CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO.

WASTE DISCHARGE REQUIREMENTS
FOR
JOHN AND GAIL KAUTZ
JOHN KAUTZ FARMS
HAY STATION RANCH RECYCLED WATER REUSE AREAS
CALAVERAS COUNTY

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

1. John and Gail Kautz (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 10 April 2006, for updating Waste Discharge Requirements (WDRs) for the reuse of recycled water produced by the Murphys Sanitary District (MSD) wastewater treatment plant. Supplemental information was submitted on 5 July 2006.

2. The Hay Station Ranch recycled water reuse areas, which are owned by John and Gail Kautz and operated by John Kautz Farms, are located on Hay Station Ranch at 1894 Six Mile Road in Murphys, Calaveras County. The reuse areas are on Assessors Parcel Nos. 66-010-04 and 66-022-01, which are in Sections 7, 8, and 18, T3N, R14E, MDB&M. The location of Hay Station Ranch is presented on Attachment A, which is attached hereto and made part of this Order by reference.

3. WDRs Order No. 5-01-063, adopted by the Regional Water Board on 16 March 2001, prescribes requirements for both the Ironstone Vineyards winery process wastewater treatment and disposal system, and the use of recycled water on Hay Station Ranch.

4. Updated requirements for the treatment, storage, and disposal of winery process wastewater at Ironstone Vineyards are found in WDRs Order No. _____, adopted by the Regional Water Board on _____. Requirements for the use of recycled water on Hay Station Ranch are contained in this Order.

5. In April 1999, MSD renegotiated a contract with Kautz Vineyards, Inc., whereby MSD will supply Hay Station Ranch with all treated wastewater from the WWTP. This agreement calls for MSD to deliver up to 180 acre-feet per year of treated wastewater with the understanding that additional wastewater may be supplied if available. Recycled water is supplied to Hay Station Ranch at a rate of 375 gallons per minute. The Murphys wastewater treatment plant is located directly across the street from Ironstone Vineyards and Hay Station Ranch as shown on Attachment A.

RECYCLED WASTEWATER REUSE AREAS

6. The Discharger's RWD indicates that recycled water obtained from MSD will be reused on approximately 120 acres of vineyards, orchards, and pasture land within Hay Station Ranch. The location of the recycled water reuse areas on Hay Station Ranch is

presented on Attachment B, which is attached hereto and made part of this Order by reference.

7. Recycled water supplied by MSD to Hay Station Ranch for reuse is treated to at least a secondary 2.2 disinfection standard using an oxidation, filtration, and disinfection process. The MSD wastewater treatment plant is regulated under WDRs Order No. 5-00-264 and Resolution No. _____, which prescribes requirements for the treatment, including effluent limits, and storage of wastewater prior to delivery to Hay Station Ranch for reuse.

8. Murphys Sanitary District is required to sample effluent and report the quality of the recycled water that is supplied to Hay Station Ranch. The following table presents the results of effluent quality sent to Hay Station Ranch for the years of 2004 through 2006.

Constituent	Units	2004 Results Concentration Range	2005 Results Concentration Range	2006 Results Concentration Range
Total Coliform Organisms	MPN/100mL	<2-240	<2-1,600	<2-2,400
Nitrate (as N)	mg/L	<0.05-1.4	<0.05-1.1	<0.05-0,73
Total Dissolved Solids	mg/L	218-1030	217-1200	162-561
Total Suspended Solids	mg/L	<0.5-31	<0.5-27	<0.5-44
Total Settleable Solids	mg/L	<0.1	<0.1	<0.1
TKN	mg/L	<1.0-20	<0.7-12	1.6-14
BOD	mg/L	7.7-54	7.3-24	6-36
PH	Std. Unit	6.6-8.5	6.4-8.2	6.6-8.7

9. Recycled water is applied to the vineyards and orchards via a drip irrigation system. Drip irrigation is used to ensure that recycled water does not come into contact with the fruit grapes and food crops. Irrigation of the pastureland is done via a spray irrigation system. Orchards and pasture lands irrigated with recycled water are graded in such a way that any potential tailwater runoff does not pond or pool up near public roads or public access areas, and does not flow towards surface drainage courses or surface waters. All the vineyards that use recycled water have berms on each row of grape vines to control any potential runoff and erosion. All areas being irrigated with recycled water are inspected on a daily basis. The entire recycled water reuse areas are inspected on a weekly basis.

