CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0026

WASTE DISCHARGE REQUIREMENTS
FOR
LANGTRY FARMS, LIMITED LIABILITY COMPANY
AND MAGOON ESTATES LIMITED
FOR
OPERATION OF CLASS II SURFACE IMPOUNDMENT
GUENOC WINERY
LAKE COUNTY

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

1. Langtry Farms, Limited Liability Company (facility owner) and Magoon Estates Limited (landowner), hereafter referred to jointly as Discharger, propose to construct and operate a bioreactor wastewater treatment system and surface impoundment at the Guenoc Winery.

2. On 5 May 2006, the Regional Water Board adopted Waste Discharge Requirements (WDRs) Order No. R5-2006-0037, which updated WDRs Order No. R5-2003-0175, and Cease and Desist Order (CDO) No. R5-2006-0038 for the storage and disposal by irrigation of winery wastewater. Order Nos. R5-2003-0175, R5-2006-0037, and R5-2006-0038 found the winery wastewater to be a 'designated waste' in accordance with Title 27 of the California Code of Regulations (CCR). Task 2 of Order No. R5-2006-0038 required submission of a Report of Waste Discharge (RWD) by 1 July 2006**.** The RWD was required to contain a design for a new surface impoundment that complies with Title 27 of the California Code of Regulations (Title 27 or 27 CCR) and a timeline showing that the pond will meet the prescriptive standards and performance goals of Title 27 no later than 1 July 2007. In addition, the RWD was required to contain a final detailed water balance showing that the proposed surface impoundment will be large enough to meet the storage and disposal requirements.

3. The Discharger is currently in violation of CDO No. R5-2006-0038 and is expected to take action to immediately come into compliance.

4. The Discharger submitted a RWD dated 30 June 2006 for a proposed Class II surface impoundment with an engineered alternative to a prescriptive liner. Supplemental information was submitted on 4, 9, 10, 11, 12, 18, 19, 22, 23, and 25 January 2007 and 16 February 2007.

5. WDRs Order No. R5-2006-0037 remains in effect, and regulates the bioreactor treatment of the waste, and the disposal onto cropland. This companion Order regulates the storage of the treated wastewater in the Class II surface impoundment prior to disposal.

6. Guenoc Winery (the facility) is approximately two miles southeast of Middletown at 21000 Butts Canyon Road in Lake County. This property is on Assessor's Parcel Number 014-310-006 in Section 4, T10N, R6W, MDB&M. The winery and associated facilities are located in Long Valley as shown on Attachment A, which is incorporated herein and made a part of this Order by reference.

7. Activities at the winery facility include receiving, crushing, and pressing of grapes; fermentation; processing into finished white and red wines; and distribution.

8. The facility currently discharges winery wastewater to a series of five unlined evaporation/percolation ponds. From the ponds, the wastewater is discharged to 54 acres of pastureland (known as DDA-2).

9. The unlined ponds are currently used to treat and dispose of liquid designated waste. However, pursuant to §20210 of Title 27, such waste can only be discharged to a Class I or a Class II surface impoundment equipped with engineered lining and a leachate collection and recovery system. The Discharger has proposed to abandon the five existing ponds in place and to construct a new Class II surface impoundment within the footprint of the abandoned ponds.

10. The proposed surface impoundment will receive process winery wastewater treated by a bioreactor as shown on Attachment B, which is incorporated herein and made a part of this Order by reference.

11. WDRs Order No. R5-2006-0037 limits the total volume discharged from the bioreactor into the proposed surface impoundment to 2.38 million gallons per year. This limitation is reiterated in this Order.

12. The following table summarizes the design criteria described in the RWD as used for designing the upgraded waste treatment system, surface impoundment, and disposal field.

Parameter	Design Criteria	Unit
Annual Wine Production	140,000	cases/year
Average Annual Discharge	2,378,518	gallons/year
Peak Daily Crush Discharge	16,500	gallons/day (gpd)
Average Daily Discharge	6,800	gallons/day (gpd)

WASTE AND SITE CLASSIFICATION

13. WDRs Order No. R5-2006-0037 prohibits the disposal of water softener backwash brine to the winery wastewater treatment system. This prohibition is reiterated in this Order.

14. Beginning in the summer of 2003, sanitary/domestic wastewater from the winery kitchen, winery restroom facilities, and a private residence is collected and disposed of separately from the process winery wastewater in an on-site sewage disposal system. This system is regulated by the Lake County Environmental Health Department.

15. WDRs Order No. R5-2006-0037 prohibits the discharge of domestic waste to the winery wastewater treatment system. This prohibition is reiterated in this Order.

16. The Discharger proposes to use the bioreactor to treat winery wastewater to produce an effluent with 700 to 900 mg/L of total dissolved solids and 14 to 16 mg/L of chloride. Order No. R5-2006-0037 contains the following monthly average Effluent Limitations for the discharge into the proposed Class II Surface Impoundment (Pond A):

Constituent	*Units*	*Discharge to Pond A*
Biochemical Oxygen Demand	*mg/L*	*180*
Total Dissolved Solids	*mg/L*	*900*
Total Suspended Solids	*mg/L*	*60*
Total Kjeldahl nitrogen	*mg/L*	*10*
pH	*mg/L*	*6.8 - 7.2*
Chloride	*mg/L*	*18*

The Effluent Limitations are provided for discharge to the surface impoundment because the wastewater is subsequently blended with irrigation water and applied to land under WDRs Order No. R5-2006-0037.

17. California Water Code §13173(b) defines "designated waste" to include "[n]*on hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations that exceed applicable water quality objectives or that could reasonably be expected to affect beneficial uses of waters of the state as contained in the appropriate state water quality control plan*."

18. The document *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985), recommends that the total dissolved solids concentration in waters used for agricultural irrigation not exceed 450 mg/L. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basin, Fourth Edition* (hereafter Basin Plan) includes the "Policy for Application of Water Quality Objectives". Applying this policy, the numeric standard that implements the Chemical Constituents objective with respect to protection of the beneficial use of agricultural irrigation supply is the Agricultural Water Quality Goal of 450 mg/L. With a proposed total dissolved solids concentration of 700 to 900 mg/L, the wastewater proposed for discharge at the facility exceeds the applicable water quality objective, has the potential to affect beneficial uses of waters of the state and

is, therefore, classified as designated waste. The waste may also be classified as designated because it has already polluted groundwater.

19. Title 27, §20090(i) exempts fully enclosed units of limited aerial extent and of reliable structural integrity (*e.g*., aboveground tanks, reinforced concrete sumps, and stainless steel sumps). The wastewater sumps and the vault at the facility are constructed of reinforced concrete. The proposed bioreactor tanks are either steel or plastic tanks, and are designed and manufactured for that purpose. The indoor process equipment is housed in a roofed building with a reinforced concrete floor. All of these features are of limited aerial extent and provide structural integrity that qualifies them for exemption from the prescriptive standards and performance goals of Title 27. Containment of designated waste in the fully enclosed units described above is authorized under this Order provided the units are operated and maintained to provide full and continuous containment for all designated waste.

20. The discharge of blended wastewater and irrigation water to DDA-2 is regulated by WDRs Order No. R5-2006-0037 and is exempt from the requirements of Title 27. The exemption, pursuant to §20090(b), is based on the following:

    a. The Regional Water Board is issuing waste discharge requirements,

    b. The discharge complies with the Basin Plan, and

    c. The wastewater does not need to be managed according to Title 22 CCR, Division 4.5, and Chapter 11, as a hazardous waste.

21. Data from monitoring wells MW-2 through MW-7 show that groundwater within land application area DDA-1 has been degraded, and does not comply with State Water Resources Control Board (State Water Board) Resolution No. 68-16. The quality of wastewater proposed to be discharged to the proposed Class II surface impoundment exceeds water quality objectives for certain waste constituents. As found in the previous WDRs and reiterated in this Order, the data demonstrates that waste discharge to the ponds has caused violations of water quality objectives. In 2003, the discharge to the ponds was classified as a discharge of designated waste, and the Discharger was provided with a time schedule to line the pond per Title 27 or reduce the concentrations of the waste constituents entering the ponds such that designated waste is no longer discharged. While the Discharger has submitted a Report of Waste Discharge proposing treatment of the waste, the resulting effluent is still considered designated waste, due to constituent concentrations significantly in excess of applicable water quality objectives. As such, the proposed Class II surface impoundment must be regulated under Title 27.

SITE DESCRIPTION

22. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

23. Surface water drainage is to Bucksnort Creek, which is a tributary to McCreary Lake, which is tributary to Putah Creek, which is tributary to Lake Berryessa in the Upper Putah Creek Hydrologic Area (512.30) of the Sacramento River Basin, as depicted on interagency hydrologic maps prepared by the California Department of Water Resources in August 1986.

