

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2012-0008

WASTE DISCHARGE REQUIREMENTS
FOR
RIVIERA WEST MUTUAL WATER COMPANY
RIVIERA WEST WATER TREATMENT PLANT
LAKE COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board), finds that:

1. The Riviera West Mutual Water Company (hereafter "Discharger") submitted Report of Waste Discharge (RWD) dated 29 December 2008, to apply for Waste Discharge Requirements (WDRs) for the existing Riviera West Water Treatment Plant (WTP). Additional information was submitted on 24 April 2009.
2. The Riviera West Water Treatment Plant (WTP) and land application area are located at 8560 Soda Bay Road on the edge of Clear Lake (Assessors Parcel Nos. 44-340-25 and -24) Section 9, T13N, R8W, MDB&M, as shown on Attachment A, which is attached hereto and made part of the Order by reference.
3. The Discharger owns and operates the WTP and land application area, therefore is responsible for compliance with this Order.
4. Before the permit was rescinded, filter backwash supernatant was allowed to be discharged to Clear Lake under National Pollutant Discharge Elimination System (NPDES) Order R5-2002-0130. Cease and Desist Order (CDO) R5-2002-0131 was issued concurrent with the NPDES permit due to a longstanding failure to submit monitoring reports and threatened violations of effluent limitations.
5. On 2 March 2011, a Notice of Violation and Order for Technical Reports was issued for failure to submit the requested additional information needed to complete the Report of Waste Discharge. The Discharger did not comply with the Order. However, the Discharger was cooperative in providing the necessary information needed to develop the tentative WDRs.
6. NPDES Order R5-2002-0130 expired on 30 June 2007 and was rescinded on 4 August 2011. The Discharger currently applies supernatant to an adjacent spray field. This discharge to land is not currently regulated.

EXISTING FACILITY AND DISCHARGE

7. Raw water from Clear Lake is pumped to the Riviera West WTP for treatment prior to distribution as potable water for the users of the Riviera West residential subdivision. The water treatment plant has been in operation since the 1970's.
8. The WTP provides treatment by coagulation, filtration, and chlorine disinfection. The WTP site plan is shown on Attachment B, which is attached hereto and made part of the Order by reference. Treated water is pumped to a storage tank for distribution. Solids that settle in the backwash tank are drained into the sludge holding tank. The sludge holding tank is pumped by a septic hauler for offsite disposal to a permitted facility.
9. Supernatant is decanted from the filter backwash tank and is land applied by sprinkler system to an adjacent two acre site, as shown in Attachment C, which is attached hereto and made part of the Order by reference.
10. The land application area (LAA) has a total area of approximately two acres and a net usable area of approximately 0.77 acres. The LAA is a hillside area that slopes to the north and northeast towards Clear Lake at a gradient of approximately 15 percent. It is covered by a moderately dense growth of native trees and grasses.
11. An existing gunite-lined drainage ditch is located along the northern property line of the LAA. The existing ditch conveys stormwater runoff from Soda Bay Road into a 36-inch pipe that drains into Clear Lake.
12. Monthly filter backwash water flow rates from 2008 are shown below. Approximately 5,000 gallons per day (gpd) of backwash water is generated. However, the Discharger states flow rates from 10,000 gpd to 15,000 gpd can occur during the summer months when more frequent backwashing takes place. The Discharger plans to irrigate with backwash water year round. During the summer months, when water usage is high, approximately 0.28 inches per day (in/day) of filter backwash water will be land-applied.

<u>Filter Backwash Water Flow Rates</u>		
<u>Month</u>	<u>Monthly Flow, gallons</u>	<u>Average Daily Flow, gpd</u>
January	101,000	3,258
February	82,000	2,828
March	81,000	2,613
April	104,000	3,467
May	185,000	5,968
June	157,000	5,233
July	212,000	6,839
August	206,000	6,645
September	208,000	6,933
October	148,000	4,774

<u>Filter Backwash Water Flow Rates</u>		
<u>Month</u>	<u>Monthly Flow, gallons</u>	<u>Average Daily Flow, gpd</u>
November	105,000	3,500
<u>December</u>	<u>117,000</u>	<u>3,774</u>
	Average	4,653

13. A geotechnical investigation, conducted within the LAA, indicated a soil infiltration rate of approximately 5.2 gpd/sq ft (8.3 in/day).
14. The following table summarizes raw and backwash water quality data from a single sampling event in January 2009.

<u>Constituent</u>	<u>Analytical Result (mg/L except as noted)</u>	
	<u>Raw Water</u>	<u>Backwash Water</u>
Aluminum	< 0.050	0.24
Arsenic	< 0.0020	< 0.0020
Boron	1.4	1.4
Cadmium	< 0.010	< 0.010
Calcium	28	27
Chromium	< 0.010	< 0.010
Copper	< 0.020	< 0.020
Iron	0.11	< 0.10
Lead	< 0.0050	< 0.0050
Magnesium	20	19
Manganese	< 0.020	0.084
Mercury	< 0.0010	< 0.0010
Nickel	< 0.010	< 0.010
Potassium	2.6	2.8
Silver	< 0.010	< 0.010
Sodium	15	16
Zinc	< 0.020	0.11
Total Alkalinity	160	160
Total Hardness	153	146
pH, std limits	7.7	7.6
Total Phosphorus	< 0.10	0.22
Total Dissolved Solids	170	180
Total Suspended Solids	1.8	3.8
Nitrate	< 1.0	< 1.0
Phosphate	0.7	1.0

Constituent	<u>Analytical Result (mg/L except as noted)</u>	
	Raw Water	Backwash Water
Chloride	8	12
Sulfate	5.3	5.5
Total Coliform Organisms, MPN/100ml	140	< 1.0
Total Trihalomethanes, µg/L	< 0.5	25.4

15. The analytical results above indicate that both the raw and backwash water are fairly similar in quality, with the exception of slightly elevated levels of aluminum, manganese, zinc, phosphorus, chloride, and total trihalomethanes (THMs). The elevated minerals concentrations are likely associated with samples not being filtered prior to preservation.
16. The backwash water quality appears to be good quality, with most constituents below primary and secondary maximum contaminant levels (MCLs), with the exception of manganese. The manganese concentration in the backwash water was slightly higher than the secondary MCL limit of 0.05 mg/L. However, the treatment process does not add manganese, so it is likely naturally-occurring in the lake water.

