

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0159

WASTE DISCHARGE REQUIREMENTS
FOR
JERRY G. BRASSFIELD
BRASSFIELD ESTATE WINERY
LAKE COUNTY

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

1. Jerry G. Brassfield dba Brassfield Estate Winery (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 22 September 2004 for updating Waste Discharge Requirements (WDRs) for the Brassfield Estate Winery. Supplemental information was received on 14 January and 10 June 2005.
2. The Discharger's winery and tasting facility is at 10915 High Valley Road in High Valley, Lake County (Assessors Parcel No. 6-004-11) in Section 23, T14N, R8W, MDB&M. The location of the winery is shown on Attachment A, which is attached hereto and made part of this Order by reference.
3. WDRs Order No. R5-2003-0097, adopted by the Regional Board on 6 June 2003, prescribes requirements for the Discharger's wastewater treatment system. This Order is not adequate because the Discharger is increasing its wine production and wastewater flows, and changing treatment methods from a Rotating Biological Contactor (RBC) with land disposal to an aerated pond system with land disposal.

BACKGROUND

4. The Discharger has developed a 4.11 acre wine tasting and passive recreational area within 1,600 acres used for grape growing and homesteading operations. The winery facility consists of a 6,000 square foot roofed warehouse and a 6,000 square foot slab for the processing operations.
5. Activities at the winery facility include receiving, crushing and pressing of grapes; fermentation; processing into finished wines; and distribution.
6. The Discharger will process approximately 80,000 cases of wine and produce approximately 762,238 gallons of winery wastewater annually. This estimate is based on standard 9-liter cases and assumes that one gallon of processed wine will produce 4 gallons of wastewater.
7. During wine production, various chemicals can be used as either an additive, a fining agent, or as a cleaner/sanitizer. These compounds may include the following:

Wine Additive

Wine Fining Agent

Cleaner/Sanitizer

| <u>Wine Additive</u> | <u>Wine Fining Agent</u> | <u>Cleaner/Sanitizer</u> |
|-------------------------|--------------------------|---------------------------------|
| Citric Acid | Bentonite | Caustic Soda |
| Fumaric Acid | Diatomaceous Earth | Sodium Hypochlorite |
| Malic Acid | Carbon | Chlorinated Trisodium Phosphate |
| Tartaric Acid | Copper Sulfate | Caustic/Wetting Agent |
| Phosphate | Nylon Polymer | |
| Sulfur Dioxide | Potassium Bitartrate | |
| Diammonium Phosphate | | |
| Potassium Metabisulfite | | |

8. Monthly influent monitoring data from January 2004 to December 2004 shows pH levels ranging from 5.05 to 7.5 and biochemical oxygen demand (BOD) concentrations up to 15,000 mg/L. Because there are no other site-specific influent concentrations available, typical influent winery wastewater data are presented below. Constituent concentrations are the highest during the crush season, and are typically in the following ranges:

| <u>Compound</u> | <u>Units</u> | <u>Typical Winery Concentration Range¹</u> |
|--|--------------|---|
| pH | pH units | 2.5 – 9.5 |
| Dissolved Oxygen | mg/L | 0.5 – 8.5 |
| Biochemical Oxygen Demand (BOD ₅) ² | mg/L | 500 – 12,000 |
| Chemical Oxygen Demand (COD) | mg/L | 800 – 15,000 |
| Grease | mg/L | 5 – 30 |
| Settleable Solids | mg/L | 25 – 100 |
| Nonfilterable Residue | mg/L | 40 – 800 |
| Volatile Suspended Solids | mg/L | 150 – 700 |
| Total Dissolved Solids (TDS) | mg/L | 80 – 2,900 |
| Nitrogen | mg/L | 1 – 40 |
| Nitrate (as Nitrate) | mg/L | 0.5 – 4.8 |
| Phosphorous | mg/L | 1 – 10 |
| Sodium | mg/L | 35 – 200 |
| Alkalinity (CaCO ₃) | mg/L | 40 – 730 |
| Chloride | mg/L | 3 – 250 |
| Sulfate | mg/L | 10 - 75 |

¹ Typical chemical analyses of winery wastewater from Summit Engineering, Process Wastewater Management System, Design Criteria and Calculations, 5 June 1998.

² Five-day, 20° Celsius Biochemical Oxygen Demand.

9. Effluent concentrations of winery wastewater treated using the Rotating Biological Contactor (RBC) treatment unit (used at the facility between 2003 and 2005), based on monthly monitoring reports from January 2004 to December 2004, are as follows:

| <u>Compound</u> | <u>Units</u> | <u>Non-Crush Concentration Range</u> | <u>Crush Concentration Range</u> |
|---|--------------|--|--------------------------------------|
| pH | pH units | 6.88 – 8.18 | 7.11 - 7.9 |
| Specific Conductivity | µmhos/cm | 361 - 1419 | 1,547 – 3,070 |
| Dissolved Oxygen | mg/L | 0.06 – 4.09 | 0.14 - 0.25 |
| Biochemical Oxygen Demand (BOD ₅) ¹ | mg/L | <0.5 – 1,900 | 43 – 1,900 |
| Total Dissolved Solids (TDS) | mg/L | 180 – 2,800 | 1,300 – 2,900 |
| Total Kjeldahl Nitrogen (TKN) | mg/L | <1.0 – 190 | 23 – 190 |
| Nitrate as Nitrogen | mg/L | <0.2 – 28 | <0.2 – 0.51 |
| Sulfate | mg/L | <2.5 – 31 | 3.8 – 22 |
| Volatile Dissolved Solids | mg/L | 37 – 660 | 320 - 850 |

¹ Five-day, 20° Celsius Biochemical Oxygen Demand.

