area are shown on the map (Page 5), and well recharge areas are generally three times greater than the minimum 50 foot distance required by Title 22.

Section VIII Hydrology and Water (Pages 20/21) states that the Department of Health requires an Engineering Report – this study was not provided for public review. The Engineering Report should show:

“restrictions on areas of use, including any restrictions to keep irrigated areas **more than 50 feet** from any domestic water well (unless conditions specified under **Section 60310 of Chapter 3 of Title 22 are met to protect the well from contamination** and with the well owner’s consent).”

The CWC has the following questions:

- *What are the mitigations required to prevent wastewater intrusion in domestic and irrigation wells?*
- *Will Syar Vineyards remove the drip irrigation system from vine within the well recharge areas?*
- *Given the alluvial soils do not attenuate contaminants in the wastewater, how are wells to be protected?*

- *What is the City's response to the Kennedy – Jenks Technical Memo findings?*

Location of Wastewater Transmission Line:

The project description has been changed to move the wastewater transmission line from the east side of the pits – traversing Syar property and the toe of Pit VI – to the western boundary, along neighboring property lines and close to the natural drainage swale. The concerns with the new alignment are:

- Section VI – Geology and Soils (pages 17/18) did not address mitigation measures or potential impacts to neighboring properties and wells from a break in the underground transmission line. What systems will be employed to isolate a break in the transmission line or loss of pressure in Syar Vineyards distribution system, and immediately stop the flow from the plant?
- Syar Industries, as part of its 2005 Pit VI Use Permit, is required to install a V-ditch in the exact same alignment as the proposed transmission line. Is there sufficient room for the required flood protection V-ditch, the pipeline and the access road?
- The alignment of the V-ditch south of Pit VI is still under review by the Regional Water Quality Control Board staff - the NCRWQCB staff recommended an alternative alignment because Syar's proposed V-ditch drainage plan – which aligns with Healdsburg's proposed wastewater pipeline – terminates in an intermittent creek.

Monitoring Wells:

The CWC respectfully requests that the City of Healdsburg include a groundwater monitoring program designed to ensure that the groundwater resource and domestic wells are not being impacted by the agricultural reuse project. The CWC supports the Riverkeeper's requests for a monitoring program.

In Summary:

The Healdsburg 2009 Negative Declaration and 2005 EIR have serious deficiencies in evaluation of wastewater agricultural irrigation impacts on groundwater quality, drinking water quality and public health.

Substantial evidence is in the records for the Santa Rosa Direct Discharge EIR and the North Sonoma County Agricultural Reuse project Draft EIR and

uncertified Final EIR/EIS that there is a very real potential for significant groundwater contamination and well impacts from agricultural reuse projects in our alluvial valleys.

The 2009 Negative Declaration relies on the presumption that the amount and quality of Healdsburg's wastewater differs from Santa Rosa/SCWA-proposed wastewater disposal projects; thus there are "no significant impacts." **In the absence of site specific analyses addressing the special considerations of the irrigation site there is little data to substantiate the City's claim that the Syar Agricultural Re-Use project will not contaminate groundwater or private wells.**

We respectfully request that Healdsburg conduct the required additional analyses and a Water Balance study to show that impacts are less than significant. The Negative Declaration, as it now stands, is inadequate and does not provide the information necessary for decision makers to judge the environmental and health impacts from the proposed project. Also, missing data and analyses do not provide the public with an opportunity to review the project in its entirety.

The City of Healdsburg should conduct the required studies, and complete an Environmental Impact Report for its agricultural and urban re-use projects, provide at least 60 days for public analysis of all the studies and mitigation measures, then hold a public hearing.

Respectfully Submitted,

Dr. Fred Corson
Chairman, Clean Water Coalition of Northern Sonoma County

Attachments:

Dr. Richard A. Kagel's letter in response to the NSCARP FEIR/EIS dated May 3, 2009

Summary of Qualifications of Experts Commenting on Behalf of the Clean Water Coalition (Comment letters and studies attached to this letter and the letter submitted by the Riverkeeper.)



City of Santa Rosa

NCRWQCB

April 22, 2010

APR 22 2010

Cathleen Goodwin
Water Resources Control Engineer
California RWQCB
5550 Skylane Blvd., Ste. A
Santa Rosa, CA 95403

<input type="checkbox"/> EO	<input type="checkbox"/> WMgmt	<input type="checkbox"/> Admin
<input type="checkbox"/> AEO	<input type="checkbox"/> Timber	<input type="checkbox"/> Legal
<input type="checkbox"/> Reg/NPS	<input type="checkbox"/> Cleanups	<input type="checkbox"/> Date

COMMENTS ON DRAFT ORDER NO. R1-2010-0034

Dear Ms Goodwin:

The City of Santa Rosa appreciates the opportunity to submit comments on the Draft Order No. R1-2010-0034 Waste Discharge Requirements and Master Reclamation Permit for the City of Healdsburg Wastewater Treatment, Reclamation and Disposal Facility Sonoma County (Draft Order). The City operates the largest water recycling system in the Region and recycles over 95 percent of our water, an unprecedented achievement in this nation for a system of our size. The City's comments on the Draft Order address water recycling and discharge issues. We are concerned that particular portions of the Draft Order are inconsistent with the State Water Resources Control Board's Recycled Water Policy and discourage recycling. We are equally concerned that particular portions of the permit misapply Basin Plan objectives to regulation of discharge. Our comments on the Draft Order (provided below) address these issues.

V. RECEIVING WATER LIMITATIONS, A. SURFACE WATER LIMITATIONS

Surface Water Limitations No. 3 and 4 in Section V.A. of the Draft Permit are based on the water quality objectives in the Basin Plan for specific conductance ("SC") and total dissolved solids ("TDS") for the "mainstem river upstream of its confluence with Laguna de Santa Rosa." Basalt Pond is not part of the mainstem river nor is it a tributary to the Russian River. Therefore, the water quality objectives in the Basin Plan for SC and TDS do not apply to Basalt Pond, and Surface Water Limitations No. 3 and 4 should be deleted.

ATTACHMENT F – FACT SHEET

Section IV.G.4. Water Reclamation Requirements and Provision on page F-54 states that the order is consistent with State Water Board Order No. 2009-0006-WQ, General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water,

2 | adopted by the State Water Board on July 7, 2009 (General Landscape Permit). While an adopted order may indeed be consistent with the General Landscape Permit (although our comments below and other changes would be needed for it to be consistent with the General Landscape Permit), consistency should be considered incidental. Like all general permits, the General Landscape Permit was developed to protect beneficial uses without advance knowledge of site-specific conditions. As a consequence, the General Landscape Permit contains provisions that would be inappropriate in a master reclamation permit issued in response to a particular report of waste discharge (ROWD) for particular recycled water producer/distributor like the City of Healdsburg. We suggest that reference to the General Landscape Permit be deleted for accuracy and to avoid the implication that consistency is necessary.

ATTACHMENT G WATER RECLAMATION REQUIREMENTS AND PROVISIONS

A. Water Reclamation Findings

3 | Paragraph 7 requires that “[a]ll runoff incidents, including incidental runoff, shall be summarized in the Discharger’s quarterly recycled water monitoring report.” This is an impossible standard to meet and unnecessary. We suggest that this requirement be modified to require reporting of discharge events exceeding the 50,000 gallon limit as required in Section 13529.2. SWRCB is evaluating the frequency and magnitude of runoff events and this information can be used in the future by RWQCB to determine appropriate reporting requirements.

B. Water Reclamation Requirements

4 | **Paragraph 11.A.** This paragraph requires a 100-foot setback of new recycling sites from surface waters. The Draft Order does not provide any rationale or justification for this restriction. Such a restriction would make irrigation of golf courses and many agricultural lands infeasible because alternative irrigation supply would be needed for areas closer than 100 feet. Properly designed and managed irrigation systems account for site-specific conditions and are operated to prevent impacts on surface water. The order should require design of appropriate facilities to protect surface water but should not presume to know what set-back distance is needed at all sites. In fact, the concept of a “bright-line” setback distance was discussed and rejected by the water and environmental stakeholders who negotiated the draft Recycled Water Policy. All stakeholders acknowledged that proper design and operation practices could protect surface water and that a “once-size-fits-all” setback distance was inappropriately restrictive.

5 | **Paragraph 24.** Please modify the paragraph 24 to acknowledge the Department of Public Health’s authority under Title 22 Section 60310(g) to approve alternate signage.

C. Water Reclamation Provisions

6
Paragraph 2. This paragraph mis-applies Title 22 sections related to engineering reports by requiring that engineering reports be submitted *for approval* by RWQCB and DPH. Title 22 Section 60313.d requires engineering report approval as a condition of recycled water delivery to dual plumbed sites as defined in Title 22 Section 60301.250. The City of Healdsburg has not proposed to serve such sites. Therefore, engineering report approval is not required. Paragraph 2 should be revised to clarify that engineering report approval is needed consistent with Title 22 Section 60313.d.

7
Paragraph 3. Title 22 Section 60314.a requires cross-connection testing only at dual plumbed use sites. Paragraph 3 should be modified so that it is consistent with Title 22 in this regard.

8
Paragraph 5. The City of Healdsburg has submitted an ROWD for its reclamation program and paragraph 5 requires submittal of additional irrigation site-specific ROWDs, which is unnecessary, burdensome and inconsistent with the intent of master reclamation permits. Furthermore, the Draft Order subjects such a submittal to review and approval by staff following a 21-day public review period. Title 22 regulations have had extensive public review as have regulations establishing master reclamation permits (which created the regulatory approach wherein Use Areas are added with submitted information as specified in Appendix E Monitoring and Reporting Program Section D.2.A.i). RWQCB staff have the authority to, and should review information submitted for each Use Area to verify compliance *with existing regulations* but subjecting these submittals to further public review is unnecessary. RWQCB staff does not need public input to determine compliance of the proposed irrigation with Title 22. Review for any other purpose is contrary to Title 22 regulations, counter to SWRCB's Recycled Water Policy and therefore unjustifiable. The reporting requirements specified in Appendix E Monitoring and Reporting Program Section D.2.A.i are sufficient and consistent with the intent of master reclamation permits. In fact the addition of site-specific public review periods flies in the face of the legislative authority for Master Reclamation Permits (Water Code Section 13523.1) which clearly anticipates a single public review period. Ongoing operations should be consistent with the recycled water purveyors adopted rules and regulations.

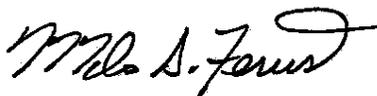
Section 7 of the SWRCB's Recycled Water Policy established that an operations and management plan should be developed. However, the provisions in paragraph 5.h impose additional burdens that substantially exceed the requirements of Section 7 of the SWRCB's Recycled Water Policy and no justification is provided as follows:

April 22, 2010

Page 4

- 9
- **Emergency Backup.** Paragraph 5.h.i specifies that BMPs employed to maintain compliance at recycled water Use Areas include “emergency backup systems.” Neither the definition of, nor the need for such systems is provided in the Draft Order. Neither Section 7 of the SWRCB’s Recycled Water Policy nor the Landscape General Permit make any mention of the need for emergency backup systems at recycled water Use Areas. Title 22 Section 60341 describes emergency storage and disposal requirements for inadequately treated recycled water. The Draft Order should be modified to refer to Section 60341 or the requirement for emergency backup systems should be removed completely.
- 10
- **Nutrient Management.** The City of Santa Rosa supports the proposed requirement that the City of Healdsburg inform recycled water users of the nutrient content of its recycled water and provide information on how landscape and agricultural managers calculate agronomic nutrient demand, but any requirement that the City of Healdsburg control nutrient applications inappropriately requires the recycled water purveyor to intrude into land management decisions where it has no such authority nor, necessarily, expertise. Specifically, the first sentence in paragraph 5.h.iii.d should be deleted.
- 11
- In paragraph 5.h.iii.d “and/or” should be changed to “and” to be consistent with paragraph 7.b.1 of the SWRCB’s Recycled Water Policy. The language in paragraph 7.b1 is the result of considerable stakeholder collaboration and public process, and deviation from it, especially with no justification, is inappropriate.

Thank you for your consideration. Should you have any further questions or comments, please contact Mr. Lynn M. Small, Deputy Director Environmental Services, of my staff at telephone number (707) 543-3350.



Miles A. Ferris
Director of Utilities



Clean Water Coalition

C E N T R A L
S O N O M A C O U N T Y

April 23, 2010

North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Comments Concerning Order No. R1-2010-0034, Waste discharge Requirements and Master Reclamation Permit for the City of Healdsburg

The following comments concern Order No. R1-2010-0034 and are made on behalf of the Clean Water Coalition of Northern Sonoma County (CWC) which was formed September 6, 2007. The Coalition is an organization comprised of local property owner groups and concerned individuals within the agricultural valleys in Northern Sonoma County. The Coalition represents citizens who live in the Alexander Valley, Dry Creek watershed or Middle Reach of the Russian River, and who depend on high-quality groundwater supplies for drinking, domestic uses, agriculture and wineries.

The CWC and/or our member organizations including the Soda Rock Neighborhood Association, the Russian Riverkeeper, the Dry Creek Valley Association, and the Westside Association to Save Agriculture have extensively studied and commented on waste discharge and reclamation projects in Northern Sonoma County including the City of Healdsburg Wastewater Treatment Plant Upgrade Project, the Santa Rosa Discharge Compliance Project, the Sonoma County Water Agency Northern Sonoma County Agricultural Reuse Project, and the Syar Property Recycled Wastewater Agricultural Irrigation Project. During these efforts we have commissioned four studies of the geology, hydrology, water balances, and potential for groundwater contamination from reclamation projects in these alluvial valleys (1, 2, 3, and 4). These studies have concluded that the potential for concentration of contaminants in these high quality groundwater aquifers from concentration in the soil and percolation with rainwater is high. We have found CEQA documents on such reclamation projects to be deficient in identifying and mitigating such negative effects.

Our comments on Order No R1-2010-0034 focus on this potential for groundwater contamination from reclamation projects proposed in the Middle Reach of the Russian River. We believe protection from such contamination is especially critical since this large, high quality groundwater aquifer is a source for municipal wells for Healdsburg, Windsor, and the Sonoma County Water Agency as well as many domestic, agricultural irrigation, and winery wells.

We are strongly supportive of the Water Reclamation Requirements and Provisions contained in Attachment G of this order. We believe that they offer the best protection of groundwater from contamination during reclamation of any permit we have evaluated to date. We especially applaud the requirement for submission and approval of a Report of Waste Discharge (ROWD) as defined in

Attachment G, Section C, Water Reclamation Provisions, paragraph 5 prior to approval of any specific reclamation project. The ROWD process includes a 21 day public notice period, requirement that the discharger attempt to resolve any issues raised by public comment, and final authority to the Executive Officer to schedule an action item to be considered at a board meeting. We believe that it is critical that these provisions remain in the final order. They are essential to protecting critical groundwater resources. And, we believe that these provisions should establish a precedent for all future Master Reclamation Permits issued in the North Coast Region.

With our strong support for this order and especially for the Water Reclamation Requirements and Provisions stated, we have three recommendations for improvements which we believe are required to make it stronger: it must be clear and unambiguous that all reclamation projects, regardless of status of current CEQA documents, must meet all of the requirements of Attachment G in order to be approved; it must be clear and unambiguous that groundwater monitoring may be required depending upon the specific findings in the ROWD; and the requirements for specific studies and groundwater monitoring for a project having unique site specific conditions should be strengthened.