PROPOSED CHANGES TO FACILITY

17. The Discharger stopped discharging directly to Clear Lake and converted to a land discharge without first submitting a Report of Waste Discharge. The following changes were proposed in the RWD that was eventually submitted, and were described in the Initial Study, but some were never completed.

Proposed changes to the Riviera West WTP are discussed below. A process flow diagram of the proposed treatment system is shown on Attachment D, which is attached hereto and made part of the Order by reference.

- a. A clarifier will be installed prior to the filters to remove sediment and enhance filter efficiency. In the interim, a 7-foot diameter by 7-foot high clarifier will be installed within the WTP area, as shown on Attachment B. A permanent 30-foot diameter by 18-foot high clarifier tank will be installed at the LAA property as shown on Attachment C.
- b. A cut-off ditch (tailwater system) will be installed to collect supernatant runoff from the LAA; re-circulate runoff back into the 45,000 gallon filter backwash tank; and prevent collection of supernatant/stormwater mixtures from entering the existing drainage ditch.

Supernatant runoff will collect in the cut-off ditch and gravity flow into a sump. Check dams will be located along the ditch path to control flow and sediment from entering the sump. During normal operation, the tailwater return gate valve will be open and supernatant runoff will gravity flow from the sump back to the

filter backwash tank. To prevent sump overflows and supernatant discharge to surface waters, a high water level flow switch will be installed in the sump. When the flow switch is triggered, the backwash filter pump will shut off and discharge to the LAA will cease. During all other times, the tailwater return gate valve will be closed and stormwater that collects in the cut-off ditch will overflow onto the spillway and into the existing drainage ditch.

18. The cut-off ditch has not been constructed. Therefore, there is an ongoing threat of discharge to surface water. The Discharger is subject to the following conditions as specified in the Major Use Permit UP 09-14.
 - a. Prior to final grading permits, or a grading exemption, for the bio-swale (cut-off ditch), the permit holder shall obtain or show evidence of easements for the off-tract portions of the driveway that accesses the water plant.

The easement issue involves private land that is not part of the subdivision and may require legal action for resolution. Until the easement is recorded, the Discharger will not be able to obtain the required local permits. Therefore, it is appropriate for this Order to include a compliance schedule and allow one year for resolution to ensure that these improvements will be completed. However, this Order prohibits the discharge of waste to surface waters. The Discharger must submit an *Interim Compliance Plan* specifying in detail how such discharges will be prevented until the facility improvements are complete.

Frequent rain events are typical during the winter months in Lake County. The Discharger proposes to apply supernatant backwash water year round. This Order allows the discharge (combined precipitation and applied supernatant) to the LAA not to exceed a maximum of two inches per day (in/day). The soil capacity is approximately 8.3 in/day and the prohibition will provide a safety factor of greater than four. In addition, the *Interim Compliance Plan* must also specify how the Discharger will comply with this requirement.

SITE-SPECIFIC CONDITIONS

19. The Riviera West Mutual WTP is located on the west shore of Clear Lake, north of Konocti Bay. The LAA is adjacent to and north of the treatment plant access road, Soda Bay Road, and west of the WTP.
20. Based on soil mapping by the U.S Department of Agriculture, Natural Resources Conservation Service Web Soil Survey, soils throughout the site consist of the following:
 - a. Relatively shallow, gently sloping, well-drained soils formed from volcanic ash.
 - b. The surface layer is a loam about 26 inches thick over gravelly clay loam that extends to weathered volcanic bedrock at a depth of about 63 inches.

- c. Soil permeability is moderately high, runoff is moderately slow, and the hazard of erosion is slight.
- 21. Two test soil borings within the LAA were drilled during the geotechnical investigation conducted in February 2009. Surface soils encountered in the borings consist of clayey sands with gravel within the upper 5 to 12 feet, underlain by silty sand with gravel. Groundwater was not encountered in any of the test borings, which were advanced to depths of approximately 30 feet, where refusal occurred.
- 22. The WTP site is not located within the 100-year flood zone.
- 23. Based on the Department of Water Resource rainfall data for the Kelseyville Station No. A80 4488 00, the average annual precipitation near the facility is approximately 25.79 inches. The 100-year return period precipitation is approximately 46.72 inches. The reference evapotranspiration rate for the inland San Francisco Bay Area (Lake County) is approximately 49.4 inches.

GROUNDWATER CONSIDERATIONS

- 24. The LAA is sloped, ranging in elevations approximately 1,400 to 1,490 feet. Clear Lake has an approximate elevation of 1,329 feet. Based on information provided in the RWD, the groundwater table is at or slightly above lake level.
- 25. Based on topography and subsurface conditions, the local direction of shallow groundwater flow is likely eastward towards the lake.
- 26. The RWD did not provide data to characterize groundwater quality near or at the WTP site. However, based on subsurface conditions and proximity of the WTP to the lake, it is reasonable to expect that shallow groundwater quality is very similar to that of the lake.

BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

- 27. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011 (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
- 28. Surface water drainage is to Clear Lake. The beneficial uses of Clear Lake are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; spawning reproduction and/or early development; wildlife habitat; and commercial and sport fishing.

29. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, and industrial supply.
30. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
31. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
32. In summary, the narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
33. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater. The applicability of this objective to groundwater designated as MUN has been affirmed by State Water Board Order WQO-2003-0014 and by subsequent decisions of the Sacramento County Superior Court and California Court of Appeal, 3rd Appellate District.

ANTIDEGRADATION ANALYSIS

34. State Water Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
 - a. The degradation is consistent with the maximum benefit to the people of the State.
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses.
 - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
 - d. The Discharger employs best practicable treatment or control (BPTC) to minimize degradation.
35. Based on the RWD, raw water extracted from Clear Lake and the filter backwash supernatant are similar in quality; both are good quality water with most waste

constituents not exceeding primary and/or secondary MCLs. Therefore, the land application of backwash supernatant is unlikely to impact groundwater quality.