10. All recycled water conveyance lines are clearly marked as such. Recycled water valves and valve boxes are marked with signage indicating that recycled water is being used.

11. The MSD is currently permitted to discharge up to a monthly average of 350,000 gallons per day (gpd) between 2 March and 29 November of each year. The maximum amount that MSD can discharge to Hay Station Ranch is approximately 85,750,000 gallons, or approximately 263 acre-feet. Hay Station Ranch proposes to apply the recycled water to approximately 120 acres of vineyards, orchards and pasture land.

12. Resolution No. _____ allows MSD to deliver up to 450,000 gpd year round to Hay Station Ranch. Based on application of recycled water to 120 acres at a rate of 450,000 gpd, approximately 514 acre feet would be applied to the 120 acres, or 4.2 feet per acre annually. As part of the RWD, John Kautz Farms submitted a hydraulic loading balance which indicates that the proposed 120 acres of land used for land application of recycled water can adequately accept 450,000 gpd without causing runoff.

13. The following table presents anticipated loading rates to the 120-acres land application area for BOD, total nitrogen, and total dissolved solids (TDS). These loading rates were calculated based on the effluent data obtained from MSD for the year 2006 and on annual wastewater flows of 514 acre feet.

Constituent	Concentration Range	Loading Rate(lbs/acre/day)	Loading Rate (lbs/acre/year)
BOD	10.2-30.5	0.3-1.0	118-355
Total Nitrogen	5.2-13.2	0.2-0.4	60.5-153
TDS	215-423	6.9-13.5	2,503-4,924

14. Based on the results of loading rate calculations, BOD loading rates are below the loading rate that typically causes objectionable odors and is unlikely to mobilize constituents in the subsurface. Applications of BOD at less than 100 lbs/ac•day generally do not cause nuisance conditions. Total nitrogen loading rates are low and should not impact groundwater quality as long as the recycled water is applied to cropland. TDS loading rates appear elevated but the crops should remove some salts. This Order requires groundwater monitoring to determine whether the discharge has the potential to impact groundwater quality.

Site Specific Conditions

15. Average annual rainfall for the Murphys area is approximately 35.89 inches per year; the 100-year return annual total rainfall is 64.92 inches per year.

16. The average evapotranspiration rate for the Murphys area is approximately 48.75 inches per year.

17. According to information presented in the RWD, the geologic conditions within the winery area consists of metamorphic rock (schist-like rock) overlaid by colluvium, which was derived from schist, which had developed into a soil. The contact between the soil and underlying bedrock is not distinct or sharp but is mostly a gradual transition. The transition from plastic, fine-grained soil to weathered rock is generally decomposed

bedrock to remoldable clay. The depth of soils to weathered bedrock or bedrock range from approximately 5.5 to 12 feet below ground surface.

18. The facility is within the Angels Camp Hydrologic Area (No. 534.22), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

19. The site is outside the 100-year flood zone.

20. Groundwater monitoring has never been conducted at the reuse site, and no information was presented in the RWD regarding groundwater quality. This Order requires the installation of groundwater monitoring wells and requires that groundwater be monitored.

Basin Plan, Beneficial Uses and Regulatory Considerations

21. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (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 Water Resources Control Board. Pursuant to §13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan.

22. Six Mile Creek, a seasonal creek, flows through the property. It begins as a drainage adjacent to the MSD wastewater treatment plant storage ponds, flows through Hay Station Ranch and the Ironstone Winery facility, and finally enters Angels Creek, which is a tributary of New Melones Reservoir.

23. The beneficial uses of surface waters tributary to New Melones Reservoir as stated in the Basin Plan are municipal and domestic supply; agricultural supply; industrial process supply; hydropower generation; water contact recreation; non-contact water recreation; warm and cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat.