WASTEWATER SYSTEM

10. By October 2005, the Discharger will convert from using the RBC treatment process to using an aerated pond treatment process. The following findings describe the new treatment system.
11. Wastewater generated from winery processing activities (process/equipment cleaning, barrel washing and washdown operations) is collected in a series of floor drains both at the crush pad and inside the winery building. The wastewater then gravity flows to an influent pump station where it is pumped through a force main equipped with a flow meter to a 3,000 gallon selector tank for sludge bulking control. A chemical feed pump used for the injection of nutrients to control pH is also piped into the selector tank. From this tank, the wastewater will flow into either Aeration Pond No. 1 or No. 2. Each of the ponds is equipped with mechanical aeration devices. Flow between these two ponds is controlled via a telescoping valve in a manhole. From the ponds, the wastewater flows through a clarifier and into two 2,500 gallon aboveground temporary storage tanks prior to being discharged to an eight acre land application area. Some of the activated sludge collected in the clarifier will be returned to the aeration ponds. A schematic of the wastewater system is shown as Attachment B. A site plan is shown as Attachment C and detailed in Attachments C-1 and C-2. Attachments B, C, C-1, and C-2 are attached hereto and made part of this Order by reference.
12. The two 2,500 gallon aboveground storage tanks are located northwest of the aeration ponds and are used for the temporary storage of wastewater from the aeration ponds. Supplemental irrigation water is added to the tanks prior to discharge to the land application area.
13. Each of the two aeration ponds will be constructed with two individual layers of 40-mil geocomposite clay liner (GCL) with a leachate collection system between the two GCL layers for leak detection purposes. A 4-inch thick concrete layer in each of the ponds will overlie the liner and act as a wear surface to protect the liner from maintenance operations and possible scour from

the mechanical aerators. The ponds have a combined surface area totaling 5,200 square feet and a volume with 2-feet of freeboard of approximately 99,000 gallons.

14. The RWD states that the activated sludge from the clarifier will either be directly pumped to the selector tank and then to the aeration ponds, or into two sludge drying beds. These beds will be constructed with a 40-mil high density polyethylene (HDPE) liner with a drainpipe connected to the aeration ponds. The beds will be covered during the wet weather months with waterproof tarps to prevent storm water from entering the beds. During the winter months, the sludge will be transported offsite via a licensed waste hauler for proper disposal.
15. The Discharger has submitted a Construction Quality Assurance (CQA) Plan to assure that construction practices for the aeration ponds are of high quality to provide maximum protection of water quality. This Order requires the Discharger to submit a Certification Report signed by an appropriately registered professional following completion of the construction phase of the project.
16. The Discharger states that this aerated pond system should be completed in October 2005. The RBC treatment unit will continue to be used until the Discharger has completed the wastewater treatment system as described in this Order.
17. The RWD states that the average monthly flow anticipated during the crush period (September and October) is approximately 6,000 gallons per day (gpd). The average monthly flows during the remainder of the year are anticipated at 1,830 gpd.
18. The Discharger's water-balance for the wastewater treatment, storage, and disposal system shows that the wastewater ponds have adequate capacity to accommodate allowable wastewater flows and design seasonal precipitation for a 100-year return period.
19. The majority of the processing is conducted under covered roofs to protect against commingling of storm water runoff with process wastewater. However, the grape crush area is on an uncovered concrete pad equipped with a drain containing a three-way control valve connected to the wastewater influent and the storm water discharge piping. This valve is secured via a padlock and chain to direct the flow of water and ensure that during crush operations all wastewater is discharged into the treatment system. The Discharger states that only senior management personnel are provided with a security key for access and control of the valve. The storm water collection system consists of an oil/water separator for treatment prior to discharge to an intermittent stream.

LAND APPLICATION SYSTEM

20. The Discharger proposes to dispose of winery effluent by applying it to eight acres of vegetated land using an automated spray irrigation system. The RWD states that in the event the foliage is not controlled by the deer population on-site that a tractor will be utilized as necessary, and the grasses will either be composted onsite or transported offsite.

21. Tailwater controls consist of an earthen berm down slope of the land application area that is used to prevent waste water from leaving the land application area. In order to prevent the potential discharge of storm water mixed with wastewater, this Order prohibits irrigation with wastewater 24 hours before, during, or 24 hours after a rain event, or when soils are saturated.
22. The following table presents anticipated loading rates to the eight acre land application area for BOD, total nitrogen, and total dissolved solids (TDS), including volatile dissolved solids (VDS), and inorganic dissolved solids (IDS). With the exception of BOD, these loading rates were calculated based on annual wastewater flows of 762,238 gallons, and average effluent concentrations from the RBC treatment unit from January 2004 to April 2005. The BOD value used in the calculation was based on modeling data.