36. Degradation of groundwater by some of the typical waste constituents associated with discharges from a municipal water treatment facility is consistent with the maximum benefit to the people of the State. The technology, energy, and waste management advantages of municipal utility service far exceed any benefits derived from reliance on numerous, individual domestic wells, and the impact on water quality will be substantially less. When allowed, the degree of degradation permitted depends upon many factors (i.e., background water quality, the waste constituent, the beneficial uses and most stringent water quality objective, source control measures, and waste constituent treatability).
37. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS), nutrients and THMs, as discussed below:
 - a. Compared to the lake water TDS concentration of 170 mg/L, the filter backwash supernatant TDS concentration is similar (approximately 180 mg/L). TDS effluent quality is expected to remain the same despite the installation of a clarifier. Therefore, the discharge is not likely to degrade groundwater quality due to increased salinity, and a TDS effluent limit is not required to protect groundwater quality.
 - b. For nutrients such as nitrate, the potential for unreasonable degradation depends not only on the quality of the treated effluent, but the ability of the vadose zone below the land application area to provide an environment conducive to nitrification and denitrification to convert the effluent nitrogen to nitrate and the nitrate to nitrogen gas before it reaches the water table. Both the lake water and the backwash supernatant nitrate (as nitrogen) concentration are less than 1.0 mg/L. Therefore, the discharge is not likely to degrade groundwater quality due to increased nitrate, and a nitrate effluent limit is not required to protect groundwater quality.
 - c. Compared to the lake water THMs concentration of less than 0.5 mg/L, the filter backwash supernatant THMs concentration is elevated at approximately 25.41 mg/L. The supernatant will be applied by sprinkler irrigation and it is likely that most of the THMs will volatilize before the water percolates into the ground. In addition, THMs found in the supernatant do not exceed applicable primary and secondary MCLs. Therefore, the discharge is not likely to degrade groundwater quality due to increased THMs, and a THMs effluent limit is not required to protect groundwater quality.
38. The WTP provides treatment and control of the discharge that incorporates:
 - a. Technology for treatment to drinking water standards;
 - b. Approximately 0.77 net acres of land application area available for the application of filter backwash supernatant; and

- c. A tailwater system to collect and re-circulate supernatant runoff back into the backwash tank, and prevent the discharge of supernatant/stormwater mixtures to surface waters.
39. At this time, there is no reason to believe that additional control measures are needed to achieve the highest water quality consistent with the maximum benefit to the people of the State. The discharge poses little threat to groundwater quality based on the following:
- a. Character of the raw water treated at the WTP,
 - b. Nature of the treatment processes,
 - c. Character of the filter backwash supernatant, and
 - d. Depth to underlying groundwater beneath the LAA.
40. Although this Order does not require groundwater monitoring, it does include requirements for monitoring the raw water, supernatant discharge, and land application area. If the results of monitoring reveal a previously undetected threat to water quality or indicate a change in waste character such that the discharge poses a threat to water quality, the Executive Officer may require groundwater monitoring and/or the Central Valley Water Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution 68-16. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16.

OTHER REGULATORY CONSIDERATIONS

41. Water Code section 13267(b) provides that:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2012-0008 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

42. On 21 December 2010, the Lake County Community Development Department adopted a Mitigated Negative Declaration of Environmental Impact (MND) for the conversion from surface water discharge to land discharge and the water treatment plant improvements pursuant to the requirements of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.)("CEQA"). Mitigation measures to prevent potentially significant impacts to water quality identified in the MND were the following:

- a. Incorporate best management practices to the maximum extent practicable to prevent or reduce discharge of all construction or post construction pollutants in the County storm drainage system.
- b. A vegetative cover and/or organic materials shall be maintained within the sprinkler spray field to ensure that soil erosion is minimized for the life of the project.
- c. The Discharger shall comply with all requirements of the California Regional Water Quality Control Board to achieve and maintain compliance with their regulations and meet their waste discharge requirements.

The Central Valley Water Board finds that these mitigation measures, which are incorporated into this Order as discharge requirements, are adequate to reduce water quality impacts to less than significant.

43. In addition, this action to adopt waste discharge requirements for this existing facility is exempt from CEQA in accordance with California Code of Regulations, title 14, section 15301.

44. The California Code of Regulations, title 27 ("Title 27") contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater discharges. This exemption, found at Title 27, section 20090(b), is described below:

(b) Wastewater – Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields, if the following conditions are met:

- (1) The applicable regional water quality control board has issued WDRs, or waived such issuance;
- (2) The discharge is in compliance with the applicable water quality control plan; and
- (3) The wastewater does not need to be managed ... as a hazardous waste.

45. The discharge authorized herein is exempt from the requirements of Title 27 because:

- The Central Valley Water Board is issuing WDRs.
 - The discharge is in compliance with the Basin Plan, and;
 - The wastewater discharged to the LAA does not need to be managed as hazardous waste.
46. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the WTP is exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
47. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

PUBLIC NOTICE

48. All of the above and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
49. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
50. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13263 and 13267, the Riviera West Mutual Water Company and its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted there under, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions:

1. Discharge of wastes from both the WTP and LAA to surface waters is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in California Code of Regulations, title 23, section 2521(a) is prohibited. Discharge of waste classified as 'designated waste', as defined in Water Code section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

3. Discharges of waste to locations other than described in the Findings and shown on Attachment C are prohibited.

B. Discharge Specifications:

1. Discharge to the land application area shall be limited to a monthly average dry weather flow not to exceed 15,000 gpd during the months of May through September and a monthly average wet weather flow not to exceed 7,000 gpd during the months of October through April.
2. For any calendar day when supernatant is discharged to the LAA, the combined depth of supernatant applied and direct rainfall shall not exceed two inches. Compliance with this requirement shall be determined based on daily precipitation totals measured at the Kelseyville Station No. A80 4488 00 or other approved rain gauge.
3. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
4. Neither the treatment nor the discharge shall cause a nuisance or condition of pollution as defined by the Water Code section 13050.
5. Objectionable odors originating at this facility including the land application area shall not be perceivable beyond the limits of the water treatment plant site boundaries.
6. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
7. All treatment, storage, and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100 year return frequency.
8. The facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow and design seasonal precipitation during the winter months. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

C. Land Application Area Requirements:

1. The discharge of filter backwash supernatant shall be distributed uniformly on the LAA.
2. Discharge of filter backwash supernatant, including runoff, spray, or droplets from the system, shall not occur outside the boundaries of the LAA. Waste application

using sprinklers or drip irrigation is acceptable if the discharge complies with all requirements of this Order.