24. The designated beneficial uses of Lake Berryessa, as specified in the Basin Plan, are municipal and domestic supply; agricultural irrigation; agricultural stockwatering; hydropower generation; water contact recreation; non-contact water recreation, including aesthetic enjoyment; warm freshwater habitat; cold freshwater habitat; spawning, reproduction and/or early development of warm freshwater aquatic organisms; and wildlife habitat.

25. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

26. The winery facility is near a hillside knoll above the wastewater ponds and the pastureland. Storm water is collected through drop inlets within the gravel parking lot and the grape unloading area. A drainage ditch located on the uphill side of Pond No. 1 is used to redirect surface water runoff away from the ponds.

27. The closest Holocene fault to the proposed surface impoundment is the Hunting Creek Fault located approximately six miles to the east of the facility. The maximum credible earthquake for this fault is a 7.1 magnitude on the Richter scale, which would result in a peak ground acceleration of 0.49 g at the site.

28. The 100-year annual precipitation at Middletown, adjusted to Guenoc Ranch, is between 61.5 and 67 inches (extrapolated from two different weather stations in the area) with the highest rainfall (13.3 inches) occurring in January. An annual precipitation value of 67 inches was used as an input parameter in the water balance. The unadjusted mean pan evaporation is 77 inches per year as measured at the Lake Berryessa Station.

29. The 1,000-year, 24-hour precipitation event is estimated to be 18.5 inches, based on National Oceanic and Atmospheric Administration (NOAA) Atlas 2, Volume XI, Figure 31 isohyetal/isopluvial lines for the unit area and application of a TR-55 rainfall distribution for a Type IA storm.

30. The waste management facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Map Number 06033C0960D.

31. Land uses within one mile of the facility are agricultural, single-family and ranch-based residential, and commercial. There is one known domestic groundwater supply well within one mile of the site, with State Well Number 10N06W09C01M.

32. Based on information obtained from the Soil Survey of Lake County, the soils underlying the wastewater ponds consist of Maxwell clay loam, Henneke-Montara Rock outcrop complex and Bressa-Millsholm loams. The Maxwell clay loam is a poorly drained alluvium. The Henneke-Montara Rock complex is an excessively drained soil formed in material weathered from serpentinitic rock, while the Bressa-Millsholm loam is a moderately deep and well drained soil formed from weathered sandstone.

33. Lithologic data collected during the installation of monitoring wells indicate that the subsurface geology consists of silty clay and clay ranging in depth from approximately 2 to 10 feet below ground surface (bgs), and is underlain by weathered bedrock.

34. A two-acre pond west of the winery is used for fire suppression purposes, for winery cooling towers and condensers, landscape irrigation, and as a supply to the surface impoundment to maintain a minimum of four feet of water for the aerators.

GROUNDWATER CONDITIONS

35. In October 2002, the Discharger abandoned three groundwater monitoring wells and installed four replacement wells (MWs 1 through 4) to monitor groundwater conditions around the wastewater storage ponds. The original wells were abandoned and replaced due to a lack of available information regarding their construction details. In addition to the four wells, the Discharger has since installed two additional monitoring wells (MW-5 and MW-6) north of the ponds, and MW-7, a background well. The first six wells are within former disposal area DDA-1. Locations of the monitoring wells are shown in Attachment C, with is incorporated herein and made a part of this Order by reference.

36. Hydrologic data collected from the monitoring wells show that groundwater is encountered at a depths ranging from approximately 2 to 10 feet bgs. The monitoring reports state that the direction of groundwater flow beneath the wastewater storage ponds is northwest with a hydraulic gradient of 0.07 ft/ft. However, staff is concerned that the five percolation ponds create a groundwater mound, and this fact is not necessarily reflected in the groundwater contour maps. Groundwater elevations range from 975 feet MSL to 1,022 feet MSL.

37. Monitoring data shows that the depth of groundwater below the bottom of the wastewater ponds varies seasonally. However, at certain times of the year groundwater rises up to within the ponds.

38. Beginning in November 2002, groundwater samples have been collected on a quarterly basis from wells MW-1 through MW-4. Beginning in May 2004, groundwater samples have been collected quarterly from wells MW-5 and MW-6, and beginning in December 2004,

groundwater samples have been collected quarterly from MW-7. Data from November 2002 through September 2006 for selected constituents are found in the table shown below.

As shown on Attachment C, wells MW-1 through MW-4 are assumed to be within the mound created by the evaporation/percolation ponds. Wells MW-5 and MW-6 are downgradient of the ponds, along the downgradient boundary of the former disposal area known as DDA-1. Well MW-7 is northwest and outside of DDA-1, and is to be considered the background groundwater monitoring well.

Constituents	Units	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7[1]
TDS	mg/L	160 – 250	840 – 1300	430 – 930	460 – 660	800 – 930	470 – 740	270 – 490
Specific Conductance	μmhos/cm	134 – 500	459 – 2490	192 – 1600	188 – 1174	961 – 1495	713– 1027	455 – 601
Magnesium	mg/L	29 – 58	200 – 290	98 – 1200	82 – 120	160 – 190	65 – 99	28 – 37
Sodium	mg/L	12 – 23	31 – 79	9.7 – 100	6.0 – 9.0	16 – 18	34 – 45	16 – 86
Chloride	mg/L	7.8 – 26	120 – 220	6.3 – 160	7.9 – 18	72 – 110	12 – 130	5.6 – 16
pH	pH units	7.02 – 8.95	7.06 – 7.85	6.98 – 8.59	6.78 – 7.53	7.1 – 7.72	7.10 – 7.82	7.47 – 8.15
TKN	mg/L	<1.0 – 2.1	<1.0 – 25	<1.0 – 2.1	<1.0 – 3.5	<1.0 – 3.4	<1.0 – 2.5	<1.0 – 2.4
Nitrate as N	mg/L	<0.2 – 0.54	<0.2 – 8.1	0.21 – 16	<0.2 – 0.85	4.1 – 7.0	0.1 – 1.7	<0.20 – 1.4
Sulfate as SO_4	mg/L	8.1 – 16	16 – 61	25 – 220	22 – 130	24 – 68	24 – 40	33 – 140
Boron	mg/L	2.1 – 2.4	0.34 – 0.66	0.20 – 0.53	0.91 – 1.4	0.22 – 0.30	0.14 – 0.18	<0.05 – 0.33
Iron	mg/L	<0.1 – 6.7	<1.0 – 8.2	<0.1 – 1.9	<0.1 – 12	<0.1 – 3.6	<0.1 – 34	<0.1 – 4.1

1 Sample results from the first monitoring event (December 2004) are not included in the table as subsequent data shows that these are outliers and not representative of true groundwater conditions (*i.e*, the December 2004 sampling event shows that specific conductance, sodium, TDS, chloride, and sulfate were detected at concentrations significantly higher than subsequent sampling events).

PROPOSED GROUNDWATER AND UNSATURATED ZONE MONITORING

39. The Discharger proposes that detection monitoring will occur through groundwater monitoring using the existing wells (monitoring wells 1 through 4 and 7) shown on Attachment C.

40. The Discharger's proposed detection monitoring program for groundwater at the surface impoundment satisfies the requirements contained in Title 27.

41. The Discharger has proposed to monitor the vadose (unsaturated) zone using a pan lysimeter. While the pan lysimeter method cannot measure the unsaturated flow until the zone is sufficiently saturated to flow into the pan, the method does satisfy the requirements contained in Title 27.

DESIGN OF WASTE MANAGEMENT UNIT

42. Title 27 §20240 states that waste management units shall be classified according to their ability to contain wastes, and that such classification shall consider the site-specific circumstances relating to the unit's ability to protect water quality.

43. The Discharger proposes an engineered alternative to the prescriptive liner requirements of Title 27 for the Class II Surface Impoundment. The engineered alternative consists of the following components from the top down:

    a. A primary 60-mil-thick High Density Polyethylene (HDPE) geomembrane;

    b. A geonet drainage layer, operating as a Leachate Collection and Removal System (LCRS);

    c. A secondary 60-mil-thick HDPE geomembrane in lieu of the prescriptive clay liner;

    d. A 4-inch gravel layer;

    e. A 40-mil-thick, HDPE-lined pan lysimeter under the impoundment sump, for unsaturated zone monitoring; and

    f. Compacted subgrade.

44. The Discharger proposes to construct the bottom of the impoundment with a 1% slope five feet above the highest anticipated groundwater elevation. In addition, the Discharger proposes to install a 4-inch gravel layer as a capillary break between the secondary liner and the compacted subgrade.

