CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2014-XXXX
FOR
THE WINE GROUP LLC
FRANZIA SANGER WINERY
FRESNO COUNTY

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

Background

1. The Beverage Source, Inc., a division of Erly Industries Inc., owned the Sanger Winery (Winery) at 2916 South Reed Avenue in Sanger. The discharge was regulated under Waste Discharge Requirements (WDRs) Order 92-120, National Pollutant Discharge Elimination System (NPDES) Permit CA0081019, which authorized a daily discharge of 0.2 million gallons per day (mgd) of condenser cooling wastewater to Fink Ditch (discharge 001), and the discharge of two waste streams to a 150-acre land application area (LAA) of up to 0.3 mgd (34 million gallons per year (mgy)) of winery wastewater (discharge 002) and 0.3 mgd (11.3 mgy) of stillage wastewater (discharge 003) produced at the Winery. In mid-1992, The Wine Group LLC, (Discharger) purchased the Winery.

2. The Discharger ceased stillage discharges (discharge 003) following the 2000 crush season. The Discharger also ceased discharging condenser cooling water to Fink Ditch (discharge 001) in 2001 by reportedly internally recycling its condenser cooling water as boiler makeup water.

3. On 2 May 2001, the Central Valley Water Board adopted Revised Monitoring and Reporting Program (MRP) 92-120 to add constituents to the effluent monitoring to characterize ion-exchange regeneration waste and boiler blowdown wastewater streams.

4. On 27 June 2011, Kennedy/Jenks Consultants submitted a Report of Waste Discharge (RWD) on behalf of the Discharger for a proposed increase in wastewater flow and LAA acreage. According to the RWD, the Discharger is proposing to increase its wastewater flows from 49 mgy up to 70 mgy and increase its current 150-acre LAA by an additional 53 acres for a total of 203 acres.

Wastewater Generation, Treatment, and Disposal

5. The Winery now produces wine and grape juice concentrate products. The Winery operates year round with the harvest/crush season from August to October. Wastewater from the Winery operations consists of cleaning and sanitation wastewater, ion-exchange regeneration waste, boiler blowdown, refrigeration unit condenser cooling water that is reused through multiple cycles before comingling, and filter backwash water.

6. The RWD indicates that chemicals used at the Winery for cleaning and sanitizing tanks, wine lines, and other equipment include: sodium hydroxide (10,750 lbs/year), chlorinated trisodium phosphate (2,200 lbs/year), citric acid (7,000 lbs/year), and calcium hypochlorite (1,200 lbs/year). Sodium chloride (2,450 lbs/year) is used for brine regeneration of the water softener. The Discharger is in the process of reexamining its use of chemicals at the Winery with the intent of eliminating specific types of chemicals and reducing the overall quantities of chemicals used.

7. Wastewater is collected in trench drains throughout the Winery and conveyed to a sump where wastewater currently gravity flows through a 24-inch diameter pipeline that is then reduced to an 18-inch diameter pipeline at the 150-acre LAA. The 150-acre LAA is divided into long checks (1,250 ft to 2,500 ft). Wastewater and supplemental water are applied by flood irrigation to the 150-acre LAA. Crops currently grown in the 150-acre LAA include corn and forage crops. Crops grown in the new 53-acre LAA are vineyards and will include a cover crop planted between the vines. Wastewater will be applied to the vineyards by flood irrigation and supplemental water will be applied using a drip irrigation system. The cover crop will be flood irrigated with both wastewater and supplemental water. A site map of the Winery (APN 333-130-22 & 34), 150-acre LAA (APN 333-130-23 & 333-061-21), and the new 53-acre LAA (APN 333-090-29 & 333-130-35) are shown on Attachment A, which is incorporated by reference and considered a part of this Order.

8. Solids generated from the Winery include stems and leaves removed at the staging area. Pomace (seeds, pulp, skins) is generated from the crushing of grapes. Spent diatomaceous earth is generated from the filters and staged onsite near the effluent sump before being hauled off site. According to the Discharger, all of the solids generated at the Winery are hauled offsite.

   This Order requires the Discharger to prepare a Solids Management Plan to characterize solids removed during the grape processing and determine appropriate disposal methods. This Order also requires the Discharger to report the amount of solids produced, disposal method used, and ultimate disposal site.

Wastewater Characteristics

9. Based on Discharger's self-monitoring reports (SMRs) from January 2008 through June 2013, monthly average wastewater flows range from 0.016 mgd to 0.46 mgd. Total annual wastewater flows generated at the winery have increased from 34 mgy in 2009 to 46 mgy in 2010, 63 mgy in 2011, and 69 mgy in 2012.

10. Monthly average comingled wastewater quality based on data contained the Discharger's SMRs from January 2008 to June 2013 are tabulated in Table 1.

Table 1. Quality of Comingled Wastewater

	BOD[1] (mg/L)	EC[2] (umhos/cm)	TDS[3] (mg/L)	FDS[4] (mg/L)	TN[5] (mg/L)	K[6] (mg/L)	Na[7] (mg/L)	SO_4[8] (mg/L)
January	3,187	1,068	1,606	890	22	80	41	101
February	5,521	640	4,240	1,062	93	71	32	79
March	4,261	---	1,832	980	19	---	---	---
April	3,885	773	960	527	19	83	66	64
May	2,398	---	803	382	24	---	---	---
June	1,762	567	1,523	746	24	26	---	60
July	1,283	1,490	1,828	1,044	25	177	139	173
August	2,925	900	3,294	1,464	24	27	---	58
September	2,521	1,200	2,040	832	71	200	67	240
October	3,662	1,344	1,366	714	80	121	75	276
November	2,848	---	1,190	528	75	---	---	---
December	1,831	1,550	1,383	735	41	185	42	565
Average	3,007	1,059	1,839	825	43	108	66	179

[1] BOD denotes Biochemical Oxygen Demand
[2] EC denotes Electrical Conductivity
[3] TDS denotes Total Dissolved Solids
[4] FDS denotes Fixed Dissolved Solids
[5] TN denotes Total Nitrogen
[6] K denotes Potassium
[7] Na denotes Sodium
[8] SO_4 denotes Sulfate

11. Data from 2012, indicates that approximately 65 percent of the TDS is a result of organic compounds based on an annual average FDS of 925 mg/L and an annual average TDS of 2,636 mg/L.

Land Application Area Practices

12. Excessive application of food processing wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater by overloading the soil profile and causing waste constituents (i.e., organic carbon, nitrates, other salts, and metals) to percolate below the root zone.

Irrigation with high-strength wastewater can result in high BOD loading on the day of application, which can deplete oxygen in the soil and lead to anoxic conditions. When insufficient oxygen is present below the ground surface, anaerobic decay of organic matter can create reducing conditions that convert metals naturally present in the soil as relatively insoluble (oxidized) forms to more soluble (reduced) forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If reducing conditions do not reverse as the percolate travels through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Excessive organic loading can also increase groundwater bicarbonate concentrations which cause increases in groundwater EC and total dissolved solids.

13. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or causing unreasonable degradation of groundwater can vary significantly depending on soil conditions and operation of the land application system.

14. Pollution Abatement in the Fruit and Vegetable Industry, published by the United States Environmental Protection Agency, cites BOD loading rates associated with crop irrigation in the range of 36 to 100 lbs/acre/day to prevent nuisance, but indicates that loading rates can be even higher under certain conditions. The studies that support this report did not evaluate actual or potential groundwater degradation associated with those loading rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have are not readily adapted to varying soil, groundwater, and climate conditions that are prevalent throughout the region.

15. The California League of Food Processors *Manual of Good Practice for Land Application for Food Processing/Rinse Water* proposes risk categories associated with particular BOD loading rate ranges as follows:

    a. Risk Category 1: (less than 50 lb/ac/day; depth to groundwater greater than 5 feet) Indistinguishable from good farming operations with good distribution important.

    b. Risk Category 2: (less than 100 lb/ac/day; depth to groundwater greater than 5 feet) Minimal risk of unreasonable groundwater degradation with good distribution more important.

    c. Risk Category 3: (greater than 100 lb/ac/day; depth to groundwater greater than 2 feet) Requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer

design equations that consider site-specific application cycles and soil properties and special monitoring.

The *Manual of Good Practice* recommends allowing a 50 percent increase in the BOD loading rates in cases where sprinkler irrigation is used, but recommends that additional safety factors be used for sites with heavy and/or compacted soils. The Manual of Good Practice also states that the use of surface irrigation (boarder check method) makes uniform application difficult, especially for coarse textured soils.

16. Although it has not been subject to a scientific peer review process, the Manual of Good Practice provides science-based guidance for BOD loading rates that, if fully implemented, may be considered management practices to prevent groundwater degradation due to reduced metals.

17. The 150-acre LAA is surface irrigated (border check method) via flood irrigation and is divided into four areas. Each area contains several checks that are separated by berms. Each check is 3 feet wide when corn is planted and 53 feet wide when grain is planted, and the current check lengths typically range from approximately 1,250 to 2,500 feet.

    On any given day during the processing season, multiple checks within the irrigation areas may be receiving water at the same time. The number of checks receiving wastewater at any one time depends on processing wastewater flow rates, which vary from day to day. Because of the long check lengths, the application of wastewater alone does not reach the lower end of each of the checks without the aid of supplemental irrigation water. Based on crop needs, supplemental water is added to reach crops at the lower end of the checks.

    Fields with long check lengths may not be able to ensure irrigation uniformity, due to higher application rates and longer infiltration period at the top end of the field in comparison to the bottom end of the field.

18. In 2012, the Discharger applied wastewater to the 150-acre LAA for several days consecutively without a rest period. The upper section of the 150-acre LAA (approximately 33 acres) near monitoring well MW-1 received wastewater continuously from 1 January 2012 to 21 March 2012 (81 days) without a rest period between applications. The 2013 self-monitoring reports indicate the Discharger continues to apply wastewater for several consecutive days to the 150 acre LAA. Due to the coarse nature of the soils and the long check lengths, wastewater loading at the upper end of the checks is significantly higher than at the lower end of the checks. This uneven distribution of waste in combination with the shallow depth to groundwater has resulted in groundwater degradation and pollution, as described in

further detail in the Groundwater Considerations and Antidegradation Analysis sections below.

19. The water balance in the RWD assumes a 30 percent irrigation loss of wastewater. Because wastewater is distributed by pipe to the LAA's delivery losses are considered to be negligible for waste load calculations. Adding the wastewater loss in the RWD back into the calculations results in the following annual application rates.

    Based on average year rainfall and a proposed wastewater flow of 70 mgy, approximately 60 mgy (1.2 ft) of wastewater and approximately 134 mgy (2.7 ft) of supplemental water will be applied to the 150-acre LAA. The new 53-acre LAA will receive approximately 10 mgy (0.6 ft) of wastewater and approximately 40 mgy (2.3 ft) of supplemental water. Based on a 100-year return period rainfall, the amount of supplement water would be reduced to approximately 65 mgy (1.3 ft) for the 150-acre LAA and approximately 36 mgy (2ft) for the new 53-acre LAA.

    Actual distribution of wastewater and supplemental water will vary upon wastewater rotation practices and annual availability of supplemental water from applicable irrigation districts. This Order requires the Discharger to submit a Nutrient and Wastewater Management Plan and implement management practices to evenly distribute the applied wastes, ensures application of nutrients at reasonable agronomic rates, and determine an appropriate discharge cycle.

20. The total nitrogen loading rate to the 150-acre LAA based on 60 mgy and annual average (2012 data) total nitrogen concentration of 59 mg/L is 197 lbs/acre/year, less than the annual nitrogen uptake for corn of 240 lbs/acre/year and greater than the annual nitrogen uptake for winter wheat of 175 lbs/acre/year for crops grown at the 150-acre LAA. The total nitrogen loading rate to the new 53-acre LAA based on 10 mgy and a yearly average (2012 data) total nitrogen concentration of 59 mg/L is 93 lbs/acre/year, less than the annual nitrogen uptake for vineyards grown at the new 53-acres of 125 lbs/acre/year according to the *Western Fertilizer Handbook*, Eighth Edition.

Source Water

21. The Winery has two supply wells (Well 1 and Well 2). Both wells have granular activated carbon treatment systems to remove Dribromochloropropane, which is a regional problem. Well 1 has experienced intermittent exceedances of State drinking water primary Maximum Contaminant Level (MCL) for nitrate. The Department of Public Health issued a Compliance Order requiring the Discharger to submit a Corrective Action Plan to evaluate and correct well exceedances for nitrate in Well 1 and increasing nitrate levels in Well 2. The Discharger is evaluating alternatives for

the mitigation of nitrate levels in Wells 1 and 2. Analytical data for Well 2 has been provided based on monthly SMRs from August 2001 through September 2013. Average EC, TDS, sodium, and chloride concentrations for Well 2 are tabulated below:

Table 2. Source Water Quality for Well 2

Year	EC (umhos/cm)	TDS (mg/L)	Na (mg/L)	Cl[1] (mg/L)
2008	355	200	24	7.4
2009	337	190	21	9
2010	670	265	22	8.6
2011	390	N/A	27	7.8
2012	427	N/A	N/A	N/A

[1] Cl denotes Chloride

Site-Specific Conditions

22. Land uses in the vicinity of the 150-acre LAA are primarily agricultural. Crops grown in the area of the 150-acre LAA are almonds, bush berries, mixed pasture, peaches, and nectarines. Crops grow in the vicinity of the Winery and the new 53-acre LAA are plums, vineyards, peaches, and nectarines, according to the Eastern Fresno County 2009 Land Use Map published by the Department of Water Resources.