3 **First**, concerning clarity of the requirement for all reclamation projects to meet the requirements of Attachment G, the two sections which discuss CEQA (NPDES, pages 8 and 9 and Attachment F, pages F-15 to 19) appear to infer that reclamation projects with certified CEQA documents may already be approved and that only additional projects be may be subject to the provisions of attachment G. These sections state that the board “considered the effects of the Discharger’s reclamation plan as identified in the certified Final EIR” and “finds that all potentially significant environmental effects to water quality will be reduced to less-than-significant levels with the incorporation of mitigation measures described in section III B of the Fact Sheet”. However, the mitigation measures in the CEQA documents and in Section III B contain essentially zero protections from contamination of groundwater. Then, the two sections state in a final paragraph that for any additions to the reclamation system, the Discharger will be lead agency for CEQA and that the Discharger must ensure that all reclamation activities comply with the provisions of Attachment G. This language leaves it unclear whether the intent is for all reclamation activities, regardless of status of CEQA documents, to meet the provisions of Attachment G. This ambiguity could be eliminated if the final sentence, in a separate paragraph, stated that “All reclamation activities, regardless of status of current CEQA documents, must meet the provisions of Attachment G.

NPDES, page 19, footnote 8 reads “Authorized recycled water use sites means sites which have been evaluated for CEQA compliance and addressed in the Discharger’s Title 22 Recycled Water Engineering Report and approved by the State Department of Public Health and Regional Water Board. In addition, new recycled water use sites must submit a Report of Waste Discharge for review and approval as required by section C.5 of Attachment G to this Order”. This language again infers that reclamation projects evaluated for CEQA compliance and having approved Engineering Reports are approved. Current CEQA documents are clearly inadequate in their address to groundwater contamination and we don’t believe that there are any currently approved Title 22 Recycled Water Engineering Reports. This inference is in direct conflict with Attachment G-1, page G-14. Attachment G-1 clearly states that “there are no approved recycled water use sites for this Discharger at this time”.

Attachment G, pages G-7 and 8, paragraph 5 states that “Recycled water shall only be used on areas identified in the 2005 EIR and any future certified environmental document and all mitigation

3

measures identified in the 2005 EIR and any future certified environmental document for the protection of water quality shall be implemented” and that “The Discharger shall submit for Regional Water Board Executive Officer approval, a Report of Waste Discharge (ROWD) in anticipation of reclaiming water at a new location(s). This language further adds to the ambiguity discussed above. One could infer that reclamation projects described in any certified documents are approved and that ROWD’s are required only for new locations.

It must be clear that certified CEQA documents and Approved Engineering Reports are required for any reclamation projects. It must be clear that all mitigations in CEQA documents must be implemented. It must be clear that these are necessary but not sufficient for project approval within the Master Reclamation Permit. It must be clear that meeting all the requirements in Attachment G is a final necessary requirement for project approval.

Discussions with John Short and Cathy Goodwin have made it clear that the intent of the Order is that all reclamation projects, irregardless of status of current CEQA documents, must meet the provisions of Attachment G. This must be clear and unambiguous. It is essential to the ability of the Order to protect groundwater. The language in all sections referring to CEQA documents and Attachment G must be cleaned up.

4

Second, concerning groundwater monitoring, Attachment E, page E-14, states “There are no groundwater monitoring requirements in this monitoring and reporting program”. This is not complete. There should be a statement that: “Groundwater Monitoring will be required if a reclamation project meets the unique, site-specific conditions described in Attachment G, Section C, 5, h, iii, e”.

The language in Attachment F, page F-62, is improved. It states that “Groundwater monitoring may be established in the future if necessary to assess impacts of effluent disposal or reclamation”. It would be of value if these two sections said the same thing about the potential for future groundwater monitoring and reporting. It must be clear and unambiguous that the Board has the authority to mandate groundwater monitoring and reporting if it deems it necessary after assessment of the ROWD.

5

Third, concerning the additional requirements for reclamation projects with site specific conditions, Attachment G, pages G-10 and 11, paragraph e, states “Where unique, site-specific conditions exist, such as where recycled water is proposed to be used for irrigation over high transmissivity soils and/or over a shallow (5 feet or less) high quality groundwater aquifer, additional requirements, including a special study to determine the appropriateness of recycled water use and develop appropriate best management practices and operations plans to ensure that recycled water is applied in a manner that is protective of groundwater. The special study may include groundwater monitoring, development of a detailed water balance and/or salt and nutrient management plan”. This is a critical requirement for reclamation projects over alluvial aquifers such as the Russian River Middle Reach. Multiple studies (1, 2, 3, 4, 5, 6, 7) have shown that soils in the Middle Reach have high transmissivity, that water percolation rates are very high, and that these soils are very poor at attenuating many contaminants including nutrients, TDS, organics, and metals. Ability of the Discharger to control user farming practices is unclear.

5

We believe this provision should always include both a study and groundwater monitoring to ensure that the results of the theoretical study are correct. The last sentence should read "The special study must include development of a detailed water balance and/or salt and nutrient management plan and groundwater monitoring". It would also be of value to state in the document that reclamation on the Syar property would meet the definition of having unique, site specific conditions.

2

Finally, we reiterate our strong support for the Water Reclamation Requirements and Provisions contained in this order. We believe they must be retained in the final order and in fact strengthened by the clarifications and improvements discussed above. Thank you for the obvious, high quality efforts to create a strong document. Thank you for the opportunity to comment. We look forward to the opportunity to participate in public comment on specific reclamation project Reports of Waste Discharge as they are considered for approval.

Respectfully Submitted,

Fred Corson
Chairman, Clean Water Coalition of Northern Sonoma County

References

1. Johnson, N.M. Potential Water Quality Impacts of NSCARP in the Alexander Valley funded by the SRNA and AVA, May 2007.
2. Johnson, N.M. Potential Water supply Impacts to Dry Creek Valley from NSCARP funded by the DCVA, December 2008.
3. Yates, G. NSCARP: Revised Versions of Nick Johnson's Water and Salt Balance Tables for Dry Creek Basin, funded by the Coalition, March 2009.
4. Yates, G. NSCARP FEIR, Technical Review of Hydrology and Water Quality Issues, funded by the CWC, April 2009.
5. Santa Rosa Discharge Compliance Project FEIR, Volume 6, TM I-3, March 2008.
6. Santa Rosa Discharge Compliance Project FEIR, Volume 6, TM I-5, March 2008.
7. Impacts of Proposed Healdsburg Wastewater Discharges on the Russian River, Prepared for the Town of Windsor, Timothy Durbin, March 18, 2005.

References 1 through 4 are in the NCRWQCB files delivered to John Short on CD with cover letter dated April 30, 2009.

Reference 7 is available in the NCRWQCB files as attachment to letter L-4 from the City of Windsor in the Healdsburg Wastewater Treatment Plant Upgrade Project FEIR

References 5 and 6 are available for download at

http://www.recycledwaterprogram.com/doclib/Documents/ut_irwp_DCP_DEIR_TM_I-3.pdf and
http://www.recycledwaterprogram.com/doclib/Documents/ut_irwp_DCP_DEIR_TM_I-5.pdf.



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April 23, 2010

N C R W Q C B

Ms. Cathleen Goodwin
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

APR 23 2010

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<input type="checkbox"/> AEO	<input type="checkbox"/> Timber	<input type="checkbox"/> Legal
<input checked="" type="checkbox"/> Reg/NPS <i>AG</i>	<input type="checkbox"/> Cleanups	<input type="checkbox"/> Other

Re: City of Healdsburg Wastewater Treatment Facilities
Draft Waste Discharge Requirements Order No. R1-2010-0034
Draft Cease and Desist Order No. R1-2010-0035
City of Healdsburg Comments

Dear Ms. Goodwin,

This letter presents the City of Healdsburg's comments on the Regional Water Quality Control Board, North Coast Region's ("Regional Board") Draft Waste Discharge Requirements and Master Reclamation Requirements ("Draft Permit") (NPDES Permit No. CA 0025135) for the City of Healdsburg ("City") dated March 22, 2010.

The City sincerely appreciates the level of effort by the Regional Board staff to coordinate and communicate with City staff during the preparation of the Draft Permit, and we understand that the City's unique circumstances present some serious challenges in drafting a permit. However, despite the fact that the City has invested \$32 million constructing probably the most advanced wastewater treatment plant ("WWTP") in the Regional Board's jurisdiction, the City is seriously concerned about its ability to comply with the permit as currently drafted. As in 2004, when the City's first NPDES permit was issued, one of the City's overriding concerns with the Draft Permit is the application of the "tributary statement" to assign to the Basalt Pond all the beneficial uses and accompanying discharge prohibitions applicable to the Russian River.

The City's other major concern is the onerous conditions that the Draft Permit imposes on the City's proposed recycled water system, a system in which the City has already invested more than \$1.2 million to design. The Draft Permit requires extensive documentation for nitrogen loading despite the fact the City's WWTP was constructed with biological nutrient removal, its effluent water quality data demonstrate that the WWTP is removing biological nutrients exactly as intended, and the Regional Board's finding that discharges to authorized reclamation sites are not expected to cause exceedances of water quality objectives. The Draft Permit also subjects each area that the City intends to irrigate to the vagaries of yet further rounds of public comment, approval by the Regional Board staff, new reports of waste discharge, and possibly more expensive studies. These requirements are inconsistent with the State Water Resources Control Board's ("State Board") policy on recycled water because they discourage,

rather than encourage, recycled water use. We are concerned with the potentially precedent-setting impacts that the Draft Permit may have on future recycled water permits, particularly for agricultural reuse, that have not been promulgated through the appropriate administrative and public review processes.

The City's concerns with these issues are summarized below.

A. The Water Quality Objectives in the Basin Plan for the Upstream Portion of the Russian River are Invalid

1. Water Quality Objectives in the Basin Plan were not Adopted in Accordance with Water Code Section 13241

The water quality objectives in the Basin Plan for the upstream portion of the Russian River were not derived in compliance with Water Code section 13241, and are therefore invalid. Water Code section 13241 requires that water quality objectives be reasonably necessary to protect beneficial uses and specifically recognizes "that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses." In establishing water quality objectives, Section 13241 requires the Regional Board to consider several factors, including past, present, and probable beneficial uses of water; economic considerations and the need to develop and use recycled water.

The Regional Board failed to comply with the 13241 when it established water quality objectives for total dissolved solids ("TDS") and specific conductance ("SC") for the upstream portion of the Russian River. There is no evidence in the Basin Plan that these water quality objectives are designed to protect certain beneficial uses. Moreover, there is substantial data demonstrating that naturally flowing Russian River water could not meet the water quality objective for SC and that potable water could not meet the water quality objective for TDS. Table 1 below summarizes data collected by the Sonoma County Water Agency from the Russian River above the Dry Creek confluence at Diggers Bend, the site of the USGS gauging station. This data was collected by automatic data loggers at intervals of approximately 15 minutes from 2005 to 2008. The data indicates that in 4 of 5 years, the TDS levels in the Russian River water did not meet the 50th percentile limit, and in some years only barely met the 90th percentile value.

TABLE 1

**Specific Conductance (micromhos)
Diggers Bend (Healdsburg) gage**

	<u>50th percentile</u>	<u>90th percentile</u>
2005	257	286
2006	253	286
2007	265	307
2008	249	285
2009	293	319
RW Limits	<250	<320

Table 2 below contains TDS data from the potable water system from 2008-2010. Although this data is not as extensive as the data for SC, it demonstrates that even potable water could not meet the water quality objectives in the Basin Plan for TDS for the upstream portion of the Russian River, yet this water meets the drinking water maximum contaminant limit of 500 mg/l and is considered suitable for other beneficial uses of the River.

TABLE 2

TDS, Healdsburg Russian River Wells, mg/L

	<u>2008</u>	<u>2009</u>	<u>2010</u>
Gauntlett Wells	160	200	110
	180	160	
	140		
	140		
Fitch Wells	170	190	
	160	210	
	200		
	170		

Based on this evidence, the Regional Board should revise the water quality objectives in the Basin Plan for SC and TDS to comply with Water Code section 13241 and to reflect levels reasonably necessary to protect beneficial uses.¹

¹ Both the Porter-Cologne Water Quality Control Act and the Clean Water Act require the Regional Board to review the Basin Plan once every three years and to modify the Basin Plan as appropriate. (Wat. Code § 13240; 33 U.S.C. § 1313(c)(1).) While the Regional Board conducted a triennial review in 2007, its review was inadequate. The Regional Board merely prioritized a list of issues to address in the future. This is not the type of review that is required by Section 303(c) of the Clean Water Act. That section requires that the Regional Board actually review water quality objectives to ensure that they are reasonably necessary to protect beneficial uses. There is no evidence to

B. The Draft Permit Does not Demonstrate that the Regional Board Adequately Considered Factors Under Water Code section 13241

The Draft Permit is invalid because it does not demonstrate that the Regional Board adequately considered the factors in Water Code Section 13241. When issuing permits solely under state law, and when issuing permits under the Clean Water Act that impose requirements more stringent than those required by the Clean Water Act, the Regional Board must consider all of the factors in Section 13241. (Wat. Code § 13263, subd. (a); *City of Burbank v. State Water Resources Control Board*, 25 Cal.4th 613, 627 (2005).) As mentioned above, section 13241 requires the Regional Board to consider, among other things, past, present and probable future beneficial uses of water, economic considerations and the need to develop and use recycled water.

The receiving water limitations in Section V.A.3 and V.A.4 of the Draft Permit, which are more stringent than required by the Clean Water Act because they are not reasonably necessary to protect beneficial uses in Basalt Pond, were not derived in compliance with section 13241. In particular, these limits do not appear to be tied to any beneficial uses. Moreover, the Regional Board failed to consider the City's costs of compliance with these limitations. While the TDS levels in Basalt Pond do not adversely affect beneficial uses, they are elevated above the proposed receiving water limits because the water in Basalt Pond consists primarily of the City's discharge. The only means by which the City could achieve compliance with the receiving water limitation in Section V.A.4 is by reverse osmosis (RO) treatment which is very expensive and would require the City to find a separate disposal point and secure permits for a separate brine waste stream. A Technical Memorandum prepared in 2004 (see Attachment 1) estimated the construction cost of RO treatment at \$20 to \$25 million, with annual operation and maintenance costs of nearly \$600,000. The Regional Board's failure to consider these substantial costs in establishing the receiving water limitations in Section V.A.3 and V.A.4 renders them invalid.²

C. The Draft Permit Improperly Assigns the Beneficial Uses Applicable to the Russian River to Basalt Pond

1. The Tributary Statement Does not Apply Because Basalt Pond is not a Tributary of the Russian River

The Draft Permit improperly applies the tributary statement in the Basin Plan to assign the beneficial uses applicable to the Russian River to Basalt Pond. While the City recognizes that the Ninth Circuit Court of

demonstrate that the Regional Board reviewed the water quality objectives for the upstream portion of the Russian River or determined that they are reasonably necessary to protect beneficial uses. Indeed, as discussed below, the water quality objectives for the upstream portion of the Russian River do not appear to be tied to any beneficial uses.

² In addition, the Regional Board's claimed exemption under CEQA pursuant to Water Code § 13389 does not apply to permit conditions that exceed the requirements under federal law. Therefore, the Regional Board was required to comply with CEQA prior to imposing these receiving water limitations and did not do so. Indeed, implementation of RO treatment that could be required by this permit could have foreseeable and significant impacts on the physical environment.