24. The beneficial uses of underlying groundwater are municipal and domestic water supply; agricultural supply; industrial service supply; and industrial process supply.

25. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater within the basin, and recognizes that water quality objectives are achieved primarily through the Water Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Water Board will, on a case-by-case basis, adopt numerical limitations in orders, which will implement the narrative objectives to protect beneficial uses of the waters of the state.

26. The Basin Plan specifies a numerical water quality objective for ground waters for bacteria that states, in part, the following:

- *"The following objectives apply to all ground waters of the Sacramento and San Joaquin River Basins, as the objectives are relevant to the protection of designated beneficial uses."*

- ***"Bacteria*** in ground waters used for domestic or municipal supply (MUN), the most probable number of coliform organisms over any seven-day period shall be less than 2.2/100mL."

- Groundwater, as described in the Basin Plan (page I-1.00), includes all subsurface waters that occur in fully saturated zones and fractures within soils and other geologic formations.

27. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Rangers) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional 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.

28. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants animals, or aquatic life. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain tastes or odors producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

29. Under the "Antidegradation" section, the attached Information Sheet lists the various waste constituents identified thus far as fitting the restriction of the Findings along with limits of each constituent necessary to maintain beneficial uses known to be adversely affected at certain concentrations of the waste constituent in groundwater. The listing identifies the constituent, the beneficial use, and its associated limit, as well as the technical reference for the limit. Some limits become less restrictive when the water supply is limited to certain applications of a beneficial use, but that requires additional factual information. Interim groundwater limitations for each constituent reflect the most

restrictive listed limit for the waste constituent, except if natural background quality is greater, in which case background becomes the interim limitation.

Groundwater Degradation

30. State Water Resources Control Board (State Board) Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation Policy") requires the Regional Water Board in regulating the discharge of waste to maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the State Board and Regional Water Board policies (e.g., quality that exceeds water quality objectives).

31. The Regional Water Board finds that some degradation of groundwater beneath the recycled water reuse areas is consistent with Resolution 68-16 provided that:
    a. The degradation is confined within a specified boundary;
    b. The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures;
    c. The degradation is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order; and
    d. The degradation does not result in water quality less than that prescribed in the Basin Plan.

32. Some degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of California. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. Degradation of groundwater by constituents (e.g., toxic chemicals) other than those specified in the groundwater limitations in this Order, and by constituents that can be effectively removed by conventional treatment (e.g., total coliform bacteria) is prohibited. 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).

33. Economic prosperity of local communities and associated industry is of benefit to the people of California, and therefore sufficient reason exists to accommodate growth and some groundwater degradation around the recycled water reuse areas, provided that the terms of the Basin Plan are met. It is noted that MSD's only method of wastewater disposal is through percolation and evaporation in the effluent storage reservoir and through irrigation of recycled water at Hay Station Ranch.

34. The Discharger does not currently monitor groundwater quality beneath the recycled water reuse areas. Therefore, it is unknown if the discharge of waste at Hay Station Ranch is in compliance with Resolution 68-16. This Order requires the Discharger to install groundwater monitoring wells and begin groundwater monitoring to determine whether the discharge of waste is in compliance with Resolution 68-16.

Treatment and Control Practices

35. Murphys Sanitation District provides treatment and control of the discharge to Hay Station Ranch that incorporates:

    a. Technology for secondary 2.2 disinfected treatment of municipal wastewater;

    b. Application of wastewater at agronomic application rates; and

    c. Certified operators to assure proper operation and maintenance of the MSD WWTP.

36. The WWTP design and reuse of recycled water on Hay Station Ranch incorporates minimal BPTC measures. In order to determine compliance with Resolution No. 68-16 it is appropriate to establish a schedule for installation and sampling of groundwater monitoring wells and to formally determine background groundwater concentrations for selected constituents. If groundwater is degraded or there is evidence that the discharge may cause degradation, then the Discharger will be required to evaluate and implement additional BPTC measures for each conveyance, treatment, storage, and disposal component of the system. Completion of these tasks will ensure that BPTC and the highest water quality consistent with the maximum benefit to the people of the state will be achieved.