23. The Winery and LAA's are in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from October through April. Average annual pan evaporation is about 108 inches according to data in the *National Oceanic and Atmospheric Administration Technical Report NWS 34, Mean Monthly, Seasonal, and Annual Pan Evaporation for the United States,* published by the U.S. Department of Commerce National Oceanic and Atmospheric Administration. The average annual precipitation is about 11 inches according to data obtained from the Western Regional Climate Center.

24. Soils below the 150-acre LAA are predominately Hanford Fine Sandy Loam and Grangeville Fine Sandy Loam with gravelly substratum. Soil near the Winery and in the new 53-acre LAA is Hanford Sandy Loam with gravelly substratum, according to the Web Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service. Hanford Sandy Loam and Grangeville Fine Sandy Loam have land capacity classification of 2s. Soils with "Class 2" have moderate limitations that restrict the choice of plant or that require moderate conservation practices. The subclass "s" indicates that soils have limitations within the root zone, such as shallowness of the root zone, a high content of stones, a low available water capacity, low fertility, and excessive salinity or sodicity. Overcoming these limitations is difficult.

25. According to the Federal Emergency Management Agency maps (Map Numbers 06019C2180F and 06019C2190F) the Winery, the 150-acre LAA, and the new 53-acre LAA are all in Zone X. This area is outside the 500-year floodplain.

Basin Plan, Beneficial Uses, and Water Quality Objectives

26. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (hereafter "Basin Plan") designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference plans and policies of the State Water Board. In accordance with Water Code section 13263 (a), these waste discharge requirements implement the Basin Plan.

27. The Winery, the 150-acre LAA, and the new 53-acre LAA are all in Detailed Analysis Unit (DAU) No. 236, within the Kings Basin hydrologic unit. The Basin Plan identifies the beneficial uses of groundwater in the DAU as municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

28. The Winery, the 150-acre LAA, and the new 53-acre LAA are all in the Consolidated Hydrologic Area No. 551.70 of the South Valley Floor Hydrologic Unit, as depicted on hydrologic maps prepared by State Water Resources Control Board in August 1986.

29. The Basin Plan includes narrative water quality objectives for chemical constituents that, at a minimum, require water designated as domestic or municipal supply to meet the Maximum Contaminant Levels specified in Title 22 of the California Code of Regulations (hereafter 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.

30. The Basin Plan establishes narrative water quality objectives for chemical constituents, taste and odors, and toxicity. The toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, 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.

31. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitation in order to implement the narrative objective.

32. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:

    a. The increase in EC of a point source discharge to surface water or land must be controlled to a maximum of 500 umhos/cm.

    b. For municipal discharges to area that may recharge to good quality groundwater, the Basin Plan states that they shall not exceed an EC of 1,000 umhos/cm, a chloride of 175 mg/L, or a boron content of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.

33. The Basin Plan authorizes an exemption to the incremental EC increase limit in Finding 32.a. for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions must be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

Groundwater Considerations

34. The proposed Carmelita Mine, is immediately adjacent to both the 150-acre LAA and the new 53-acre LAA. Groundwater below the Carmelita Mine is found at approximately 15 feet below ground surface (bgs) and flows to the southeast.

35. The proposed Carmelita Mine has a groundwater monitoring well network consisting of three monitoring wells (MW-A, MW-B, and MW-C) that have a total depth of 50 feet. Monitoring well MW-A is the upgradient well and MW-B and MW-C are the downgradient wells. Groundwater quality below the Carmelita Mine based on a sample collected on 10 June 2009, is tabulated in Table 3 below.

Table 3. Groundwater Quality below the Carmelita Mine

Well	EC (umhos/cm)	TDS (mg/L)	HCO_3[1] (mg/L)	Ca[2] (mg/L)	Fe[3] (mg/L)	Mn[4] (mg/L)	As[5] (mg/L)
MW-A	98	80	50	9	0.11	0.02	<0.002
MW-B	454	310	140	40	0.07	<0.01	<0.002
MW-C	571	370	160	48	<0.05	<0.01	<0.002
MCL	900/1600	500/1000	N/A	N/A	0.30	0.050	0.010

[1] HCO_3 denotes Bicarbonate
[2] Ca denotes Calcium
[3] Fe denotes Iron
[4] Mn denotes Manganese
[5] As denotes Arsenic

36. The new 53-acre LAA borders the Winery to the north and south. The new 53-acre LAA has a groundwater monitoring well network of three wells (MW-5 through MW-7) installed in August 2013. The wells have a total depth ranging from 54 feet bgs to 58 feet bgs. Monitoring well MW-5 is the upgradient well and MW-6 and MW-7 are the downgradient wells. Groundwater below the new 53-acre LAA is at about 30 feet bgs and flows to the south. The quality of groundwater below the new 53-acre LAA based on a sample collected on 5 September 2013 is shown in Table 4.

Table 4. Groundwater Quality below the new 53-acre LAA

Well	EC (umhos/cm)	TDS (mg/L)	HCO_3 (mg/L)	Ca (mg/L)	Fe (mg/L)	Mn (mg/L)	As (mg/L)	TN (mg/L)	NO_3 as N[1] (mg/L)
MW-5	510	310	170	55	<0.10	0.0054	<0.010	17	17
MW-6	820	**520**	260	81	<0.10	<0.0050	<0.010	22	22
MW-7	**990**	**670**	170	97	<0.10	0.027	<0.010	32	32
MCL	900/1600	500/1000	N/A	N/A	0.30	0.050	0.010	10	10

[1] NO_3 denotes Nitrate as Nitrogen, converted from Nitrate as Nitrate

37. The 150-acre LAA is a mile and a half west of the Winery. The 150-acre LAA has a groundwater monitoring well network of four wells (MW-1 through MW-4). Groundwater in the 150-acre LAA is shallow, 7 to 10 feet bgs, and flow is generally to the southeast. Monitoring well MW-1 was installed as the upgradient well and MW-2, MW-3, and MW-4 as downgradient wells. Groundwater below the 150-acre LAA shows EC, TDS, and bicarbonate increasing as groundwater moves downgradient from MW-1 to MW-4. Annual average groundwater EC ranges from 161 to 335 umhos/cm in MW-1, 248 to 434 umhos/cm in MW-2, 544 to 1,037 umhos/cm in MW-3, and 353 to 923 umhos/cm in MW-4 (based on data from January 2008 through June 2013). Groundwater TDS also increases as groundwater moves from MW-1 towards MW-4. Annual average TDS concentrations range from 108 to 196 mg/L in MW-1, 170 to 256 mg/L in MW-2, 351 to 652 in MW-3, and 233 to 539 mg/L in MW-4

(based on data from January 2008 through June 2013). TDS concentrations in MW-3 and MW-4 occasionally exceed the State drinking water recommended secondary MCL of 500 mg/L, with bicarbonate being a large contributor to the TDS. Annual average bicarbonate concentrations in groundwater range from 90 to 193 mg/L in MW-1, 167 to 243 mg/L in MW-2, 345 to 682 mg/L in MW-3, and 224 to 604 mg/L in MW-4 (based on data from January 2008 through June 2013). The data also show elevated levels of TOC and ammonia and a lack of nitrate nitrogen. These results all point to organic overloading as the cause of groundwater degradation with respect to EC, TDS, and bicarbonate. Average concentrations for selected constituents in groundwater below the 150-acre LAA are presented in Table 9A of the Information Sheet.

38. Iron and manganese concentrations in groundwater underlying the current 150-acre LAA consistently exceed their respective secondary MCLs of 0.3 mg/L and 0.05 mg/L for MW-1 through MW-4 by several orders of magnitude. Arsenic also exceeds the primary MCL of 10 ug/L consistently in MW-1 and MW-3, relatively consistently in MW-4, and sporadically in MW-2.

39. MW-1, the upgragradient well on the northeast corner and immediately adjacent to the 150-acre LAA (wastewater is applied from east to west), appears to be impacted by the discharge as it contains iron, manganese, and arsenic concentrations exceeding MCLs. Elevated concentrations of iron, manganese, and arsenic in MW-1 are likely due to reducing conditions. Monitoring well MW-1 does not represent background groundwater conditions. This Order includes a Provision requiring the Discharger to evaluate background groundwater conditions and replace MW-1 so that it represents background groundwater quality conditions.

40. TOC concentrations (based on data from 2008 through 2012) in groundwater below the 150-acre LAA increase as groundwater moves downgradient from MW-1 to MW-4. Concentrations of TOC range from 1.83 to 2.57 mg/L in MW-1, 2.83 to 10.56 mg/L in MW-2, 5.34 to 8.23 mg/L in MW-3, and 7.88 to 11.31 mg/L in MW-4. Elevated TOC concentrations in groundwater deplete oxygen creating anoxic conditions and mobilizing naturally occurring metals is soil such as iron, manganese, and arsenic. The increase in TOC concentrations as the groundwater moves downgradient across the site is another indication of organic overloading.

41. Groundwater from Carmelita Mine monitoring wells MW-A, MW-B, and MW-C and groundwater from MW-5 near the new 53-acre LAA represent groundwater unaffected by the discharge and, therefore, background water quality. The higher EC and TDS values in MW-6 and MW-7 indicate they may have not been properly developed or may be affected by other discharges.

Antidegradation Analysis

42. State Water Board Resolution 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (*Anti-Degradation Policy*), generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:

    a. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;

    b. The degradation will not unreasonably affect present and anticipated future beneficial uses;

    c. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and

    d. The degradation is consistent with the maximum benefit to the people of the state.

43. Constituents of concern that have the potential to degrade and pollute groundwater include organics and iron, manganese and arsenic; salts; and nitrogen, as discussed below:

Organics, Iron, Manganese and Arsenic

    a. While reported BOD loading rates to the 150-acre LAA have been relative low compared to other facilities, the data presented in Findings 34 through 41 indicate that first encountered groundwater below the 150-acre LAA contains concentrations of arsenic, iron, and manganese that exceed those associated with groundwater that is unaffected by the discharge and the applicable State primary and secondary drinking water MCLs resulting in a condition of pollution. Groundwater data also show elevated ammonia concentrations, a lack of nitrate as nitrogen, and increasing TOC concentrations as groundwater moves across the site in the downgradient direction. These are symptoms of reducing conditions in groundwater caused by organic overloading of the site. The overloading is due to the uneven application of relatively high strength wastewater to long checks having coarse grained soils overlaying shallow groundwater. As a result of application practices, much more wastewater is applied to the head of the checks resulting in high organic matter loading rates over relatively small area.

       The reducing conditions that create excess concentrations of arsenic, iron, and manganese in groundwater are reversible; arsenic, iron, and manganese will precipitate out of solution when organic overloading ceases and oxygen is

reintroduced to groundwater. This can be accomplished by the implementation of management practices to promote the even distribution of organic materials at rates that do not overwhelm the treatment capacity of the soils. To ensure the ongoing discharge does not result in further impermissible degradation, this Order sets a cycle average BOD loading limit of 100 lbs/acre/day to the 150-acre LAA and the new 53-acre LAA, over the course of an appropriate discharge cycle. This Order also requires the Discharger to implement measures to ensure the even application of wastes, and groundwater monitoring to confirm that water percolating to groundwater will not exacerbate existing groundwater pollution.

Salts

b. Groundwater levels of EC and TDS increase as groundwater moves across the 150-acre LAA in the downgradient direction. As noted in Finding 37, EC and TDS levels in MW-3 and MW-4 occasionally exceed the State drinking water recommended secondary MCLs of 900 umhos/cm and 500 mg/L, respectively. Bicarbonate is a large contributor to the EC and TDS levels and is another indicator of organic overloading. At a minimum the discharge has unreasonably degraded underlying groundwater with EC, TDS, and bicarbonate.

   The Basin Plan limits the increase in EC of a discharge to land to 500 umhos/cm. The Basin Plan allows exceptions to the EC limit where the discharge exhibits a disproportionate increase in EC over the EC of the source water due to concentrations of organic dissolved solids from the raw food products, provided water quality objectives are met. With an annual average FDS of 925 mg/L and an annual average TDS of 2,636 mg/L, approximately 65 percent of the discharge TDS concentration is a result of organic compounds. The discharge meets the incremental EC limit exception. Under these conditions, it is not appropriate to apply the Basin Plan EC limit of 1,000 umhos/cm.

   This Order requires the Discharger to submit a Salinity Management Plan to identify and implement additional methods to further reduce the salinity of the discharge to the maximum extent feasible. This Order also requires the Discharger to submit a Nutrient and Wastewater Management Plan that proposes measures to evenly distribute the applied wastes, ensures application of nutrients at reasonable agronomic rates, and determine an appropriate discharge cycle. Implementation of these plans and the measures described above to prevent organic overloading of the LAA's should result in a reduction mass of salts discharged to the LAA's and the bicarbonate concentration in groundwater at the 150-acre LAA, which in turn, should result in lower levels of EC and TDS. This, along with the implementation of a Salinity Management Plan should prevent the discharge from causing

degradation with salts of the groundwater beneath the LAA's to the extent that it exceeds water quality objectives or adversely affects beneficial uses.

c. Nitrogen beneath the 150-acre LAA appears to be in the ammonia form in concentrations, that if converted to nitrate as nitrogen, would not exceed the State primary MCL of 10 mg/L. The RWD indicates the Discharger will maximize nitrogen uptake by double cropping the 150-acre LAA with corn and forage crops and planting a cover crop between the vineyards at the new 53-acre LAA. This Order includes groundwater limits that proscribe the discharge from causing groundwater beneath the LAA's to contain nitrate as nitrogen in excess of the primary MCL of 10 mg/L or natural background quality, whichever is greater. The application of wastewater at agronomic rates for nitrogen loading should preclude degradation of groundwater beneath the LAA's to the extent that it exceeds water quality objectives.