Appeals determined that Basalt Pond is a navigable water subject to regulation under the Clean Water Act due to its ecological connection and underground hydrological connection with the Russian River, the City respectfully submits that Basalt Pond is not a tributary for purposes of determining applicable beneficial uses and water quality objectives under the Basin Plan. The tributary statement is based on the assumption that tributaries and their downstream waters have a continuous surface connection. (*See In the Matter of the Review on Own Motion of Waste Discharge Requirements Order No. 5-01-044 for Vacaville's Easterly Wastewater Treatment Plant Issued by the California Regional Water Quality Control Board, Central Valley Region, Order WQO 2002-0015, p. 7 (Cal.St.Wat.Res.Bd. 2002)* (hereinafter referred to as *In re Vacaville.*) Here, Basalt Pond's only continuous connection with the Russian River is underground. Thus, it does not make sense to apply the tributary statement to Basalt Pond to assign to it the surface water beneficial uses applicable to the Russian River when its only continuous connection to the Russian River is via groundwater. Otherwise, all groundwater basins that contribute flow to surface waters would have the same beneficial use designations as the downgradient surface waters – a result the Water Boards cannot have intended when adopting the Basin Plan. The City notes that the application of the Basin Plan's tributary statement to determine beneficial uses is a different issue from the determination of the "waters of the United States," and was not addressed in *Northern California River Watch v. City of Healdsburg*, 496 F.3d 993 (9th Cir. 2007). Accordingly, the Regional Board should establish beneficial uses for Basalt Pond on a case-by-case basis.

2. Even if the Tributary Statement Applies, the Regional Board Improperly Applied it to Basalt Pond

Even if Basalt Pond were considered a tributary to the Russian River, the Regional Board improperly applied the tributary statement in the Basin Plan to Basalt Pond. The tributary statement does not provide that all of the beneficial uses of a specifically identified water body automatically apply to its tributaries. Rather, the tributary statement provides that the beneficial uses of specifically identified water body "generally apply" to its tributaries. The use of the word "generally" suggests that the Regional Board may determine beneficial uses in a permit if it would be inappropriate to apply the beneficial uses of a specifically identified water body to a particular tributary due to unique circumstances. Indeed, the State Board has previously interpreted a similar tributary statement in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins to allow the determination of beneficial uses in a permit. (*In re Vacaville*, Order WQO 2002-0015, p. 12 (Cal.St.Wat.Res.Bd. 2002) ("Arguably, the 1994 tributary language can be read to allow the Central Valley Regional Board to determine beneficial uses in a permit".))

The Regional Board's automatic application of all of the beneficial uses applicable to the Russian River to Basalt Pond violates Water Code section 13000. Water Code section 13000 directs the Regional Boards to regulate activities and factors that may affect water quality "to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." A Regional Board acts arbitrarily and unreasonably in violation of section 13000 when it assigns beneficial uses to a water body that do not currently exist and cannot be feasibly attained. (*In re Vacaville*, Order WQO 2002-0015, p. 15 (Cal.St.Wat.Res.Bd. 2002) ("[w]here a Regional Water Quality Control Board (Regional Board) has evidence that a designated use does not exist and likely cannot be feasibly attained, it is unreasonable to require a discharger to incur control costs to protect that use".))

The Regional Board acted arbitrarily and unreasonably in assigning the following uses to Basalt Pond in the Draft Permit: municipal and domestic supply; industrial service or process supply; navigation; hydropower generation; water contact recreation; non-contact recreation; cold freshwater habitat; migration of aquatic organisms; preservation of rare, threatened, or endangered species; shellfish harvesting; and aquaculture. These uses do not currently exist and likely cannot be feasibly attained because Basalt Pond is a man-made, privately owned pond that consists primarily of the City's effluent. The pond is not used for municipal supply, industrial supply, agricultural supply or navigation. Clearly, there is no hydropower generation occurring or likely to occur in this pond. Water-contact recreation or non-contact recreation are not existing uses as Basalt Pond is located on private property and is not used for recreational kayaking or swimming. There are no cold water fish species that inhabit the pond. Studies conducted by Healdsburg as part of its Wastewater Treatment Plant Upgrade Project EIR established that only warm water fish species inhabit the pond. There is clearly no "migration" of aquatic organisms to or from the Basalt Pond, given the isolated character of this water body. No rare, threatened or endangered species inhabit Basalt Pond nor is Basalt Pond used for shellfish harvesting or aquaculture. Accordingly, the assignment of these beneficial uses of the Russian River to the Basalt Pond violates section 13000. (See also Wat. Code § 13240.) At a minimum, we request that the language in the Draft Permit be modified to allow a beneficial use study to identify realistic and justifiable beneficial uses.

D. The Draft Permit Improperly Applies North Coastal Basin Discharge Prohibition No. 4 in the Basin Plan to Basalt Pond

Discharge Prohibition III.J and III.K in the Draft Permit are based on North Coastal Basin Discharge Prohibition No. 4 in the Basin Plan, which only applies "to the Russian River and its tributaries." As discussed under Section A above, Basalt Pond is not a tributary to the Russian River for purposes of the Basin Plan. Therefore, North Coastal Basin Discharge Prohibition No. 4 does not apply to Basalt Pond, and Discharge Prohibitions III.J and III.K are invalid.

E. The Draft Permit Improperly Applies the Water Quality Objectives in the Basin Plan for the Upstream Portion of the Russian River to Basalt Pond

Surface Water Limitations No. 3 and 4 in Section V.A. of the Draft Permit are based on the water quality objectives in the Basin Plan for SC and TDS for the "mainstem river upstream of its confluence with Laguna de Santa Rosa." (Basin Plan, p. 3-8.00, fn. 8.) Basalt Pond is not part of the mainstem river, nor is it a tributary to the Russian River as discussed under Section A above. Therefore, the water quality objectives in the Basin Plan for SC and TDS do not apply to Basalt Pond, and Surface Water Limitations No. 3 and 4 are invalid.

F. Discharge Prohibition E is Unnecessarily More Stringent than Required by State Law

Discharge prohibition E provides that "any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land, that creates pollution, contamination or nuisance, as defined in Water Code section 13050(m) is prohibited." This prohibition is more expansive than the prohibition in the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, which merely prohibits SSOs that reach surface waters of the

United States and SSOs that create a nuisance. The Regional Board asserts that Discharge Prohibition E is necessary “because of the prevalence of high groundwater in the North Coast Region, and this Region’s reliance on groundwater as a drinking water source.” (Fact Sheet, p. F-26.) However, there is no reason to suspect that any discharges to land would impact groundwater since such any such discharges would be to paved surfaces and would be captured immediately. Thus, this provision is not supported by the evidence and is therefore unnecessary, inappropriate and invalid.

G. Groundwater Limitation in Section V.B.1 Violates Substantive Due Process

The groundwater limitation in Section V.B.1 of the Draft Permit violates substantive due process because it is a vague narrative provision. A permit provision is unconstitutionally vague if it does not “sufficiently convey the proscribed conduct when measured by common understanding and practices,” (*U.S. v. Christopher*, 700 F.2d 1253, 1258 (9th Cir. 1983.)), or if it encourages arbitrary and discriminatory enforcement. (*Kolender v. Lawson*, 461 U.S. 352 (1983); *People ex. rel. Gallo v. Acuna*, 14 Cal.4th 1090 (1997).)

Section V.B.1 merely provides that “the collection storage, and use of wastewater or recycled water shall not cause or contribute to a statistically significant degradation of groundwater quality.” The Draft Permit does not define “statistically significant,” nor does it provide the City with any other means of knowing how to control the collection storage, and use of wastewater or recycled water to comply with the groundwater limitation in Section V.B.1. Accordingly, Section V.B.1 does not sufficiently convey the proscribed conduct as required by due process.

Moreover, the Draft Permit does not contain any standards for determining compliance with Section V.B.1, and therefore encourages arbitrary enforcement in violation of due process. (*Kolender v. Lawson*, 461 U.S. at 358-62 (holding that statute was unconstitutionally vague because it contains no standard for determining what a person must do to comply with the requirements of the statute and vests virtually complete discretion in the hands of the police to determine compliance).)

H. The Draft Permit Improperly Incorporates Requirements for the Delivery of Recycled Water to Dual-Plumbed Recycled Water Systems

The Draft Permit requires the City to submit revised and/or additional engineering reports to the Regional Board and California Department of Public Health (“CDPH”) for approval prior to initiating any recycled water use not addressed in a previously approved engineering report, and that the City’s engineering reports must contain a cross-connection program. (Draft Permit, pg. G-7, C.2.) These requirements are inappropriate because they only apply to the delivery of recycled water to facilities with dual-plumbed water systems,³ and the sites which will receive the City’s recycled water do not fall within the definition of dual-plumbed since the water will only be used for agricultural irrigation and for landscape irrigation of schools, parks and the Tayman Park Golf Course.

³ A dual-plumbed water system is “a system that utilizes separate piping systems for recycled water and potable water within a facility and where the recycled water is used for either of the following purposes: (a) To serve plumbing outlets (excluding fire suppression systems) within a building or (b) Outdoor landscape irrigation at individual residences.” (25 CCR § 60301.250.)

(a) Approval of Engineering Reports is not Required for Systems that are Not Dual-Plumbed

Approval of engineering reports is only required for the delivery of recycled water to dual-plumbed systems. Section 60313(d) provides “no recycled water agency shall deliver recycled water to a facility *using a dual plumbed system* unless the report required pursuant to section 13522.5 of the Water Code, and which meets the requirements set forth in section 60314, has been submitted to, and approved by, the regulatory agency.” (22 CCR § 60313(d) (emphasis added).) For the delivery of recycled water to systems that are not dual plumbed, approval by the Regional Board or CDPH is not required. Rather, a recycled water agency is only required to file the report. (22 CCR § 60323(a) (“No person shall produce or supply reclaimed water for direct reuse from a proposed water reclamation plant unless he files an engineering report”).) Thus, because the City will not be delivering recycled water to dual-plumbed systems, it is not required to obtain the Regional Board’s or CDPH’s approval of its engineering reports, and the provisions in the Draft Permit requiring the City to obtain approval are invalid.

(b) A Cross-Connection Program is not Required to be Included in Engineering Reports for Delivery of Recycled Water to Systems that are Not Dual-Plumbed

Cross-connection programs need only be included in engineering reports for the delivery of recycled water to dual-plumbed systems. (25 CCR § 60314(a) (“*For dual-plumbed recycled water systems*, the report submitted pursuant to section 13522.5 of the Water Code shall contain the following information in addition to the information required by section 60323: ... (3) the methods to be used by the recycled water agency to assure that the installation and operation of the dual plumbed system will not result in cross-connections between the recycled water piping system and the potable water piping system...”) (emphasis added).) For the delivery of recycled water to systems that are not dual-plumbed, a cross-connection program is not required in the engineering report. Rather, the engineering report need only describe the design of the proposed reclamation system, indicate the means for compliance with the Title 22 regulations and contain a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use area. (25 CCR § 60323.) Accordingly, the cross-connection program requirements in the Draft Permit are also invalid.

I. The Reclamation Requirements in the Permit are Inconsistent with Water Code Section 13253.1

Water Code Section 13253.1, which applies to master reclamation permits, provides that “permit conditions for a use of reclaimed water not addressed by the uniform statewide water reclamation criteria [Title 22 Regulations] shall be considered on a case-by-case basis.” The Regional Board failed to comply with this requirement. Rather than develop permit requirements specific to the City’s reclamation project, the Regional Board incorporated the landscape irrigation provisions from the State Recycled Water Policy and the Landscape General Permit without taking into consideration the unique circumstances of the City’s project, such as the fact that the City’s recycled water is of high quality and that the vineyards will be drip-irrigated, thus making the potential for over-application negligible. The Regional Board’s failure to develop reclamation requirements tailored to the City’s reclamation project as required by Section 13253.1 renders the reclamation requirements invalid.

J. The Nutrient Loading Provisions in the Draft Permit are Inconsistent with the Regional Board's Finding that Discharges to Authorized Reclamation Sites are Not Expected to Cause Exceedances of Water Quality Objectives

Appendix G and the Monitoring and Reporting Program in the Draft Permit require extensive and onerous levels of documentation for nitrogen loading from all sources, including applied fertilizers, which are beyond the City's control. The Regional Board is aware that the City's new WWTP was constructed with Biological Nutrient Removal ("BNR") in the biological treatment process, and effluent water quality data demonstrate that the WWTP is removing biological nutrients exactly as intended. The data submitted with the City's Report of Waste Discharge ("ROWD") demonstrate that the new treatment plant consistently achieves very low nitrate levels. Even nitrate levels higher than those in the City's effluent are well under the total nutrient demands for either the vineyards or turf that would be irrigated by the City's recycled water system. As far as we are aware, there are few, if any, municipal treatment plants in the Regional Board's jurisdiction that currently treat to this level.

The permit is internally inconsistent with respect to the need for these requirements. We note the following finding in the Fact Sheet (Attachment F) in the rationale for Groundwater Receiving Water Limitations on page F-56:

The Discharger monitored groundwater upstream and downstream of the discharge to Basalt Pond from 2005 through 2007 for ammonia, TDS, nitrate, nitrite, chloride, and fluoride. Monitoring data for these constituents in the upstream and downstream groundwater did not indicate exceedances of applicable water quality objectives established in the Basin Plan. Therefore, discharges to Basalt Pond, the recycled water storage pond, and authorized reclamation sites are not expected to cause exceedances of applicable water quality objectives in the groundwater and monitoring for these parameters are not required by this Order.

It is significant that the data set supporting this finding was collected well before the City constructed and began operating its new wastewater treatment plant with BNR. The Fact Sheet on page F-36 acknowledges that effluent nitrate levels are low, and thus discharges do not have a reasonable potential to cause or contribute to exceedances of the applicable nitrate water quality objective in the Basalt Pond. Additional data provided below demonstrate that effluent nitrate levels are consistent and even lower than shown in the Fact Sheet.

Despite this finding, the Draft Permit imposes stringent levels of controls for *all* applied nutrient loadings on the irrigated properties, even making the City responsible for all fertilizer applied. These requirements apparently came from the State Recycled Water Policy (State Water Board Resolution No. 2009-0011) ("Recycled Water Policy") and State Water Board Order No. 2009-0006-WQ, General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water ("Landscape General Permit"). The Recycled Water Policy and Landscape General Permit are intentionally restrictive so that they can be protective in covering a wide range of recycled water sources. In this case, the Regional Board is drafting a discharger-specific master reclamation permit, where ample data submitted with the ROWD demonstrate that the City's recycled water is a high quality source water with only minimal levels of nutrients. A "reasonable potential" approach to nutrients in this case, using the data already

submitted, would clearly demonstrate that these monitoring requirements are unnecessary and excessively burdensome.

We reiterate that the only portions of the City's proposed recycled water system over which it has any direct irrigation management control are the urban turf areas (schools, parks and the Tayman Park Golf Course), and these areas make up only a small part of the recycled water demand needed to comply with the seasonal discharge prohibition. With respect to these areas, the City believes it can work with most Operation and Management Plan provisions in Attachment G, the exceptions being noted below. However, participation in most of the City's recycled water system will be voluntary. In particular, the City must be able to attract individual agricultural users, and specifically vineyard users, for 2/3 of the demand needed to comply with the seasonal discharge prohibition.

K. Additional Specific Comments

1. II.B, Facility Description, page 6

The description of the treatment facility should be revised as follows:

The treatment facility has design treatment capacities of 1.4 mgd (average dry weather flow) and 4.0 mgd (maximum sustained peak wet-weather flow). The plant headworks can accept instantaneous flow rates up to 9.6 mgd. Inflows greater than 4.0 mgd are automatically diverted to the equalization basin. During periods of lower inflows, the stored water is returned to the headworks and delivered to the wastewater treatment plant for full treatment and disinfection.
The Discharger's upgraded advanced wastewater treatment Facility...