3. The Discharger shall maintain the LAA to prevent the runoff of supernatant water and supernatant/stormwater mixtures. Specifically, the tailwater return valve shall be open at all times when filter backwash supernatant is being discharged to the LAA.
4. All applied filter backwash supernatant must infiltrate before the next irrigation event. No pooling or ponding of irrigated water shall occur beyond 24 hours after application.
5. The Discharger shall not discharge supernatant to the LAA during moderate to heavy¹ precipitation, when storm water runoff is being generated, or when soils are saturated.
6. Discharges to LAA and vegetative cover within the LAA shall be managed to minimize both erosion and runoff from the irrigated area.
7. The LAA shall be managed to prevent breeding of mosquitoes. More specifically:
 - a. All applied irrigation water must infiltrate completely within 24 hours.
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.
 - c. Low pressure pipelines, unpressurized pipelines, and ditches that are accessible to mosquitoes shall not be used to store wastewater.
8. The application of supernatant to the LAA shall comply with the following setback requirements:

<u>Setback Definitions¹</u>	<u>Minimum Irrigation Setback (feet)</u>
Edge of land application area ² to any watercourse ³	25
Edge of land application area ² to industrial, domestic, or irrigation well	50
Edge of land application area ² to property line	5

¹ Additional setbacks may be needed to comply with other requirements of the Order.

² As defined by the wetted area produced during irrigation.

³ Excludes ditches used exclusively for tailwater return; includes the gunite-lined storm water drainage ditch.

¹ As defined by the National Oceanic and Atmospheric Administration (NOAA) publication at www.srh.noaa.gov/srh/dad/sfc/chapter4.pdf

D. Solids/Sludge Disposal Requirements:

1. Collected screenings and other solids removed from the water treatment plant shall be disposed of off-site in a manner that is consistent with Division 2 of Title 27.
2. Sludge and other solids generated from the water treatment process shall be removed from sumps, tanks, etc. as needed to ensure optimal operation and adequate hydraulic capacity.
3. Any proposed change in solids use or disposal practice from a previously approved practice shall be reported to the Executive Officer at least 90 days in advance of the change.

E. Groundwater Limitations:

1. Release of waste constituents from the discharge to the LAA shall not cause current groundwater quality to be degraded.

F. Provisions:

1. The following reports shall be submitted pursuant to Section 13267 of the Water Code and shall be prepared as described in Provision F.2.
 - a. By **1 March 2012**, the Discharger shall submit an *Interim Compliance Plan and Long Term Precipitation Compliance Plan* that provides the following:
 - i. Operational plans and specific procedures to be implemented to prevent the discharge of waste outside of the LAA and comply with this Order prior to the completion of the facility tailwater system improvements described in Finding 17.b.
 - ii. Operational plans and specific procedures that will be implemented to measure precipitation daily, prevent the over-application of wastewater to the LAA, and ensure continuous compliance with Discharge Specification B.2 and Land Application Area Requirement C.5.
 - iii. (Optional) If an onsite rain gauge is desired in lieu of using the Kelseyville weather station to determine compliance with Discharge Specification B.2, provide a map showing the location of the rain gauge, provide equipment specifications, and describe in detail the operational and maintenance procedures that will be implemented to ensure that rainfall totals are accurately measured daily.
 - b. By **1 March 2012**, the Discharger shall submit a *Land Application Flow Monitoring Plan* for review and approval that provides operational details describing how supernatant application flow will be monitored and how daily flow rates to the land application area will be determined.

- c. By **1 February 2013**, the Discharger shall submit a *Facility Improvements Construction Completion Report* demonstrating that the improvements described in Finding 17.b. have been completed to prevent any discharge outside of the LAA. The report shall include as built site plans depicting the locations and geometry of all new or expanded waste treatment and containment facilities, and shall demonstrate that these improvements are adequate to ensure complete containment of the waste.
2. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geological sciences, shall be prepared by, or under the direction of, persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with California Code of Regulations, title 16, sections 415 and 3065, all technical reports, must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
3. The Discharger shall comply with Monitoring and Reporting Program R5-2012-0008, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
4. The Discharger shall use the best practicable treatment and control, including proper operation and maintenance, to comply with this Order.
5. The Discharger shall report to the Central Valley Water Board any toxic chemical release data reported to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to Section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
6. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
7. At least 90 days prior to termination or expiration of any lease, contract, or agreement involving the sites and facilities used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
8. The Discharger shall submit to the Central Valley Water Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.

9. The Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
10. In the event of any change in control or ownership of the facility or land application areas, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved by the Executive Officer.
11. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel at each land application property shall be familiar with its contents.
12. The Central Valley Water Board will review this Order periodically and may revise requirements when necessary.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality
or will be provided upon request.