45. Section 20080(b) of Title 27 allows the Regional Water Board to consider the approval of an engineered alternative to the prescriptive standard. The Discharger has proposed an HDPE geomembrane in place of the prescribed clay for the secondary liner. In order to approve an engineered alternative in accordance with §20080(b), the Discharger must demonstrate the following:

    a. The prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in §20080(b) [§20080(c)(1)], *or* would be impractical and would not promote attainment of applicable performance standards [§20080(c)(2)];

    b. The proposed engineered alternative(s) provides protection against water quality impairment equivalent to the prescriptive standard in accordance with §20080(b)(2) of Title 27 [§20080(b)(2)(B)]; and

    c. The proposed engineered alternative is consistent with the performance goal in accordance with §20310 of Title 27 [§20080(b)(2)(A)]. §20310 requires that Class II

units be designed and constructed to prevent migration of wastes from the units to adjacent geologic materials, groundwater, or surface water.

46. The Discharger has provided information to make the demonstrations described in Finding 45. In both the prescriptive and proposed engineered alternative liner configurations, liquid passing through a hole in the uppermost (primary) geomembrane enters the underlying drainage layer and flows to a leachate collection sump where the liquid is removed. Presence of liquid in the sump is an indication of a leak in the primary liner. In the prescriptive configuration, liquid entering the LCRS flows along the LCRS/clay interface toward the sump. Since the clay is absorptive to some degree, the movement of the liquid (particularly a small trickle) toward the sump is attenuated. With an HDPE geomembrane beneath the LCRS layer, the liquid is conveyed more efficiently, providing earlier detection of penetration of the primary liner.

    Containment effectiveness is also improved with the proposed alternative system. Liquids collecting in the LCRS sump are pumped out, but as pumps are rarely able to remove all liquid, there is usually some liquid present in the sump even when the sump pump is operating properly. This constant hydraulic head will eventually penetrate the prescribed secondary clay liner, releasing liquid to the underlying soils, contrary to the performance goal to prevent migration of wastes from the unit. With the alternative configuration, the secondary HDPE geomembrane is essentially impermeable and, with proper construction quality assurance, provides superior containment effectiveness to the prescriptive liner system, particularly in the sump area. Improved containment provides increased assurance of prevention of migration of wastes from the surface impoundment and enhances protection against water quality impairment.

    While the mechanical durability (puncture resistance) of the proposed alternative (HDPE) may be reduced from that of the thicker prescriptive clay liner, the increased efficiency of leachate conveyance and earlier detection of liner penetration through monitoring allow for prompt corrective action(s). To further address the potential for puncture of the secondary liner, the surface impoundment will be underlain by a pan lysimeter as part of the engineered alternative. This will provide early detection of leakage from any portion of the liner system.

    The proposed engineered alternative provides improved protection against water quality impairment and prevention of migration of wastes from the surface impoundment as compared to the prescriptive liner, thereby complying with §20080(b)(2) of Title 27.

47. Section 13360(a)(1) of the California Water Code allows the Regional Water Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.

48. The Discharger proposes a liner system which will be designed, constructed, and operated to prevent migration of wastes from the Unit to adjacent natural geologic materials, groundwater, or surface water during disposal operations and closure in accordance with the criteria set forth in Title 27 for a Class II waste management unit.

49. The Class II Surface Impoundment will be equipped with an on-demand aeration device. The Discharger proposes to maintain a minimum of four feet of water in the surface impoundment to allow the aerator to operate year-round. Clean irrigation water will be added to the pond whenever the level drops below four feet.

50. The proposed surface impoundment will be constructed with an estimated total (minus allowance for required two feet of freeboard) capacity of approximately 1.65 million gallons. Excluding the unavailable capacity described in Finding 49, total available capacity will be approximately 1.35 million gallons.

51. Construction will proceed only after all applicable construction quality assurance plans have been approved.

CEQA AND OTHER CONSIDERATIONS

52. The action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, *et seq*., and the CEQA guidelines, in accordance with Title 14, CCR, §15302.

53. This order implements:

    a. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basin, Fourth Edition* and

    b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27 of the California Code of Regulations, effective 18 July 1997, and subsequent revisions.

54. Section 13267 of the California Water Code states, in part, "(a) *A regional board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region*" and "(*b) (1) In conducting an investigation…, the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring these reports, the*

regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify evidence that supports requiring the person to provide the reports."

55. This Order requires the Discharger to conduct groundwater and other monitoring and includes a regular schedule of monitoring in the attached Monitoring and Reporting Program. The monitoring reports are necessary to evaluate impacts to waters of the state to assure protection of beneficial uses and compliance with Regional Board plans and policies, including Resolution 68-16; to assess compliance with this Order and water quality objectives; and to gather information to evaluate the need for additional limitations. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that have degraded groundwater. The Discharger owns and operates the facility subject to this Order.

PROCEDURAL REQUIREMENTS

56. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.

57. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

58. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

59. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.waterboards.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED that pursuant to Sections 13263 and 13267 of the California Water Code, Langtry Farms, Limited Liability Company, and Magoon Estates Limited, their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of 'hazardous waste' at this facility is prohibited. For the purposes of this Order, the terms 'hazardous waste' and 'designated waste' are as defined in Division 2 of Title 27 of the CCR.

2. The discharge of solid waste or liquid waste to surface waters or surface water drainage courses is prohibited.

3. The discharge of solid waste or liquid waste to groundwater is prohibited, except as authorized by Waste Discharge Requirements Order No. R5-2006-0037 and any successors, amendments, and revisions thereto.

4. Effective **1 July 2007**, the discharge of designated wastes outside of a waste management unit or to portions of a waste management unit not specifically designed for their containment is prohibited.

5. The discharge of domestic wastewater to the winery wastewater treatment system or surface impoundment is prohibited.

6. The disposal of water softener backwash brine to the surface impoundment is prohibited.

B. DISCHARGE SPECIFICATIONS

General Specifications

1. Wastes shall only be discharged into, and shall be confined to, the waste management units (WMUs) specifically designed for their containment.

2. Prior to the discharge of waste to a WMU, all wells within 500 feet of the unit shall have sanitary seals or shall be properly abandoned. A record of the sealing and/or abandonment of such wells shall be sent to the Regional Water Board and to the State Department of Water Resources.

3. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned by the Discharger.

4. As a means of discerning compliance with Discharge Specification No. B.3, the dissolved oxygen content in the upper zone (one foot) of the surface impoundment shall not be less than 1.0 mg/L.

5. The total annual discharge into the Class II Surface Impoundment shall not exceed 2.38 million gallons.

6. Leachate removed from the surface impoundment's LCRS shall be discharged to the impoundment.

Protection From Storm Events

7. Waste management units shall be designed, constructed and operated to prevent inundation or washout due to flooding events with a 100-year return period.

8. Precipitation and drainage control systems shall be designed, constructed and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 1,000-year, 24-hour precipitation conditions.

9. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.

C. DESIGN AND CONSTRUCTION SPECIFICATIONS

1. The surface impoundment shall consist of the following from the top down:

   a. A primary 60-mil-thick High Density Polyethylene (HDPE) geomembrane;
   b. A geonet drainage layer, operating as a Leachate Collection and Removal System (LCRS);
   c. A secondary 60-mil-thick HDPE geomembrane in lieu of the clay liner;
   d. A 4-inch gravel layer;
   e. A 40-mil-thick, HDPE-lined pan lysimeter under the impoundment sump, for unsaturated zone monitoring; and
   f. Compacted subgrade.

2. The Discharger may propose changes to the liner system design prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Regional Water Board.

3. The unsaturated zone monitoring system shall be capable of measuring both saturated and unsaturated flows that may occur as a result of a release from the waste

management unit.

4. Surface impoundments shall be designed, constructed, and operated to maintain a freeboard of 2 feet plus the rainfall and leachate producted from a 1,000-year, 24-hour precipitation event or 2 feet plus the 100-year wet season precipitation, whichever is greater. At no time shall the freeboard of an impoundment be less than two feet.

5. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the surface impoundment.

6. Materials used to construct the LCRS shall have appropriate physical and chemical properties to ensure the required transmission of leachate over the life of the surface impoundment and the post-closure maintenance period.

7. The LCRS shall be designed, constructed, and maintained to collect twice the anticipated daily volume of leachate generated by each surface impoundment and to prevent the buildup of hydraulic head on the underlying liner at any time. The depth of the fluid in the one-foot deep LCRS sump shall be kept at the minimum needed for safe pump operation.

8. The LCRS shall be designed and operated to function without clogging through the scheduled closure of the surface impoundment. The surface impoundment shall be equipped to facilitate annual testing to demonstrate proper operation as required by §20340(d) of Title 27.

9. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overfilling.

10. The surface impoundment shall be designed, constructed, and maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the impoundment and by wave action at the water line.

D. DETECTION MONITORING SPECIFICATIONS

1. If leachate generation by a surface impoundment to the LCRS exceeds 300 gallons per acre per day, the Discharger shall submit (within 72 hours) and implement a leakage response plan to restore the hydraulic integrity of the uppermost liner.

   In addition, leachate generation by a surface impoundment to the LCRS shall in no case exceed design capacity of the LCRS, including the pumping system. If leachate generation exceeds this value, then the Discharger shall immediately cease the discharge of waste, excluding leachate, to the impoundment and shall notify the

Regional Water Board in writing within 72 hours. Notification shall include a timetable for remedial action to repair the upper liner of the impoundment or other action necessary to reduce leachate production.

2. If leachate is detected in the vadose zone monitoring system of a surface impoundment indicating a leak in the containment structures the Discharger shall:

   a. immediately cease discharge of waste, excluding leachate to the surface impoundment until the leaks can be found and repaired,
   b. report to the Regional Water Board within 72 hours that the containment structures have failed,
   c. submit written notification of the release to the Regional Water Board within seven days, the notification should include a time schedule to repair the containment structures, and
   d. discharge of wastes to the surface impoundment will not resume until the Regional Water Board has determined that repairs to the liners are complete and there is no further threat to water quality.

E. SOLIDS DISPOSAL

1. Solids that accumulate in the surface impoundment shall be periodically removed to maintain minimum freeboard requirements and to maintain sufficient capacity for surface impoundment leachate and for the discharge of wastes. Sludge and solids removal shall be accomplished in a manner that ensures the continued integrity of liners and leachate collection systems. Sludge shall be hauled by an authorized carrier.

2. Solids that accumulate in the surface impoundments shall be periodically removed to maintain minimum freeboard requirements and to maintain sufficient capacity for surface impoundment leachate and for the discharge of wastes. Prior to removal and disposal of these solids, sufficient samples shall be taken for their characterization and classification pursuant to Article 2, Subchapter 2, Chapter 3, Division 2 of Title 27 CCR. The rationale for the sampling protocol used, the results of this sampling, and a rationale for classification of the solids and proposed disposal alternative shall be submitted to Regional Water Board staff for review.

3. Any proposed change in solids use or disposal practice from a previously approved practice shall be reported at least 90 days in advance of the change.

F. CLASS II SURFACE IMPOUNDMENT CLOSURE

1. The closure of each surface impoundment shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.

2. At closure of the surface impoundment, all residual wastes, including liquids, sludges, precipitates, settled solids, and liner materials and adjacent natural geologic materials contaminated by wastes, shall be completely removed and discharged to a waste management unit approved by Regional Water Board staff. If after reasonable attempts, the Discharger demonstrates the removal of all remaining contamination is infeasible, the impoundment shall be closed as a landfill.

G. WATER QUALITY PROTECTION STANDARDS

The concentrations of Constituents of Concern in waters passing through the Point of Compliance, as indicated by water quality at groundwater monitoring points, shall not exceed the Concentration Limits established pursuant to Monitoring and Reporting Program No. R5-2007-0026 at the monitoring points specified therein.

H. FINANCIAL ASSURANCE

1. **By 5 April 2007**, the Discharger shall submit detailed cost estimates and a demonstration of assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the waste management unit. The Discharger shall provide the assurances of financial responsibility to the Regional Water Board as required by Title 27 CCR, Division 2, Subdivision 1, Chapter 6. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Regional Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The financial assurance fund for corrective action shall be established **prior to discharging waste to the surface impoundment**.

2. **By 5 April 2007**, the Discharger shall submit detailed cost estimates and a demonstration of assurances of financial responsibility to ensure closure of each waste management unit in accordance with its approved closure plan. The Discharger shall provide the assurances of financial responsibility to the Regional Water Board as required by Title 27 CCR, Division 2, Subdivision 1, Chapter 6. The assurances of financial responsibility shall provide that funds for closure shall be available to the Regional Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The financial assurance fund for closure shall be established **prior to discharging waste to the surface impoundment**.

3. The Discharger shall, by **30 April each year**, adjust the costs required by Financial Assurance H.1 and H.2 to account for inflation and any changes in facility design, construction, or operation, and submit the adjusted costs to the Regional Water Board.

I. PROVISIONS

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Discharges Regulated by Title 27, dated September 2003, which are hereby incorporated into this Order. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements.

2. The Discharger shall comply with Monitoring and Reporting Program No. R5-2007-0026, which is attached to and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities and precipitation and drainage controls and monitoring groundwater, the unsaturated zone, and surface waters throughout the active life of the waste management units and the post-closure maintenance period. A violation of Monitoring and Reporting Program No. R5-2007-0026 is a violation of these waste discharge requirements.

3. All technical reports required herein 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. As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

4. **By 20 April 2007**, the Discharger shall submit a comprehensive technical report in accordance with §20415(e)(7) of Title 27, proposing data analysis methods to establish Water Quality Protection Standards and background groundwater quality. The report shall consider actions proposed in the Engineering Feasibility Study and Correction Action Plan required by CDO No. R5-2006-0038. The specifications for the proposed data analysis methods shall include a detailed description of the criteria to be used for determining measurably significant evident of any release from the surface impoundment and for determining compliance with Water Quality Protection Standards. The Discharger shall submit a report containing the following:

   a. background groundwater characterization in accordance with §20415(e)(6) of Title 27,
   b. data analysis methods to determine measurably significant evidence of any release from the surface impoundment, in accordance with §20415(e)(7) of Title 27,and

c. an initial Water Quality Protection Standard (WQPS), including all the items outlined in Section C of MRP Order No. R5-2007-0026.

5. **By 20 April 2007**, the Discharger shall sample and analyze the soil underlying the proposed surface impoundment for general minerals and other constituents of concern. Samples shall be analyzed by a waste extraction test using de-ionized water pursuant to §66700 of Title 22 of the California Code of Regulations, or acceptable alternative. A report on the results of the analyses and a workplan for addressing soils containing concentrations of constituents at levels that pose a threat to water quality shall be submitted to Regional Water Board staff for review and approval. The results report and workplan may be combined with the Correction Action Plan required by Cease and Desist Order R5-2006-0038.

6. **By 20 April 2007**, the Discharger shall submit final construction plans, a design report, and a construction quality assurance (CQA) plan for the surface impoundment. The final design plan shall include provisions for annual LCRS testing, include the design capacity of the LCRS, and shall show that the bottom of the impoundment will be constructed at least five feet above the highest anticipated groundwater elevation in accordance with §20240 of Title 27. The CQA plan shall include the requirements of §§20323 and 20324 of Title 27. This report shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared by a registered professional, as described in Provision I.3.

7. **By 31 May 2007**, the Discharger shall submit an Operations Plan consistent with requirements in Title 27 §20375 (a, b, and f) to be enacted once discharge to the surface impoundment begins. As part of the Operations Plan, a weekly inspection shall be made of the surface impoundment and shall include:

   a. a visual inspection of the liner will be conducted;
   b. the LCRS pumps will be inspected and cycled to ensure their operation, additionally, the number of automatic cycles per week will be recorded and an estimated volume of discharge from the LCRS will be recorded; and,
   c. a contingency plan will be enacted if the inspection reveals damage to the surface impoundment or ancillary features.

8. **By 15 July 2007**, a final Construction Quality Assurance Plan shall be submitted. The Plan shall be in accordance with §20324 of Title 27 and shall demonstrate that the surface impoundment was constructed in accordance with the approved construction plans. This report shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared by a registered professional, as described in Provision I.3.

9. **By 31 August 2007**, the Discharger shall submit the professionally surveyed bottom elevations of the constructed surface impoundment. This report shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared by a registered professional, as described in Provision I.3.

10. The Discharger shall maintain legible records of the volume and type of waste discharged to and from the surface impoundment and the manner of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Regional Water Board and of the State Water Resources Control Board; copies of these records shall be sent to the Regional Water Board.

11. If the Discharger demonstrates that the removal of all remaining contamination is infeasible and the surface impoundment is closed as a landfill in accordance with Provision F.2, the Discharger shall provide proof to the Regional Water Board **within sixty days after completing final closure of the surface impoundment** that the deed to the surface impoundment facility property, or some other instrument that is normally examined during title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that:

    a. the parcel has been used for disposal of liquid wastes;
    b. land use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in WDRs for the surface impoundment; and
    c. in the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a release, then the responsibility for carrying out such work falls to the property owner.

12. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Regional Water Board.