| <u>Compound</u> | <u>Concentration (mg/L)</u> | <u>Loading Rate (lbs/acre/year)</u> | <u>Loading Rate (lbs/acre/month)</u> | <u>Loading Rate (lbs/acre/day)</u> |
|-----------------|-----------------------------|-------------------------------------|--------------------------------------|------------------------------------|
| BOD | 400 | 318 | 26 | 0.9 |
| TDS | 1,279 | 1,016 | 85 | 2.8 |
| VDS | 213 | 169 | 14 | 0.5 |
| IDS | 1,066 | 847 | 71 | 2.3 |
| Total Nitrogen | 42 | 33 | 3 | 0.1 |

23. These loading rate calculations show that the nitrogen in the wastewater is less than the grass crop demand on the land application area based on a nitrogen demand of 200 lbs/acre/year for native grasses. Given the application method and loading, groundwater should not be degraded by nitrogen. In addition, these calculations show application of the winery wastewater to the eight acre land application area should not cause an increase in the salt (measured as specific conductivity, TDS, or chloride concentrations) in the underlying groundwater. The “total dissolved solids” component of the wastewater is composed of both volatile dissolved solids (VDS) and inorganic dissolved solids (IDS). The volatile dissolved solids are broken down by soil microorganisms in a well managed land application system and do not reach groundwater. Because plants can take up to 2,000 pounds of salt/acre/year, the loading rate for TDS should not degrade the underlying groundwater.
24. The following table presents estimated average hydraulic loading rates for the eight acre land application area if wastewater was land applied on a daily basis. However, because this Order prohibits irrigation of wastewater 24 hours before, during, or 24 hours after a rain event, or when soils are saturated, these calculations may not represent actual applied daily rates.

| | |
|---------------------------|---------|
| Annual Flow (gallons) | 762,238 |
| Acreage Applied (acres) | 8 |
| Rate(gallons/acre/year) | 95,280 |
| Rate (gallons/acre/month) | 7,940 |
| Rate (gallons/acre/day) | 265 |

SOLID WASTE

25. Solid/semi-solid wastes such as pomace (skins, seeds, pulp, stems, etc. resulting from the grape crush), and wine settlement and filter cake media (bentonite and diatomaceous earth) are also generated by the processing operations. Such solid/semi-solid wastes are segregated from the process wastewater stream for separate handling and disposal. The pomace is spread in the vineyards as compost and/or tilled into the vineyards as a soil amendment. The bentonite and diatomaceous earth are removed from the facility by a licensed waste hauler. According to the RWD, storage of solid/semi-solid wastes will only occur on relatively impervious surfaces with leachate collection capabilities. Collected leachate will be sent to the process wastewater treatment system for further handling and treatment prior to disposal.
26. Seeds, stems, skins, and pomace collected from crushing equipment and from floor drain screens will be placed into plastic tubs and then spread out within the 80 acres of vineyard area prior to the beginning of the rainy season. Any composted waste material would be disced into the soil during spring soil preparation.

SITE SPECIFIC CONDITIONS

27. The site is relatively flat and is near the western end of High Valley which trends east to west. High Valley is a few miles north of Clear Lake.
28. Surficial soils (upper 12-inches) consist of the Wolfcreek loam which is characterized as a stratified brown clay loam and very sandy clay loam. These soils typically have moderately slow permeability. Based on a Soil Conservation Survey report, permeability values for the Wolfcreek soils range from 0.2 to 0.6 inches/hour at 20 to 25 inches depth.
29. The upper 20 feet of subsurface geology consists primarily of highly plastic, very stiff to hard clay of lacustrine origin.
30. The soils underlying the aeration ponds generally consist of dark organic material at the surface underlain by silt with sands to approximately 1.5 feet bgs, silt with some clay and angular particles to approximately 5 feet bgs, and sandy silt with some 1 to 2-inch diameter cobbles to approximately 7 feet bgs. Water was encountered at approximately 8-feet bgs. The depth to underlying bedrock in the area is unknown since the soil pits excavated to approximately 9-feet bgs did not reveal bedrock.
31. The facility is within the Lucerne Hydrologic Area (No. 513.53), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
32. The 100 year return rainfall for the area is approximately 62 inches and ranges from 0.3 to 11.8 inches. The precipitation data is based on information obtained from the Clearlake Highlands Station.
33. Evapotranspiration rates for the High Valley area range from 0.9 to 8 inches per month with the highest rates occurring in July.

34. Sanitary/domestic wastewater is collected separately from the process winery wastewater in an on-site sewage disposal system. This system is regulated by Lake County Environmental Health Department.

GROUNDWATER CONDITIONS

35. The Discharger installed three two-inch diameter groundwater monitoring wells in 2002 and a fourth well in 2003. Hydrologic data collected from these wells show that the depth to water ranges from approximately 3 to 11 feet below ground surface (bgs) and groundwater flow is toward the southeast at a magnitude of 0.013 ft/ft. The monitoring well locations are shown in Attachment C-1.
36. Quarterly groundwater samples collected from monitoring wells between first quarter 2003 and second quarter 2005 have been analyzed for a number of constituents. Relevant constituents are presented in the table below.