37. This Order establishes interim groundwater limitations for the recycled water reuse on Hay Station Ranch that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order contains tasks for assuring that BPTC and the highest water quality consistent with the maximum benefit to the people of the state will be achieved. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16. Based on the results of the scheduled tasks, the Regional Water Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution 68-16.

Water Recycling

38. State Board Resolution No. 77-1, *Policy with Respect to Water Recycling in California*, encourages recycling projects that replace or supplement the use of fresh water, and *The Water Recycling Law* (CWC sections 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.

39. The California Department of Health Services (DHS) has established statewide water recycling criteria in Title 22, CCR, Section 60301 et. seq. (hereafter Title 22). The MSD will treat the wastewater to secondary standards and disinfect the effluent per Title 22 requirements.

40. A 1988 Memorandum of Understanding between DHS and the State Board on the use of recycled water establishes basic principles relative to the two agencies and the regional water boards. The Memorandum allocates primary areas of responsibility and authority between the agencies and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to use of recycled water.

41. DHS requires that the American Water Works Association (AWWA) Guidelines for Distribution of Non-Potable Water and Guidelines for the On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water be implemented in design and construction of recycling equipment. The guidelines require installation of purple pipe, adequate signs, and adequate separation between the recycled water lines and domestic water lines and sewer lines. It is unknown if the Discharger currently uses purple pipes, but this Order requires that all future recycled water distribution pipes be purple.

42. Section 60323(a) of Title 22 states that no person shall produce or supply recycled water for direct reuse from a proposed water recycling plant unless an engineering report is submitted for review and approval by DHS and the Regional Water Board. Irrigation of vineyards, orchards, and pasture lands used for grazing is considered a beneficial reuse. In May 2001 the MSD and Kautz Vineyards, Inc. submitted the required Title 22 Engineering Report to DHS and the Regional Water Board. The Title 22 Engineering Report was approved by DHS in January 2002.

OTHER REGULATORY CONSIDERATIONS

43. The State Board adopted Order No. 97-03 DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. Industrial Storm Water permitting requirements do not apply to facilities irrigating agricultural lands with recycled water, therefore the Discharger is not required to apply for a stormwater NPDES permit.

44. The action to update WDRs for this existing facility is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000, et seq.). The action to update WDRs for this existing facility is exempt from CEQA because it involves negligible or no expansion beyond the previous WDRs (14 California Code of Regulations (CCR) Section 15301) and it is an action taken by a regulatory agency to assure the protection of the environment, and the regulatory process involves procedures for protection of the environment (14 CCR Section 15308).

45. Section 13267(b) of the California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional water board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional water 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."

46. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. _____" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the wastes subject to this Order.

47. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to CWC Section 13801, apply to all monitoring wells.

48. 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 land application area 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.

53. The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Title 27 CCR Section 20090(a), is based on the following:

    a. The waste consists primarily of domestic sewage and treated effluent;

    b. The waste discharge requirements are consistent with water quality objectives; and

    c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

54. Pursuant to California 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

55. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

56. 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.

57. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that Order No. 5-01-063 is rescinded and, pursuant to Sections 13263 and 13267 of the California Water Code, John and Gail Kautz, and John Kautz Farms, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, 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 to surface waters or surface water drainage courses is prohibited.

2. Bypass or overflow of recycled water or tailwater containing recycled water is prohibited.

3. Discharge of waste classified as 'hazardous', as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq., (hereafter Chapter 15), or 'designated' as defined in Section 13173 of the California Water Code, is prohibited.

4. Surfacing of wastewater outside or downgradient of the recycled water reuse areas is prohibited.

5. The use of recycled water on land at which winery wastewater has been, or is, used for irrigation is prohibited.

B. Discharge Specifications:

1. The discharge of recycled water to the Hay Station Ranch recycled water reuse areas shall not exceed a monthly average of 450,000 gallons per day.

2. The discharge of recycled water shall remain within the designated disposal areas (as described in Finding No. 6) at all times.