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

14. This Order shall take effect upon the date of adoption.

15. The Discharger shall comply with the reporting requirements specified in this Order, in Monitoring and Reporting Program Order No. R5-2007-0026 and in the Standard Provisions and Reporting Requirements dated September 2003.

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 16 March 2007.

PAMELA C. CREEDON, Executive Officer

Attachments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0026

FOR
LANGTRY FARMS, LIMITED LIABILITY COMPANY
AND MAGOON ESTATES LIMITED
FOR
OPERATION OF CLASS II SURFACE IMPOUNDMENT
GUENOC WINERY
LAKE COUNTY

Compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements Order No. R5-2007-0026 (WDRs). Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements dated September 2003, constitutes noncompliance with the WDRs and with the California Water Code, which can result in the imposition of civil monetary liability.

A. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Historical and current monitoring data shall be graphed at least once annually. Graphs for the same constituent shall be plotted at the same scale to facilitate visual comparison of monitoring data. A short discussion of the monitoring results, including notations of any water quality violations shall precede the tabular summaries. Data shall also be submitted in an acceptable digital format.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Field and laboratory tests shall be reported in the quarterly monitoring reports. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Regional Water Board.

A portion of the monitoring required herein is also required by Monitoring and Reporting Program No. R5-2006-0037. To the extent that there is overlap between the monitoring requirements of this Monitoring and Reporting Program and those contained in Monitoring and Reporting Program No. R5-2006-0037, the monitoring need not be duplicated. However, separate monitoring reports must be submitted to comply with each of the Monitoring and Reporting Programs.

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

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the Discharger, or the Discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

B. REQUIRED MONITORING REPORTS AND SUBMITTAL DATES

1. Quarterly Groundwater, Vadose Zone, and Leachate Monitoring Reports

All Quarterly monitoring reports shall include all water quality data and observations collected during the reporting period and submitted per the Reporting Due Dates in Section B.6 of this Monitoring and Reporting Program. At a minimum the sampling and data collection in Tables 1 through 4 of this Monitoring and Reporting Program, Standard Provisions and Reporting Requirements (2003), and Waste Discharge Requirements shall be reported.

2. Annual Monitoring Summary Report

The Discharger shall submit an Annual Monitoring Summary Report to the Regional Water Board covering the previous monitoring year. The annual report shall contain the information specified in Standard Provisions and Reporting Requirements (2003), Section VIII.B of the "*Reports to be Filed with the Board*."

3. Facility Monitoring Report

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall include a review of the exposed portions of the facility to ensure that all components are in good working order, as well as an assessment of any damage to the surface water drainage control system, groundwater monitoring equipment (including wells, *etc*.), and shall include the Standard Observations contained in Section XII.S of Standard Provisions and Reporting Requirements (2003).

4. Response to a Release

If the Discharger determines that there is either significant statistical evidence of a release or physical evidence of a release, the Discharger shall immediately notify the Regional Water Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination and implement Response to Release section of the Standard Provisions and Reporting Requirements (2003).

5. Water Quality Protection Standard Report

For any proposed changes in a statistical method or concentration limits for a constituent of concern or monitoring parameter, the Discharger shall submit a Water Quality Protection Standard Report and include the information required in Section C.1 of this Monitoring Reporting Program. Any changes to Water Quality Protection Standard shall be approved by the Executive Officer in a Revised Monitoring and Reporting Program.

6. Submittal Dates

Quarterly Groundwater, Unsaturated Zone, and Leachate Monitoring Reports			
Reporting Type	**Sampling Frequency and Data Reported**	**Reporting Period**	**Report Date Due**
Quarterly	Weekly, Monthly, and Quarterly	1 January – 31 March 1 April – 30 June 1 July – 30 September 1 October – 31 December	**30 April** **31 July** **31 October** **31 January**
Semiannually	Weekly, Monthly, Quarterly, and Semiannually	1January – 30 June 1 July – 31 December	**31 July** **31 January**

Annual Monitoring Summary Report	**31 January**
Facility Monitoring Report	**15 November**
Response to a Release	**as necessary**
Water Quality Protection Standard Report	**as necessary**

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points.

The Water Quality Protection Standard consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Water Quality Protection Standard, or any modification thereto, shall be submitted for review and approval, for each monitored medium.

The report shall:

a. Identify **all distinct bodies of surface and groundwater** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.

b. Include a map showing the monitoring points and background monitoring points for the groundwater monitoring program and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.

c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

2. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in Tables 1 through 4 for the specified monitored medium.

Monitoring Parameters

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables 1 through 4 for the specified monitored medium.

3. Concentration Limits

For a constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

a. By comparison with the approved background data set, using a statistical method pursuant to §20415(e)(9) of Title 27; or

b. By comparison with the approved background data set, using a nonstatistical method pursuant to the initial paragraph of §20415(e)(9) of Title 27.

4. Point of Compliance

The point of compliance for the Concentration Limits given in C.3 at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

D. MONITORING

The Discharger shall comply with the monitoring program provisions of Title 27 for groundwater and the unsaturated zone, in accordance with Monitoring Specifications in Standard Provisions and Reporting Requirements (2003). Detection monitoring for a new facility or a new Unit shall be installed, operational, and one year of monitoring data collected **prior to** the discharge of wastes. A minimum of eight samples should be used to develop background concentrations for COCs. All monitoring shall be conducted in accordance with an acceptable Sample Collection and Analysis Plan, which includes quality assurance/quality control standards.

As noted in the Reporting section (p. 1) of this Monitoring and Reporting Program (MRP), a portion of the monitoring required herein is also required by MRP No. R5-2006-0037. To the extent that there is overlap between the monitoring requirements of this MRP and those contained in MRP No. R5-2006-0037, the monitoring need not be duplicated.

All detection monitoring program groundwater monitoring wells, unsaturated zone monitoring devices, and leachate monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables 1 through 5.

Method detection limits and practical quantitation limits shall be reported. All peaks shall

be reported, including those which cannot be quantified and/or specifically identified.

The Discharger may, upon approval, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Surface Impoundment

Surface impoundment samples shall be collected in a convenient location at least 50 feet from the influent structure. Liquids in the surface impoundment shall be sampled for the following:

Table 1 – Surface Impoundment Monitoring

Parameters	Units	Frequency
Field Parameter		
Influent Flow Rate	gallons per month	Monthly
Effluent Flow Rate	gallons per month	Monthly
Remaining Capacity	acre-feet	Monthly
Freeboard	feet and tenths	Weekly
Specific Conductance	µmhos/cm	Weekly
Dissolved Oxygen	mg/L	Weekly
pH	pH number	Weekly
Monitoring Parameters		
Total Dissolved Solids	mg/L	Quarterly
Fixed Dissolved Solids	mg/L	Quarterly
Volatile Dissolved Solids	mg/L	Quarterly
BOD[1]	mg/L	Quarterly
Alkalinity Series (carbonate, bicarbonate, and hydroxide)	mg/L	Quarterly
Boron	µg/L	Quarterly
Calcium	mg/L	Quarterly
Chloride	mg/L	Quarterly
Sodium	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Total Kjeldahl Nitrogen	mg/L	Quarterly
Nitrate (as Nitrogen)	mg/L	Quarterly
Potassium	mg/L	Quarterly
Iron (EPA 200.7)	µg/L	Quarterly
Manganese (EPA 200.7)	µg/L	Quarterly
Magnesium (EPA 200.7)	mg/L	Quarterly

1 5-day, 20ºC biochemical oxygen demand (BOD)

2. Groundwater

The Discharger shall operate and maintain a groundwater monitoring system that complies with the applicable provisions of §20415 of Title 27 in accordance with an approved Monitoring Program. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

The groundwater monitoring points include the wells shown below, as well as any additional compliance wells the Executive Officer requires (subsequent to the adoption of this Order).

Monitoring Well	Location	Role	Comments
1	possibly downgradient	Compliance	No evidence of wastewater impact
2	downgradient	Compliance	Impacted by wastewater discharge
3	upgradient	Background	Impacted by wastewater discharge
4	upgradient	Background	Impacted by wastewater discharge
7	side-gradient	Background	Not impacted by discharge

Groundwater samples shall be collected from the compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table 2.

In addition to the statistical tests, the monitoring parameters shall be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot, and labeled with respect to background and compliance wells.