44. The Discharger provides control of the discharge or will provide control of the discharge as required by this Order, control of the discharge that incorporates:

a. Internal recycling of cooling water within the condenser cooling towers through as many cycles as is feasible before comingling with the winery process discharge;

b. Removal of pomace (seeds, pulp, skins) and spent diatomaceous earth offsite and implementation of a Solids Management Plan;

c. Double cropping at the 150-acre LAA, and vineyard and cover crop in the new 53-acre LAA to maximize uptake rates for nitrogen, other nutrients, and salts;

d. Application of supplemental irrigation water to meet agronomic requirements for crop growth;

e. A cycle average BOD loading rate of 100 lb/acre/day;

f. Even distribution of wastewater to the LAA's;

g. Soil monitoring at the LAA's;

h. Preparation and implementation of a Salinity Management Plan and a Nutrient and Wastewater Management Plan;

i. Groundwater monitoring; and

j. Groundwater limitations.

These control practices are reflective of BPTC of the discharge.

45. With respect to EC, TDS, bicarbonate, iron, manganese, and arsenic, an unacceptable degree of groundwater degradation/pollution has occurred. This Order establishes terms and conditions to ensure that the authorized discharge will not further degrade groundwater, contribute to existing pollution, or unreasonably affect present and anticipated future beneficial uses of groundwater.

46. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State and, therefore, sufficient reason exists to accommodate growth and limited groundwater degradation around the Winery, provided that the terms of the Basin Plan are met. The Discharger aids in the economic prosperity of the region by the direct employment of about 30 full time and 45 seasonal employees. The Winery also provides additional benefits to California by purchasing material and services from approximately 175 vendors, contractors, and companies. Annually, the Winery purchases about $24 million worth of grapes grown in California, $2.5 million on purchasing local or California goods and services to operate the Winery, and pays $110,000 in property taxes.

47. This Order is consistent with the *Anti-Degradation Policy* since: (a) the Discharger has or will implement BPTC to minimize degradation, (b) the limited degradation allowed by this Order will not unreasonably affect present and anticipated future beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State.

Other Regulatory Considerations

48. Based on the threat and complexity of the discharge, the Winery is determined to be classified as 2B as defined below:

    a. Category 2 threat to water quality: “Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance.”

    b. Category B complexity: “Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units.”

49. California Code of Regulations, Title 27 (“Title 27”) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. 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. The exemption, found at Title 27, section 20090, 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, reclamation requirements, or waived such issuance;
>
> (2) The discharge is in compliance with applicable water quality control plan; and
>
> (3) The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

50. The discharge authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:

    a. The Central Valley Water Board is issuing WDRs.
    b. The discharge authorized herein will comply with the Basin Plan, and;
    c. The treated effluent discharged to the LAA's does not need to be managed as hazardous waste.

51. Water Code section 13267(b) states that:

> In conducting an investigation specified in subdivision (a), the Central Valley Water 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…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Central Valley Water 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 Central Valley 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.

52. The technical reports required by this Order and monitoring reports required by the attached MRP R5-2014-XXXX are necessary to assure compliance with these waste discharge requirements. The Discharger operates the wastewater treatment facility that discharges the waste subject to this Order.

53. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order

promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

54. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), 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 Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

55. Fresno County, as lead agency, adopted an Initial Study and Mitigated Negative Declaration. On 29 April 2010, Fresno County filed a Notice of Determination (E201010000133) with Fresno County Clerk for a flow increase from 30 mgy to 70 mgy and an increase in LAA by 53 acres for a total of 203 acres of LAA at the Winery.

56. To mitigate potential impacts to water quality, the CEQA document included a mitigation measure requiring the Discharger to submit a complete RWD prior to initiating any operation that would increase flows over the current permitted limits prescribed in WDRs Order 92-120.

57. 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

58. 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 conditions of discharge of this Order.

59. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.

60. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order 92-120, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081019, and Revised Monitoring and Reporting Program 92-120 are rescinded except for enforcement purposes. Pursuant to Water Code sections 13263 and 13267, The Wine Group, LLC, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of waste to surface waters or surface water drainage courses is prohibited.

2. Discharge of waste classified as 'hazardous', as defined in California Code of Regulations, title 23, section 2521(a), is prohibited.

3. Treatment system bypass or overflow of untreated wastes is prohibited, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991.

4. Discharge of wastewater in a manner or location other than that described herein or in the RWD is prohibited.

5. Application of residual solids to the LAA's is prohibited.

6. Discharge of domestic wastewater to the LAA's or any surface water is prohibited.

B. Effluent and Mass Loading Limitations

1. The monthly average daily discharge flow shall not exceed 0.459 mgd and the total annual flow shall not exceed 70 mgy. **[Compliance shall be determined at EFF-001]**

2. The cycle average BOD loading rates to the 150-acre LAA and the new 53-acre LAA shall not exceed 100 lbs/acre/day over the course of any discharge cycle (i.e., the time between successive applications).

C. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of Groundwater Limitations of this Order.

2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.

3. The discharge shall remain within the permitted waste treatment/containment structures and LAA's at all times.

4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.

5. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. Objectionable odors shall not be perceivable beyond the limits of the Winery or LAA's at an intensity that creates of threatens to create nuisance conditions.

7. Storage of residual solids, including pomace and/or diatomaceous earth on areas not equipped with means to prevent storm water infiltration is prohibited.

8. Application of pomace and/or diatomaceous earth to the LAA's is prohibited.

D. Land Application Area Specifications

1. Application of waste constituents to the LAA's shall be at reasonable agronomic rates to preclude creation of a nuisance and degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the LAA's, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.

2. The Discharger shall ensure that water, BOD, and nitrogen are applied and distributed uniformly across each LAA field. The Discharger shall implement change to the irrigation system and/or operational practices as needed to ensure compliance with this requirement.

3. Wastewater shall not be discharged to the LAA's in a manner that causes wastewater to stand for greater than 48 hours after irrigation ceases.

4. Any irrigation runoff shall be confined to the LAA's and shall not enter any surface water drainage course or stormwater drainage system.

5. The perimeter of the LAA's shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties not owned or controlled by the Discharger.

6. The volume of wastewater applied to the LAA's on any single day shall not exceed reasonable agronomic rates based on the vegetation grown, soil moisture, and weather conditions.

7. Hydraulic loading of wastewater and supplemental irrigation water shall be at reasonable agronomic rates designed to:

   a. Maximize crop nutrient uptake;

   b. Maximize breakdown of organic waste constituents in the root zone; and

   c. Minimize the percolation of waste constituents below the root zone.

8. Tailwater runoff and spray of wastewater shall not be discharged outside of the LAA's.

9. Land application of wastewater shall be managed to minimize erosion.

10. The LAA's shall be managed to prevent breeding of mosquitos. In particular:
    a. All applied irrigation water must infiltrate within 48 hours;

    b. Tailwater ditches shall 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 recycled water.

11. Irrigation of the LAA's shall occur only when appropriately trained personnel are on duty.

12. LAA's shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.

E. Solids Specifications

Solids, as used in this document, includes all residual solids, including but not limited to, grape stems and pomace, diatomaceous earth, and semisolid residues removed during grape processing, wine making, or cleaning of wine making equipment.

1. Any handling and storage of solids and sludge shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituent into soils in a mass or concentration that will violate groundwater limitations of this Order.

2. Collected screenings, sludge's and other solids removed from the liquid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board or as proposed in a Solids Management Plan approved by the Executive Officer will satisfy this specification.

3. Any proposed change in solids use or disposal practice shall be reported to the Executive Officer at least 90 days in advance of the change.

F. Groundwater Limitations

Release of waste constituents from any treatment, reuse, or storage component associated with the Winery or LAA's shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:

1. Nitrate as Nitrogen of 10 mg/L

2. For constituents identified in Title 22, the MCLs quantified therein.

G. Provisions

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements,* dated 1 March 1991 (Standard Provisions), which are part of this Order.

2. The Discharger shall comply with MRP R5-2014-XXXX, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.

3. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified documents to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance

with the specific schedule date and task. If noncompliance is being reported, then the Discharger 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 Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

4. The Discharger must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger only when the operation is necessary to achieve compliance with the conditions of this Order.

5. As described in the Standard Provisions, 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.

6. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, 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.

7. In the event of any change in control or ownership of the Winery, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

8. To assume operation as a 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 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. If approved by the Executive Officer,

the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

9. A copy of this Order, including its MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

10. **By (120 days following Order adoption)**, the Discharger shall submit a Salinity Management Plan, which identifies additional methods, and projected costs, that could potentially be used to reduce the salinity of the discharge to the maximum extent feasible. The Salinity Management Plan shall include a proposed implementation schedule and shall be subject to review and approval of the Executive Officer.

11. **By (180 days following Order adoption)**, the Discharger shall submit a Nutrient and Wastewater Management Plan for the LAA's for Executive Officer approval. The Plan must include procedures of daily monitoring of the LAA's and proposed management practices that will be implemented to ensure wastewater and the nutrients contained therein are applied evenly at agronomic rates. The objective of the Plan shall be to identify and utilize site specific data to demonstrate that wastewater loading will occur at reasonable agronomic rates that will preclude degradation of groundwater that will exceed Water Quality Objectives or adversely affect Beneficial Uses.

12. **By (180 days following Order adoption)**, the Discharger shall submit a Solids Management Plan. The Plan shall characterize the various solids removed at the Winery with respect to organic matter, nutrients, salts, and metals; identify any practicable beneficial uses (i.e., soil supplement, animal feed, biomass fuel, etc.); provide a description of the tasks, costs, and time required to investigate and implement various beneficial reuse elements in the Plan; and provide an implementation time schedule for Executive Officer approval. The Discharger shall implement the approved plan in accordance with the approved scheduled

13. The Discharger shall comply with the following schedule to replace MW-1.

	Task	Report Date
a.	Submit a work plan to evaluate background groundwater conditions and locations for a new monitoring well to replace MW-1. Include a proposed time schedule for tasks to be completed.	**6 months from the adoption of this Order**

b.	Submit the evaluation describing background groundwater conditions and identifying a proposed location for MW-1's replacement.	**9 months from the adoption of this Order.**
c.	Complete well installation and commence groundwater monitoring in accordance with Monitoring and Reporting Program R5-2014-XXXX.	**3 months from the completion of Task b.**
d.	Submit a monitoring well installation report that meets the requirements of Attachment B.	**1 month from the completion of Task c.**

14. 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 work plans 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 bear the professional's signature and stamp.

15. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objectives are to be interpreted for the protection of agricultural use. If new information or evidence indicates that groundwater limitations are different that those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.

16. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

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 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.

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, section 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 filling petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality/

or will be provided upon request.

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 XX August 2014.

_____
PAMELA C. CREEDON, Executive Officer

Order Attachments:
A Site Location Map
B Standard Requirements for Monitoring Well Installation
Work Plans and Monitoring Well Installation Reports
Monitoring and Reporting Program R5-2014-XXXX
Information Sheet
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2014-XXXX
FOR
THE WINE GROUP LLC
FRANZIA SANGER WINERY
FRESNO COUNTY

This monitoring and Reporting Program (MRP) is required pursuant to Water Code section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer and in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for the requested reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page 11.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

Monitoring Location Name	Monitoring Location Description
EFF-001	Sump where wastewater comingles before being discharged to the LAA's.
SPL-001 and SPL-002	Supply Well 1(SPL-001) and supply well 2 (SPL-002)
MW-1 through MW-7	Monitoring Wells MW-1 to MW-4 at the 150-acre LAA and MW-5 to MW-7 at the new 53-acre LAA.
LAA-001 and LAA-002	150-acre LAA (LAA-001) and new 53-acre LAA (LAA-002)

EFFLUENT MONITORING

Effluent samples shall be collected at the EFF-001. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

Frequency	Constituent/Parameter	Units	Sample Type
Continuous	Total Effluent Flow	mgd	Meter
Weekly	pH	pH Units	Grab
Weekly	Electrical Conductivity (EC)	umhos/cm	Grab
Weekly	Biochemical Oxygen Demand$_5$ (BOD)[1]	mg/L	24-hr composite
Weekly	Chemical Oxygen Demand	mg/L	24-hr composite
Monthly	Total Organic Carbon (TOC)	mg/L	24-hr composite
Monthly	Total Suspended Solids	mg/L	24-hr composite
Monthly	Total Dissolved Solids (TDS)	mg/L	24-hr composite
Monthly	Fixed Dissolved Solids	mg/L	24-hr composite
Monthly	Total Kjeldahl Nitrogen (TKN)	mg/L	24-hr composite
Monthly	Nitrate as Nitrogen	mg/L	24-hr composite
Monthly	Nitrite as Nitrogen	mg/L	24-hr composite
Monthly	Ammonia as Nitrogen	mg/L	24-hr composite
Monthly	Total Nitrogen	mg/L	Computed
Monthly	Chloride	mg/L	24-hr composite
Monthly	Sodium	mg/L	24-hr composite
Monthly	Potassium	mg/L	24-hr composite

Frequency	Constituent/Parameter	Units	Sample Type
Monthly	Iron	mg/L	24-hr composite
Monthly	Manganese	mg/L	24-hr composite
Monthly	Arsenic	mg/L	24-hr composite
Quarterly	General Minerals[2]	mg/L	24-hr composite

[1] Five-day, 20ºC biochemical oxygen demand (BOD_5)
[2] See glossary on page 11 for list of general mineral constituents

SOURCE WATER MONITORING

The Discharger shall monitor supply wells SPL-001 and SPL-002. For each source (either well or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements.