| <u>Constituents</u> | <u>Units</u> | <u>MW-1</u> (upgradient) | <u>MW-2</u> (downgradient) | <u>MW-3</u> (downgradient) | <u>MW-4</u> (background) |
|-------------------------|--------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------|
| pH | pH units | 6.28 – 7.15 | 6.42 – 7.1 | 6.43 – 7.24 | 6.21 – 6.44 |
| Specific Conductivity | µmhos/cm | 204 – 609 | 740 – 1280 | 595 – 875 | 142 – 458 |
| Total Dissolved Solids | mg/L | 140 - 280 | 400 – 710 | 310 – 440 | 100 – 220 |
| Chloride | mg/L | 7 - 21 | 59 – 190 | 3 – 49 | 10 – 49 |
| Sulfate | mg/L | 9 – 35 | 35 - 120 | 33 – 48 | 14 – 23 |
| Nitrate as Nitrogen | mg/L | <0.2 | <1 - 47 | 12 – 19 | <0.2 – 6.2 |
| Total Kjeldahl Nitrogen | mg/L | <1.0 | <1.0 – 15 | <1.0 – 5.6 | <1.0 – 5.5 |
| Sodium | mg/L | 18 - 59 | 48 – 120 | 38 – 47 | 14 – 39 |

37. Nitrate as nitrogen has consistently been reported above the maximum contaminant level (MCL) of 10 mg/L in quarterly groundwater samples collected from MW-3 since the first quarter 2003. Nitrate as nitrogen has also been reported above the MCL in samples collected from MW-2. In addition, these nitrate as nitrogen concentrations in MW-2 and MW-3 exceed background concentrations reported in MW-4 located upgradient of MW-2 and MW-3.
38. Total Dissolved Solids (TDS) concentrations have exceed the Agricultural Water Quality Goal of 450 mg/L in several samples collected from MW-2 and MW-3 since the first quarter 2003. In addition, these TDS concentrations in MW-2 and MW-3 exceed background concentrations reported in MW-4 located upgradient of MW-2 and MW-3.
39. The RWD states that the sources of the higher nitrate and TDS concentrations in MW-2 and MW-3 may be associated with previous ranching/cattle operations, current fertilizer applications in the area, and the domestic leachfield located near MW-1. The RWD states that removal of the RBC treatment unit and replacement of the pump station should prevent further groundwater degradation.

40. A Salinity Reduction Workplan submitted in August 2004 indicated that the most obvious method of reducing salinity was to reduce its use in the winemaking process. In addition, the report stated that if the BOD concentration were lowered, then the VDS levels would also be reduced. Finally, the report stated that improving the landscape within the land application area would increase the amount of nitrogen taken up by the crops.
41. It is noted that the above discussion relates to the monitoring wells installed to measure the effects of the RBC treated wastewater and the discharge to the landscaped areas. This Order requires that the discharge be ceased by 1 November 2005. As the new wastewater treatment and disposal system is in a different location, this Order also requires that new groundwater monitoring wells be installed. Because the new system provides better treatment, the Discharger should be able to comply with the Groundwater Limitations of this Order.
42. Primary water for processing and domestic purposes is derived from a spring southwest of the facility and at an elevation approximately 150 feet higher than the facility. The water from the spring gravity flows to the winery. In addition to this water supply, two 5,000 gallon storage tanks located on the hillside south of the winery site are connected to various hydrants and to the sprinkler system inside the winery building used for fire protection. A groundwater sample was collected from the spring in February 2002 and analyzed for the following constituents. Results are presented in the table below.

| <u>Constituents</u> | <u>Units</u> | <u>Water Supply</u> |
|-----------------------|---------------|---------------------|
| pH | pH units | 7.0 |
| Specific Conductivity | μ mhos/cm | 480 |
| Dissolved Oxygen | mg/L | 5.6 |
| TDS | mg/L | 240 |
| Hardness, Total | mg/L | 203 |
| Iron | mg/L | <0.10 |
| Manganese | mg/L | 0.027 |
| Sodium | mg/L | 22 |
| Arsenic | mg/L | <0.0020 |
| Boron | mg/L | <0.050 |
| Total Coliform | MPN/100 mL | <1.0 |
| Fecal Coliform | MPN/100 mL | <1.0 |

BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

43. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. Pursuant to §13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan.

44. Surface water drainage in the area is to Schindler Creek, which is tributary to Clear Lake.
45. The beneficial uses of Clear Lake, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; water contact recreation; noncontact water recreation; warm freshwater habitat, cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat.
46. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
47. State Water Resources Control Board (State Board) Resolution No. 68-16 requires that the Board, in regulating the discharge of waste, must maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies (e.g., quality that exceeds water quality objectives).
48. Anti-degradation has been considered pursuant to State Board Resolution No. 68-16 and it has been determined that this discharge of waste should not degrade surface water or groundwater quality. The waste will be treated to remove BOD and total suspended solids, and will be applied to land at agronomic rates. The Discharger is required to implement its Salinity Reduction Plan. This Order establishes effluent limitations that are protective of the beneficial uses of the underlying groundwater, and requires the sampling of groundwater monitoring wells to assure that the discharge of waste is not impacting the underlying groundwater. Based on the result of the scheduled tasks, this Order may be reopened to reconsider effluent limitations and other requirements to comply with Resolution 68-16.
49. Section 13267(b) of California Water Code provides that: *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of 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 regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2005-0159" are necessary to assure compliance with these waste discharge requirements.