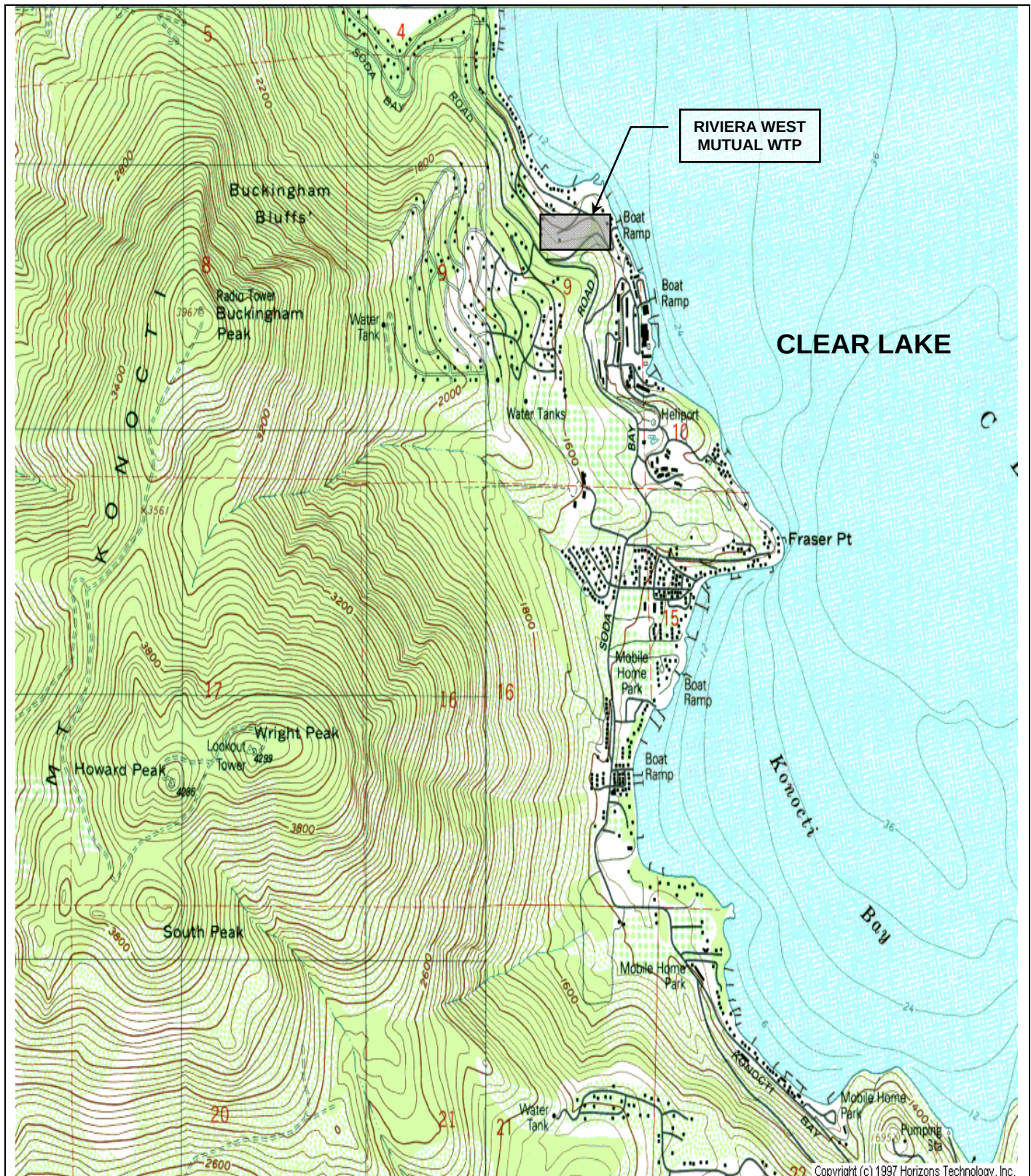
If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 2 February 2012.

Original signed by

PAMELA C. CREEDON, Executive Officer

LLA:020612

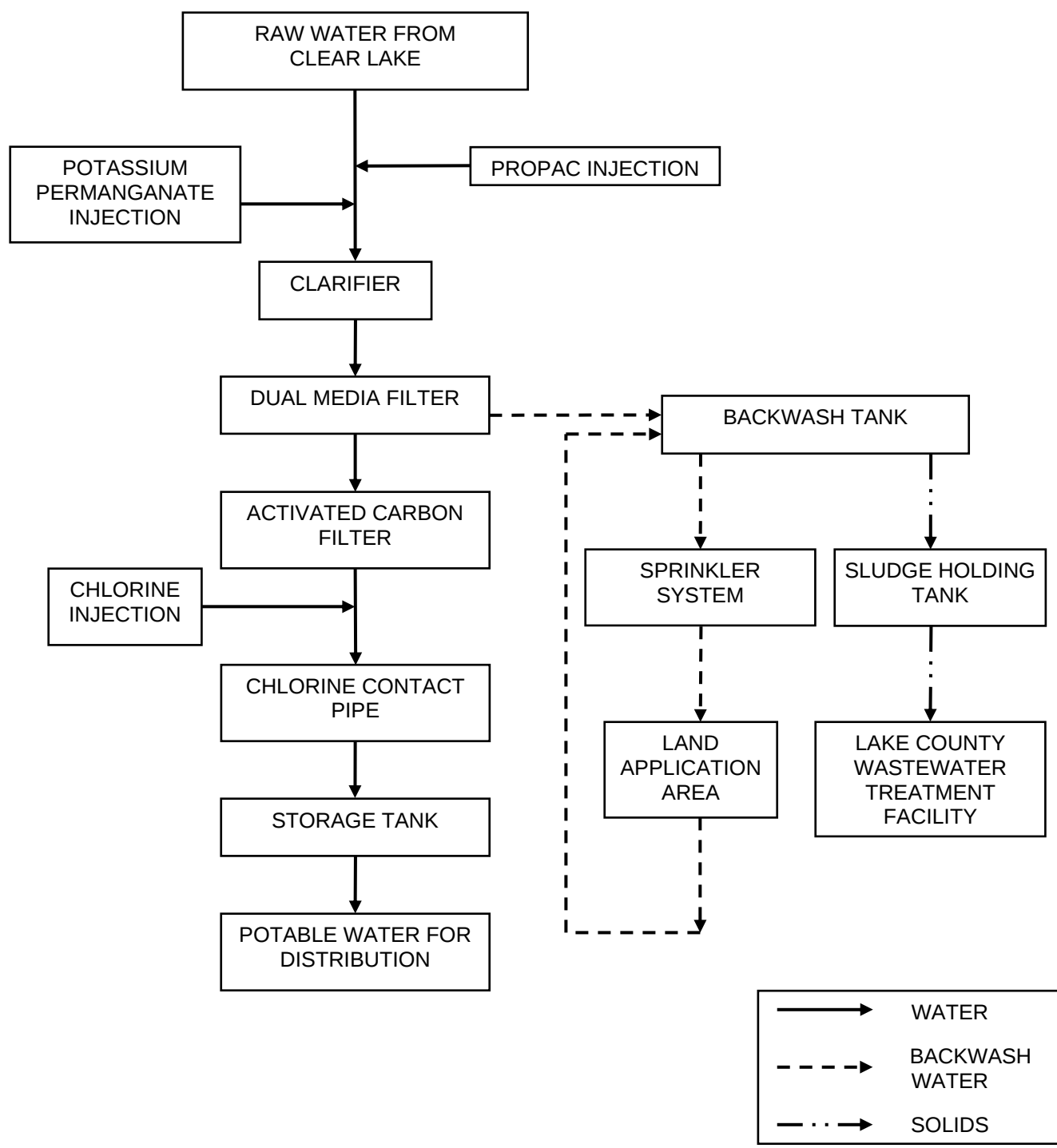


Drawing Reference:
U.S.G.S.
Clearlake Quadrangle
TOPOGRAPHIC MAP
7.5 MINUTE QUAD

SITE LOCATION MAP
RIVIERA WEST MUTUAL WATER COMPANY
RIVIER WEST WATER TREATMENT PLANT
LAKE COUNTY

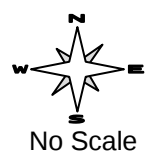

Approx. Scale:
1" = 5,000'