Table 2 – Groundwater Monitoring		
Parameters	Units	Frequency
Field Parameter		
Groundwater Elevation	feet and hundredths, MSL	Quarterly
Temperature	^{o}C	Quarterly
Specific Conductance	µmhos/cm	Quarterly
pH	pH number	Quarterly
Monitoring Parameters		
Total Dissolved Solids	mg/L	Quarterly
Fixed Dissolved Solids	mg/L	Quarterly
Volatile Dissolved Solids	mg/L	Quarterly
Turbidity	NTU	Quarterly
Alkalinity Series (carbonate, bicarbonate, and hydroxide)	mg/L	Quarterly
Boron	µg/L	Quarterly
Calcium	mg/L	Quarterly
Chloride	mg/L	Quarterly
Potassium	mg/L	Quarterly
Sodium	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Nitrate (as Nitrogen)	mg/L	Quarterly
Iron (EPA 200.7)	µg/L	Quarterly
Manganese (EPA 200.7)	µg/L	Quarterly
Magnesium (EPA 200.7)	mg/L	Quarterly

3. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of §20415 of Title 27 in accordance with an approved monitoring plan. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

Unsaturated zone samples shall be collected from the monitoring devices of the approved unsaturated zone monitoring system. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in Table 3. All monitoring parameters shall be graphed so as to show historical trends at each monitoring point.

Pan lysimeters shall be checked monthly for liquid. Monitoring shall include the total volume of liquid removed from the system. Unsaturated zone monitoring reports shall be included with the corresponding quarterly groundwater monitoring and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard. While providing effective and early determination of a release, the characteristics of pan lysimeters do not lend themselves to background monitoring. Therefore, in lieu of using a pan lysimeter to collect background samples, data from the pan lysimeter will be compared to groundwater, wastewater, and if necessary, surface water, to determine the origin of the water captured in the pan lysimeter.

Table 3 – Unsaturated Zone Monitoring

Parameters	Units	Frequency
Field Parameter		
Flow Rate	gallons/month	Monthly
Specific Conductance	µmhos/cm	Quarterly
pH	pH number	Quarterly
Monitoring Parameters		
Total Dissolved Solids	mg/L	Quarterly
Fixed Dissolved Solids	mg/L	Quarterly
Volatile Dissolved Solids	mg/L	Quarterly
Turbidity	NTU	Quarterly
Alkalinity Series (carbonate, bicarbonate, and hydroxide)	mg/L	Quarterly
Boron	µg/L	Quarterly
Calcium	mg/L	Quarterly
Chloride	mg/L	Quarterly
Potassium	mg/L	Quarterly
Sodium	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Nitrate (as Nitrogen)	mg/L	Quarterly
Iron (EPA 200.7)	µg/L	Quarterly
Manganese (EPA 200.7)	µg/L	Quarterly
Magnesium (EPA 200.7)	mg/L	Quarterly

4. LCRS Monitoring

The LCRS sump shall be inspected weekly for leachate. Upon detection of leachate in a previously dry LCRS (defined here as an event), the Discharger shall immediately collect a grab sample of the leachate and shall continue to collect grab samples of the leachate at the following frequencies thereafter. The LCRS shall be sampled and analyzed for the following:

Table 4 – LCRS Monitoring

Parameters	Units	Frequency
Field Parameter		
Flow Rate	gallons/month	Monthly
Specific Conductance	µmhos/cm	Quarterly (unless dry)
pH	pH number	Quarterly (unless dry)
Monitoring Parameters		
Total Dissolved Solids	mg/L	Once per Event
Fixed Dissolved Solids	mg/L	Once per Event
Volatile Dissolved Solids	mg/L	Once per Event
Turbidity	NTU	Once per Event
Chloride	mg/L	Once per Event
Sodium	mg/L	Once per Event
Sulfate	mg/L	Once per Event
Nitrate (as Nitrogen)	mg/L	Once per Event
Iron, Total Recoverable (EPA 200.7)	µg/L	Once per Event
Manganese, Total Recoverable (EPA 200.7)	µg/L	Once per Event
Magnesium, Total Recoverable (EPA 200.7)	mg/L	Once per Event

All LCRSs shall be tested annually to demonstrate operation in conformance with waste discharge requirements. The results of these tests shall be reported to the Regional Water Board and shall include comparison with earlier tests made under comparable conditions.

5. Facility Monitoring

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess any damage to the drainage control system, groundwater monitoring equipment (including wells, *etc*.), and shall include the Standard Observations

contained in section F.4.f of Standard Provisions and Reporting Requirements. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. Storm Events

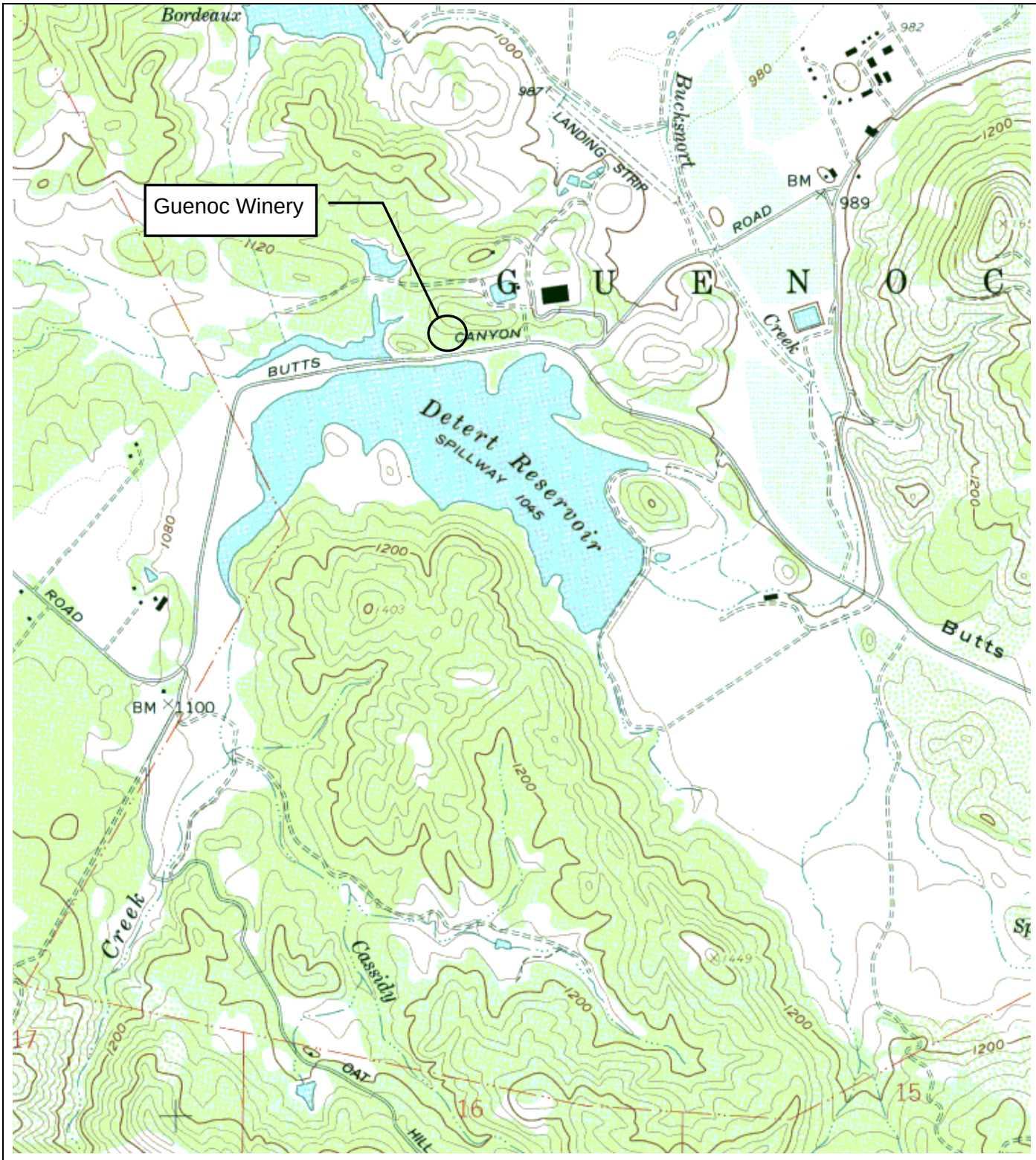
The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following major storm events. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