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

51. Federal regulations for storm water discharges were promulgated by the U.S. Environmental Protection Agency on 16 November 1990 (40 CFR Parts 122, 123, and 124). The State Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The Discharger has obtained coverage under General Permit No. CAS000001.
52. This discharge is exempt from the requirements of *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq., (hereafter Title 27). The exemption pursuant to Section 20090(b), is based on the following:
 - a. The 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.
53. The action to update WDRs for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), in accordance Title 14, California Code of Regulations (CCR), Section 15301.
54. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

PUBLIC NOTICE

55. All the above and the supplemental information and details in the attached Information Sheet, incorporated by reference herein, were considered in establishing the following conditions of discharge.
56. The Discharger and interested agencies and persons were notified of the intent to prescribe WDRs for this discharge and provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
57. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that Order No. R5-2003-0097 is rescinded and, pursuant to Sections 13263 and 13267 of the California Water Code, Jerry G. Brassfield, his agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

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

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Operation of a distillery at the facility is prohibited.
3. Bypass or overflow of untreated or partially treated waste is prohibited.
4. Discharge of waste classified as 'hazardous,' defined in Section 20164 of Title 27, CCR, or 'designated,' as defined in Section 13173 of the California Water Code, is prohibited.
5. The discharge of winery wastewater to the storm water collection area or the domestic wastewater system is prohibited.
6. The discharge of domestic waste to the process wastewater treatment system is prohibited.
7. As of **1 November 2005**, the discharge of wastewater to other than the land application area shown on Attachment C-2 is prohibited.
8. Use of the RBC treatment system and landscape disposal area is prohibited after **1 November 2005**.

B. Discharge Specifications:

1. The monthly average discharge into the wastewater pond system shall not exceed 1,830 gpd. Higher monthly average flows are allowed during the crush season (generally mid-September through mid-November), as long as the total yearly flow does not exceed 762,238 gallons.
2. Disposal of effluent shall be confined to the wastewater ponds and the land application area.
3. Neither the treatment nor the discharge shall cause a condition of nuisance or pollution as defined by the CWC, §13050.
4. The discharge shall not cause the degradation of any water supply.
5. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
6. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned by the Discharger.

7. As a means of discerning compliance with Discharge Specification No. 6, the dissolved oxygen content in the upper zone (one foot) of the wastewater ponds shall not be less than 1.0 mg/L.
8. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.
9. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
10. The wastewater treatment system and land application area(s) shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
11. No physical connection shall exist between wastewater piping and any domestic water supply or other domestic/industrial supply well without an air gap or approved reduced pressure device.
12. The wastewater treatment, storage, and land application system shall have sufficient capacity to accommodate wastewater flow and seasonal precipitation. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
13. The freeboard in the aeration ponds shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.
14. By **1 November** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 12 and No. 13.
15. The ponds shall be managed to prevent the breeding of mosquitoes. In particular,
 - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the waste surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and/or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
16. The August 2004 Salinity Reduction Workplan shall be immediately implemented.

C. Effluent Limits:

1. Hydraulic loading of wastewater and supplemental fresh water to the land application area shall be at rates designed to minimize percolation below the evaporative zone, except as

needed to promote surface soil chemistry that is consistent with sustainable agricultural land uses.

2. Wastewater discharged from the aerated ponds to the eight acre land application area shall not exceed the following monthly average effluent limits, or any lower limits necessary to comply with the Groundwater Limitations:

| <u>Constituent</u> | <u>Units</u> | <u>Concentration</u> |
|------------------------|--------------|----------------------|
| BOD | mg/L | 425 |
| Total Dissolved Solids | mg/L | 1,300 |
| Total Nitrogen | mg/L | 45 |

3. The wastewater discharged to the land application area shall not have a pH of less than 6.5 or greater than 8.4.

D. Land Application Area Requirements:

1. The discharge shall be distributed uniformly on adequate acreage in compliance with the Discharge Specifications and Effluent Limitations.
2. Crops (or grasses) shall be grown on the land application area. Crops shall be selected based on nutrient uptake capacity, tolerance to high soil moisture conditions, and consumptive use of water and irrigation requirements. Cropping activities shall be sufficient to take up all the nitrogen applied. Grasses shall be harvested and removed from the application area.
3. Discharge of process wastewater, including runoff, spray or droplets from the irrigation system, shall not occur outside the boundaries of the land application area.
4. Hydraulic loading of process wastewater and irrigation water shall be at reasonable agronomic rates designed to minimize the percolation of process wastewater and irrigation water below the root zone (i.e., deep percolation).
5. Wastewater conveyance lines shall be clearly marked as such. Reclaimed process wastewater controllers, valves, etc. shall be affixed with reclaimed water warning signs, and these and quick couplers and sprinkler heads shall be of a type, or secured in such a manner, that permits operation by authorized personnel only.
6. Irrigation systems shall be labeled as containing reclaimed wastewater. If wastewater and irrigation water utilize the same pipeline, then backflow prevention devices shall be installed to protect the potable water supply.
7. Public contact with wastewater shall be precluded through such means as fences, signs, and irrigation management practices. Signs with proper wording of sufficient size shall be placed at areas of access and around the perimeter of the land application area(s) to alert the public of the use of wastewater.

8. The land application area shall be managed to prevent breeding of mosquitoes.
9. A 50-foot buffer zone shall be maintained between any watercourse and the wetted area produced during irrigation used for process wastewater effluent disposal.
10. A 100-foot buffer zone shall be maintained between any spring, domestic well or irrigation well and the wetted area produced during irrigation used for process wastewater effluent disposal.
11. Discharges to land application area shall be managed to minimize both erosion and runoff from the irrigated area.
12. The resulting effect of the wastewater discharge on the soil pH shall not exceed the buffering capacity of the soil profile.