Frequency	Constituent/Parameter	Units	Sample Type
Quarterly	Flow-Weighted EC	umhos/cm	Grab
Annually	TDS	mg/L	Grab
Annually	Nitrate as Nitrogen	mg/L	Grab
Annually	Nitrite as Nitrogen	mg/L	Grab
Annually	General Minerals[1,2]	mg/L	Grab

[1] With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.
[2] See glossary on page 11 for list of general mineral constituents.

GROUNDWATER MONITORING

After measuring water levels and prior to collecting samples, each monitoring well (MW-1 through MW-7) shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall monitor monitoring wells MW-1 through MW-4 at the 150-acre LAA and MW-5 through MW-7 at the new 53-acre LAA, and any subsequent additional wells, for the following:

Frequency	Constituent/Parameter	Units	Sample Type
Quarterly	Depth to groundwater	Feet	Measured
Quarterly	Groundwater elevation	Feet	Computed
Quarterly	pH	pH units	Grab
Quarterly	EC	umhos/cm	Grab
Quarterly	TDS	mg/L	Grab
Quarterly	TKN	mg/L	Grab
Quarterly	Nitrate as Nitrogen	mg/L	Grab
Quarterly	Nitrite as Nitrogen	mg/L	Grab
Quarterly	Ammonia as Nitrogen	mg/L	Grab
Quarterly	Total Nitrogen	mg/L	Computed
Quarterly	Iron	mg/L	Grab
Quarterly	Manganese	mg/L	Grab
Quarterly	Arsenic	mg/L	Grab
Quarterly	Boron	mg/L	Grab
Quarterly	Copper	mg/L	Grab
Quarterly	General Minerals[1,2]	mg/L	Grab

[1] With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

[2] See glossary on page 11 for list of general mineral constituents.

The Discharger shall maintain its groundwater monitoring well network. If a groundwater monitoring well(s) are dry for more than four consecutive sampling events, the Discharger shall submit a work plan and proposed time schedule to replace the well(s). The well(s) shall be replaced following written Executive Officer approval of the work plan and time schedule.

SOIL MONITORING

The Discharger shall establish with concurrence of Central Valley Water Board staff, at least six soil profile monitoring locations within the LAA's and at least two representative background location(s) (i.e., that historically have not received process wastewater). The Discharger shall submit a map to the Central Valley Water Board with the identified sample locations no fewer than **30 days** prior to the first sampling event in October following adoption of this Order. The samples shall be collected and analyzed for the constituents and frequencies specified below:

Frequency	Constituent/Parameter	Units	Sample Type
Annually	Moisture Content	% volume	Grab[1]
Annually	Cation Exchange Capacity	meq/100 grams	Grab[1]
Annually	Soil pH	pH units	Grab[1]
Annually	Buffer pH	mg/kg as $CaCO_3$	Grab[1]
Annually	Sodium	mg/kg	Grab[1]
Annually	Chloride	mg/kg	Grab[1]
Annually	Potassium	mg/kg	Grab[1]
Annually	Nitrate as Nitrogen	mg/kg	Grab[1]
Annually	Ammonia as Nitrogen	mg/kg	Grab[1]
Annually	TKN	mg/kg	Grab[1]

[1] Samples shall be collected at 6-inches, 2.5, 5, 7.5, and 10 feet below ground surface (bgs).

LAND APPLICATION AREA MONITORING

The Discharger shall perform the following routine monitoring and loading calculations for the 150-acre (LAA-001) and new 53-acre (LAA-002) LAA's. In addition the Discharger shall keep a log of routine monitoring observations (e.g. areas of ponding, broken irrigation pipes, odors and/or flies within the LAA's, etc.). Data shall be collected and presented in tabular format and shall include the following:

Frequency	Constituent/Parameter	Units	Sample Type
Daily	Application Location	n/a	n/a
Daily	Application Area	acres	n/a
Daily	Wastewater Flow	gallons	Metered
Daily	Wastewater Loading	inches/day[1]	Calculated
Daily	Supplemental Irrigation	inches/day[1]	Calculated
Daily	Precipitation[2]	inches/day[1]	Rain gage[2]
	BOD_5 Loading Rates:		
Daily	Day of Application[3]	lbs/acre	Calculated
Daily	Cycle Average[4]	lbs/acre-day	Calculated
	Nitrogen Loading Rates:		
Monthly	From Wastewater[5]	lbs/acre	Calculated
Monthly	From Fertilizer[6]	lbs/acre	Calculated
Annually	Cumulative Nitrogen Loading	lbs/acre-year	Calculated
	Salt Loading Rates:		
Monthly	From Wastewater[5]	lbs/acre	Calculated
Annually	Cumulative Salt Loading	lbs/acre-year	Calculated

[1] Report to the nearest 0.01 inch.

[2] National Weather Service data from the nearest weather station is acceptable.

[3] Loading rates to be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD_5.

[4] The cycle average BOD_5 loading rates shall be calculated using applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD_5 and divided by the number of days between applications.

[5] Nitrogen and salt shall be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for total nitrogen and Fixed Dissolved Solids.

[6] Additional nitrogen loading to the land application area from other sources (i.e. organic matter and manure).

REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports** which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

First Quarter Monitoring Report:	**1 May**
Second Quarter Monitoring Report:	**1 August**
Third Quarter Monitoring Report:	**1 November**
Fourth Quarter Monitoring Report:	**1 February**

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The following information is to be included on all monitoring and annual reports, as well as report transmittal letters, submitted to the Central Valley Water Board:

Discharger Name
Facility Name
MRP Number
Contact Information (telephone number and email)

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or

PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic 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.

At any time henceforth, the State or Central Valley Water Board may notify the Discharger to electronically submit monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html) or similar system. Until such notification is given, the Discharger shall submit hard copy monitoring reports.

A. All Quarterly Monitoring Reports shall include the following:

Wastewater Reporting

1. The results of Effluent Monitoring specified on page 2 and 3.

2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.

3. For each month of the quarter, calculation of the monthly average effluent EC and BOD_5 concentrations.

Source Water Reporting

1. The results of Source Water Monitoring specified on page 3.

Groundwater Reporting

1. The results of Groundwater Monitoring specified on page 3 and 4. If there is insufficient water in the well(s) for sampling the monitoring well(s) shall be reported as dry for the quarter.

2. For each monitoring well, a table showing groundwater depth, elevation, and constituent concentrations for the five previous years, up through the current quarter.

3. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and flow direction of groundwater flow. The map shall also include the locations of all monitoring wells and wastewater storage and/or disposal areas.

Land Application Area Reporting

1. The results of the routine monitoring and loading calculations specified on page 5 and 6.

2. Provide a Site Map of the LAA's showing predominant features, and include field numbers (if applicable) and acreage where wastewater was applied.

3. For each month that wastewater is applied to the LAA's, calculation of the monthly hydraulic load for wastewater and supplemental irrigation water (in million gallons) to each discrete irrigation area.

4. A summary of the notations made in the LAA's monitoring log during each quarter. The entire contents of the log do not need be submitted.

B. Fourth Quarter Monitoring Reports, in addition to the above, shall include the following:

Facility Information

1. The names and general responsibilities of all persons in charge of wastewater management.

2. The names and telephone numbers of persons to contact regarding the facility for emergency and routine situations.

3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).

4. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

Solids Reporting

1. Annual production total solids (excluding trash and recyclables) in dry tons or cubic yards.

2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.

    a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.

    b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.

    c. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).

    d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.

    e. For beneficial reuse at locations and by entities not operating under a WDRs, and as approved by the Executive Officer, include: the name and location of the site where the beneficial reuse occurs and/or solids are sent for beneficial reuse.

Soil Reporting

1. The tabulated results of Soil Monitoring as specified on page 4 and 5.

Land Application Area Reporting

1. The type of crop(s) grown in the LAA's, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes (as estimated by technical references or, preferably, determined by representative plant tissue analysis).

2. The monthly and annual discharge volume during the reporting year expressed in million gallons and inches.

3. A monthly balance for the reporting year that includes:

    a. Monthly crop uptake

i. Crop water utilization rates are available from a variety of publications available from the local University of California Davis extension office.

ii. Irrigation efficiency – Frequently, engineers include a factor for irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.

(a) Monthly average precipitation – this data is available at

http://www.cimis.water.ca.gov/ or at http://www.ncdc.noaa.gov

(b) Monthly average and annual average discharge flow rates.

(c) Monthly estimates of the amount of wastewater percolating below the root zone (i.e., amount of wastewater applied in excess of crop requirements)

4. A summary of average and cycle BOD_5 loading rates.

5. The total pounds of nitrogen applied to the LAA's, as calculated from the sum of the monthly loadings, and the total annual nitrogen loading to the LAA's in lbs/acre-year.

6. The total pounds of fixed dissolved solids that have been applied to the LAA's in lbs/acre-year, as calculated from the sum of the monthly loadings.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____
(Date)

GLOSSARY

BOD_5	Five-day biochemical oxygen demand
CBOD	Carbonaceous BOD
DO	Dissolved oxygen
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
NTU	Nephelometric turbidity unit
TKN	Total Kjeldahl nitrogen
TDS	Total dissolved solids
TSS	Total suspended solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-Hour Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.
Daily	Samples shall be collected at least every day.
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.
Weekly	Samples shall be collected at least once per week.
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.
Monthly	Samples shall be collected at least once per month.
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months.
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.
mg/L	Milligrams per liter
mL/L	milliliters [of solids] per liter
ug/L	Micrograms per liter
umhos/cm	Micromhos per centimeter
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
General Minerals	Analysis for General Minerals shall include at least the following:

Alkalinity	Chloride	Sodium
Bicarbonate	Hardness	Sulfate
Calcium	Magnesium	TDS
Carbonate	Potassium	Nitrate

General Minerals analyses shall be accompanied by documentation of cation/anion balance.

INFORMATION SHEET

INFORMATION SHEET-ORDER R5-2014-XXXX
THE WINE GROUP LLC
FRANZIA SANGER WINERY
FRESNO COUNTY

Background

Waste Discharge Requirements (WDRs) Order 92-120, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081019, adopted on 26 June 1992 authorize a daily discharge of 0.2 million gallons per day (mgd) of condenser cooling wastewater to Fink Ditch (discharge 001), and discharge of two waste streams to a 150-acre land application area (LAA): (1) up to 0.3 mgd (34 million gallons per year (mgy)) of winery wastewater (discharge 002), and (2) 0.3 mgd (11.3 mgy) of stillage wastewater (discharge 003) produced at the Sanger Winery (Winery) at 2916 South Reed Avenue in Sanger.

The Winery was formerly owned by The Beverage Source, Inc., a division of Erly Industries Inc., and in mid-1992, was sold to The Wine Group LLC (Discharger).

On 12 December 2000, a Notice of Violation issued to the Discharger indicated that there were additional waste streams other than those described in WDRs 92-120 being discharged. The Discharger was discharging regeneration water from an ion exchange unit and boiler blowdown water to a common sump where it was being comingled with the winery and stillage wastewaters before being applied to the LAA. On 2 May 2001, the Central Valley Water Board adopted Revised Monitoring and Reporting Program (MRP) 92-120 to include additional effluent monitoring constituents and monitoring requirements for the ion-exchange regenerant and boiler blowdown wastewaters streams.

Following the 2000 crush season, distillation operations (discharge 003) were terminated. NPDES Permit No. CA0081019 expired on 1 June 1997. The Discharger ceased discharging condenser cooling water to Fink Ditch (discharge 001) in 2001 by internally recycling its cooling water which, after use, becomes comingled with the process wastewater discharge. The Central Valley Water Board has not formally rescinded the NPDES requirements of NPDES Permit No. CA0081019 contained in WDRs 92-120.

On 27 June 2011, Kennedy/Jenks Consultants submitted a Report of Waste Discharge (RWD) on behalf of the Discharger for a proposed increase in wastewater flow, and land application area. The Discharger is proposing to increase its wastewater flows from 49 mgy up to 70 mgy. To accommodate the increase in flow, the RWD proposes to increase the current LAA acreage by an additional 53 acres for a total of 203 acres.

The 150-acre LAA is in sections 29 and 32 or Township 14 South, Range 23 East, Mount Diablo Base and Meridian (MDB&M). The Winery and the new 53-acre LAA are in sections

22 and 27 or Township 14 South, Range 23 East, MDB&M. The Discharger has not discharged any wastewater to the new 53-acre LAA.

Discharge

The Discharger produces wine and grape juice concentrate at the Winery. Wastewater at the Winery consists of cleaning and sanitation wastewater, ion-exchange regeneration waste, boiler blowdown and refrigeration units, condenser cooling water that is reused through multiple cycles before comingling, and filter backwash.