The description of the City's solids handling process on pgs. 7-8 of the Draft Permit currently reads:

Solids from the bottom of the aeration basins are pumped to a rotary drum screen where larger solids are separated from the remaining centrate. The solids are then dewatered by a screw conveyor and placed in a dumpster. Centrate from the surge tank is directed to one of two interchange reactor tanks. Settled solids from the interchange reactor tank are pumped to a centrifuge for dewatering and conveyed to a dumpster. The interchange reactor tanks are periodically decanted. Decant is pumped back to an influent splitter box. Dewatered solids are hauled to a landfill for disposal. All solids are currently being disposed at the Redwood Landfill in Marin County.

To clarify, the description should be revised to read as follows:

The City uses a proprietary solids removal and digestion process that combines aerobic and anaerobic processes. Solids are periodically removed from the biological process and transferred to two digester tanks, referred to as interchange reactors. Transfer to the interchange reactors occurs in a daily decant/fill process, where decanted clear liquid from the interchange reactors is returned to the biological process, and the volume decanted is replaced with solids from the biological process. All solids transferred from the biological process to the interchange tanks are

first passed through a 250 micron rotary drum screen to remove inert non-biodegradable material, which is compacted and conveyed to a separate dumpster. In the final solids removal step, digested solids are pumped from the interchange reactor tanks, dosed with polymer for thickening, and then dewatered in a centrifuge and conveyed to a dumpster. Dewatered solids are hauled for landfill disposal to the Redwood Landfill in Marin County.

This description should also replace the Biosolids discussion in the Fact Sheet on page F-6.

2. IV.D.2.c and d. (UV Disinfection)

The City's UV disinfection system is designed for the low-turbidity water produced by membrane filtration. The correct value for dose rate should be 80 millijoules/cm².

3. V. Receiving Water Limitations

As described above, the City believes all receiving water limitations have been improperly applied. If they are not removed, the City requests, at a minimum, the following changes to the wording in the limitations.

(a) A. Surface Water Limitations 3 and 4, p. 22

As discussed above, it is inappropriate to apply the TDS and SC limitations in the Basin Plan to the Basalt Pond because such limitations apply only to the mainstem river and do not appear to be tied to any specific beneficial use. Accordingly, these receiving water limits should be removed until more information and data can be collected on appropriate receiving water limits in these circumstances.

(b) A. Surface Water Limitation 13, p. 23

The Draft Permit contains the following receiving water limit for temperature: "The discharge shall not cause a measurable temperature change in the receiving water at any time." If a receiving water limit for temperature remains in the permit, it should be revised to be consistent with the language in the Basin Plan Water Quality Objectives, which states the following on page 3-4.00:

At no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature.

At no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature."

Considering the lack of any observed cold water fishery in the Basalt Pond, as described above, we request that only the warm water limitation be applied. However, if the COLD limitation is applied, we request that the language in the Draft Permit be replaced with the language included in other

recent NPDES permits, and specifically the following language included in Order No. R1-2006-0045 issued to the City of Santa Rosa:

The following temperature limitations apply to the discharge to the receiving waters:

- a. When the receiving water is below 58°F, the discharge shall cause an increase of no more than 4°F in the receiving water, and shall not increase the temperature of the receiving water beyond 59°F. No instantaneous increase in receiving water temperature shall exceed 4°F at any time.
- b. When the receiving water is between 59°F and 67°F, the discharge shall cause an increase of no more than 1°F in the receiving water. No instantaneous increase in receiving water temperature shall exceed 1°F at any time.
- c. When the receiving water is above 68°F, the discharge shall not cause an increase in temperature of the receiving water.

In our discussion with City of Santa Rosa representatives, we understand that this language was included at their request, and was based on guidance from the Department of Fish and Game.

4. VI.C.1.e, page 26 Water Effects Ratio

Two successive samples collected during a period of high flows at EFF-001 in late January and early February exceeded the proposed Average Monthly Effluent Limit (“AMEL”) for copper. Subsequent samples for copper at EFF-001 have fallen back below the AMEL. The City is investigating the cause of these exceedances and determining whether they were aberrations, or if any operational changes can be made to reduce copper concentrations. If these actions are unsuccessful and copper exceedances continue, the City may undertake a site specific copper translator study and, if needed, determine a site specific Water Effects Ratio. The City appreciates the Reopener Provision provided by the Regional Board (Provision VI.C.1.e, page 26) supporting this approach.

5. Attachment E (Monitoring and Reporting Program)

(a) Table E-4, Effluent Monitoring for Discharges to Basalt Pond, page E-4

As described below, no toxicity at any level has been detected in any of the acute or chronic tests conducted so far on effluent from the new advanced treatment process. Given the lack of toxicity and the higher level of treatment at the City’s facility, we believe that a reduction in frequency of sampling from monthly to quarterly is justified. If the Regional Board believes that it needs more data to justify this, we suggest adding the following footnote to Table E-4:

Monitoring for acute toxicity shall be conducted monthly during the first year of the permit term. If all sample results show at least 90% survival during that time period, the Discharger may reduce monitoring frequency to quarterly.

(b) V.A , Acute Toxicity Testing and V.B, Chronic Toxicity Testing

The City conducted acute and chronic toxicity species screening studies of its final treated effluent during 2009. No mortality was observed during the acute toxicity testing using two required species (water flea, rainbow trout). No toxicity (related to survival, reproduction, and growth endpoints) was detected during chronic toxicity testing using three required species (water flea, fathead minnow, algae). The Fact Sheet (pages F-43, F-44) discussion indicates the City may now proceed with routine testing using rainbow trout (only) for acute toxicity tests and one species of its choosing for the chronic toxicity tests. The Fact Sheet also indicates that another round of species screening is not required until 2014, based on 5 years of routine testing.

To clarify and make the corresponding language in the MRP consistent with the Fact Sheet, the City suggests the following revisions in section V.A. and V.B. (page E-6 and 7) of the MRP relating to test species, sample collection timing, and test procedures:

Acute Toxicity Testing V.A. (page E-6)

1. **Test Frequency.** The Discharger shall conduct monthly acute WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-34, above.
2. **Sample Type.** For 96-hour static renewal or 96-hour static non-renewal testing, the effluent samples shall be 24-hour composite samples collected at Monitoring Location EFF-001.
3. **Test Species.** The Discharger shall conduct ~~two suites of acute WET testing~~ routine testing using ~~an invertebrate, the water flea, Ceriodaphnia dubia, and a vertebrate, rainbow trout, Oncorhynchus mykiss. After the initial screening period, monitoring shall be conducted using the most sensitive species.~~ However, one suite of acute WET testing using an invertebrate, the water flea, Ceriodaphnia dubia, and a vertebrate, rainbow trout, Oncorhynchus mykiss must be conducted during this permit term. If the sensitivity of both species is equal, WET testing shall be conducted using the rainbow trout, *Oncorhynchus mykiss* for the remaining term of this Order. **The next two-species acute WET test shall be conducted by March 2014.**

Chronic Toxicity Testing V.B. (page E-7, 8)

1. **Test Frequency.** The Discharger shall conduct annual chronic WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-4, above.

2. **Sample Type.** Effluent samples from Monitoring Location EFF-001 shall be 24-hour composite samples. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.
3. **Test Species.** Test species for routine chronic WET testing shall be either a vertebrate, the fathead minnow, *Pimephales promelas* (larval survival and growth), an invertebrate, the water flea, *Ceriodaphnia dubia* (survival and reproduction test), or ~~and~~ a plant, the green algae, *Selanastrum capricornutum* (growth test). At least one time during this permit term ~~every 5 years~~, the Discharger shall conduct one two suites of chronic WET testing using the three species listed above. After this screening period, monitoring shall be conducted annually using the most sensitive species during the remaining term of this Order. ~~The next multiple species chronic WET test shall be conducted by March 2014.~~

(c) **C, Chronic Toxicity Reporting, page E-11**

The numbering for “Quality Assurance Reporting” and “Compliance Study Headings” should be 2 and 3 rather than 1 and 2.

(d) **Table E-6, Reclamation Monitoring Requirements, page E-13**

Monitoring of effluent quality during discharges to the Basalt Pond is at the same location used for discharge to the recycled water storage pond (after disinfection but prior to discharge). The MRP specifies this location as EFF-001 or REC-001, depending on the ultimate destination of the treated effluent. To avoid duplicative monitoring efforts, the City requests clarification in the MRP that monitoring conducted for EFF-001 (when wastewater is being discharged to the storage pond) can be used to establish effluent quality for REC-001. The suggested revision to the MRP is as follows:

Reclamation Monitoring Requirements VII.A. (page E-12)

1. The Discharger shall monitor treated, disinfected wastewater that will be reclaimed prior to discharge to the 25 million gallon recycled water storage pond at Monitoring Location **REC-001** as follows:

Table E-5. Reclamation Monitoring Requirements – REC-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow ¹⁶	mgd	Meter	Continuous	Meter
Biochemical Oxygen Demand (5-day @ 20°C) ²³	mg/L	Grab	Monthly	Standard Methods ³
Total Suspended Solids ²³	mg/L	Grab	Monthly	Standard Methods
Total Coliform Bacteria ²³	MPN/100 mL	Grab	Monthly	Standard Methods
pH ²³	standard units	Grab	Monthly	Standard Methods
Visual Observations ¹⁷	--	--	Daily	Visual

²³ Monitoring conducted for EFF-001 (when discharging to the storage pond) may be used for compliance with these monitoring requirements.

(e) IX Other Monitoring Requirements, (Disinfection Process Monitoring for Ultraviolet (UV) Disinfection System), B.1 (Monitoring), B.2 (Compliance), and B.3. (Compliance), page E-15

The City’s UV disinfection system is designed for the low-turbidity water produced by membrane filtration, with a minimum transmittance of 65%. The correct value for dose rate should be 80 millijoules/cm². The operational limits in provisions 2 and 3 should be revised to reflect this value.

(f) X (Reporting Requirements), E. Spills and Overflows Notification

The City currently notifies and reports on spills in accordance with a May 27, 2007 memorandum from the Regional Board titled “Spill Reporting Procedures, Mandatory Procedures And Requirements For Addressing Spills And Other Unauthorized Discharges From Your Agency’s Wastewater Collection, Treatment And Disposal Facilities.” The May 2007 memorandum, which we understand is the currently applicable procedure, applies to all spills regardless of size. The notification procedures in the current Draft Permit, however, distinguish between spills above and below 1,000 gallons. To avoid confusion and avoid reporting errors, we suggest that the Spills and Overflows Notification section of the Draft Permit be modified to be consistent with the May 2007 memorandum

6. Attachment F (Fact Sheet)

(a) II.A. Description of Wastewater and Biosolids Treatment or Controls, Collection System, page F-5

The Magnolia Lift Station underwent a major electrical upgrade in 2006, and the lift station now includes a total of four 50 horsepower dry-pit pumps. The discussion should be revised accordingly.

(b) II.A. Description of Wastewater and Biosolids Treatment or Controls, Wastewater Treatment , page F-5,6

(e) II.E. Planned Changes

As discussed above, the City is not required to obtain the Regional Board’s or Cap’s approval of its Title 22 engineering reports because it is not delivering recycled water to facilities with dual-plumbed systems. Accordingly the following sentences should be deleted from this section:

The Discharger has not yet secured approval from CDPH for the Title 22 Recycled Water Engineering Report. CDPH approval is required prior to startup of the reclamation system in accordance with Water Reclamation Finding 4 and Water Reclamation Provisions 1 and 2 in Attachment G to this Order.

(f) IV.C3.a.iii.(a), Determining need for Wobbles, Nitrate, page F-34

We support the finding that the discharges from the City’s wastewater treatment plant do not have a reasonable potential to cause or contribute to exceedances of applicable water quality for nitrate in the receiving water. Additional data for the City’s effluent nitrate levels since the ROWD was submitted provide further support for this conclusion:

TABLE 3

Date	Nitrate as N (mg/L)	Date	Nitrate as N (mg/L)
12/3/2008	3.3	9/1/2009	1.8
1/6/2009	4.8	10/6/2009	3.0
2/4/2009	3.4	11/3/2009	3.1
3/4/2009	2.7	12/1/2009	3.0
4/1/2009	3.3	1/5/2010	1.2
4/29/2009	1.6	2/2/2010	3.4
5/6/2009	1.2	3/2/2010	0.8
8/5/2009	3.0		
Maximum	4.8		
Average	2.6		
Minimum.	0.8		

(g) IV.D.2. Final Effluent Limitations, Satisfaction of Ant degradation Policy, page F-47

This provision cites the recycled water requirements and management measures in Attachment G as support for a conclusion that discharge of recycled water in the reclamation system will not result in a degradation to surface water or groundwater. For the reasons discussed below in our comments on Attachment G, we believe that many of the provisions are unnecessary and go well beyond what is necessary to support this finding, to the point that they will present a substantial disincentive to voluntary

use of recycled water. We point instead to the rationale for Groundwater Receiving Water Limitations on page F-56 of the Fact Sheet:

The Discharger monitored groundwater upstream and downstream of the discharge to Basalt Pond from 2005 through 2007 for ammonia, TDS, nitrate, nitrite, chloride, and fluoride. Monitoring data for these constituents in the upstream and downstream groundwater did not indicate exceedances of applicable water quality objectives established in the Basin Plan. Therefore, discharges to Basalt Pond, the recycled water storage pond, and authorized reclamation sites are not expected to cause exceedances of applicable water quality objectives in the groundwater and monitoring for these parameters are not required by this Order.

As we noted in comments above, the data used to support this finding were collected before the City began operating its new treatment plant with biological nutrient removal. The Draft Permit's findings on nitrate (page F-36) determined that the discharge will not have a reasonable potential for exceedances of water quality criteria for nitrate. The additional nitrate data provided above further supports this finding.

(h) IV.G.1. Reclamation Specifications, Scope and Authority, page F-51

This section includes the following statement:

The Discharger did not submit any evidence regarding whether the waste discharge requirements for reclamation discharges would interfere with the development of needed housing within the region or the costs of compliance, particularly anything to show that the costs of compliance with the Order would be unmanageable.

Unfortunately, the City could not have submitted any such evidence, for the simple reason that the waste discharge requirements for reclamation had not been made available to the City. The City also had no reasonable expectation of such requirements in the Draft Permit, since many of these provisions have never before been imposed on any other water recycler in the Regional Board's jurisdiction.

In fact, the projected \$12 to \$14 million construction cost and \$450,000 annual operation and maintenance cost for the recycled water system would be unmanageable under the terms of the Draft Permit, because it now may not be enough to achieve full compliance with the seasonal discharge prohibition. Even with USDA grant/loan funding for construction of the recycled water system (See Attachment 2), the cost estimate and rate analysis demonstrate that it will be necessary to increase the average rates from \$78 to \$106 per month. Now, the Draft Permit, if adopted, would impose such onerous conditions on voluntary users of recycled water that the City could not be certain that the project, if funded and constructed, would ever get the City to full compliance with the seasonal discharge prohibition. The cost would be unmanageable because the City would have spent \$12 to \$14 million⁴,

⁴ See attached Engineers Opinion of Probable Cost dated February 19, 2010 totaling \$10.7 million. Approximately \$1.2 million has been expended on project design. Construction Management is estimated at 8 (\$800,000), and right of way acquisition is estimated at \$200,000. It is also likely that the City will need to finance approximately \$620,000 in improvements necessary to upgrade the Tayman Park Golf Course irrigation system. To avoid an even greater rate increase, the USDA Rate Analysis in Attachment 2 assumes refinancing of \$9.75 million of existing debt for the new WWTP.

and would still not know how much more would be necessary to achieve full compliance. These onerous conditions in the Draft Permit create unquantifiable operational, administrative and compliance costs that further diminish the financial viability of beneficial reuse.