3. The discharge of recycled water shall be managed to minimize erosion and prevent runoff from the designated recycled water areas.

4. 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.

5. Neither the treatment nor the discharge shall cause a condition of pollution or nuisance as defined by the California Water Code, Section 13050.

6. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.

7. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.

C. Recycled Water Specifications

Irrigation of recycled water shall not be performed within 24 hours of a forecasted storm, during a storm, within 24 hours after any measurable precipitation event, or when the ground is saturated.

Recycled water used for irrigation shall be managed to minimize saturation, pooling, and runoff from the vineyards, orchards, and pasture land.

Application of recycled water shall comply with the following setback requirements:

Setback Definition[1]	Minimum Irrigation Setback (feet)
Edge of recycled water reuse areas in the vineyards to property boundary	10
Edge of recycled water reuse areas in the orchards and pasture land to property boundary	25
Edge of recycled water reuse areas in the vineyards to public roads	10

Setback Definition[1]	Minimum Irrigation Setback (feet)
Edge of recycled water reuse areas in the orchards and pasture land to public roads	50
Edge of recycled water reuse areas to irrigation wells	100
Edge of recycled water reuse areas to domestic wells	100
Edge of recycled water reuse areas to manmade or natural surface water drainage course [2] or spring	25

[1] As defined by the wetted area produced during irrigation.
[2] Excluding ditches used exclusively for tailwater return.

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.

Objectionable odors originating at this facility shall not be perceivable beyond the limits of the land application areas.

Crops shall be grown on the land application areas. Crops shall be selected based on nutrient uptake capacity, tolerance to high soil moisture conditions, and consumptive use of water and irrigation requirements. Cropping activities shall be sufficient to take up all the nitrogen applied.

Hydraulic loading of recycled water and supplemental irrigation water shall be at reasonable agronomic rates designed to maximize uptake and breakdown of waste constituents in the root zone and minimize the percolation of waste constituents below the root zone (i.e., deep percolation).

Recycled water distribution lines installed after the date of the this Order shall meet the AWWA Guidelines described in Finding No. 45.

Wastewater conveyance lines shall be clearly marked as such. Process wastewater controllers, valves, etc. shall be affixed with recycled water warning signs, and these and quick couplers and sprinkler heads shall be of a type, or secured in such a manner, that permits operation by authorized personnel only.

Irrigation systems shall be labeled as containing recycled water. If wastewater and irrigation water utilize the same pipeline, then backflow prevention devices shall be installed to protect the potable water supply.

Irrigation runoff (i.e., tailwater) shall be completely contained within the designated recycled water reuse areas and shall not enter any surface water drainage course.

Spray irrigation of recycled water is prohibited when wind velocities exceed 30 mph.

The recycled water areas shall be managed to prevent breeding of mosquitoes. In particular:

a. There shall be no standing water 48 hours after irrigation ceases;

b. Tailwater ditches must be maintained essentially free of emergent, marginal, and floating vegetation, and;

c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recylced wastewater.

1. Any tailwater ditches used to contain runoff shall be adequately sloped such that the wastewater flows to a collection point.

2. Tailwater ditches shall not be operated such that their primary purpose is recycled water storage, evaporation, or percolation.

D. Groundwater Limitations:

1. Release of waste constituents from the use of recycled water shall not cause groundwater under and beyond that system component, as determined by an approved well monitoring network, to:

a. Contain any of the following constituents in concentration greater than as listed or greater than ambient background quality, whichever is greater:

Constituent	Units	Limitation
Ammonia (as NH_4)	mg/l	1.5
Boron	mg/L	0.7
Chloride	mg/L	106
Iron	mg/L	0.3
Manganese	mg/L	0.05
Sodium	mg/L	69
Total Coliform Organisms	MPN/100 mL	<2.2
Total Dissolved Solids [1]	mg/L	450
Total Nitrogen	mg/L	10
Nitrite (as N)	mg/L	1
Nitrate (as N)	mg/L	10
Bromoform	µg/l	4
Bromodichloromethane	µg/l	0.27
Chloroform	µg/l	1.1
Dibromochloromethane	µg/l	0.37

[1] A cumulative impact limit that accounts for several dissolved constituents in addition to those listed here separately [e.g., alkalinity (carbonate and bicarbonate), calcium, hardness, phosphate, and potassium].

b. Exhibit a pH of less than 6.5 or greater than 8.4 pH units

c. Impart taste, odor, or color that creates nuisance or could impair any beneficial use.