Wastewater is collected in trench drains throughout the Winery and conveyed to a sump where wastewater currently gravity flows to the 150-acre LAA. The 150-acre LAA is divided into long checks (1,250 ft to 2,500 ft). Wastewater is applied from east to west at the 150-acre LAA. Table 1 shows total annual wastewater flows generated at the winery.

Table 1. Total Annual Wastewater Flows

Year	Total Annual Wastewater (mgy)
2008	45
2009	34
2010	46
2011	63
2012	69

The volume of wastewater generated at the Winery has increased since 2009 as follows: from 34 mgy in 2009 to 46 mgy in 2010 (35% increase), from 46 mgy in 2010 to 63 mgy in 2011 (37% increase), and from 63 mgy in 2011 to 69 mgy in 2012 (9% increase).

Wastewater Characteristics

The annual average quality of comingled wastewater is tabulated in Table 2 below.

Table 2. Quality of Comingled Wastewater

Year	BOD[1] (mg/L)	EC[2] (umhos/cm)	TDS[3] (mg/L)	FDS[4] (mg/L)	HCO_3[5] (mg/L)	TN[6] (mg/L)	Cl[7] (mg/L)	K[8] (mg/L)	Na[9] (mg/L)	SO_4[10] (mg/L)
2008	3,426	763	1,460	708	108	46	27	91	48	188
2009	2,959	977	1,423	730	183	48	22	119	71	269
2010	2,295	800	1,239	560	292	35	21	72	65	91
2011	2,050	1,518	2,146	1,126	318	26	31	165	100	153
2012	3,894	1,800	2,636	925	357	59	28	148	105	105
2013[11]	3,159	550	1,799	1,020	112	17	11	60	29	84
Average	2,964	1,068	1,784	845	228	39	23	109	70	148

[1] BOD denotes Biochemical Oxygen Demand

[2] EC denotes Electrical Conductivity

[3] TDS denotes Total Dissolved Solids
[4] FDS denotes Fixed Dissolved Solids
[5] HCO_3 denotes Bicarbonate
[6] TN denotes Total Nitrogen
[7] Cl denotes Chloride
[8] K denotes Potassium
[9] Na denotes Sodium
[10] SO_4 denotes Sulfate
[11] 2013 average constituent concentrations include data from January 2013 to June 2013.

Historical FDS and TN loading rates to the 150-acre LAA based on the total annual wastewater flows (shown in Table 1) and average annual constituent concentrations (in Table 2) from 2008 to 2012 are shown in Table 3.

Table 3. Historical FDS and TN Loading Rates at the 150-acre LAA

Year	FDS (lbs/acre/yr)	TN (lbs/acre/yr)
2008	1,772	115
2009	1,380	90
2010	1,427	88
2011	3,945	93
2012	3,528	225

FDS loading rates have increased from 1,380 lbs/acre/yr in 2009 to 3,528 lbs/acre/yr in 2012. TN loading rates have increased from 90 lbs/acre/yr in 2009 to 225 lbs/acre/yr in 2012.

The increase in total annual wastewater flows from 2009 to 2012 as shown in Table 1 have resulted in the increase in FDS, and TN loading rates to the 150-acre LAA as shown in Table 3.

Historical BOD loading rates to the 150-acre LAA during the processing season are tabulated in Table 4 below.

Table 4. Historical BOD Loading Rates at the 150-acre LAA

Year	Month	BOD (mg/L)	Monthly Average Daily Flow (mgd)	BOD Loading Rate (lbs/acre/day)
2008	Aug	4,300	0.201	48
	Sep	5,575	0.287	89
	Oct	4,720	0.293	77
2009	Aug	2,075	0.209	24
	Sep	2,575	0.152	22
	Oct	3,180	0.254	45
2010	Aug	3,100	0.128	22
	Sep	2,100	0.370	43
	Oct	4,667	0.409	106
2011	Aug	5,425	0.158	48
	Sep	1,375	0.401	31
	Oct	3,925	0.366	80
2012	Aug	1,220	0.321	22
	Sep	1,085	0.459	28
	Oct	1,925	0.398	43

At a proposed total annual flow of 70 mgy, the distribution of wastewater to the 150-acre and the new 53-acre LAA's was calculated as approximately 60 mgy and 10 mgy, respectively, based on monthly distribution patterns presented in the RWD. The FDS and TN loading rates to the 150-acre LAA and the new 53-acre LAA, based on the above distribution of wastewater flow to each of the LAA's and an annual average (2012 data) constituent concentrations for FDS and TN are tabulated in Table 5.

Table 5. Proposed FDS and TN Loading Rates to the 150-acre and 53-acre LAA's

Area	FDS (lbs/acre/yr)	TN (lbs/acre/yr)
150-acre LAA	3,089	197
53-acre LAA	1,457	93

The Discharger does not have a consistent rest period between applications of wastewater at the 150-acre LAA. This Order requires the Discharger to submit a Nutrient and Wastewater Management Plan and determine an appropriate discharge cycle to meet the cycle average BOD limit of 100 lbs/acre/day at the 150-acre and the new 53-acre LAA's. The estimated monthly average daily BOD loading rates to the 150-acre and new 53-acre LAA's based on given worst case scenario wastewater application rates in the water balance and an average BOD concentration (from August through October of 2008 to 2012) of 3,036 mg/L are tabulated in Table 6.

Table 6. Estimated Monthly Average Daily BOD Loading Rates to the 150-acre and 53-acre LAA

Area	BOD (lbs/acre/day)
150-acre LAA	77
53-acre LAA	90

The instantaneous and cycle average BOD loading rates to the 150-acre and new 53-acre LAA's are much higher than the estimated monthly average daily and threatens to violate Effluent and Mass Loading Limitation B.2, Discharge Specifications C.1 and C.2, Land Application Area Specifications D.1 and D.2, and Groundwater Limitations of this Order.

Soil and Groundwater Conditions

Soils in the 150-acre LAA are coarse grained and consist of Hanford Fine Sandy Loam and Grangeville Fine Sandy Loam. Groundwater is shallow at 7 to 10 feet below ground surface (bgs) and flows in the southeast direction.

Soils in the new 53-acre LAA are primarily sandy loams and consist of Hanford Sandy Loam. Groundwater below the new 53-acre LAA is about 30 feet bgs and flows in the south direction.

The proposed Carmelita Mine, is immediately adjacent to both the 150-acre LAA and the new 53-acre LAA. Groundwater below the Carmelita Mine is approximately 15 to 30 feet bgs and flows in the southeast direction.

The Carmelita Mine has a groundwater monitoring well network consisting of three monitoring wells (MW-A, MW-B, and MW-C) that have a total depth of 50 feet. Groundwater quality below the Carmelita Mine, based on a single sampling event, is generally of good quality. Electrical conductivity in groundwater ranges from 98 to 571 umhos/cm, TDS ranges from 80 to 370 mg/L, bicarbonate ranges from 50 to 160 mg/L, calcium ranges from 9 to 48 mg/L, iron ranges from <0.05 to 0.11 mg/L, manganese ranges from less than 0.01 to 0.02 mg/L, and arsenic is less than 0.002 mg/L.

The Discharger installed three new groundwater monitoring wells (MW-5 through MW-7) in the new 53-acre LAA a mile and a half east of the 150-acre LAA. The three new groundwater monitoring wells were installed in August 2013 by Westex, Inc., utilizing air rotary method. Monitoring well MW-5 is the upgradient well and MW-6 and MW-7 are the downgradient wells.

The new monitoring wells have a 4-inch schedule 40 PVC pipe casing and screen. The wells have 30 feet of screen with a 0.02-inch slot size and a filter pack of Cemex #3 sand with bentonite-cement grout sanitary seal. The total depth below ground surface of the wells, screen interval, and depth to groundwater for each well are tabulated below.

Table 7. 53-acre LAA Monitoring Well Construction Details

Well	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to GW* (feet bgs)
MW-5	54	22.1-52.1	28.82
MW-6	56	25.6-55.6	32.48
MW-7	58	20.8-50.8	33.26

*After well development

Groundwater below the new 53-acre LAA, based on a single sampling event, has an EC ranging from 510 to 990 umhos/cm, TDS from 310 to 670 mg/L, bicarbonate from 170 to 260 mg/L, calcium from 55 to 97 mg/L, iron from less than 0.05 to 0.11 mg/L, manganese from less than 0.01 to 0.02 mg/L, and arsenic less than 0.002 mg/L.

The 150-acre LAA has a groundwater monitoring well network of four wells (MW-1 through MW-4) that were installed in October 1985. Monitoring well MW-1 was installed as the upgradient well and MW-2 through MW-4 are the downgradient wells. The four monitoring wells have steel casing with a screen interval of approximately 30 feet. The total depth of the wells and screen interval is tabulated below.

Table 8. 150-acre LAA Monitoring Well Construction Details

Well	Total Depth (feet bgs)	Screen Interval (feet bgs)
MW-1	70	20-50
MW-2	50	20-50
MW-3	50	20-50
MW-4	50	20-50

Annual average concentrations of selected constituents in groundwater below the 150-acre LAA from January 2008 through June 2013 are shown in Table 9A. For comparison purposes, State drinking water primary and secondary maximum contaminant levels (MCLs) are listed at the end of the table, where bold, constituent concentration are greater than listed MCLs.

Table 9A. Groundwater Quality below the 150-acre LAA

	Year		EC (µmhos/cm)	TDS (mg/L)	NH_3-N[1] (mg/L)	NO_3-N[2] (mg/L)	HCO_3 (mg/L)	TOC[3] (mg/L)	Fe[4] (mg/L)	Mn[5] (mg/L)
MW-1	2008	Average	161	108	0.5[6]	0.28[7]	90	1.85	**3.2**	**1.6**
		Count	12	12	12	12	12	11	12	12
	2009	Average	178	116	0.82[6]	0.30[7]	106	1.83	**3.9**	**1.9**
		Count	12	12	12	12	12	11	12	12
	2010	Average	243	160	0.55[6]	0.34[7]	144	2.57	**5.1**	**2.6**
		Count	12	12	12	12	12	11	12	12
	2011	Average	294	191	0.57[6]	0.23[7]	182	2.02	**6.6**	**3.3**
		Count	12	12	12	12	12	12	12	12
	2012	Average	317	196	0.62[6]	0.23[7]	161	2.01	**8.3**	**3.8**
		Count	12	12	12	12	12	12	12	12
	2013	Average	335	192	1.53[6]	0.23[7]	193	1.98	**7.1**	**3.4**
		Count	6	6	6	6	6	6	6	6
MW-2	2008	Average	434	256	1.64[6]	0.29[7]	243	10.56	**11.3**	**2.0**
		Count	12	12	12	12	12	12	12	12
	2009	Average	328	212	0.88[6]	0.25[7]	208	5.28	**3.0**	**2.3**
		Count	12	12	12	12	12	12	10	12
	2010	Average	248	170	0.60[6]	0.32[7]	167	3.48	**1.4**	**2.0**
		Count	12	12	12	12	12	12	9	12
	2011	Average	279	179	0.94[6]	0.23[7]	177	2.83	**3.1**	**2.9**
		Count	12	12	12	12	12	12	9	12
	2012	Average	379	226	0.62[6]	0.23[7]	218	3.00	**8.7**	**3.2**
		Count	12	12	12	12	12	12	12	12
	2013	Average	412	220	0.63[6]	0.23[7]	243	3.07	**5.3**	**3.9**
		Count	6	6	6	6	6	6	6	6
MW-3	2008	Average	672	445	1.11[6]	0.36[7]	450	7.98	**4.5**	**4.9**
		Count	12	12	12	12	12	12	9	12
	2009	Average	**1037**	**652**	2.08	0.40[7]	682	8.23	**19.3**	**5.5**
		Count	12	12	12	12	12	12	11	12
	2010	Average	827	**525**	2.13	0.46[7]	532	7.51	**11.6**	**3.7**
		Count	12	12	12	12	12	12	11	12
	2011	Average	544	351	1.76	0.23[7]	345	5.34	**5.2**	**2.1**

	Year		EC (µmhos/cm)	TDS (mg/L)	NH_3-N[1] (mg/L)	NO_3-N[2] (mg/L)	HCO_3 (mg/L)	TOC[3] (mg/L)	Fe[4] (mg/L)	Mn[5] (mg/L)
		Count	12	12	12	12	12	12	10	12
	2012	Average	659	414	2.26	0.26[7]	418	5.38	**15.2**	**2.8**
		Count	12	12	12	12	12	12	12	12
	2013	Average	707	415	2.88	0.23[7]	428	6.07	**13.5**	**3.1**
		Count	6	6	6	6	6	6	6	6
MW-4	2008	Average	353	233	2.68	0.30[7]	224	9.32	**1.6**	**2.3**
		Count	12	12	12	12	12	12	11	12
	2009	Average	572	355	5.07	0.34[7]	308	9.38	**14.0**	**3.4**
		Count	12	12	12	12	12	12	12	12
	2010	Average	798	477	7.24	0.46[7]	488	11.31	**22.5**	**4.5**
		Count	12	12	12	12	12	12	11	12
	2011	Average	721	432	5.83	0.26[7]	434	8.51	**14.5**	**4.8**
		Count	12	12	12	12	12	12	11	12
	2012	Average	**923**	**539**	6.08	0.32[7]	604	8.63	**29.0**	**7.6**
		Count	12	12	12	12	12	12	12	12
	2013	Average	682	380	4.23	0.23[7]	482	7.88	**8.6**	**5.9**
		Count	6	6	6	6	6	6	6	6
		MCL	900/1600	500/1000	N/A	10	N/A	N/A	0.30	0.050

[1] NH_3-N denotes Ammonia as Nitrogen
[2] NO_3-N denotes Nitrate as Nitrogen
[3] TOC denotes Total Organic Carbon
[4] Fe denotes Iron
[5] Mn denotes Manganese
[6] Some or all of the sampling events were reported as less than the detection limit of 1.0 mg/L. For calculating purposes half the detection limit was used to calculate the yearly average.
[7] Some or all of the sampling events were reported as less than the detection limit of 0.45 mg/L. For calculating purposes half the detection limit was used to calculate the yearly average.