(i) IV.G.3. Water Reclamation Requirements and Provision. Table F-13 ,page F-54

The heading on this table should be titled “Reclamation” rather than “Land Discharge.”

(j) IV.G.4. Water Reclamation Requirements and Provision. Page F-54

This section includes a finding that the water reclamation requirements in Attachment G are consistent with the requirements of the Recycled Water Policy and the Landscape General Permit. However, at least two aspects of the permit directly conflict with the Recycled Water Policy. First, as discussed above, the Draft Permit applies key provisions of the Recycled Water Policy and Landscape General Permit to all uses, including agricultural use. This was never the intention of either document, and was never contemplated during the corresponding stakeholder input processes. It would be inappropriate, at best, to now apply these requirements to agricultural recycled water uses.

Second, Provision C.5.h.iii.e would require special studies where “.....unique, site-specific conditions exist, such as where recycled water is proposed to be used for irrigation over high transmissivity soils *and/or* (emphasis added) over a shallow (5 feet or less) high quality groundwater aquifer...” This requirement has been inappropriately applied to agricultural irrigation, and as modified this provision would now substantially broaden and fundamentally change a key provision of the Recycled Water Policy by the simple insertion of “and/or” to that condition, which in its original form plainly and clearly intended that both conditions be present to apply these special study requirements. As noted in comments above, we are concerned with the potentially precedent-setting impacts that this language change may have on future recycled water permits, particularly for agricultural reuse, that have not been fully promulgated through the appropriate administrative and public review processes.

(k) VI.E, Reclamation Monitoring Requirements, page F-60

The flow rate to authorized reclamation sites should be on a monthly rather than daily basis, as shown in Table E-7 of the Monitoring and Reporting Program.

(l) VI.F.1, Receiving Water Monitoring, page F-61

The Fact Sheet indicates there are three special studies requirements for receiving water monitoring (see page 28). The permit includes only two that are required; a third is an optional study described in Attachment E in Table E-2 (page E-3). We suggest that the Fact Sheet discussion be changed as follows:

The Order also establishes ~~two~~ three special study requirements that may affect receiving water monitoring. The first special study requirement requires the Discharger to propose and implement a study designed to collect sufficient effluent and receiving water monitoring data for ammonia,

pH, temperature and any other relevant parameter to establish whether or not the discharge of effluent to Basalt Pond poses reasonable potential to cause or contribute to exceedances of applicable water quality objectives for ammonia in the receiving water (Basalt Pond). ~~The second special study requirement is optional and allows the Discharger to conduct a monitoring study designed to establish an alternate downstream receiving water monitoring location to submit to the Regional Water Board Executive Officer for approval. The second~~ third special study requires the Discharger to establish reference receiving water temperature and dissolved oxygen conditions based on establishment of an appropriate reference receiving water monitoring location in one of the abandoned gravel ponds that exist in proximity to Basalt Pond. This reference monitoring station will be used to verify whether dissolved oxygen and temperature conditions in Basalt Pond are due to natural conditions or influenced by the discharge of wastewater effluent. A third option, allowing the discharger to propose a modified receiving water location, is described in the Monitoring and Reporting Program in Table E-2.

Considering the unique circumstances of the City's discharge, we appreciate and support the option to modify the receiving water monitoring location if necessary.

7. Attachment G (Water Reclamation Requirements and Provisions)

In general, the City is extremely disappointed by the additional obstacles to water recycling that this Draft Permit imposes, particularly through the Water Reclamation Requirements and Provisions contained in section C of Attachment G. These provisions, to our knowledge, have not been imposed on any other water recyclers in the Regional Board's jurisdiction.

Of great concern to the City is the fact that in spite of having completed a very extensive and expensive CEQA and public participation process for its recycled water system, the Draft Permit approves *none* of the recycled water irrigation areas covered in that process. This is also despite the fact that this project is the City's solution to comply with the seasonal discharge prohibition imposed by the Regional Board, and that Regional Board staff expressed unquestionably strong support for the project during the public comment period. Instead, the Draft Permit (Attachment G, Provision C5) subjects the areas that the City intends to irrigate to yet further rounds of public comment, approval by the Regional Board staff, new Reports of Waste Discharge, and open-ended requirements for potentially expensive studies.

The City acknowledges and understands that significant additional information will need to be submitted to the Regional Board and CDPH before recycled water use can commence. However, when the City submitted its ROWD and time schedule for compliance with the seasonal discharge prohibition, it anticipated water reclamation requirements similar to those issued for other recyclers such as Santa Rosa and Windsor, which merely require the submission of a Recycled Water Engineering Report, executed recycled water agreements containing the necessary Title 22 provisions, and additional information on redundancy features in the treatment plant, etc. Many of the section C provisions addressed below, and in particular the additional approval, public input and special study requirements, go well beyond what has been required of other water recyclers with lower levels of treatment, and well beyond what the City could have reasonably expected. These provisions are also contrary to the Recycled Water Policy and the numerous statutes encouraging the use of recycled water. If these provisions are not modified as requested, the City cannot reasonably be expected to meet the CDO time schedule for compliance with

the seasonal discharge prohibition. A more basic question, considering the uncertainty these provisions present, is whether it would even be responsible or prudent for the City to commit ratepayers to funding the \$12 to \$14 million construction cost for the recycled water system, in addition to the increased annual operation, maintenance and compliance costs, with these section C provisions in place.

(a) A.6, page G-1

As discussed above, Sections 60313(d), which requires that a Title 22 engineering report for delivery of recycled water to a facility with a dual-plumbed system be approved by the Regional Board, and 60314, which requires a cross-connection control program in Title 22 engineering reports for delivery of recycled water to a facility with a dual-plumbed system, do not apply to the City because it is not providing recycled water to facilities with dual-plumbed systems. Accordingly, Section A.6 in Attachment G should be revised as follows:

The Discharge is required to develop and keep updated, an Engineering Report for the use of recycled water as required by sections ~~60313(d), 60314, and 60323~~ of title 22. This title 22 Engineering Report must be ~~approved by~~ submitted to CDPH and the Regional Board Executive Officer prior to delivery of disinfected, treated effluent to any recycled water use site as required by title 22. The title 22 Engineering Report shall describe how the Discharger will operate the treatment facilities and reclamation system to comply with all applicable rules and regulations, including title 22 and this Order. The title 22 Engineering Report shall also recognize the possibility of runoff from recycled water use areas and describe measures the Discharger will take to minimize this possibility.

(b) A.7, page G-2

In this finding, the Regional Board recognizes that minor runoff violations are unavoidable and present a low risk to water quality, yet requires that all runoff incidents, including incidental runoff, be summarized in quarterly recycled water monitoring reports. For practical reasons, this is obviously an impossible standard to meet and, considering the Regional Board's own finding, unnecessary. Runoff event reporting should be consistent with the Spill Reporting requirements in the Landscape General Permit.

(c) A.8, page G-2

As discussed above, Sections 60313(d), which requires that a Title 22 engineering report for delivery of recycled water to a facility with a dual-plumbed system be approved by the Regional Board, does not apply to the City because it is not providing recycled water to facilities with dual-plumbed systems. Accordingly, Section A.8 in Attachment G should be revised as follows to be consistent with Section 60323 which only requires submittal of the engineering report:

This Order authorizes the Discharger to reuse treated municipal wastewater that complies with effluent limitations contained in

section IV of the Order for uses that have been addressed in an approved title 22 Engineering Report and for which recycled water user agreements have been negotiated.

(d) B.9.b., page G-3

This requirement would make the City responsible for all fertilizer application where it provides recycled water. This is an inappropriate expansion of the requirements in the Landscape General Permit, which as described above, has been improperly extended to agricultural users and was never intended in the Recycled Water Policy. The Landscape General Permit explicitly requires reporting only the nutrients in the recycled water (Monitoring And Reporting Program No. 2009-0006-DWQ, page 1, footnotes 5 and 6). If the requirements of the Landscape General Permit are to be applied (which, as described below, we believe is not necessary), they should apply only to the specific landscape irrigation definitions included on pages 1 and 2 of the Landscape General Permit, and then in a manner that is consistent with the Landscape General Permit.

The Landscape General Permit is intentionally restrictive so that it can be protective in covering a wide range of recycled water sources. In this case, the Regional Board is drafting a discharger-specific Master Reclamation Permit, where the data submitted with the ROWD demonstrate that this is a high quality source water with only minimal levels of nutrients. The Regional Board's own findings in the Fact Sheet support this. This requirement, as well as all other requirements in the permit that mandate direct nutrient management, run counter to State and Regional Board policies encouraging recycled water use, and in any case is unnecessary. In addition to the low nutrient levels in the City's recycled water, vineyard managers already have every incentive to minimize fertilizer use because excess application is harmful to grape production and quality. Any requirements related to nutritive loading should be strictly informative, where the City provides data to recycled water users on the nutrient loading from recycled water. A similar requirement in provision C.5.h.iii.d states the requirement this way, which is consistent with provision 7.c.(3) of the state Recycled Water Policy, which specifies compliance by monitoring and communicating with recycled water users. We ask that the same language be added to provision B.9.b.

(e) B.11.a., page G-4

This paragraph would require a 100-foot setback of new recycling sites from surface waters, however there is no rationale or justification for this restriction. This section would eliminate recycled water irrigation on wide swaths of golf course and agricultural lands, and would require that alternative irrigation supply be installed in those areas. We strongly believe that other provisions in Attachment G requiring properly designed and managed irrigation systems already provide more than adequate protection from impacts on surface water. In the case of agricultural irrigation, drip irrigation would present only a minimal risk of runoff from normal irrigation. The detailed measures necessary to protect surface water are very site-specific, and the Draft Permit should not prejudice what setbacks are necessary at all sites. Thus, this provision should be eliminated.

(f) Provision C-5, page G-7-8

This provision requires a full ROWD for all recycled water locations, a further 21-day (minimum) public comment period on all material in the ROWD, as well as Regional Board staff approval. The City would be required to attempt to resolve all comments, regardless of merit or substance. Depending on the level of public comment, approval of each ROWD would likely require a hearing before the full Regional Board at a public meeting.

The City has several significant objections to this provision:

- We are uncertain whether it was the Regional Board's intention, but requiring a full ROWD, rather than a straight-forward information submittal, elevates each of these actions to essentially a new set of Waste Discharge Requirements. The Regional Board's Executive Officer is not authorized to administratively approve Waste Discharge Requirements, which means that each submittal would require a full Regional Board hearing. This is certainly not consistent with the goal of permit streamlining in the Recycled Water Policy.
- The bulk of the material to be issued for public comment is the Operations and Management Plan, which includes a lengthy list of details about each irrigator's practices. These include soil characteristics, climate conditions, groundwater depths, and detailed justifications for the amounts of water and fertilizers applied. The last of these is a potential requirement for further open-ended studies where "unique, site-specific conditions" exist. As described above, this definition has been improperly broadened from the language in the Landscape General Permit. In addition, it has been inappropriately applied to agricultural irrigation.

The vineyard irrigation would occur entirely within existing vineyards, where vineyard managers already have well-established irrigation and fertilization practices. Beyond the time-consuming effort necessary to gather and document this information, this public noticing provision would subject these existing practices to second-guessing that each operator would be forced to justify. This is despite the fact that other water recyclers with no nitrate removal treatment processes have irrigated vineyards for years without causing any groundwater nutrient problems. Since all vineyard operators in question currently have adequate surface and groundwater sources that are largely free of these regulatory burdens, it is unlikely that they would choose to submit to this process. We believe it would prove to be a significant disincentive to agricultural recycled water use.

- The City certified an Environmental Impact Report (EIR) for the City's Wastewater Treatment Plant (WWTP) Upgrade Project (2005 EIR) on July 11, 2005. A significant component of the 2005 EIR was the Seasonal Irrigation Reuse component, which is the recycled water irrigation system under consideration in the Draft Permit. The 2005 DEIR was adopted after a 3-year process that included several public hearings and a 45-day public comment period. During the public comment period for the draft EIR, Regional Board staff expressed unambiguous support for the City's plan to construct this recycled water system.

- Provision C.5.h would allow an Operations and Management Plan to apply to multiple sites. While this may be feasible for the City's turf irrigation sites, it is unlikely that the City could consolidate this approval process for vineyards. For each property owner that agrees to take recycled water, the City's submittal will need to provide an executed recycled water agreement, and this will occur one property owner at a time. In addition, the practices of individual vineyard managers will differ, and a "one-size-fits-all" Operations and Management Plan is not likely to be acceptable to potential irrigators. For these reasons the City would need to run through the submittal process in Attachment G not once, but several times.

We strongly believe that the CEQA process provides ample opportunities for public input, and that the additional process in this provision is unnecessary, burdensome, and inconsistent with State policies on recycled water use. For these reasons, the City believes that this process step should be removed. The information submittal requirement should be limited to that information required in the Santa Rosa and Windsor permits, rather than a full ROWD.

(g) C.2, page G-7

As discussed above, Sections 60313(d), which requires that a Title 22 engineering report for delivery of recycled water to a facility with a dual-plumbed system be approved by the Regional Board, and 60314, which requires a cross-connection control program in Title 22 engineering reports for delivery of recycled water to a facility with a dual-plumbed system, do not apply to the City because it is not providing recycled water to facilities with dual-plumbed systems. Accordingly, Section C.2 in Attachment G should be revised as follows:

The Discharger shall submit revised and/or additional engineering report(s) ~~for to the~~ Regional Water Board and CDPH approval, prior to initiating any recycled water use (e.g., new industrial use, recreational surface impoundments, water cooling, new dual-plumbed system, etc.) not addressed in any ~~previously approved~~ prior CCR title 22 engineering report(s). Engineering report(s) shall be prepared by a properly qualified engineer registered in California and experienced in the filed of wastewater treatment, and shall contain (1) a description of the design of the reclamation system; and (2) a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use areas; ~~and (3) a cross-connection control program (title 17 of the California Code of Regulations).~~ Engineering reports shall clearly indicate the means for compliance with CCR title 22 regulations and this Order.

(h) C.5.h.i., page G-9

The description of the Operations Plan in this section should be deleted because it lacks specifics and does not add any information to the Operations and Management Plan that is not covered elsewhere in the Draft Permit.

(i) **C.5.h.iii.e, page G-10**

This provision would require special studies where “.....unique, site-specific conditions exist, such as where recycled water is proposed to be used for irrigation over high transmissivity soils *and/or* (emphasis added) over a shallow (5 feet or less) high quality groundwater aquifer....” As discussed above in the Fact Sheet section, this rewrites and fundamentally changes a key provision of the Recycled Water Policy by the insertion of “and/or” condition. The Recycled Water Policy and Landscape General Permit were products of an extensive stakeholder process, and this modification, which has no justification, is inappropriate. Based on the comments and findings discussed above regarding the lack of reasonable potential to cause or contribute to exceedances of applicable water quality for nitrate in the receiving water, this paragraph should be eliminated. Alternatively, this provision should be revised to only require special studies when recycled water is proposed to be used for irrigation over high transmissivity soils and over a shallow (5 feet or less) high quality groundwater aquifer and to apply only to landscape irrigation, consistent with the Recycled Water Policy and Landscape General Permit.