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

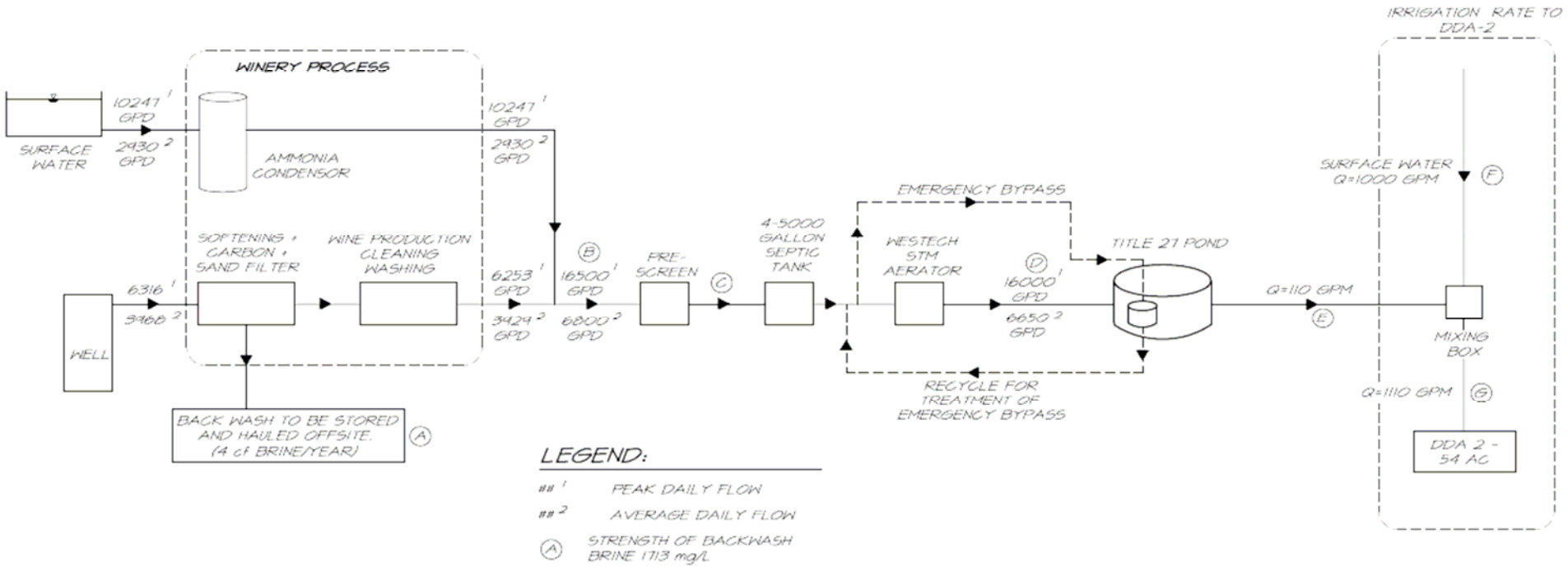
Ordered by:

PAMELA C. CREEDON, Executive Officer

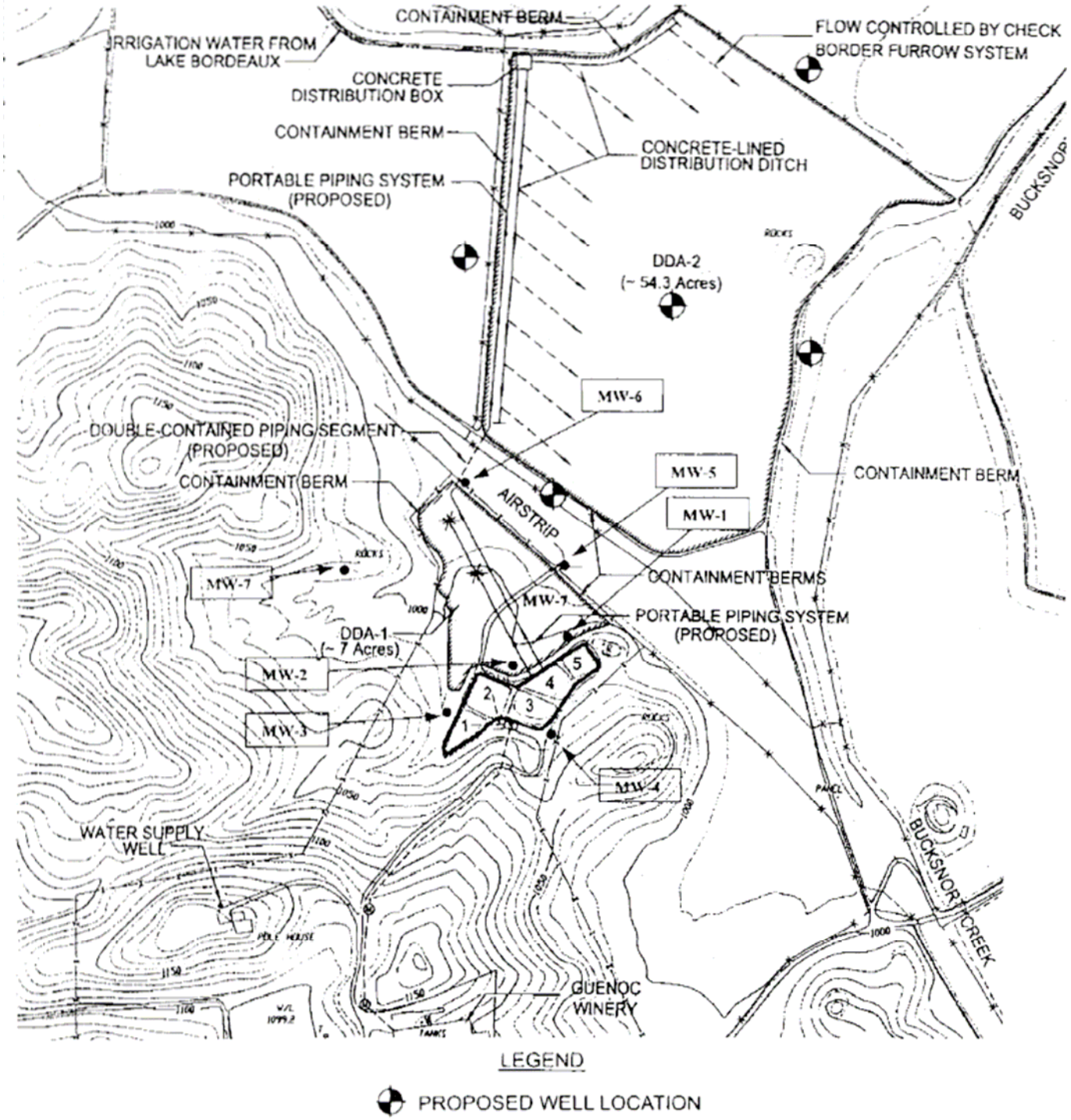
(Date)



Drawing Reference:	**VICINITY MAP**	
U.S.G.S TOPOGRAPHIC MAP DETERT RESERVOIR 7.5 MINUTE QUADRANGLE	LANGTRY FARMS, LLC AND MAGOON ESTATES LIMITED GUENOC WINERY LAKE COUNTY	N W E S approx. scale 1 in. = 1,800 ft.



DRAWING REFERENCE: Riechers Spence Associates, Inc.	**WASTEWATER TREATMENT SYSTEM SCHEMATIC** LANGTRY FARMS, LLC AND MAGOON ESTATES LIMITED GUENOC WINERY LAKE COUNTY



Source: EBA Engineering **Note:** Pond A (Class II surface impoundment) to be constructed within the footprint of existing unlined wastewater ponds 2, 3, and 4.	**MONITORING WELL LOCATIONS** LANGTRY FARMS, LLC AND MAGOON ESTATES LIMITED GUENOC WINERY LAKE COUNTY	N W E S NOT TO SCALE

INFORMATION SHEET

ORDER NO. R5-2007-0026
LANGTRY FARMS, LIMITED LIABILITY COMPANY AND MAGOON ESTATES LIMITED
FOR OPERATION OF A CLASS II SURFACE IMPOUNDMENT
GUENOC WINERY
LAKE COUNTY

On 5 May 2006, the Regional Water Board adopted Waste Discharge Requirements (WDRs) Order No. R5-2006-0037, which updated WDRs Order No. R5-2003-0175, and Cease and Desist Order No. R5-2006-0038 for the storage and disposal by irrigation of winery wastewater. Order Nos. R5-2003-0175, R5-2006-0037, and R5-2006-0038 found the winery wastewater to be a 'designated waste' in accordance with Title 27 of the California Code of Regulations (CCR). Task 2 to Order No. R5-2006-0038 required submission of a Report of Waste Discharge (RWD) by 1 July 2006**.** The RWD was required to contain a design for a new surface impoundment that complies with Title 27 of the California Code of Regulations (CCR) and a timeline showing that the pond will meet the prescriptive standards and performance goals of Title 27 no latter than 1 July 2007. In addition, the RWD was required to contain a final detailed water balance showing that the proposed surface impoundment will be large enough to meet the storage and disposal requirements.

The Discharger submitted a Report of Waste Discharge dated 30 June 2006 for a proposed Class II surface impoundment with an engineered alternative to a prescriptive liner. Supplemental information was submitted on 4, 9, 10, 11, 12, 18, 19, 22, 23, and 25 January 2007 and 16 February 2007.