Drawing Reference:
Western Engineering
and Surveying
Services

PROCESS FLOW DIAGRAM
RIVIERA WEST MUTUAL WATER COMPANY
RIVIERA WEST WATER TREATMENT PLANT
LAKE COUNTY



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2012-0008
FOR
RIVIERA WEST MUTUAL WATER COMPANY
RIVIERA WEST WATER TREATMENT PLANT
LAKE COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring raw water, supernatant wastewater, and land application area. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

Specific sampling locations shall be approved by Central Valley Water Quality Control Board (Central Valley Water Board) staff prior to implementation of sampling activities. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to measure pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. The instruments are serviced and/or calibrated per the manufacturer's recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of the MRP.

RAW WATER MONITORING

The Discharger shall monitor the quantity and quality of raw water from the lake. The Discharger shall establish permanent monitoring stations within the water treatment plant (WTP) as needed to ensure that all samples are representative of these streams. At a minimum, the Discharger shall monitor raw water as follows:

Constituent	Units	Sample Type	Sampling Frequency	Reporting Frequency
Flow	gpd	Meter observation	Daily	Monthly
Electrical Conductivity	µmhos/cm	Grab	Annually ³	Annually ³
Total Dissolved Solids	mg/L	Grab	Annually ³	Annually ³
pH	Standard	Grab	Annually ³	Annually ³
Dissolved Metals ¹	mg/L	Grab	Annually ³	Annually ³
Standard Minerals ²	mg/L	Grab	Annually ³	Annually ³

¹ At a minimum, the following metals shall be included: arsenic, cadmium, chromium, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, and zinc.

² Standard Minerals shall include, at a minimum, the following elements/compounds: bromide, chloride, fluoride, and sodium.

³ Annual monitoring results shall be reported in the Annual Monitoring Report.

SUPERNATANT WASTEWATER MONITORING

One sample of supernatant liquid from the filter backwash tank shall be collected and monitored for the following. Grab samples will be considered representative of the discharge.

Constituent	Units	Sample Type	Sampling Frequency	Reporting Frequency
Flow to LAA	gpd	Meter observation ⁴	Daily	Monthly
Electrical Conductivity	µmhos/cm	Grab	Monthly	Monthly
pH	Standard	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly ⁵	Quarterly ⁵
Dissolved Metals ^{1,2}	mg/L	Grab	Quarterly ⁵	Quarterly ⁵
Standard Minerals ³	mg/L	Grab	Quarterly ⁵	Quarterly ⁵
Total Trihalomethanes	µg/L	Grab	Quarterly ⁵	Quarterly ⁵

¹ At a minimum, the following metals shall be included: arsenic, cadmium, chromium, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, and zinc.

² Samples shall be filtered through a 0.45-micron filter prior to preservation.

³ Standard Minerals shall include, at a minimum, the following elements/compounds: bromide, chloride, fluoride, and sodium.

⁴ Or other method as specified in the *Land Application Flow Monitoring Plan* (such as, but not limited to, pump run time and sight gages) to determine supernatant discharge daily flow rates to the land application area.

⁵ Quarterly monitoring results shall be reported in the monthly monitoring reports for the last month in each sampling quarter (i.e., March, June, September, and December).

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the application of filter backwash supernatant to the land application area. Monitoring shall be conducted **daily during the irrigation operations**. Evidence of erosion, ground saturation, tailwater runoff, and the presence of nuisance conditions shall be reported in the monthly monitoring report. If irrigation does not occur during a reporting period, the monitoring report shall so state. Monitoring of the land application areas shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Supernatant Application	Inches	Calculated	Daily	Monthly
Local Rainfall	Inches	Local Gauge Station ¹	Daily	Monthly
Total Depth (supernatant plus rainfall)	Inches	Calculated	Daily	Monthly
Acreage Applied	Acres	Calculated	Daily	Monthly
Application Rate	gal/acre·day	Calculated	Daily	Monthly

¹ Kelseyville Station No. A80 4488 00 or other approved rain gauge.

At least **once per week** when filter backwash supernatant is being applied to the land application areas, the entire application area shall be inspected and observations from those inspections shall be documented for inclusion in the monthly monitoring reports. If no irrigation with wastewater takes place during a given month, then the monthly monitoring report shall so state and the monitoring below is not necessary. The following items shall be documented:

1. Evidence of erosion;
2. LAA berm condition;
3. Soil saturation;
4. Ponding;
5. Cut-off ditch that collect potential runoff/tailwater from the land application areas and potential runoff /tailwater to off-site areas; and
6. Potential and actual discharge to surface waters.

SLUDGE DISPOSAL MONITORING

The Discharger shall maintain a written log of all water treatment sludge disposal activities. For each discrete quantity of sludge removed from the facility, the log shall contain the following information:

1. Date,
2. Name and signature of the recorder of the entry,
3. Volume or weight of sludge removed,
4. Name and address of permitted disposal site,
5. Analytical results for any sludge monitoring conducted at the request of the disposal facility,
6. Transport method, and
7. Transporter.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., raw water, wastewater, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Central Valley Water Board.