Arsenic concentrations in groundwater below the 150-acre LAA based on the 18 most recent sampling events from January 2012 to June 2013 are presented in Table 9B.

Table 9B. Arsenic Results below 150-acre LAA

Sample Date	MW-1 (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)
1/5/2012	<0.010	<0.010	<0.020	<0.020
2/6/2012	**0.017**	<0.010	**0.017**	<0.010
3/1/2012	**0.013**	<0.010	**0.022**	<0.010
4/4/2012	**0.020**	<0.010	**0.019**	<0.010
5/7/2012	**0.015**	<0.010	**0.024**	**0.014**
6/11/2012	**0.014**	<0.010	**0.026**	**0.016**
7/5/2012	**0.017**	**0.013**	**0.041**	**0.021**
8/8/2012	**0.014**	<0.010	**0.045**	**0.018**
9/6/2012	**0.015**	**0.011**	**0.029**	**0.012**
10/3/2012	<0.010	<0.010	**0.011**	<0.010
11/12/2012	**0.015**	<0.010	**0.020**	<0.020
12/5/2012	**0.014**	<0.010	**0.030**	**0.011**
1/21/2013	<0.010	<0.010	**0.016**	**0.012**
2/7/2013	<0.010	<0.010	<0.010	<0.010
3/7/2013	**0.013**	<0.010	**0.017**	<0.010
4/9/2013	<0.010	<0.010	<0.010	<0.010
5/6/2013	<0.010	<0.010	<0.010	<0.010
6/6/2013	<0.010	<0.010	**0.020**	<0.010

Arsenic exceeds the primary MCL of 0.010 mg/L consistently in MW-1 and MW-3, relatively consistently in MW-4, and sporadically in MW-2, as shown in Table 9B. Arsenic in MW-1 exceeds the MCL 11 out of 18 sampling events; arsenic in MW-2 exceeds the MCL 2 out of 18 sampling events; arsenic in MW-3 exceeds the MCL 14 out of 18 sampling events; and MW-4 exceeds the MCL 7 out of 18 sampling events.

Figures 1 through 12 depict the quality of groundwater below the 150-acre LAA for EC, TDS, bicarbonate, iron, manganese, and arsenic.

Figure 1. EC in groundwater below the 150-acre LAA

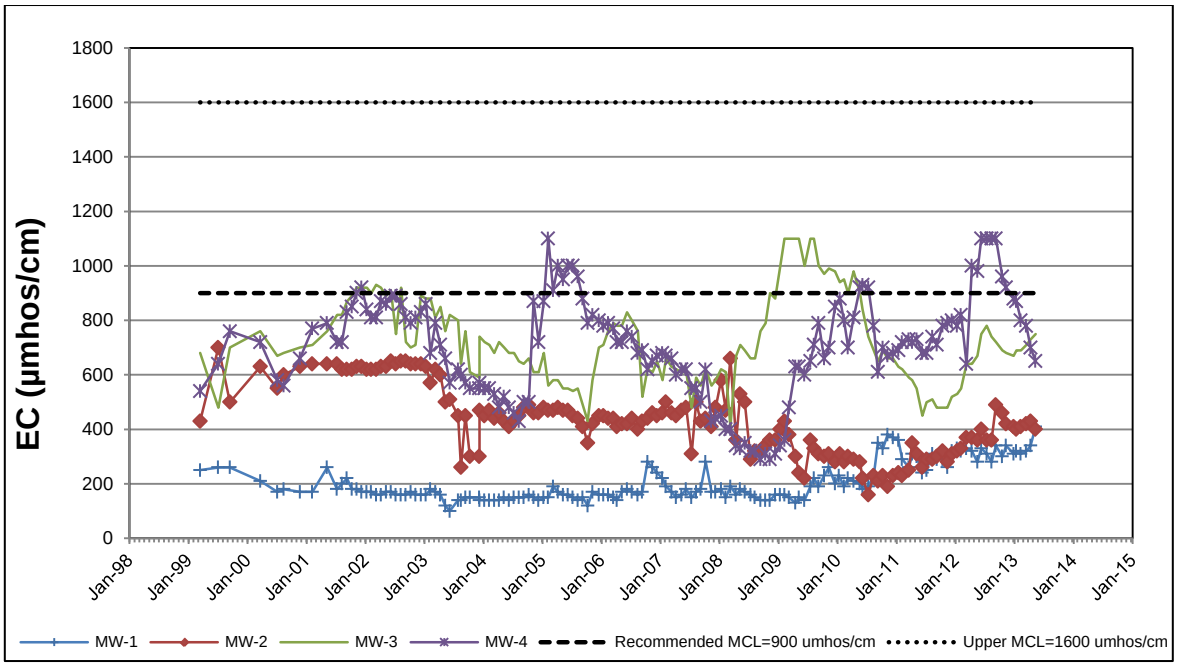


Figure 2. TDS concentrations in groundwater below the 150-acre LAA

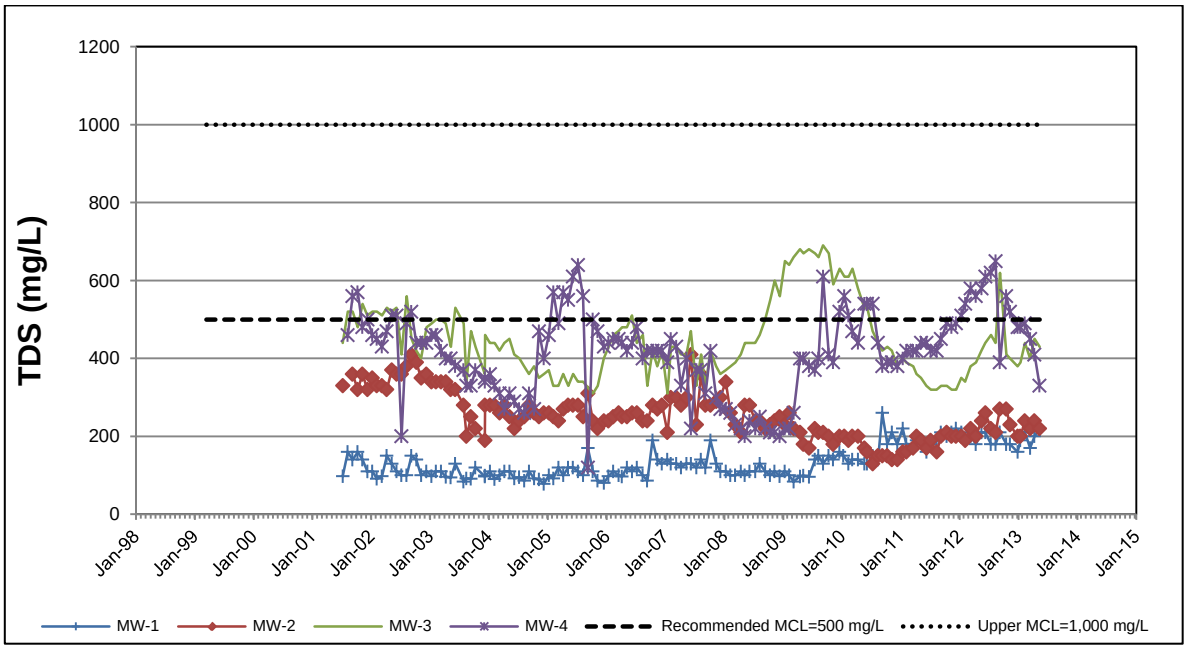
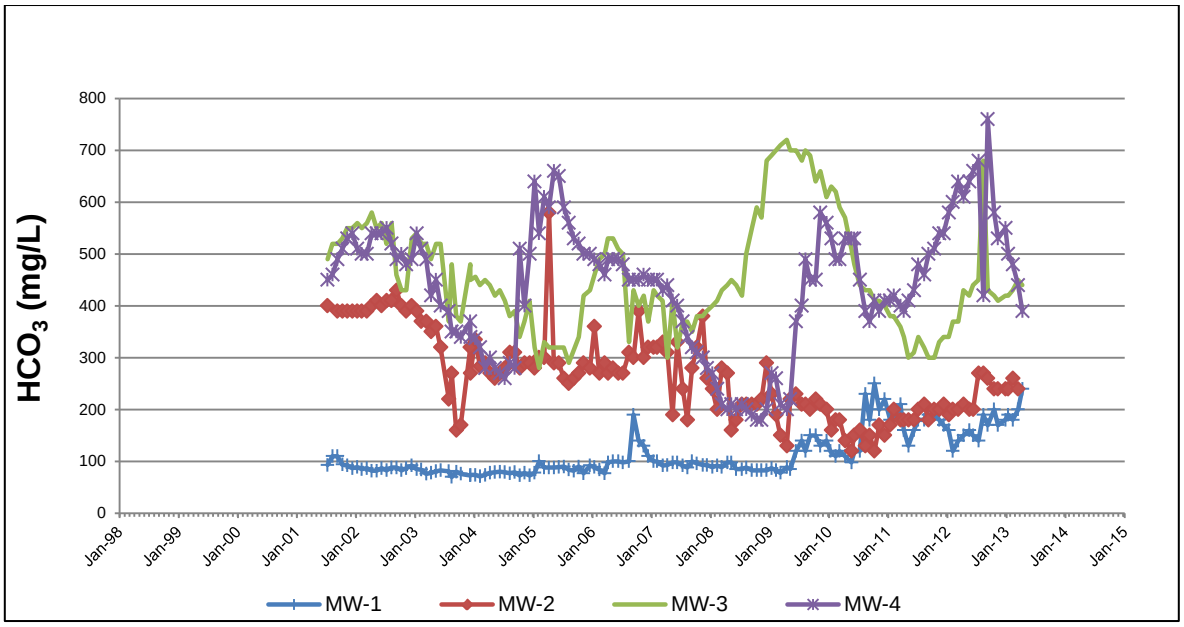


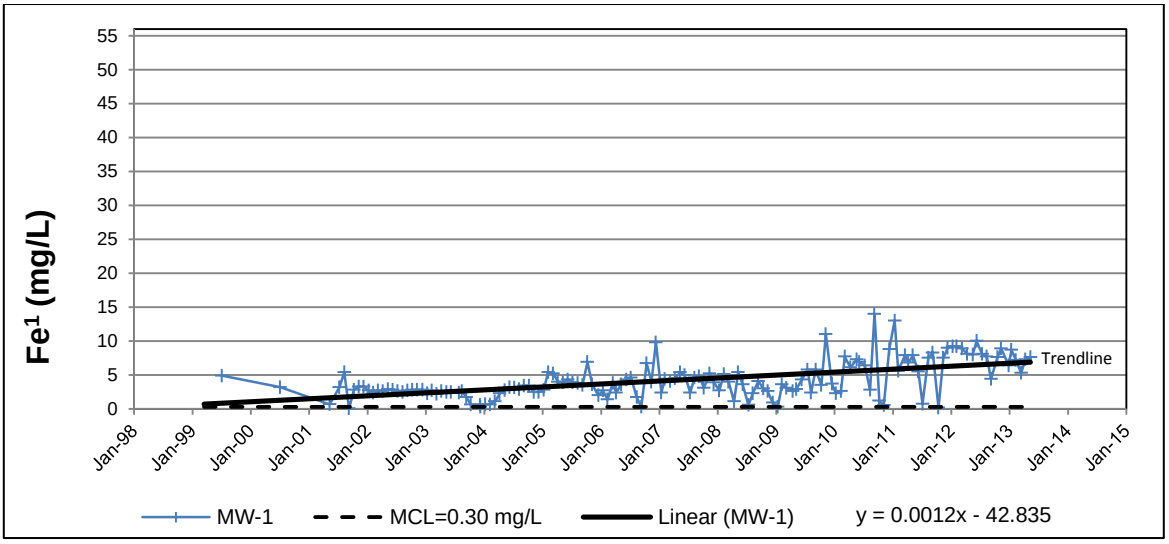
Figure 3. Bicarbonate concentrations in groundwater below the 150-acre LAA



Groundwater EC, TDS, and bicarbonate increase as groundwater moves in the downgradient direction from MW-1 to MW-4 as shown in Figures 1, 2, and 3. EC and TDS concentrations in MW-3 and MW-4 occasionally exceed the EC MCL of 900 umhos/cm and the TDS MCL of 500 mg/L, with bicarbonate being a large contributor to TDS. Groundwater EC and TDS concentrations shown in Figures 1 and 2 follow a similar pattern as bicarbonate concentrations shown in Figure 3.

Iron concentrations in all of the groundwater monitoring wells (MW-1 through MW-4) at the 150-acre LAA have exceeded the iron MCL of 0.30 mg/L the majority of the time, based on 144 sampling events from June 2001 through June 2013.