8. Draft Cease and Desist Order (CDO) No. R1-2010-0035, Time Schedule and Compliance Dates

The City appreciates the Regional Board’s extension of the time schedule in the CDO for compliance with the seasonal discharge prohibition. However, as described above in our comments on Attachment G to the Draft Permit, if the reclamation provisions related to the additional approval, public input and special study requirements are not modified as requested, the City cannot reasonably be expected to meet the CDO time schedule for compliance with the seasonal discharge prohibition, particularly the deadlines for tasks D, E and G. The CDO includes the following language regarding delays in paragraph 3:

If, given written justification from the Discharger, the Executive Officer determines that a delay in the implementation schedule is beyond the reasonable control of the Discharger, the Executive Officer may revise the implementation schedule as appropriate. Written justification must be received by the Executive Officer before the specific due date occurs, must describe the circumstances causing the delay, and must state when each outstanding task will be completed.

We appreciate the Regional Board’s inclusion of this language in the CDO and believe it may well be necessary, considering the open-ended nature of the new reclamation requirements in Attachment G. However, if these Attachment G provisions are not modified as requested, it may not be possible for the City to identify specific dates for the outstanding tasks.

We appreciate the opportunity to comment on the Draft Permit. We will make time available if you would like to meet to discuss any of these comments or potential remedies.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Flugum', written in a cursive style.

Jim Flugum
Deputy Public Works Director

Attachments:

- 1) Reverse Osmosis Treatment Requirements Technical Memorandum, HDR Engineering, Inc, April 27, 2004
- 2) USDA Rate Analysis, Engineers Opinion of Probable Cost

Attachment 1

REVERSE OSMOSIS TREATMENT REQUIREMENTS

City of Healdsburg

April 16, 2004

Revised April 27, 2004

Reviewed by: Kevin A. Kennedy, P.E.

Prepared by: Pravit Parikh

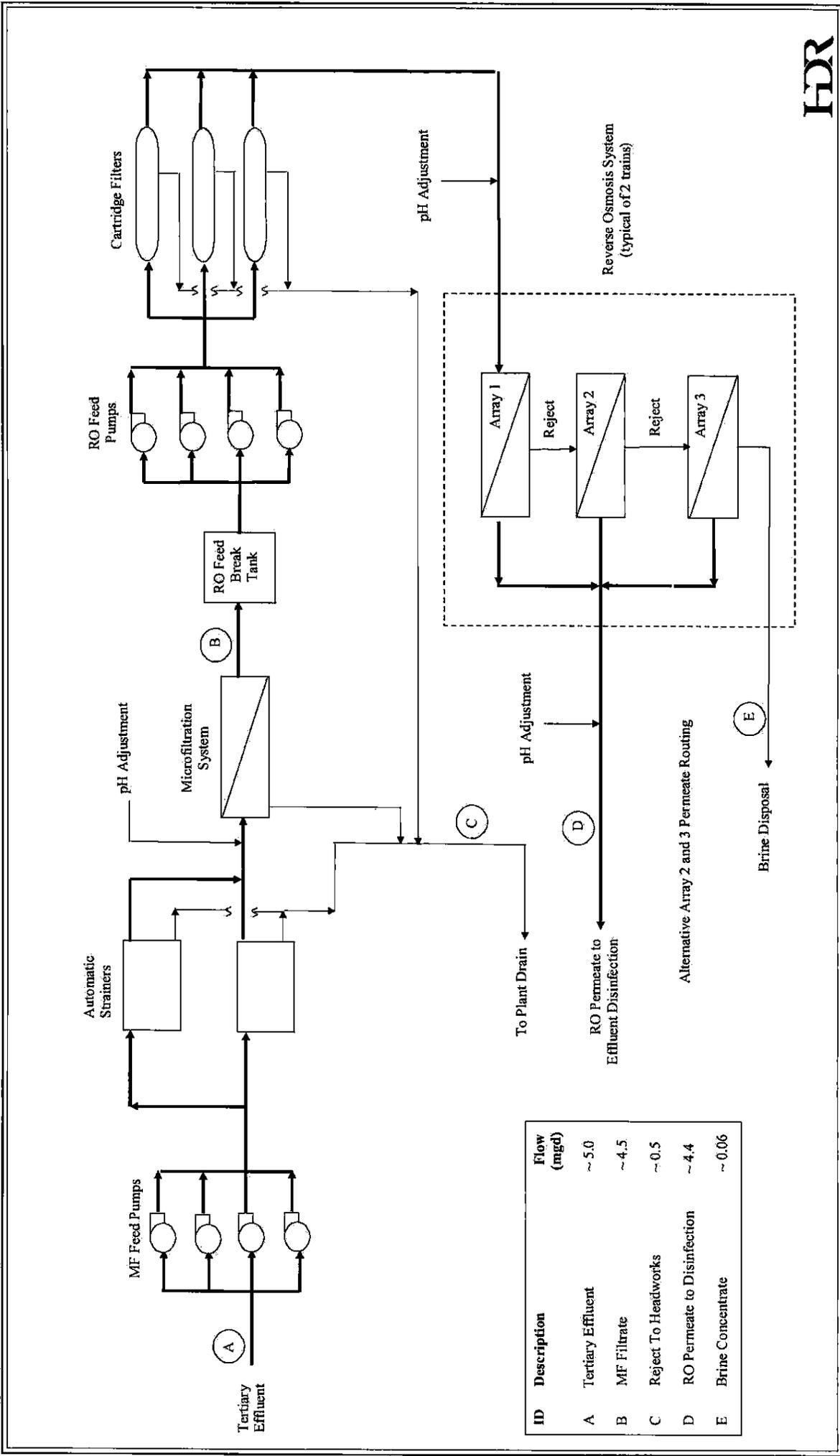
This document describes treatment facility requirements for achieving reverse osmosis grade effluent from the City of Healdsburg (City) Wastewater Treatment Plant. The following three process streams can be employed to achieve this grade of effluent:

- ◆ **Alternative 1 - Conventional Secondary Treatment Followed by Microfiltration and Reverse Osmosis (MF/RO).** With the exception of tertiary filtration, the same facilities as those described for *Option 1: Extended Aeration*, will be required for this alternative.¹ For this alternative, secondary effluent, as opposed to tertiary effluent as shown in Figure 1, would be conveyed to the MF feed pumps.
- ◆ **Alternative 2 - Conventional Tertiary Treatment Followed by Microfiltration and Reverse Osmosis (MF/RO)¹.** The same facilities, including tertiary filtration, as those described for *Option 1: Extended Aeration*, will be required for this alternative.
- ◆ **Alternative 3 - Membrane Bioreactor (MBR) Followed by Reverse Osmosis (MBR/RO).** It is our understanding that there are no full-scale MBR/RO wastewater treatment plants currently in operation or under construction. However, this treatment scheme should provide the same level of RO pretreatment as the other two alternatives. For this alternative, MBR effluent, as opposed to MF filtrate as shown in Figure 1, would be conveyed to the RO feed break tank and the MF feed pumps, automatic strainers, and microfiltration system would not be required.

Design Criteria

Facilities described in this technical memorandum are based on the same treatment design criteria presented in the *Wastewater Treatment Technical Memorandum*. The MF/RO treatment scheme may require tertiary filtration followed by microfiltration to minimize the overall project costs. The following assumptions pertaining to the treatment scheme were made for developing facility, operation, and maintenance requirements presented in this technical memorandum.

¹ Facilities required for this treatment category are described in the *Wastewater Treatment Technical Memorandum* dated November 17, 2003.



ID	Description	Flow (mgd)
A	Tertiary Effluent	~ 5.0
B	MF Filtrate	~ 4.5
C	Reject To Headworks	~ 0.5
D	RO Permeate to Disinfection	~ 4.4
E	Brine Concentrate	~ 0.06



Figure 1

- ◆ The same facilities, through secondary treatment, as those described in Option 1: Extended Aeration will be required.
- ◆ Tertiary filtration followed by microfiltration and reverse osmosis will be required.
- ◆ Either UV or sodium hypochlorite effluent disinfection as described in the *Wastewater Treatment Technical Memorandum* will be required.

Process Description

This technical memorandum provides a description of the major facilities required for a MF/RO process configuration. A process schematic for this option is shown in Figure 1.

MF Feed Pumps

Four, 75 HP vertical turbine pumps (one standby unit) will be furnished and installed for MF feed. Each pump will have a minimum rated capacity of 1.67 mgd (approximately) and will be furnished with a variable frequency drive (VFD). With three pumps in service, the firm capacity of this pumping station will be approximately 5.0 mgd, which is equivalent to the estimated sustained peak flow previously described in the *Wastewater Treatment Technical Memorandum* plus backwash from the MF System.

MF System

Microfiltration will be provided to remove residual solids from the tertiary effluent stream prior to feed into the RO system. There are several microfiltration technologies suitable for this application. The microfiltration skids will be designed and operated to ensure that (1) the flux does not exceed the limits recommended by the California Department of Health Services and/or fluxes typically encountered at other full-scale MF/RO systems and (2) the MF filtrate turbidity and other performance requirements comply with the limits required for RO pretreatment.

If the MF/RO system is selected for full-scale implementation, it is recommended that the City assess different MF membrane manufacturers during the predesign phase. At that time the specific MF technology will be identified. Regardless of which type is chosen, the MF skids will be located in a 30 by 40 foot area, and will be approximately 15 feet high (maximum).

Strainers that will be used for MF pretreatment will be automatically self-cleaning. Two units will be installed, each with a rated capacity of 5.0 mgd. The strainers will have a mesh size of 400 to 500 microns as required by the specific MF supplier.

RO Feed Break Tank

Filtrate from the MF system will flow into a RO feed break tank. The break tank will serve to equalize filtrate flow so the feed pumps can operate at a constant flow. A 10,000 gallon

fiberglass reinforced plastic (FRP) tank installed ahead of the RO system will provide sufficient equalization capacity for the system's flow requirements.

RO Feed Pumps

Four, 150 HP horizontal end-suction pumps (one standby unit) will be furnished and installed for RO feed. Each pump will have a minimum rated capacity of 1.5 mgd (approximately) at 140 psi. With three pumps in service, the firm capacity of this pumping station will be 4.5 mgd (approximately), which is equivalent to the estimated sustained peak flow through the MF system assuming a 90 percent recovery. All pumps will be furnished with a VFD to maintain a constant flow at variable discharge pressures.

RO System

The RO system will have a rated capacity of 4.5 mgd. As shown in Figure 1, a total of two trains will be provided. Each train will consist of three arrays to minimize brine production. The estimated recovery for Array 1, 2, and 3, are 85, 75, and 75 percent, respectively. Based on this data, it is estimated that an average of 15,000 gallons per day of brine will be produced at the average annual flow of 1.5 mgd.

The two RO trains will be capable of operating independently. The major components of this system include:

- ◆ **Cartridge Filters** - These filters will be placed upstream of the RO system. They will remove any debris from RO feed water that may have passed through the MF system. Three cartridge filters will be provided; each having a firm rated capacity of 2.25 mgd (approximately).
- ◆ **Pressure Vessels**
- ◆ **RO Membrane Elements**
- ◆ **Flushing System** - The flushing system will provide recirculation of RO permeate for backwash of RO membrane elements.
- ◆ **Decarbonator** - This equipment removes excess carbon dioxide from the RO permeate and raises pH.

If this treatment alternative is selected, it is recommended that the City assess different RO membrane manufacturers during the predesign phase. During this assessment, a specific RO manufacturer can be identified. Regardless of which manufacturer is chosen, the RO skids will be located in a 40- by 70-foot area, and will be approximately 15 feet high (maximum).

Chemical Systems

Chemicals will be required to maintain the flux and integrity of the MF and RO membranes. A list of the major chemicals required and their approximate dosages are shown in Table 1.

Table 1. Chemicals and Usage Rates.

Item	Purpose	Maximum Frequency	Dosage Range
MF System			
Hypochlorite (12 percent solution)	Backwash cleaning (for chlorine tolerant membranes only)	2 to 5 min/hour	120 mg CL ₂ /L
Caustic Soda (50 percent solution)	Removal of organics and slimes (CIP)	1/month	12 gal
Citric acid (solid) mix up to make 2.5 pH solution	Removal of metal hydroxides and carbonates (CIP)	1/month	75 lbs
RO System			
Sulfuric acid (93.2 percent solution)	Inhibit scale formation	Continuous	15 to 30 mg/L
Antiscalant	Inhibit scale formation	Continuous	3 to 5 mg/L
Citric acid (solid) mix up to make 2.5 pH solution	Removal of metal hydroxides and carbonates (CIP)	1/month	22 lbs
Sodium tripolyphosphate/ Trisodium phosphate/EDTA (Per manufacturer)	Removal of organics and slimes (CIP)	1/month	Manufacturer Specific
Anionic or nonionic surfactants	General cleaning (CIP)	1/month	Manufacturer Specific
pH Adjustment			
Sulfuric acid or citric acid	Reduce pH of RO feed stream	Continuous	Manufacturer Specific
Caustic Soda	Increase pH of RO permeate	Continuous	Manufacturer Specific

Building

Both the MF and RO systems will be housed inside a single building. The building will be set on a reinforced concrete slab with FRP grating over piping trenches. The building will be approximately 230 feet by 95 feet, and approximately 20 feet high. Each chemical room in the building will be constructed as a containment area with a collection sump.

Brine Disposal Method

The disposal of RO brine presents significant engineering and economic problems. The disposal options for inland membrane demineralization treatment facilities producing high TDS waste streams are limited to the following alternatives:

- ◆ **Deep-Well Injection.** This method is considered to be the cost effective method for brine disposal and is typically associated with relatively large desalination plants. It is our understanding that this method has not been implemented in California. Based on this information, deep-well injection is not considered to be a viable alternative for the City.
- ◆ **Evaporation Ponds.** This method is most effective in relatively warm, dry climates with high evaporation rates and low land costs. Evaporation ponds would have to be double lined to prevent pond leakage and subsequent aquifer contamination. If this

method were to be implemented, preliminary estimates indicate that a pond with a minimum exposed surface area of 3,600 ft² and minimum depth of 20 to 25 feet would be required. Even with this disposal option, concentrated brine would have to be either hauled for land or ocean disposal.

- ◆ **Solar Ponds.** This disposal method has traditionally been coupled with thermal power generation and is considered to be cost effective for small desalination facilities. Due the lack of proximity to a thermal power generation facility, this alternative is not considered to be viable for the City. Additionally this method has not been proven in practice in the United States.
- ◆ **Brine Pipeline.** Pipeline conveyance of brine for ocean discharge would require the installation of a pipeline from the wastewater treatment plant to the coast and a pumping station. It is estimated that the minimum pipeline length is approximately 40 miles.
- ◆ **Hauling.** Potentially brine could be hauled to the coast and disposed of via an ocean outfall. Considering the brine production of 15,000 gallons per day, this method would likely be the recommended disposal method since it is the most cost effective solution with regard to capital, operation, and maintenance costs.

Construction Costs

The preliminary estimated construction cost for the MF/RO system described in this technical memorandum is \$20 to 25 million dollars. This cost does not include the costs associated with preliminary, secondary, or tertiary treatment or brine disposal.

Operations and Maintenance (O&M) Costs

The major O&M costs associated with this treatment process are presented in Table 2.

Table 2. Major O&M Cost Contributors

Process	Type of O&M Cost	Cost
MF Feed Pumps (3 pumps, 385 gpm @ 60 psi)	Energy	\$50,000/yr ^a
MF System (Membrane replacement)	Material	\$85,000/yr ^b
RO Feed Pumps (3 pumps, 345 gpm @ 140 psi)	Energy	\$95,000/yr ^a
RO System (Membrane replacement)	Material	\$100,000/yr ^c
RO System (Brine Disposal)	Material	\$255,000 ^d

^a Costs are based on \$0.13/KWhr for energy cost.

^b Based on a membrane replacement life cycle of 8 years.

^c Preliminary estimate based on cost information obtained from Osmonics.

^d Based on hauling brine for ocean discharge.