E. Solids/Sludge Disposal Requirements:

1. Collected screenings, sludge, and other solids removed from winery wastewater shall be disposed of in a manner that is consistent with Title 27, Division 2, Subdivision 1 of the CCR and approved by the Executive Officer.
2. Winery sludge and other solids shall be removed from the process equipment, sumps, etc. as needed to ensure optimal operation and adequate hydraulic capacity. Winery solids drying operations, if any, shall be designed and operated to prevent leachate generation.
3. Any proposed change in solids use or disposal practice from a previously approved practice shall be reported to the Executive Officer at least 90 days in advance of the change.

F. Groundwater Limitations:

Release of waste constituents from any system component associated with the wastewater treatment facility shall not cause groundwater under and beyond that system component (as determined by an approved well monitoring network) to contain any constituents in concentrations greater than ambient background conditions, and shall not cause or contribute to the violation of any Basin Plan narrative or numeric water quality objective.

G. Provisions:

1. 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 §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.

2. All of the following reports shall be submitted pursuant to §13267 of the CWC, and shall be prepared by a California registered professional as described in Provision G.1.
 - a. By **30 November 2005**, the Discharger shall submit a *Construction Report* certifying that the new wastewater system has been constructed, inspected, and tested in accordance with the CQA plan and this Order. The report shall show the treatment plant and disposal area layout, and shall clearly document any significant deviation from the system design as presented in the RWD. The report shall also certify that the existing RBC has been decommissioned.
 - b. By **1 January 2006**, the Discharger shall submit and implement an *Operation and Management Plan* (O&M Plan) that addresses operation of the wastewater treatment and disposal facility. At a minimum, the O&M Plan will describe (a) the daily operation and maintenance of the treatment system, (b) the practices used to treat the wastewater within limits specified in this Order, (c) the locations of the land application areas, and procedures used for the disposal of wastewater to these areas to prevent excessive BOD, nitrogen, and salt over the loading limits specified in this Order, (d) the locations of flow and effluent sampling points, (e) quality control sampling procedures necessary to obtain representative samples, (f) practices used to maintain the land application area(s), and (g) the locations of the solid waste disposal areas, methods of disposal, and the daily practices associated with the disposal of the solid waste. A copy of the O&M Plan shall be kept at the facility for reference by operating personnel and they shall be familiar with its contents.
 - c. By **1 February 2006**, the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan*. The workplan shall describe the proposed installation of groundwater monitoring wells around the wastewater ponds and the disposal area(s) to adequately characterize the groundwater quality upgradient and downgradient of the wastewater ponds and disposal area(s). Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost aquifer and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment D, which is attached hereto and made part of this Order by reference.
 - d. By **1 July 2006**, the Discharger shall submit a *Groundwater Monitoring Well Installation Report* that describes the installation of groundwater monitoring wells and contains the items found in the second section of Attachment D.
 - e. By **1 July 2006**, the Discharger shall submit a *Salinity Reduction Report of Results* that quantifies the mass and concentration of salt constituents discharged in the effluent. The report shall compare concentrations both before and after the August 2004 Salinity Reduction Workplan was implemented. If measurable difference has not been achieved, the report shall discuss the reasons why there has been no decrease and shall propose additional salinity reduction measures.

- f. The Discharger shall submit the following technical reports by the required dates to address the groundwater degradation described in Finding Nos. 39 and 40:
 - a. By **1 February 2007**, an *Engineering Feasibility Study* (EFS) that assesses the feasibility and effectiveness of various remedial options to return impacted groundwater to background levels as measured in the background monitoring well.
 - b. By **1 July 2007**, a *Corrective Action Plan* (CAP) to implement the best remedy selected from the EFS to return impacted groundwater to background levels as measured in background monitoring well(s). The CAP shall be implemented no later than **1 September 2007**.
 - g. By **1 December 2008**, the Discharger shall submit a *Background Groundwater Quality Study Report* for the new wells installed around the aerated ponds and the disposal field. For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program, the report shall present a summary of monitoring data, a calculation of the concentration in background monitoring well(s), and a comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events.
3. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2005-0159, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
4. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
5. In the event of any change in control or ownership of the facility or land disposal areas, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.
6. The Discharger shall submit to the Regional Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then

the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.

7. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to §313 of the "Emergency Planning and Community Right to Know Act of 1986."
8. The Discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.
9. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.
10. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board orders, the imposition of civil liability, revision or rescission of this Order, or referral to the Attorney General.
11. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
12. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, 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 21 October 2005.

THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
MONITORING AND REPORTING PROGRAM NO. R5-2005-0159

FOR
JERRY G. BRASSFIELD
BRASSFIELD ESTATE WINERY
LAKE COUNTY

This monitoring and reporting program (MRP) incorporates requirements for monitoring of the process wastewater, ponds, land application area, solids, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Process wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field test instruments (such as pH and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field calibrated prior to each use;
3. Instruments are serviced and/or calibrated at the frequency recommended by the manufacturer; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

INFLUENT MONITORING

Process wastewater samples shall be collected prior to entering the wastewater treatment ponds. Influent monitoring for the process wastewater system shall include at least the following:

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|-------------------------------|--------------|-----------------------|---------------------------|----------------------------|
| Flow | Gallons | Metered | Continuous ¹ | Monthly |
| BOD ₅ ² | mg/L | Grab | Monthly | Monthly |

¹Continuous monitoring requires daily meter reading or automated data collection.