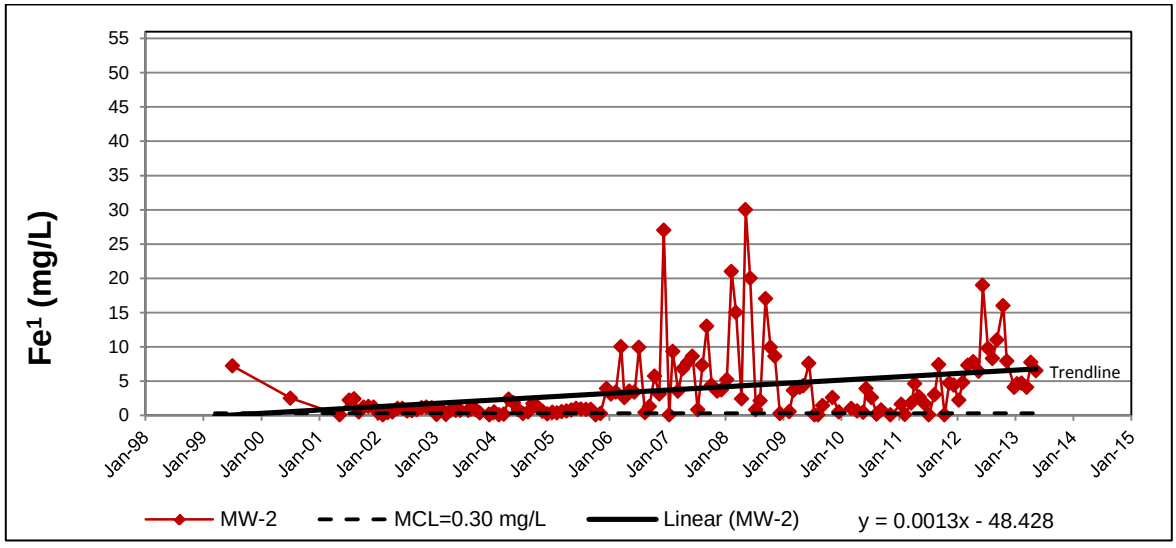
Figure 4. Iron Concentrations in MW-1



1 For graphing purposes, half of the detection limit of 0.10 mg/L was utilized for sampling events reported as less than the detection limit.

Monitoring well MW-1, the upgradient well immediately adjacent to the 150-acre LAA, appears to have been impacted by the discharge. As shown in Figure 4, iron concentrations in MW-1 exceed the MCL 141 out 144 sampling events and show an increasing trend over time.

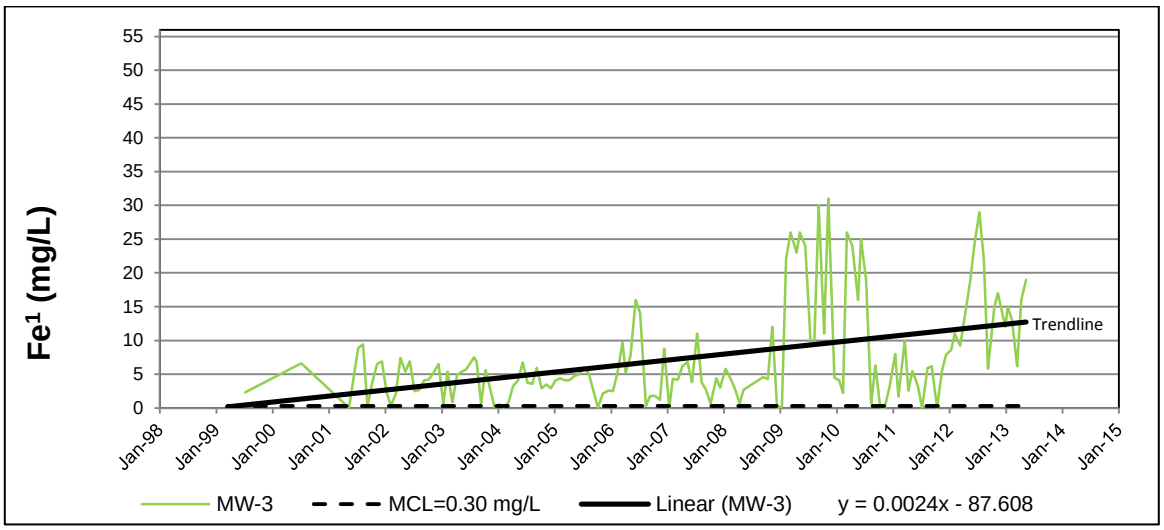
Figure 5. Iron Concentrations in MW-2



1 For graphing purposes, half of the detection limit of 0.10 mg/L was utilized for sampling events reported as less than the detection limit.

Iron concentrations in MW-2 exceed the MCL 136 out 144 sampling events and also show an increasing trend over time as shown in Figure 5.

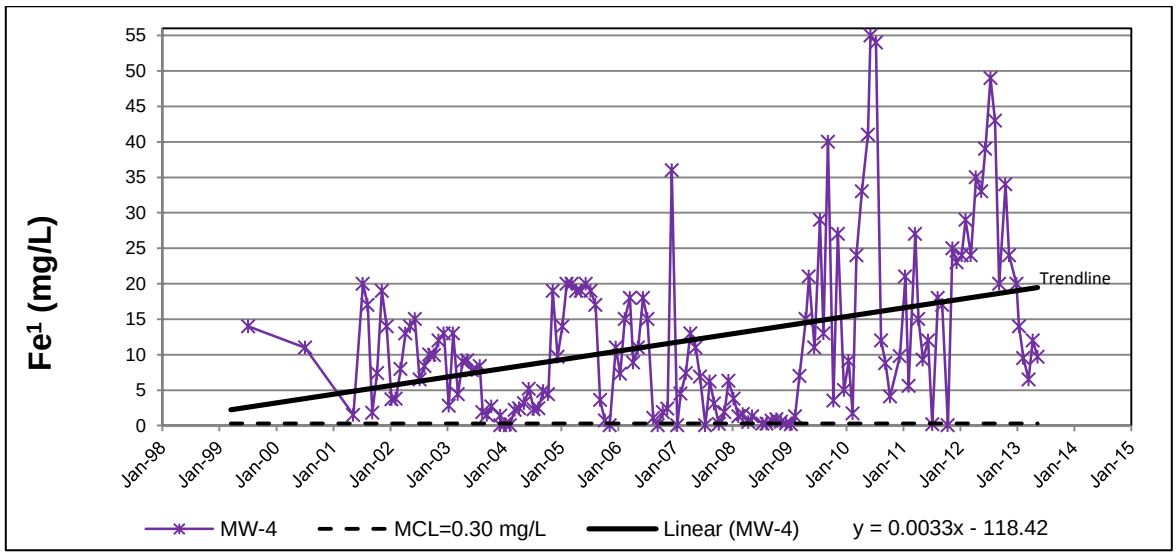
Figure 6. Iron Concentrations in MW-3



1 For graphing purposes, half of the detection limit of 0.10 mg/L was utilized for sampling events reported as less than the detection limit.

Iron concentrations in MW-3 exceed the MCL 127 out 144 sampling events and show an increasing trend over time as shown in Figure 6.

Figure 7. Iron Concentrations in MW-4

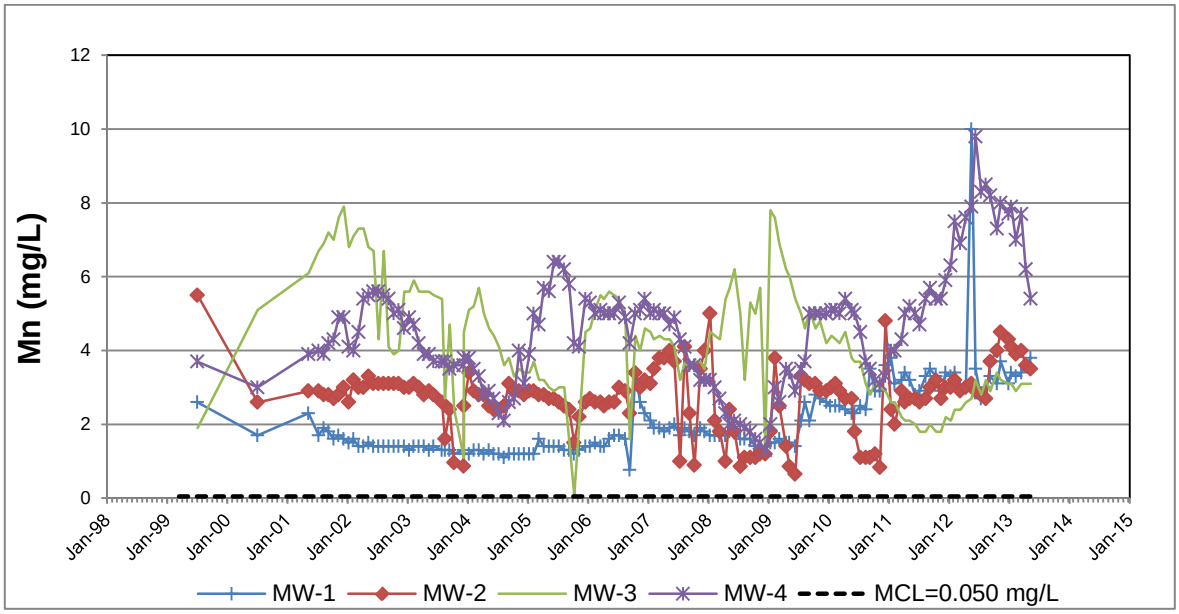


1 For graphing purposes, half of the detection limit of 0.10 mg/L was utilized for sampling events reported as less than the detection limit.

Iron concentrations in MW-4 exceed the MCL 128 out 144 sampling events and show an increasing trend over time as shown in Figure 7.

Manganese has also been detected in concentrations above the MCL of 0.050 mg/L in groundwater below the 150-acre LAA (see Figure 8).

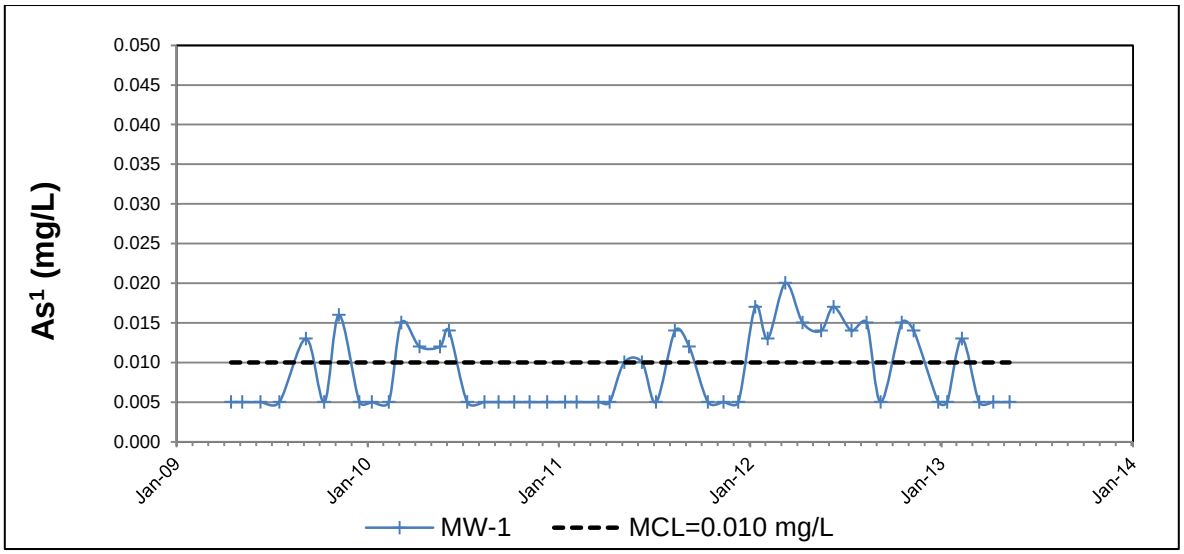
Figure 8. Manganese in Groundwater Monitoring Wells MW-1 through MW-4



As shown in Figure 8, manganese in groundwater exceeds the MCL of 0.050 mg/L by several orders of magnitude for all the monitoring wells at the 150-acre LAA. All of the 144 sampling events taken over a thirteen year period after stillage ceased in 2000 have detected manganese at levels above the MCL. Manganese concentrations in MW-1 are elevated exceeding their respective MCL of 0.050 mg/L with a gradual increase over time (see Figure 8).

Because monitoring data showed iron and manganese degradation/pollution of groundwater by the discharge, Central Valley Water Board staff recommended groundwater monitoring for arsenic. The Discharger began monitoring groundwater for arsenic in 2009. Figures 9 through 12 show arsenic in groundwater based on data from May 2009 through June 2013 (49 sampling events).