As required by the California Business and Professionals Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a registered Professional Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Central Valley Water Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of the raw water flow monitoring;
2. Results of supernatant, land application area, and sludge disposal monitoring performed during the month, including all daily and monthly sampling data. Quarterly monitoring results shall be reported in the monthly monitoring reports for the last month of each quarter when sampling occurs.
3. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
4. Copies of laboratory analytical report(s); and
5. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Annual Monitoring Report

An Annual Monitoring Report shall be submitted to the Central Valley Water Board by **1 February** each year. The Annual Report shall include the following:

1. Volume of raw water treated during the previous year.
2. Results of the annual raw water analytical testing.
3. Tabular and graphical summaries of all data collected during the year with data arranged to confirm compliance with the WDRs.
4. A comparison of supernatant monitoring results for the year to the results presented in Finding 15 of the WDRs, and a detailed explanation of significant differences, if any.
5. A detailed description of any operational changes or new systems for sludge handling or dewatering.
6. A summary of sludge disposal practices for the year, including tabulation of all sludge disposal monitoring data.
7. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
8. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

9. A forecast of influent flows for the coming year, as described in Standard Provision No. E.4.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program as of the date of this Order.

	Original signed by
Ordered by:	_____
	PAMELA C. CREEDON, Executive Officer

	2 February 2012
	(Date)

LLA:02/06/12

**MONITORING AND REPORTING PROGRAM R5-2012-0008
EXAMPLE MONTHLY MONITORING REPORT**

[Note: The following is a suggested monthly report format that complies with the reporting requirements set forth in the MRP and the Standard Provisions and Reporting Requirements. The Discharger is not required to use the example monthly monitoring report, but all monthly monitoring reports must comply with the MRP and the Standard Provisions and Reporting Requirements.]

DATE: _____

TO:

FROM:

Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Riviera West Mutual Water Company

Attention: WDR Compliance and Enforcement Unit

MONTHLY MONITORING REPORT FOR _____
(month) (year)

**RIVIERA WEST MUTUAL WATER COMPANY
RIVIERA WEST WATER TREATMENT FACILITY
LAKE COUNTY**

Enclosed is the monthly monitoring report for the Riviera West Mutual Water Company Water Treatment Facility in Lake County. The report covers the monitoring period noted above.

The following attachments comprise this monitoring report:

- A. Flow Monitoring Summary
- B. Supernatant Wastewater Monitoring Summary
- C. Land Application Area Monitoring Summary
- D. Land Application Area Weekly Inspection Summary
- E. Violation Reporting
- F. Facility Inspection and Repair Report and Violation Summary
- G. Field instrument calibration logs dated _____
- H. Analytical laboratory report(s) dated _____

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine.

(signature)

(date)

(printed name)

(month) (year)

A. FLOW MONITORING

Day of Month	Raw Water Flow (gpd)	Supernatant Wastewater Flow to LAA (gpd)
Monitoring frequency:	Daily	Daily
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
Average		

gpd = gallons per day

(month) (year)

B. SUPERNATANT WASTEWATER MONITORING

Sampling Date			
Sample Location			
Sample Type			
Constituent/Parameter	Sampling Frequency	Analytical Result	Units
Electrical Conductivity	Monthly		µmhos/cm
pH	Monthly		Std units
Total Dissolved Solids	Quarterly ¹		mg/L
Arsenic	Quarterly ¹		mg/L
Cadmium	Quarterly ¹		mg/L
Chromium	Quarterly ¹		mg/L
Copper	Quarterly ¹		mg/L
Iron	Quarterly ¹		mg/L
Lead	Quarterly ¹		mg/L
Magnesium	Quarterly ¹		mg/L
Manganese	Quarterly ¹		mg/L
Mercury	Quarterly ¹		mg/L
Molybdenum	Quarterly ¹		mg/L
Nickel	Quarterly ¹		mg/L
Zinc	Quarterly ¹		mg/L
Bromide	Quarterly ¹		mg/L
Chloride	Quarterly ¹		mg/L
Fluoride	Quarterly ¹		mg/L
Sodium	Quarterly ¹		mg/L
Total Trihalomethanes	Quarterly ¹		µg/L

¹ Results to be included in the monthly report for the last month in each sampling quarter (i.e., March, June, September, and December).

C. LAND APPLICATION AREA MONITORING

Parameter:	Supernatant Application	Local Rainfall	Total Depth (supernatant plus rainfall)	Acreage Applied	Application Rate
Monitoring Frequency:	Daily	Daily	Daily	Daily	Daily
Sample Type:	Calculated	Rain Gauge Observation	Calculated	Calculated	Calculated
Units:	inches	inches	inches	acres	gal/acre•da
Day of the Month					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

(month) (year)

D. LAND APPLICATION AREA WEEKLY INSPECTIONS SUMMARY

Inspection Date	Inspector	Problems identified, repairs recommended, repairs completed, and date of completion
Erosion (Weekly)		
LAA Berm (weekly)		
Soil Saturation (weekly)		
Ponding (weekly)		
Cut-off Ditch (weekly)		

(month)_____

(year)_____

Discharge to Surface Water (Weekly)		

(month) (year)

E. VIOLATION REPORTING

Discuss all violations of the WDRs and MRP during the monitoring period. For each violation, explain the reason(s) for the violation and steps that will be taken to prevent recurrence.

[illegible]

INFORMATION SHEET

ORDER R5-2012-0008
RIVIERA WEST MUTUAL WATER COMPANY
RIVIERA WEST WATER TREATMENT PLANT
LAKE COUNTY

Background

The Riviera West Mutual Water Company owns and operates the Riviera West Water Treatment Plant (WTP) located along the west shore of Clear Lake in Lake County. The WTP is designed to treat up to 0.15 million gallons of water per day. The WTP provides treatment by coagulation, filtration, and chlorine disinfection. Sludge from the backwash tank is drained into a sludge holding tank. A septic hauler collects and disposes the sludge off-site to a permitted facility. Under a previous NPDES permit, which has been rescinded, supernatant from the backwash tank was intermittently discharged to Clear Lake. Currently, the Discharger is land applying the supernatant on an adjacent two-acre site. This discharge to land is currently not regulated.

The Discharger proposes to install a clarifier before the filters to enhance coagulation and sedimentation. The Discharger will continue to use filter backwash supernatant to irrigate approximately 0.77 acres of the land application area (LAA). A moderately dense growth of trees covers this field, which slopes to the north and northeast at a gradient of approximately 15 percent. Downgradient of the LAA is an existing drainage culvert that conveys storm water runoff to the lake.

The derivation of selected terms and conditions of the Order is discussed below.

Order Terms and Conditions

The antidegradation directives of State Water Board Resolution 68-16 require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference State Water Board Resolution 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation" Policy).