Attachment 2

City of Healdsburg
Recycled Water System Project
Engineer's Opinion of Probable Cost
19-Feb-10

ENR CCI (February 2010)

8671.77

No.	Description	Quantity	Unit	Unit Price	Total
1	Mobilization and Demobilization (4% of Construction Subtotal)	1	LS	\$ 354,000.00	\$ 354,000
2	SWPPP Implementation (1% of Construction Subtotal)	1	LS	\$ 89,000.00	\$ 89,000
3	Traffic Control (3% of Construction Subtotal)	1	LS	\$ 266,000.00	\$ 266,000
4	Trench Sheeting, Shoring and Bracing (Recycled Water, 3% of RW Pipe)	1	LS	\$ 107,000.00	\$ 107,000
5	Trench Sheeting, Shoring and Bracing (Storm Drain, 10% of SD Pipe)	1	LS	\$ 36,000.00	\$ 36,000
6	Tayman Park Reservoir Site Tree Removal	4	EA	\$ 2,000.00	\$ 8,000
7	Tayman Park Reservoir Site Demolition	1	LS	\$ 150,000.00	\$ 150,000
8	Tayman Park Reservoir Site Excavation	2,596	CY	\$ 10.00	\$ 25,960
9	Tayman Park Reservoir Site Fill	1,852	CY	\$ 15.00	\$ 27,780
	Tayman Park Reservoir Class 2 A.B. (Under AC Paving)	290	CY	\$ 8.00	\$ 2,320
10	Tayman Park Reservoir AC Paving	99	TON	\$ 110.00	\$ 10,890
11	Tayman Park Reservoir Gravel Surfacing (Class 2 A.B.)	1,050	SY	\$ 8.00	\$ 8,400
12	Tayman Park Reservoir Flush Retaining Curb	376	LF	\$ 18.00	\$ 6,768
13	Tayman Park Reservoir Fencing & Gates	70	LF	\$ 60.00	\$ 4,200
14	Tayman Park Reservoir 8-Inch Ductile Iron Yard Piping (AWWA C151)	283	LF	\$ 85.00	\$ 24,055
15	Tayman Park Reservoir 12-Inch Ductile Iron Yard Piping (AWWA C151)	350	LF	\$ 110.00	\$ 38,500
46	Tayman Park Reservoir 8-Inch Motor Actuated Butterfly Valve	1	EA	\$ 2,000.00	\$ 2,000
47	Tayman Park Reservoir 12-Inch Motor Actuated Butterfly Valve in Vault	1	EA	\$ 3,500.00	\$ 3,500
48	Tayman Park Reservoir 12-Inch Check Valve in Vault	1	EA	\$ 5,500.00	\$ 5,500
49	Tayman Park Reservoir 8-Inch Magnetic Flow Meter	1	EA	\$ 5,000.00	\$ 5,000
16	Tayman Park Reservoir Overflow/Drain Vault, Piping & Outfall	1	LS	\$ 10,000.00	\$ 10,000
60	Tayman Park GFS Reservoir and Foundation	1	LS	\$ 550,000.00	\$ 550,000
61	Tayman Park Reservoir Site Electrical	1	LS	\$ 40,000.00	\$ 40,000
26	4-Inch Recycled Water Main AC Pavement Surface Restoration	660	LF	\$ 85.00	\$ 42,900
27	8-Inch Recycled Water Main AC Pavement Surface Restoration	12,718	LF	\$ 85.00	\$ 1,081,030
28	12-Inch Raw & Recycled Water Main AC Pavement Surface Restoration	17,592	LF	\$ 110.00	\$ 1,935,120
29	12-Inch Recycled Water Main Non-Pavement Surface Restoration	3,475	LF	\$ 85.00	\$ 295,375
30	16-Inch Recycled Water Main AC Pavement Surface Restoration	44	LF	\$ 125.00	\$ 5,500
42	4-Inch Gate Valve (City Std.)	1	EA	\$ 1,600.00	\$ 1,600
43	8-Inch Gate Valve (City Std.)	13	EA	\$ 1,900.00	\$ 24,700
44	12-Inch Gate Valve (City Std.)	25	EA	\$ 2,300.00	\$ 57,500
45	16-Inch Gate Valve (City Std.)	1	EA	\$ 11,000.00	\$ 11,000
50	2-Inch Blowoff (City Std.)	5	EA	\$ 1,600.00	\$ 8,000
51	1-Inch Air Release Valve (City Std.)	23	EA	\$ 2,500.00	\$ 57,500
	Fire Hydrant (City Std.)	2	EA	\$ 5,000.00	\$ 10,000
37	6-Inch Agricultural Irrigation Service Connections (Tee with Blind Flange)	17	EA	\$ 750.00	\$ 12,750
38	3-Inch Irrigation Service Connection (Valve Included)	3	EA	\$ 2,500.00	\$ 7,500
39	4-Inch Irrigation Service Connection (Valve Included)	2	EA	\$ 3,000.00	\$ 6,000
40	6-Inch Irrigation Service Connection (Valve Included)	2	EA	\$ 4,500.00	\$ 9,000
41	Badger Park Recycled Water Irrigation Retrofit	1	LS	\$ 17,298.00	\$ 17,298
	Recreation Park Recycled Water Irrigation Retrofit	1	LS	\$ 8,045.00	\$ 8,045
31	Magnolia Bridge 8-Inch Recycled Water Main Ductile Iron (AWWA C151)	170	LF	\$ 165.00	\$ 28,050
34	Magnolia Bridge Above Grade Pipe Brackets	9	EA	\$ 300.00	\$ 2,700
	Magnolia Bridge Wing Wall Pipe Penetration	2	EA	\$ 1,200.00	\$ 2,400
	Magnolia Bridge Remove and Replace Barricade	2	EA	\$ 1,500.00	\$ 3,000
32	Mill Creek Bridge 12-Inch Raw & Recycled Water Main Ductile Iron (AWWA C151)	135	LF	\$ 200.00	\$ 27,000
33	Mill Creek Bridge Above Grade Pipe Brackets	14	EA	\$ 300.00	\$ 4,200
35	Mill Creek Bridge Thrust Collars	2	EA	\$ 1,500.00	\$ 3,000
58	Aerial Crossing Structure over Dry Creek	1	LS	\$ 402,624.00	\$ 402,624
59	Aerial Crossing 12-Inch FLEX-TEND Force Balance Fittings	2	EA	\$ 18,000.00	\$ 36,000
	Aerial Crossing Welded Steel Recycled Water Main (AWWA C200)	500	LF	\$ 200.00	\$ 100,000
52	Above Grade Air Release Valve - (Aerial Crossing & Bridge Crossings)	3	EA	\$ 1,000.00	\$ 3,000
57	Bore and Jack Recycled Water and Water Main (Hwy 101 Crossing)	1	LS	\$ 691,000.00	\$ 691,000
19	72-Inch Storm Drain Manhole	7	EA	\$ 7,000.00	\$ 49,000
20	96-Inch Storm Drain Manhole	2	EA	\$ 10,000.00	\$ 20,000
21	Storm Drain Drop Inlet	3	EA	\$ 2,000.00	\$ 6,000
22	15-Inch Storm Drain - (RCP)	87	LF	\$ 65.00	\$ 5,655
23	18-Inch Storm Drain - (RCP)	70	LF	\$ 75.00	\$ 5,250
24	36-Inch Storm Drain - (RCP)	233	LF	\$ 100.00	\$ 23,300
25	48-Inch Storm Drain - (RCP)	1,945	LF	\$ 125.00	\$ 243,125
17	Replace Survey Monument (City Std.)	2	EA	\$ 1,500.00	\$ 3,000
18	Minor Concrete	100	SF	\$ 25.00	\$ 2,500
53	Replace 1-Inch Water Service (City Std.)	40	EA	\$ 1,650.00	\$ 66,000
54	Replace 2-Inch Water Service (City Std.)	10	EA	\$ 1,850.00	\$ 18,500
55	Replace 4-Inch Sanitary Sewer Lateral (City Std.)	30	EA	\$ 1,200.00	\$ 36,000
56	Replace 6-Inch Sanitary Sewer Lateral (City Std.)	20	EA	\$ 1,500.00	\$ 30,000
62	Recycled Water Pump Station and Yard Piping	1	LS	\$ 430,000.00	\$ 430,000
	Contractor's Bonds, Insurance, Overhead and Profit (17%)				\$ 1,293,189
	Construction Subtotal				\$ 8,900,184
	Construction Contingency (15%)				\$ 1,335,028
	SUBTOTAL				\$ 10,235,212
	Construction Engineering and Geotech				\$ 170,000
	Construction Management				\$ -
	Project Administration				\$ 307,056
	SUBTOTAL				\$ 477,056
	TOTAL				\$ 10,712,268

Rate Analysis for:

Applicant: **CITY OF HEALDSBURG**
 Project: **RECYCLED WATER PROJECT**

version 4.3

Instructions: Enter data only in highlighted areas Date: **10/29/09**

PROJECT INFORMATION		Observations:	SOURCES OF FUNDS	
Total Project Costs:	\$24,750,000.00		Assume:	
Equivalent Dwelling Units:	6,284.00		USDA Loans:	\$9,800,000.00
Annual Operating and Maintenance Costs:	\$5,237,695.00	FY 2012	USDA Grants:	\$4,200,000.00
Existing Annual Debt Service:	\$1,315,213.00	Debt Service on Balance of Series 2006	Applicant Contribution	\$1,000,000.00
Average Monthly Existing Rates:	\$78.18		Refi 2005D & 2006 (Part)	\$9,750,000.00
Estimated Other Income			Other Proposed Grant	\$0.00
Estimated Interest Income:	\$75,000.00		TOTAL:	\$24,750,000.00

30% of USDA funding
 3.5M refi 2005 and 6.25M on 2006 debt

Comments: Regarding Average Monthly Existing Rates:
 Apply to existing rate schedule - show calculations Average Winter Water Use is 42,582HCF/6284 EDUs = 6.78 HFC per EDU 6.78 x \$5.86 = 39.73 plus 38.45 base charge = \$78.18/month/EDU

Crosscheck Rate/EDU with most recent Audit (Optional)
 June 30, 2008 Audit - Sewer Sales \$5,506,437/6284/12 = \$73.02/mo/edu Note that rates increased in July, 2009 which is reflected in the Average Monthly Existing Rates above.

Note: Loan (including interest rate) and Grant amounts are preliminary and subject to change at loan approval - analysis does not imply loan/grant approval

IMPACT ON RATES

USDA Loan Amount:	\$19,550,000.00	\$9.8 loan and \$9.
Rate :	4.250%	40 Years
Multiplier:	0.05242	MHI-\$48,995 2000 Census
USDA Loan x multiplier =	\$1,024,811.00	new debt service per year

Therefore:	\$1,024,811.00	new USDA debt service/EDU =	\$163.08
	\$102,481.10	required USDA reserve/EDU =	\$16.31
	\$5,237,695.00	Operating. & Maintenance / EDU =	\$833.50
	\$1,315,213.00	Existing annual debt svc. / EDU =	\$209.30
	\$0.00	Other Proposed debt service/EDU=	\$0.00
		TOTAL:	\$1,222.18 /EDU/year
		or	\$101.85 /EDU/mo without debt coverage ratio

Rate Increase Required:

Select Yearly Rate	\$1,267.00	Monthly Rate/EDU	\$105.58	/EDU/mo with debt coverage ratio
Existing Yearly Rates/EDU:	\$938.16	Monthly Rate/EDU	\$78.18	
		Monthly Rate Increase/EDU =	\$27.40	

FUNDS AVAILABLE

New Yearly Rate x EDUs =	\$7,961,828.00	/year
Less O&M	\$5,237,695.00	/year
Plus Interest Income	\$75,000.00	/year
Plus Other Income	\$0.00	
Available for Debt Service=	\$2,799,133.00	/year

DEBT SERVICE

USDA Debt Service =	\$1,024,811.00	/year
USDA Reserve =	\$102,481.10	/year
Existing Debt=	\$1,315,213.00	/year
Other Proposed Debt	\$0.00	/year
Total Debt Service =	\$2,442,505.10	/year

Surplus (+) or Deficit (-) = **\$356,627.90 /year**
 Debt Coverage Ratio = 1.20

Conclusions: Parity Debt requires 120% debt service coverage. So, \$2,799,133/(2,442,505-102,481) = 1.20. Yearly rate per EDU will be \$1,267.00 requiring a monthly rate increase of \$27.40/month/EDU.



April 21, 2010

Mr. Geoffrey Hales, Chair
and Members of the
California Regional Water Quality Control Board, North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

RE: Comments on NPDES Order R1-2010-0034 & CDO Order R1-2010-0035 for the City of
Healdsburg – Support with Clarifications

Dear Chair Hales and Members of the Board,

I am submitting these comments on the proposed NPDES Order R1-2010-0034 & CDO Order R1-2010-0035 for the City of Healdsburg (Permit) on behalf of Russian Riverkeeper and our over 1450 members in support of our mission to work with the community to advocate, educate and uphold our environmental laws to ensure the protection and restoration of the Russian River.

In general we support this draft Permit as being a model for protecting groundwater quality from pollutants remaining in reclaimed water and believe it can be improved with some clarifications as detailed below. We also support the conditions in the CDO Order allowing continued discharge to the Basalt Pit while the City is moving forward on developing a reclaimed water distribution system and reuse projects.

I would like to begin by acknowledging the efforts of the City of Healdsburg in upgrading their treatment plant to advanced tertiary producing the highest quality effluent in the Russian River watershed. At the same time we have held several meetings with Healdsburg City Manager and staff to discuss future reclaimed water use and we appreciate their willingness to listen to our concerns – many of which are addressed in this permit. We also applaud the Waterboard staff, Cathy Goodwin and John Short, for working with Healdsburg and the concerned community to develop a well thought out draft Permit that considers all interests and the Board's mandate.

Overall this Permit represents the first Permit to incorporate the recently adopted SWRCB Recycled Water Policy (RWP) and we find that the Permit reflects the language and intent of the RWP. In general, we strongly support most of the Permit terms and find that some clarifications would help improve the Permit and its implementation as detailed below.

Suggested Clarifications to the draft Permit:

- 2 | - Clarify that ALL reclamation projects must comply with conditions in Attachment G Specifically: NPDES Order Pgs 19, footnote 8; Att. F Pgs F15-19; Att G Pgs G7-8 paragraph 5

- 3 | - Attachment E Page 14, sections VII-B must be acknowledge that Att G could require groundwater monitoring.
- 4 | - Clarify how prohibition in Att G Pg G-4 paragraph 13 will be met by irrigators

Clarify that ALL reclamation projects must comply with conditions in Attachment G

2 | The Permit is not clear in several sections whether all reclamation projects shall comply with the conditions outlined in Attachment G. In the following sections of the Permit there is discussion about certain certified and pending EIRs and CEQA documents and alludes that projects in previously approved EIRs are not subject to Att. G. The sections are NPDES Order Pgs 19, footnote 8; Att. F Pgs F15-19; Att. G Pgs G7-8 paragraph 5. The Permit should be amended to make it clear that since Healdsburg has no current operating and approved projects that ALL projects whether covered in the 2005 EIR or other CEQA documents still must comply with Att. G to be permitted. The 2005 EIR occurred prior to the approval of the State Recycled Water Policy, which should be considered substantial new information along with the conclusions of the Yates study of Dry Creek impacts from the NSCARP project (study att'd).

Attachment E Page 14, section VII-B must be acknowledge that Att. G could require groundwater monitoring.

3 | We believe adding the phrase, "Unless required under Attachment G" to the end of the sentence will clarify this section, as monitoring and reporting could be required under Attachment G.