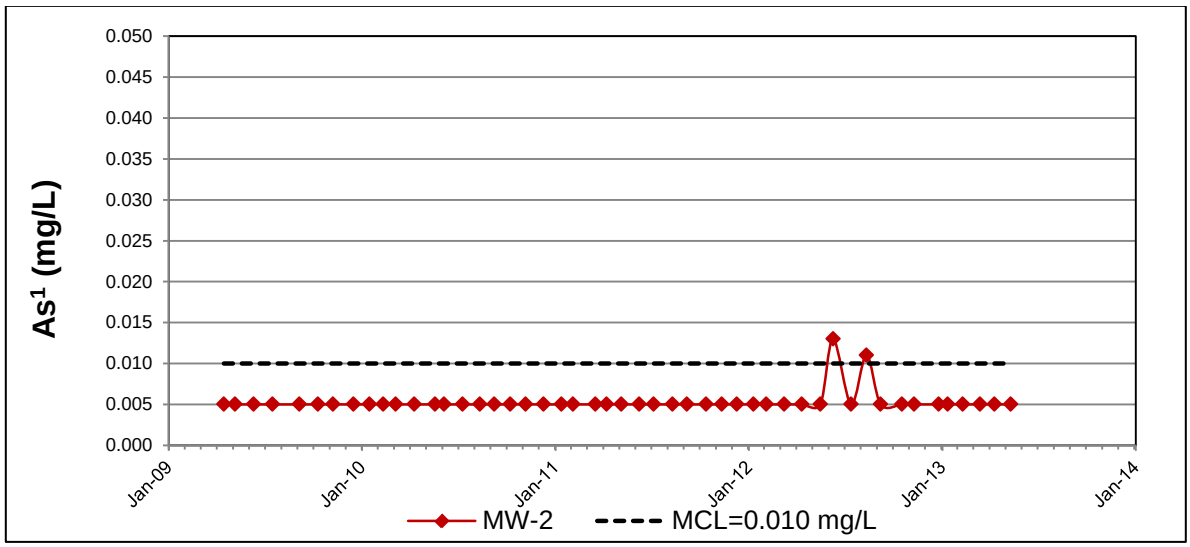
Figure 9. Arsenic in Groundwater Monitoring Well MW-1



1 For graphing purposes, half of the detection limit of 0.010 mg/L was utilized for sampling events reported as less than the detection limit.

From May 2009 through June 2013, arsenic in MW-1 exceeded the MCL of 0.010 mg/L 19 out of 49 sampling events (see Figure 9).

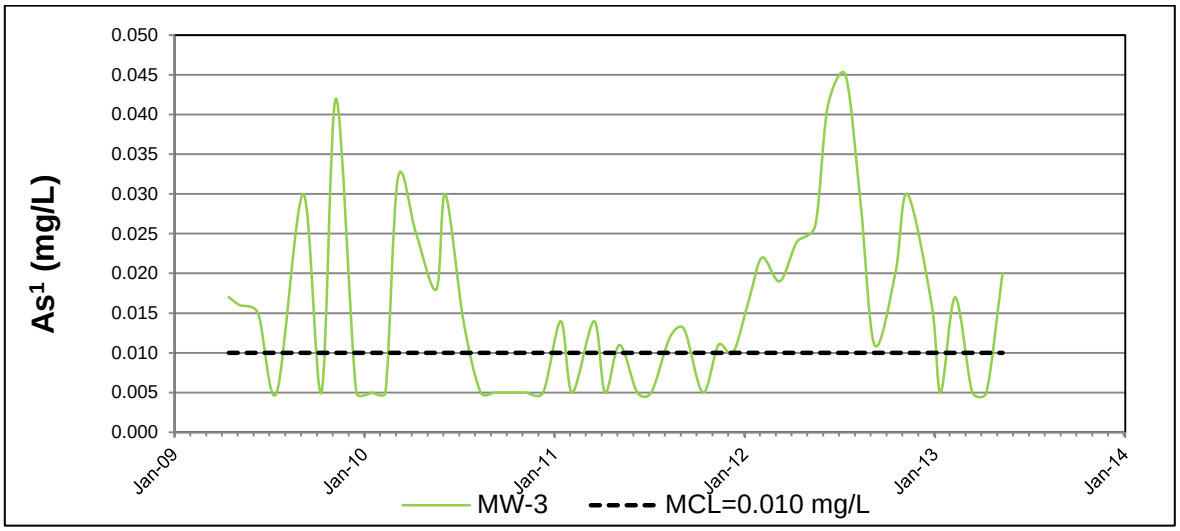
Figure 10. Arsenic in Groundwater Monitoring Well MW-2



1 For graphing purposes, half of the detection limit of 0.010 mg/L was utilized for sampling events reported as less than the detection limit.

Arsenic in MW-2 exceeds the MCL 2 out of 49 sampling events from May 2009 through June 2013, as shown in Figure 10.

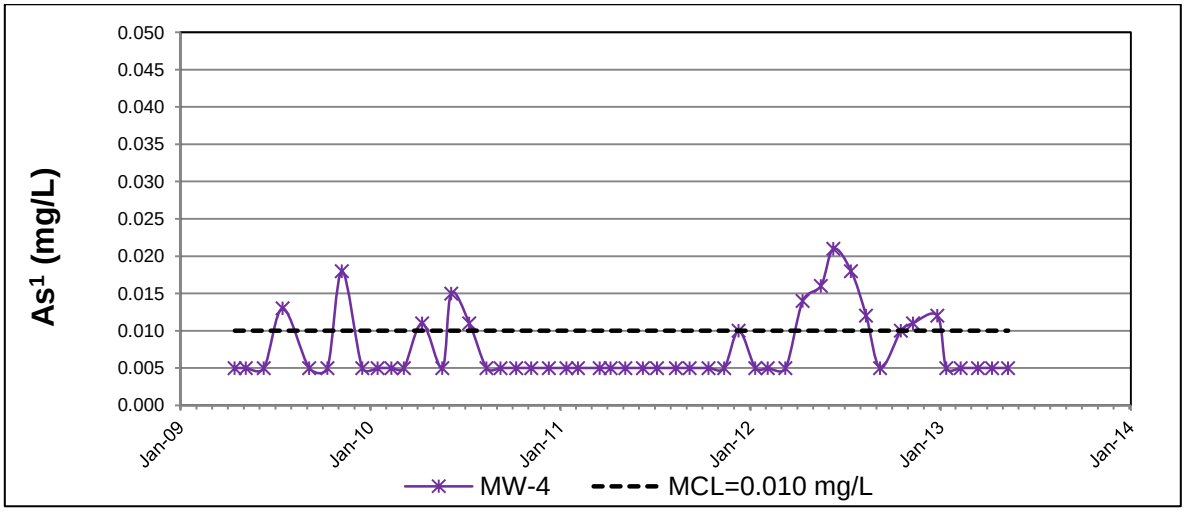
Figure 11. Arsenic in Groundwater Monitoring Well MW-3



1 For graphing purposes, half of the detection limit of 0.010 mg/L was utilized for sampling events reported as less than the detection limit.

Arsenic in MW-3 exceeds the MCL 30 out of 49 sampling events from May 2009 through June 2013 as shown in Figure 11. Monitoring well MW-3 shows the greatest impacts to groundwater with respect arsenic.

Figure 12. Arsenic in Groundwater Monitoring Well MW-4



1 For graphing purposes, half of the detection limit of 0.010 mg/L was utilized for sampling events reported as less than the detection limit.

Arsenic in MW-4 has exceeded the MCL 12 out of 49 sampling events from May 2009 through June 2013 as shown in Figure 12.

The increase in groundwater EC, TDS, bicarbonate, total organic carbon, and ammonia levels in groundwater as it moves in the down gradient direction across the 150-acre LAA and iron, manganese, and arsenic pollution are symptoms of organic overloading of the site associated with wastewater discharges. Although calculated BOD loading rates are low compared to other sites, site specific conditions and application methods have resulted in unpermissable groundwater degradation and pollution.

As previously described, site soils are coarse grained and very permeable and groundwater is shallow. Wastewater is applied using border check irrigation to very long irrigation checks of 1,250 feet to 2,500 feet. Because of the coarse grained soils and long check lengths, large volumes of wastewater and/or long irrigation times are necessary to push applied water to the end of the irrigation checks. In 2012, the Discharger applied wastewater to the 150-acre LAA for several days consecutively without a rest period. The upper section of the 150-acre LAA (approximately 33 acres) near monitoring well MW-1 received wastewater continuously from 1 January 2012 to 21 March 2012 (81 days) without a rest period between applications. The 2013 self-monitoring reports indicate the Discharger continues to apply wastewater for several consecutive days to the 150 acre LAA. As a result, wastewater loading at the upper end of the checks is significantly higher than at the lower end of the checks. This uneven distribution of waste is not reflected in average BOD loading calculations, and in combination with coarse site soils and shallow depth to groundwater has resulted in reducing conditions in groundwater and concentrations of several constituents that exceed State drinking water MCLs.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised October 2004* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board.

The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service and industrial process.

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt

imbalance. Until then, the Basin Plan establishes several salt management requirements, including:

a. The increase in EC of a point source discharge to surface water or land must be controlled to a maximum of 500 umhos/cm.

b. Discharges to areas that may recharge to good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.

The Basin Plan authorizes an exemption to the incremental increase limit for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions shall be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

Antidegradation
State Water Board Resolution 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (*Anti-Degradation Policy*), requires the regional water boards to maintain high quality water of the State until it is demonstrated that any change in quality will not result in water quality less than that described in State and Regional Water Board policies or exceed water quality objectives, will not unreasonably affect beneficial uses and is consistent with the maximum benefit to the people of the State.

The constituents of concern in the discharge from the Winery that have the potential to degrade and pollute groundwater are salinity (EC, TDS, sodium, and chloride), nitrates, organics, iron, manganese, and arsenic. Groundwater from nearby monitoring wells indicates groundwater in the area is generally of good quality with respect to EC, TDS, iron, manganese, and arsenic. Groundwater under the 150-acre LAA is degraded with respect to EC, TDS, and bicarbonate and polluted with iron, manganese, and arsenic. The degradation and pollution is due to the shallow depth to groundwater, the coarse grained permeable soils of the 150-acre LAA, and historic discharge practices that resulted in the uneven application of wastes. These waste discharge requirements and an accompanying Time Schedule Order require the Discharger to implement measures to abate discharge conditions that have resulted in groundwater pollution.

Specifically, the Discharger provides control of the discharge or will provide control of the discharge that incorporates or will incorporate:

1. Internal recycling of cooling water within the condenser cooling towers through as many cycles as is feasible before comingling with the winery process discharge;
2. Removal of pomace (seeds, pulp, skins) and spent diatomaceous earth offsite and the implementation of an approved Solids Management Plan;
3. Double cropping at of the LAA's to maximize uptake rates for nitrogen, other nutrients, and salts;
4. Application of supplemental irrigation water to meet agronomic requirements for crop growth;
5. A cycle average BOD loading rate of 100 lbs/acre/day;
6. Even distribution of wastewater to the LAA's;
7. Preparation and implementation of a Salinity Management Plan and a Nutrient and Wastewater Management Plan;
8. Groundwater monitoring; and
9. Groundwater limitations.

This Order establishes terms and conditions to ensure that the authorized discharge will not further degrade groundwater, contribute to existing pollution, or unreasonably affect present and anticipated future beneficial uses of groundwater. This Order is consistent with the Anti-Degradation Policy since: (a) the Discharger has or will implement Best Practicable Treatment or Control to minimize degradation, (b) the degradation will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State, due to the economic benefits provided by the operation of the Winery.

CEQA

Fresno County, as lead agency, adopted Initial Study and Mitigated Negative Declaration. On 29 April 2010, filed a Notice of Determination (E201010000133) with Fresno County Clerk for a flow increase from 30 mgy to 70 mgy and an increase in LAA by 53 acres for a total of 203 acres of LAA.

To mitigate potential impact to water quality, the CEQA document includes a mitigation measure requiring the Discharger to submit a complete Report of Waste Discharge prior to initiating any operation that would increase flows over the current permitted limits prescribed in WDRs Order 92-120.

Title 27

Unless the Board finds that the discharge of designated waste is exempt from Title 27 of the California Code of Regulations, the release of designated waste is subject to full containment requirements. Here, the discharge is exempt from the requirements of Title 27 pursuant to the wastewater exemptions found at Title 27, sections 20090 (b).

Proposed Order Terms and Conditions

Discharge Prohibitions, Specifications and Provisions

The proposed Order prohibits the discharge of waste to surface waters and to surface water drainage courses. The proposed Order restricts the discharge to a monthly average daily flow limit of 0.459 mgd and a total annual flow limit of 70 mgy.

This Order sets cycle average BOD_5 loading rate limits of 100 lbs/acre/day at the 150-acre and at the new 53-acre LAA over the course of any discharge cycle. The proposed Order includes Provisions requiring the Discharger to submit a Salinity Management Plan, Nutrient and Wastewater Management Plan, Solids Management Plan, and a background groundwater quality investigation.

The accompanying Time Schedule Order R5-2014-XXXX includes a time schedule for the Discharger to comply with the cycle average BOD loading rate at the LAA's and assess the extent of the groundwater pollution and implement measures to bring groundwater back into compliance with water quality objectives.

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated beneficial uses of groundwater. The limitations require that the discharge not cause or contribute to exceedances of water quality objectives or natural background water quality, whichever is greater. The proposed Order sets specific groundwater limits for nitrates as nitrogen at the primary MCL of 10 mg/L.

Monitoring Requirements

Section 13267 of the Water Code authorizes the Central Valley Water Board to require the Discharger to submit monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State.

The proposed Order includes effluent monitoring, source water monitoring, groundwater monitoring, soil monitoring, and land application area monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent and mass loading limitations prescribed by the Order, and evaluate groundwater quality and the extent of degradation, if any, caused by the discharge.

Reopener

The conditions of discharge in the proposed 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. It may be appropriate to reopen the Order if new technical information is received or if applicable laws and regulations change.