Resolution 68-16 is applied on a case-by-case, constituent-by-constituent basis in determining whether a certain degree of degradation can be justified. It is incumbent upon the Discharger to provide technical information for the Central Valley Water Board to evaluate that fully characterizes:

- All waste constituents to be discharged;
- The background quality of the uppermost layer of the uppermost aquifer;
- The background quality of other waters that may be affected;
- The underlying hydrogeologic conditions;

- Waste treatment and control measures;
- How treatment and control measures are justified as best practicable treatment and control;
- The extent the discharge will impact the quality of each aquifer; and
- The expected degree of degradation.

In allowing a discharge, the Central Valley Water Board must comply with Water Code section 13263 in setting appropriate conditions. The Central Valley Water Board is required to implement the Basin Plan and consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Central Valley Water Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (Wat. Code, § 13263(b).) and must consider other waste discharges and factors that affect that capacity.

Some degradation of the groundwater for certain constituents is consistent with maximum benefit to the people of California because the technology, energy, and waste management advantages of community water treatment plants far outweigh the environmental impact of a community that would otherwise be reliant on numerous domestic wells. Economic prosperity of local communities is of maximum benefit to the people of California, and therefore sufficient reason to accommodate this wastewater discharge provided terms of reasonable degradation are defined and met. The Order authorizes some degradation consistent with the maximum benefit to the people of the State.

Based on the chemical character of the raw water treated at the WTP, the nature of the treatment process, and depth to groundwater; the discharge poses little threat to groundwater quality. The following treatment and control measures will be implemented at the WTP:

- Technology for treatment to drinking water standards;
- Approximately 0.77 net acres of land application area available for the application of supernatant; and
- Tailwater system to prevent the discharge of supernatant/stormwater mixtures to surface waters.

At this time, there is no reason to believe that additional control measures are needed to protect groundwater quality. This Order establishes discharge specifications, land application area requirements, and monitoring requirements to assure protection of the beneficial uses of groundwater.

Groundwater Limitations

Although the RWD lacked groundwater quality information, the land application of filter backwash supernatant is unlikely to impact groundwater quality based on the following:

- The WTP is located on the shores of Clear Lake. It is reasonable to assume groundwater quality is similar to lake water, which is good quality water.
- The supernatant from the filter backwash tank is similar in quality to lake water, with the exception of total trihalomethanes (THMs). The supernatant will be applied by sprinkler irrigation and it is likely that most of the THMs will volatilize before the water percolates into the ground. In addition, THMs, along with most waste constituents, found in the supernatant did not exceed applicable primary and secondary maximum contaminant levels. Manganese was the only exception, and this is likely due to improper sampling procedures.
- The elevation of the LAA (ranging from approximately 1,400 to 1,490 feet) is above lake level (approximately 1,329 feet). Groundwater within the LAA was not encountered in the test borings advanced to depths of approximately 30 feet. And therefore, the underlying groundwater is likely at or slightly above lake level.

Narrative groundwater limitations not to exceed current groundwater quality are adequate at this time. If raw water and supernatant monitoring indicates that the discharge of wastes poses a threat to groundwater quality, groundwater monitoring may be required. However, the discharge is not expected to impact groundwater based on topography and hydrogeologic conditions of the land application area, depth of groundwater, and quality of the lake water and supernatant discharge.

Discharge Prohibition A.1; Prohibition B.8; Land Application Area Requirements C.2, C.3, and C.5; and Provision F.1.a and F.1.c

Any supernatant runoff or supernatant/stormwater mixtures released to Clear Lake is in violation of the Order. Currently, no tailwater system exists, and an existing drainage ditch has the ability to convey supernatant runoff and stormwater mixtures to Clear Lake. The Discharger is required to submit a report detailing the completion and adequacy of the necessary improvements to contain such waste and prevent discharges to surface waters. However, the Discharger is still expected to comply with the Discharge Prohibitions prior to the construction of the cut-off ditch; and is required to submit an *Interim Compliance Plan* to provide operational details to prevent such discharge and demonstrate compliance with the Order prior to completion of the facility improvements.

Discharge Specification B.1 and Provision F.1.c

Based on 2008 flow data, the WTP has an average backwash flow of 5,000 gallons per day (gpd). However, the Discharger states that more frequent backwashing occurs during the summer months with flow rates ranging from 10,000 gpd to 15,000 gpd. Application of supernatant to the LAA will be year round. The filter backwash tank has a capacity of 45,000 gallons. The estimated soil infiltration rate within the LAA is approximately 8.3 inches per day. Based on the conditions above, filter backwash supernatant applied to the LAA shall not exceed a monthly average wet weather flow of 7,000 gpd from October through April and a monthly average dry weather flow of 15,000 gpd from May through September.

Provision F.1.b

It is unclear in the RWD or supplemental information how the flow of supernatant discharge is measured prior to land application. Therefore, the Order requires that the Discharger submit a *Land Application Flow Monitoring Plan* that provides operational details regarding supernatant application flow monitoring and determination of daily flow rates to the land application area.

Monitoring Requirements

The Order requires monitoring of the raw water, supernatant, and land application area. In order to adequately characterize the waste, the Discharger is required to monitor for constituents previously detected in the waste and compare these results to results submitted in the Report of Waste Discharge. If waste concentrations increase, the Monitoring and Reporting Program may be revised at the Executive Officer's discretion to require groundwater monitoring for those constituents.

Due to the low threat that the discharge poses, the Order will not require groundwater monitoring at this time. In addition, groundwater basins in Lake County are composed primarily of shallow alluvial deposits and deposits of the Clear Lake Volcanics over fractured basement rock of the Franciscan Formation¹. Mount Konocti, just south of the WTP, is a composite of volcano with alternating layers of pyroclastic and lava rock. Dischargers at nearby facilities have not been able to install monitoring wells in these subsurface conditions.

Reopener

The conditions of discharge in the Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. Groundwater monitoring is not required at this time. Filter backwash supernatant is good quality water, and will likely not impact groundwater quality. The Discharger is required to monitor the raw water, supernatant, and land application area. If the information obtained from the monitoring activities indicate possible threat to water quality, it may be appropriate to reopen the Order to address compliance with the Basin Plan.

LLA:02/17/12

¹ Lake County Groundwater Management Plan, CDM (in cooperation with the California Department of Water Resources, Northern District), 31 March 2006.