²Five-day, 20° Celsius Biochemical Oxygen Demand.

POND MONITORING

Samples shall be collected from an established sampling station located in an area that will provide a sample representative of the water in each storage pond. Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet. Monitoring of each pond shall include, at a minimum, the following:

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|-------------------------------|--------------|-----------------------|---------------------------|----------------------------|
| Dissolved Oxygen ¹ | mg/L | Grab | Weekly | Monthly |
| Freeboard | feet (±0.1) | Measurement | Weekly | Monthly |
| Odors | -- | Observation | Weekly | Monthly |
| Berm Seepage ² | NA | Observation | Weekly | Monthly |

¹ Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.

² Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe of the levees. If surfacing water is found, then a sample shall be collected and tested for total dissolved solids

EFFLUENT MONITORING

Effluent samples shall be collected from the effluent storage tanks prior to discharge to the land application area, and shall be representative of the volume and nature of the discharge. Effluent monitoring shall include at a minimum the following:

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|-------------------------------|--------------|-----------------------|---------------------------|----------------------------|
| pH | pH units | Grab | Weekly | Monthly |
| Specific Conductivity | µmhos/cm | Grab | Monthly | Monthly |
| BOD ₅ ¹ | mg/L | Grab | Monthly | Monthly |
| Nitrates as Nitrogen | mg/L | Grab | Monthly | Monthly |
| Total Kjeldahl Nitrogen | mg/L | Grab | Monthly | Monthly |
| Total Dissolved Solids | mg/L | Grab | Monthly | Monthly |
| Sulfate | mg/L | Grab | Monthly | Monthly |

¹ Five-day, 20° Celsius Biochemical Oxygen Demand.

LEACHATE COLLECTION AND RECOVERY SYSTEM MONITORING

The Leachate Collection and Recovery System (LCRS) sump shall be inspected monthly for leachate. Upon detection of leachate in a previously dry sump, 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 sump shall be sampled and analyzed for the following:

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|-------------------------------|--------------|-----------------------|---------------------------|----------------------------|
| Flow | Gallons | Calculated | Daily | Monthly |
| pH | pH units | Grab | Weekly | Monthly |
| Specific Conductivity | µmhos/cm | Grab | Monthly | Monthly |
| BOD ₅ ¹ | mg/L | Grab | Monthly | Monthly |
| Nitrates as Nitrogen | mg/L | Grab | Monthly | Monthly |
| Total Kjeldahl | mg/L | Grab | Monthly | Monthly |

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|------------------------|--------------|-----------------------|---------------------------|----------------------------|
| Nitrogen | | | | |
| Total Dissolved Solids | mg/L | Grab | Monthly | Monthly |
| Sulfate | mg/L | Grab | Monthly | Monthly |

¹ Five-day, 20° Celsius Biochemical Oxygen Demand.

LAND APPLICATION AREA MONITORING

The Discharger shall conduct monitoring of process wastewater discharged for irrigation to the land application area. Monitoring shall be conducted **daily** during operation and the results shall be included in the monthly monitoring report. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Loading rates for the land application areas shall be calculated. Monitoring of the land application area shall include the following:

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|---------------------------------------|-----------------------------|-------------------------|---------------------------|----------------------------|
| Flow | Gallons | Continuous ¹ | Daily | Monthly |
| Local Rainfall | inches | Measurement | Daily | Monthly |
| Acreage Applied ² | Acres | Calculated | Daily | Monthly |
| Application Rate | gal/acre/day | Calculated | Daily | Monthly |
| Total Nitrogen Load Rate ³ | lbs/acre/month ⁴ | Calculated | Monthly | Monthly |
| Total Dissolved Solids Loading Rate | lbs/acre/month ⁴ | Calculated | Monthly | Monthly |
| BOD ₅ Loading Rate | lbs/acre/day ⁵ | Calculated | Monthly | Monthly |

¹Continuous monitoring requires daily meter reading or automated data collection.

²Land Application Area(s) in use shall be identified by name or number and the acreage provided. If a portion of an area is used, then the acreage shall be estimated.

³Total nitrogen applied from all sources, including fertilizers and supplemental irrigation water if used.

⁴Report monthly total and cumulative annual to date.

⁵Report 7-day average and maximum daily loading.

The Discharger shall also visually monitor the land application area **daily** during any period of process wastewater discharge. Observations shall include presence of solids buildup, standing water, observed runoff, presence of nuisance such as odors, vectors or insects, and other relevant physical conditions. Notes on disposal area conditions shall be recorded, and submitted in the regular monitoring reports.

SOLIDS MONITORING

The Discharger shall record and report monthly the quantity, disposal location, and method of disposal of solids disposed of during the processing season, as well as during the off-season, if applicable. If solid waste is shipped offsite, then a description of the quantity of each type of waste shipped offsite and the

location of the disposal area(s) shall be included with the report.