E. Provisions

1. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described by Provision E.3.

   a. By **15 July 2007***,* the Discharger shall submit and implement an *Operation and Management Plan* (O&M Plan) that addresses operation of the land application facility that receives recycled water. At a minimum, the *O&M Plan* shall (a) provide a map that defines all the areas where recycled water is used, and procedures used for the application of wastewater to these areas to prevent excessive BOD, nitrogen, and dissolved solids application loading rates, (b) provide a map showing the areas that have been bermed and grading to prevent recycled water from running off the land application areas, and (c) maintenance of the land application areas. A copy of the *O&M Plan* shall be kept at the facility for reference by operating personnel and they shall be familiar with its contents.

   b. By **15 July 2007**, the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan*. The workplan shall describe the installation of sufficient wells to allow evaluation of the groundwater quality upgradient and downgradient of the recycled water reuse areas. The workplan shall conform to items listed in Section 1 of Attachment C (*Items to be Included a Monitoring Well Installation Workplan*), which is attached to this Order.

   c. By **1 October 2007**, the Discharger shall submit a *Groundwater Monitoring Well Installation Report*. The report shall be consistent with, and include the items listed in, the second section of Attachment C of this Order. The report shall describe the installation and development of the monitoring wells, explain any deviation from the approved workplan, and clearly show that Discharger has the expertise and equipment necessary to collect groundwater samples. Alternatively, the report may describe the qualified consultant that the Discharger will use to collect groundwater samples.

   d. By **1 February 2010**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater parameter/constituent identified in the Groundwater Limitations section of this Order, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10) or equivalent, and shall be based on

data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with: 1) the calculated background concentration, and 2) the interim numeric limitations set forth in Groundwater Limitation D.1.a. Where background concentrations are statistically greater than the interim limitations specified in Groundwater Limitation D.1.a, the report shall recommend final groundwater limitations for waste constituents listed therein. Subsequent use of a concentration as a final groundwater limitation will be subject to the discretion of the Executive Officer.

2. If the *Background Groundwater Quality Study* Report shows that the discharge of waste is causing groundwater to contain waste constituents in concentrations statistically greater than background water quality then, within **120 days** of a request by the Executive Officer, the Discharger shall submit a *BPTC Evaluation Workplan* that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of the land application system to determine best practicable treatment and control for each waste constituent listed in the Groundwater Limitation D.1.a of this Order. The workplan shall contain a preliminary evaluation of the land application system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year. The Discharger shall also coordinate and cooperate with the MSD in any BPTC evaluation that the Regional Water Board requires of the MSD wastewater treatment system.

3. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall the professional's signature and/or stamp of the seal.

4. The Discharger shall comply with Monitoring and Reporting Program No. _____, which is part of this Order, and any revisions thereto as ordered by the Executive Officer

5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

6. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with discharge limits specified in this order.

7. As described in the Standard Provisions, the Discharger shall report promptly to the Regional Water Board any material change or proposed change in the character, location, or volume of the discharge.

8. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports 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."

9. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater includes rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

10. The Discharger shall submit to the Regional 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 being reported, then the Discharge shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board in writing when it returns to compliance with the time schedule.

11. In the event of any change in control or ownership of the recycled water reuse 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 Regional 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 California Water Code. Transfer shall be approved or disapproved by the Executive Officer.

12. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed herein or by the Executive Officer pursuant to Section 13267 of the CWC. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

13. A copy of this Order shall be kept at Hay Station Ranch. Key operating personnel shall be familiar with its contents.

14. The Regional Water Board will review this Order periodically and will revise requirements when necessary.

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 _____.

_____
PAMELA C. CREEDON, Executive Officer

Attachments
JSK: 4/16/07