Clarify how irrigators will meet prohibition in Att. G Pg. G-4 paragraph 13

4 | We support the prohibition on allowing direct or windblown spray or mist from entering places where the public could be exposed but believe the permit needs to clarify this by adding some information in the findings or in this section. Healdsburg intends to extend reclaimed water supply lines into town to serve parks, schools and the City-owned Tayman Park Golf Course. Currently these areas are irrigated when the prevailing afternoon and evening sea breezes are blowing from the south and irrigation water from sprinklers sprays and blows on to several roadways and public sidewalks. In order to prevent any spray from entering places where the public could be exposed, irrigation with spray-type delivery should be prohibited during windy periods when spray can reach roadways or paths used by the public. We are not confident that the simple prohibition will suffice since most irrigation systems slated to conversion to reclaimed water would need substantial modification with either layout to controls to avoid this problem. Additionally it should be noted that sprays reaching roadways often convey excess reclaimed water to stormdrains and creeks so this is a surface water issue as well as a human health issue.

The conditions and requirements of Attachment G are critical to implementing the State RWP and protecting groundwater.

5 | Our concern over the potential for groundwater contamination is based on several scientific reports, Yates (2009), and Kennedy/Jenks (2007): January 2007 Technical Memorandum I-3, Sub Regional Soil Column Study and I-5, Indirect Discharge Water Quality Constituent Attenuation Study, Santa Rosa IRWP Discharge Compliance Project, Draft Engineering Report for DEIR. These reports show poor to no attenuation for several water contaminants and the potential for groundwater degradation below drinking water source standards in alluvial soils. This is counter to the goal of the May 2009 State Recycled Water Policy to extend our limited supplies of potable water in California. The Recycled Water Policy

5 acknowledges we have a problem with limited supplies of potable quality water to serve our states various needs. It needs to be acknowledged that large quantities of fresh water are not available for public use due to contamination – this limits the supply of water available for the state. We participated in the development of the Recycled Water Policy expressly to ensure the protection of existing water quality so that the goal of extended our total water supply in this state is realized. The requirements in the RWP for site-specific studies were driven by the need to ensure we first do no harm when increasing our state’s use of recycled water. The requirements in attachment G of this Permit reflect those goals and are a critical part of this Permit in order to ensure protection of existing water quality.

6 **Conditions Requiring Site-Specific Studies are Present in the Permit Area**

A large portion of the areas slated for reclaimed water use in the Healdsburg 2005 EIR are located in the Middle Reach of the Russian River adjacent to the Healdsburg Treatment Plant. This area is all alluvial soil well below the groundwater depth as evidenced by the open pit mines formerly operated by Syar Industries. These pits are excavated as deep as 70 feet showing that the alluvial deposits exist well below the average groundwater level of 30-40ft. This tells us the any reclaimed water applied to the surface in excess of actual agronomic demand will quickly transport to groundwater. In fact recent studies in Napa Valley have conservatively estimated that at least 10% of irrigation water “zips right past the plants, hardly even pausing” Science Daily (2009). Additionally some groundwater studies show that concentrations of Total Dissolved Solids and Nitrates are already elevated allowing less room for assimilative capacity. These site specific conditions are exactly the kind that are described in the State RWP as requiring site specific studies and we appreciate the Permit’s acknowledgement of this fact.

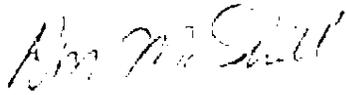
7 **Strong Support for Public Review on Individual Reclaimed Water Projects & Engineering Reports**

Many of the mitigations, best management practices and prohibitions that will be prescribed for individual reclaimed water irrigation projects will be contained in the Title 22 Engineering Report and studies required in the Permit. We strongly support providing public review and comment opportunities for these reports rather than just Executive Officer approval is critical since people affected by these projects will not be able to comment otherwise. One example is myself as I live next door to the Healdsburg golf course and I regularly walk my dog on our street, which is sprayed with irrigation water most days of the summer due to wind. Once that irrigation source is reclaimed water I would want to be assured that when my kids walk the dog in the evening they will not get directly sprayed with recycled water. Without being able to review and comment on the engineering report or site specific BMP’s, how can I know my family will not get sprayed by reclaimed water? Additionally since I am quite familiar with the over-spray from the golf course, likely far more than the operators, I will have productive suggestions to offer to allow use of reclaimed water while reducing any potential for direct human contact during irrigation. The same line of thinking goes for a property owner who has their well in a vineyard slated for reclaimed water irrigation, that person should have a voice as they will be affected by the project directly and might have good suggestions to reduce impacts as well.

In summary we support the proposed Permit and CDO Order with the clarifications and amendments suggested above and appreciate the efforts of staff and the City of Healdsburg to craft a permit that addresses the State Recycled Water Policy mandate to protect groundwater and still provides for feasible use of reclaimed water for irrigation.

Thank you for your consideration of our comments.

Sincerely,



Don McEnhill
Executive Director/
Riverkeeper

References:

Kennedy/Jenks: January 2007 Technical Memorandum I-3, Sub Regional Soil Column Study and I-5, Indirect Discharge Water Quality Constituent Attenuation Study, Santa Rosa IRWP Discharge Compliance Project, Draft Engineering Report for DEIR

Yates, Gus: 2009; Northern Sonoma County Agricultural Reuse Project, Final Environmental Impact Report: Technical Review of Hydrology and Water Quality Issues; submitted to SCWA NSCARP FEIR in letter to David Cuneo

Science Daily, 12/21/2009; **Lost Water of the Napa Valley Vineyards** ,
www.sciencedaily.com/releases/2009/12/091216103605.htm

From: Brenda Adelman <rrwpc@comcast.net>
To: Cathy Goodwin <cgoodwin@waterboards.ca.gov>
CC: Cat Kuhlman <CKuhlman@waterboards.ca.gov>, John Short <jshort@waterboard...>
Date: 4/23/2010 12:16 PM
Subject: Water Reclamation Requirements for Healdsburg

Hi Cathy!

As you know, I have been deeply concerned about the issue of irrigation with wastewater for a very long time. I have commented extensively on the State Board's Recycled Water Policy and the MS4 Permit dealing with recycled water. I have been particularly concerned about incidental runoff and the potential for water quality impacts resulting from runoff at a time when streams are most vulnerable to pollution. I have also been very concerned about the synergistic effects of residue toxins remaining in wastewater as they combine with fertilizers, pesticides, fungicides, and herbicides during the irrigation process.

1 | I recently read Attachment G: Water Reclamation Requirements and Provisions for the Healdsburg Draft Permit. On behalf of Russian River Watershed Protection Committee, I strongly support the current draft. I hope there are few changes (except of course, the ones I recommend), but would like to be kept informed as the process proceeds.

I only have a few comments/questions/suggested changes as follows:

2 | Page G-3: #7 I believe there needs to be a follow up statement as to what should happen should such an event occur. For instance, immediate cessation of irrigation until notification indicates wastewater quality is again restored.

3 | Page G-4: #11b: It refers to "appropriate" setbacks. Is this defined somewhere? Does it refer to item 11a right before stating there should be a 100 foot setback to all surface waters? Also I think I remember that in the MS4 Permit requirements, no median strips or narrow vegetative strips between sidewalk and street should be irrigated. I don't recall seeing any such directions in these regulations.

4 | Page G-7 #3: This refers to periodic inspections but doesn't specify what is meant. I think you need to designate a minimum interval between inspections, such as weekly, monthly, or bi-monthly for this to have meaning and to be effective. (This comment also applies to page G-11 f-1)

5 | I am disappointed that there was no attempt to deal with pesticide, herbicide, fungicide issues. Can anything be inserted about not irrigating within a certain time of application? Is there any way you can put in some protection from this activity?

Congratulations on a job well done. I hope this document is adopted without too many changes. Please keep me informed on this issue. I would like to know the timeline for adoption of this permit.

Sincerely,
Brenda Adelman

Note: Comment numbers correspond to numbering under the City of Santa Rosa heading in the Healdsburg Response to Comments document.



April 22, 2010

Regional Water Quality Control Board, North Coastal Region
Attention: Cathy Goodwin
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Subject: Comments on Draft Order No. R1-2010-0034

Dear Ms Goodwin:

WaterReuse California appreciates the opportunity to submit comments on Draft Order No. R1-2010-0034 Waste Discharge Requirements and Master Reclamation Permit for the City of Healdsburg Wastewater Treatment, Reclamation and Disposal Facility Sonoma County (Draft Order). Our members are local public agencies and professionals engaged in the production and distribution of recycled water for beneficial use throughout the State. WaterReuse California was actively engaged in the development of the Recycled Water Policy, adopted by State Water Resources Control Board (SWRCB) in early February 2009. We strongly support the Policy's emphasis on streamlining and simplifying permitting for irrigation projects using recycled water. The Draft Order must be consistent with and further this important Policy.

As SWRCB acknowledged in the Policy, use of recycled water in California is more important today than at any other time in our history. The sustainability of the State's future water supply and economy depend upon increased recycled water use. As California's Recycled Water Task Force recognized in 2003, recycled water is at an artificial, unfair and unnecessary disadvantage compared to other, typically less energy-efficient water sources. The primary reason for this is regulatory inconsistency and overly burdensome requirements in the permitting of recycled water projects. We are concerned that particular portions of the Draft Order perpetuate pre-Policy regulatory approaches that discourage recycling, and our comments (provided below) address such portions of the Draft Order.

Attachment F – Fact Sheet

2 Section IV.G.4. Water Reclamation Requirements and Provision on page F-54 states that the order is consistent with State Water Board Order No. 2009-0006-WQ, General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water, adopted by the State Water Board on July 7, 2009 (General Landscape Permit). While an adopted order may indeed be consistent with the General Landscape Permit (although our

Recycling Water to Meet the World's Needs

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2 comments below and other changes would be needed for it to be consistent with the General Landscape Permit), consistency should be considered incidental. Like all general permits, the General Landscape Permit was developed to protect beneficial uses without advance knowledge of site-specific conditions. As a consequence, the General Landscape Permit contains provisions that would be inappropriate in a master reclamation permit issued in response to a particular report of waste discharge (ROWD) for particular recycled water producer/distributor like the City of Healdsburg. We suggest that reference to the General Landscape Permit be deleted for accuracy and to avoid the implication that consistency is necessary.

Attachment G Water Reclamation Requirements and Provisions,

A. Water Reclamation Findings

3 Paragraph 7 requires that “[a]ll runoff incidents, including incidental runoff, shall be summarized in the Discharger’s quarterly recycled water monitoring report.” This is an impossible standard to meet and unnecessary. We suggest that runoff events that this requirement be modified to require reporting of discharge events exceeding the 50,000 gallon limit as required in Section 13529.2. WaterReuse California is assisting SWRCB evaluate the frequency and magnitude of runoff events and this information can be used in the future by RWQCB to determine appropriate reporting requirements.

B. Water Reclamation Requirements.

4 **Paragraph 11.A** This paragraph requires a 100-foot setback of new recycling sites from surface waters. The Draft Order does not provide any rationale or justification for this restriction. Such a restriction would make irrigation of golf courses and many agricultural lands infeasible because alternative irrigation supply would be needed for areas closer than 100 feet. Properly designed and managed irrigation systems account for site-specific conditions and are operated to prevent impacts on surface water. The order should require design of appropriate facilities to protect surface water but should not presume to know what set-back distance is needed at all sites. In fact, the concept of a “bright-line” setback distance was discussed and rejected by the water and environmental stakeholders who negotiated the draft Recycled Water Policy. All stakeholders acknowledged that proper design and operation practices could protect surface water and that a “once-size-fits-all” setback distance was inappropriately restrictive.

5 **Paragraph 24.** Please modify the paragraph 24 to acknowledge the Department of Public Health’s (DPH’s) authority under Title 22 Section 60310(g) to approve alternate signage.

C. Water Reclamation Provisions

6 **Paragraph 2.** This paragraph mis-applies Title 22 sections related to engineering reports by requiring that engineering reports be submitted *for approval* by RWQCB and DPH.

Title 22 Section 60313.d requires engineering report approval as a condition of recycled water delivery to dual plumbed sites as defined in Title 22 Section 60301.250. The City of Healdsburg has not proposed to serve such sites. Therefore, engineering report approval is not required. Paragraph 2 should be revised to clarify that engineering report approval is needed consistent with Title 22 Section 60313.d.

7 **Paragraph 3.** Title 22 Section 60314.a requires cross-connection testing only at dual plumbed use sites. Paragraph 3 should be modified so that it is consistent with Title 22 in this regard.

8 **Paragraph 5.** The City of Healdsburg has submitted an ROWD for its reclamation program and paragraph 5 requires submittal of additional irrigation site-specific ROWDs, which is unnecessary, burdensome and inconsistent with the intent of master reclamation permits. Furthermore, the Draft Order subjects such a submittal to review and approval by staff following a 21-day public review period. Title 22 regulations have had extensive public review as have regulations establishing master reclamation permits (which created the regulatory approach wherein Use Areas are added with submitted information as specified in Appendix E Monitoring and Reporting Program Section D.2.A.i). WaterReuse California supports the notion that RWQCB staff have the authority to, and should review information submitted for each Use Area to verify compliance *with existing regulations* but subjecting these submittals to further public review is unnecessary. RWQCB staff does not need public input to determine compliance of the proposed irrigation with Title 22. Review for any other purpose is contrary to Title 22 regulations, counter to SWRCB's Recycled Water Policy and therefore unjustifiable. The reporting requirements specified in Appendix E Monitoring and Reporting Program Section D.2.A.i are sufficient and consistent with the intent of master reclamation permits. In fact the addition of site-specific public review periods flies in the face of the legislative authority for Master Reclamation Permits (Water Code Section 13523.1) which clearly anticipates a single public review period. Ongoing operations should be consistent with the recycled water purveyors adopted rules and regulations.

WaterReuse California supports the requirement that an operations and management plan be developed consistent with Section 7 of the SWRCB's Recycled Water Policy. However, the provisions in paragraph 5.h impose additional burdens that substantially exceed the requirements of Section 7 of the SWRCB's Recycled Water Policy and no justification is provided as follows:

- 9
- **Emergency Backup.** Paragraph 5.h.i specifies that BMPs employed to maintain compliance at recycled water Use Areas include "emergency backup systems." Neither the definition of, nor the need for such systems is provided in the Draft Order. Neither Section 7 of the SWRCB's Recycled Water Policy nor the Landscape General Permit make any mention of the need for emergency backup systems at recycled water Use Areas. Title 22 Section 60341 describes emergency storage and disposal requirements for inadequately treated recycled water. The Draft Order should be

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modified to refer to Section 60341 or the requirement for emergency backup systems should be removed completely.

- 10 • Nutrient Management. WaterReuse California supports the proposed requirement that the City of Healdsburg inform recycled water users of the nutrient content of its recycled water and provide information on how landscape and agricultural managers calculate agronomic nutrient demand, but any requirement that the City of Healdsburg control nutrient applications inappropriately requires the recycled water purveyor to intrude into land management decisions where it has no such authority nor, necessarily, expertise. Specifically, the first sentence in paragraph 5.h.iii.d should be deleted.
- 11 • In paragraph 5.h.iii.d “and/or” should be changed to “and” to be consistent with paragraph 7.b.1 of SWRCB’s Recycled Water Policy. The language in paragraph 7.b1 is the result of considerable stakeholder collaboration and public process, and deviation from it, especially with no justification, is inappropriate.

Thank you for your consideration. Please contact me if you have questions or to request additional information.

Sincerely,



David W. Smith, PhD
Managing Director

cc: Jim Flugum, City of Healdsburg