Guenoc Winery (the facility) is approximately two miles southeast of Middletown at 21000 Butts Canyon Road in Lake County. This property is on Assessor's Parcel Number 014-310-006 in Section 4, T10N, R6W, MDB&M. The winery and associated facilities are located on the western side of Sacramento Valley. Activities at the winery facility include receiving, crushing, and pressing of grapes; fermentation; processing into finished white and red wines; and distribution.

The facility currently discharges winery wastewater to a series of five unlined evaporation/percolation ponds. From the ponds, the wastewater is discharged to 54 acres of pastureland (DDA-2).

The proposed facility will consist of a surface impoundment and will receive process winery wastewater treated by a bioreactor as shown on Attachment B.

The following table summarizes the design criteria described in the RWD as used for designing the upgraded waste treatment system, ponds, and disposal field.

Parameter	Design Criteria	Unit
Annual Wine Production	140,000	cases/year
Average Annual Discharge	2,378,518	gallons/year
Peak Daily Crush Discharge	16,500	gallons/day (gpd)
Average Daily Discharge	6,800	gallons/day (gpd)

The Discharger proposes to treat winery wastewater to produce an effluent with 700 to 900 mg/L of total dissolved solids and 14 to 16 mg/L of chloride. Order No. R5-2006-0037 contains the following monthly average Effluent Limitations for the discharge into the proposed Class II Surface Impoundment (Pond A):

"Constituent	*Units*	*Discharge to Pond A*
Biochemical Oxygen Demand	*mg/L*	*180*
Total Dissolved Solids	*mg/L*	*900*
Total Suspended Solids	*mg/L*	*60*
Total Kjeldahl nitrogen	*mg/L*	*10*
pH	*mg/L*	*6.8 - 7.2*
Chloride	*mg/L*	*18"*

Beginning in the summer of 2003, sanitary/domestic wastewater from the winery kitchen, winery restroom facilities, and a private residence is collected and disposed of separately from the process winery wastewater in an on-site sewage disposal system. This system is regulated by the Lake County Environmental Health Department.

Surface water drainage is to Bucksnort Creek, which is a tributary to McCreary Lake, which is tributary to Putah Creek, which is tributary to Lake Berryessa in the Upper Putah Creek Hydrologic Area (512.30) of the Sacramento River Basin, as depicted on interagency hydrologic maps prepared by the California Department of Water Resources in August 1986.

The winery facility is near a hillside knoll above the wastewater ponds and the vineyards. Storm water is collected through drop inlets within the gravel parking lot and the grape unloading area. A drainage ditch located on the uphill side of Pond No. 1 is used to redirect surface water runoff away from the ponds.

The designated beneficial uses of Lake Berryessa, as specified in the Basin Plan, are municipal and domestic supply; agricultural irrigation; agricultural stockwatering; hydropower generation; water contact recreation; non-contact water recreation, including aesthetic enjoyment; warm freshwater habitat; cold freshwater habitat; spawning, reproduction and/or early development of warm freshwater aquatic organisms; and wildlife habitat.

The designated beneficial uses of the groundwater, as specified in the Basin Plan, are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

The 100-year annual precipitation at Middletown, adjusted to Guenoc Ranch, is between 61.5 and 67 inches (extrapolated from two different weather stations in the area) with the highest rainfall (13.3 inches) occurring in January. An annual precipitation value of 67 inches was used as an input parameter in the water balance. The unadjusted mean pan evaporation is 77 inches per year as measured at the Lake Berryessa Station.

The 1,000-year, 24-hour precipitation event is estimated to be 18.5 inches, based on National Oceanic and Atmospheric Administration (NOAA) Atlas 2, Volume XI, Figure 31 isohyetal/isopluvial lines for the unit area and application of a TR-55 rainfall distribution for a Type IA storm.

The waste management facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Map Number 06033C0960D.

In October 2002, the Discharger abandoned three groundwater monitoring wells and installed four replacement wells (MWs 1 through 4) to monitor groundwater conditions around the wastewater storage ponds. The original wells were abandoned and replaced due to a lack of available information regarding their construction details. In addition to the four wells, the Discharger has since installed two additional monitoring wells (MW-5 and MW-6) north of the ponds, and MW-7, a background well.

Beginning in November 2002, groundwater samples have been collected on a quarterly basis from wells MW-1 through MW-4. Beginning in May 2004, groundwater samples have been collected quarterly from wells MW-5 and MW-6, and beginning in December 2004, groundwater samples have been collected quarterly from MW-7. Data from November 2002 through September 2006 for selected constituents are found in the following table.

Constituents	Units	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7[1]
TDS	mg/L	160 – 250	840 – 1300	430 – 930	460 – 660	800 – 930	470 – 740	270 – 490
Specific Conductance	μmhos/cm	134 – 500	459 – 2490	192 – 1600	188 – 1174	961 – 1495	713– 1027	455 – 601
Magnesium	mg/L	29 – 58	200 – 290	98 – 1200	82 – 120	160 – 190	65 – 99	28 – 37
Sodium	mg/L	12 – 23	31 – 79	9.7 – 100	6.0 – 9.0	16 – 18	34 – 45	16 – 86
Chloride	mg/L	7.8 – 26	120 – 220	6.3 – 160	7.9 – 18	72 – 110	12 – 130	5.6 – 16
pH	pH units	7.02 – 8.95	7.06 – 7.85	6.98 – 8.59	6.78 – 7.53	7.1 – 7.72	7.10 – 7.82	7.47 – 8.15
TKN	mg/L	<1.0 – 2.1	<1.0 – 25	<1.0 – 2.1	<1.0 – 3.5	<1.0 – 3.4	<1.0 – 2.5	<1.0 – 2.4
Nitrate as N	mg/L	<0.2 – 0.54	<0.2 – 8.1	0.21 – 16	<0.2 – 0.85	4.1 – 7.0	0.1 – 1.7	<0.20 – 1.4
Sulfate as SO_4	mg/L	8.1 – 16	16 – 61	25 – 220	22 – 130	24 – 68	24 – 40	33 – 140
Boron	mg/L	2.1 – 2.4	0.34 – 0.66	0.20 – 0.53	0.91 – 1.4	0.22 – 0.30	0.14 – 0.18	<0.05 – 0.33
Iron	mg/L	<0.1 – 6.7	<1.0 – 8.2	<0.1 – 1.9	<0.1 – 12	<0.1 – 3.6	<0.1 – 34	<0.1 – 4.1

1 Sample results from the first monitoring event (December 2004) are not included in the table as subsequent data shows that these are outliers and not representative of true groundwater conditions (*i.e*, the December 2004 sampling event shows that specific conductance, sodium, TDS, chloride, and sulfate were detected at concentrations significantly higher than subsequent sampling events).

Hydrologic data collected from the monitoring wells show that groundwater is encountered at a depths ranging from approximately two to 10 feet bgs. The monitoring reports state that the direction of groundwater flow beneath the wastewater storage ponds is northwest with a hydraulic gradient of 0.07 ft/ft. However, staff is concerned that the five percolation ponds

create a groundwater mound, and this fact is not necessarily reflected in the groundwater contour maps. Groundwater elevations range from 975 feet MSL to 1,022 feet MSL. Monitoring data shows that the depth of groundwater below the bottom of the wastewater ponds varies seasonally. However, at certain times of the year groundwater rises up to within the ponds.

The Discharger proposes an engineered alternative to the prescriptive liner requirements of Title 27 for the Class II Surface Impoundment. The engineered alternative consists of from the top down:

a. A primary 60-mil-thick High Density Polyethylene (HDPE) geomembrane
b. A geonet drainage layer, as a Leachate Collection and Removal System (LCRS)
c. A secondary 60-mil-thick HDPE geomembrane in lieu of the clay liner
d. A 40-mil-thick, HDPE-lined pan lysimeter under the impoundment sump, for unsaturated zone monitoring; and
e. A 4-inch gravel capillary break

The Discharger proposes to construct the bottom of the impoundment with a 1% slope five feet above the highest anticipated groundwater elevation. In addition, the Discharger proposes to install a 4-inch gravel layer as a capillary break between the secondary liner and the compacted subgrade.

The Class II Surface Impoundment will be equipped with an on-demand aeration device. The Discharger proposes to maintain a minimum of four feet of water in The surface impoundment to allow the aerator to operate year-round. Clean irrigation water will be added to the pond whenever the level drops below four feet.

Order Nos. R5-2003-0175 and R5-2006-0037 found that groundwater quality at the site has been degraded for total dissolved solids, specific conductance, magnesium, sodium, chloride, nitrate, sulfate, and iron. Monitoring parameters in Monitoring and Reporting Program No. R5-2007-0026 were selected based in part on these findings.