GROUNDWATER MONITORING

This monitoring program applies to the four wells shown of Attachment C-1 of the WDRs and the wells that must be installed around the aerated pond and new disposal field. Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods and water table elevations shall be calculated and used to determine groundwater gradient and direction of flow.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring shall include, at a minimum, the following:

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling and Reporting Frequency</u> |
|------------------------------------|--------------|-----------------------|---|
| Depth to Groundwater | 0.01 feet | Measurement | Quarterly |
| Groundwater Elevation ¹ | 0.01 feet | Calculated | Quarterly |
| Gradient | feet/feet | Calculated | Quarterly |
| Gradient Direction | degrees | Calculated | Quarterly |
| pH | std. | Grab | Quarterly |
| Nitrate as Nitrogen | mg/L | Grab | Quarterly |
| Total Kjeldahl Nitrogen | mg/L | Grab | Quarterly |
| Total Dissolved Solids | mg/L | Grab | Quarterly |
| Volatile Dissolved Solids | mg/L | Grab | Quarterly |
| Sulfate | mg/L | Grab | Quarterly |
| Standard Minerals ² | mg/L | Grab | Annually |

¹Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well.

²Standard Minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, total alkalinity (including alkalinity series), and hardness.

REPORTING

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

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. Monthly Monitoring Reports

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

1. Results of influent, pond, effluent, LCRS, land application area, and solids disposal monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. If requested by staff, copies of laboratory analytical report(s);
4. A calibration log verifying calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program;
5. The total pounds of total dissolved solids (year to date) that have been applied to the land application area, as calculated from the sum of the monthly loadings;
6. The total pounds of nitrogen in fertilizer applied to the land application area for the month; and
7. The total wastewater flow (year to date).

B. Quarterly Report

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by May 1st) and may be combined with the monthly report. The Quarterly Report shall include the following:

1. Results of the groundwater monitoring;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;

6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
8. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An Annual Report shall be prepared as the December monthly monitoring report. The Annual Report will include all monitoring data required in the monthly and quarterly schedule. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. The contents of the regular monthly and quarterly monitoring report for the last month and quarter of the year, respectively;
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. Results of the annual effluent and groundwater monitoring;
4. Tabular and graphical summaries of historical monthly total loading rates for water (hydraulic loading in gallons and inches), BOD, total nitrogen, and total dissolved solids;
5. The total wastewater flow for the year;
6. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control and groundwater protection, including consideration of application management practices (i.e.: waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), soil profile monitoring data and groundwater monitoring data;
7. A summary of the quantity of solid waste (lees, stems, pomace, etc) generated and disposed of both on and off the site;
8. An evaluation of the groundwater quality beneath the ponds and the land application area;
9. Estimated monthly flows for the next calendar year;
10. A discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements; and
11. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

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.

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

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____ 21 October 2005
(Date)

GJC:21-Oct-05

INFORMATION SHEET

ORDER NO. R5-2005-0159
JERRY G. BRASSFIELD
BRASSFIELD ESTATE WINERY
LAKE COUNTY

Jerry G. Brassfield (Discharger) owns and operates Brassfield Estate Winery, located at the western end of High Valley, a few miles north of Clear Lake. The winery will process up to 80,000 cases of wine for export and local sale. The winery consists of a 6,000 square foot roofed warehouse and a 6,000 square foot open area for the processing operations.

Wastewater was previously treated using a Rotating Biological Contactor (RBC) with disposal to a landscaped area. The Discharger now wishes to change the treatment and disposal method, as described below.

Wastewater generated from winery processing activities (process/equipment cleaning, barrel washing and washdown operations) will be collected in a series of floor drains both at the crush pad and inside the winery building. The wastewater will gravity flow to an influent pump station where it will be pumped through a force main to a selector tank for sludge bulking control. From this tank, the wastewater will be pumped to either Aeration Pond No. 1 or No. 2. Each of the two aeration ponds will be constructed with two individual layers of 40-mil geocomposite clay liner (GCL) underlain with a leachate collection system between the two GCL layers for leak detection purposes. A 4-inch thick concrete layer will overlie the liner and act as a wear surface to protect the liner from maintenance operations and possible scour from the mechanical aerators. From the ponds, the wastewater will then flow through a clarifier and into storage tanks and a pumping system where supplemental water will be added prior to being discharged to an 8-acre land application area. Activated sludge from the clarifier will either be directly pumped to the selector tank and then to the aeration ponds, or into two sludge drying constructed with a 40 mil high density polyethylene (HDPE) liner with a drain pipe connected to the aeration ponds. This Order requires the Discharger to submit Construction Quality Assurance (CQA) Certification Report signed by a registered professional to document that the aeration ponds were constructed in accordance with the previously submitted CQA plan and are of high quality to provide maximum protection of water quality.

The Discharger estimates a maximum daily process wastewater flow rate of 6,000 gallons per day (gpd) during the peak grape processing period and approximately 1,830 gpd during the off-season. This Order allows for a monthly average flow of 1,830 gpd with higher monthly average flows allowed during the crush season (generally mid-September through mid-November), as long as the total yearly flow does not exceed 762,238 gallons.

Sanitary/domestic wastewater is collected separately from the process wastewater using an on-site sewage disposal system which is regulated by Lake County Environmental Health Department.

The solid/semi-solid wastes such as pomace (skins, seeds, pulp, stems, etc. resulting from the grape crush) is placed into plastic tubs and then spread over the adjacent 80 acre vineyard. The composted waste material is then disced into the soil during spring soil preparation.

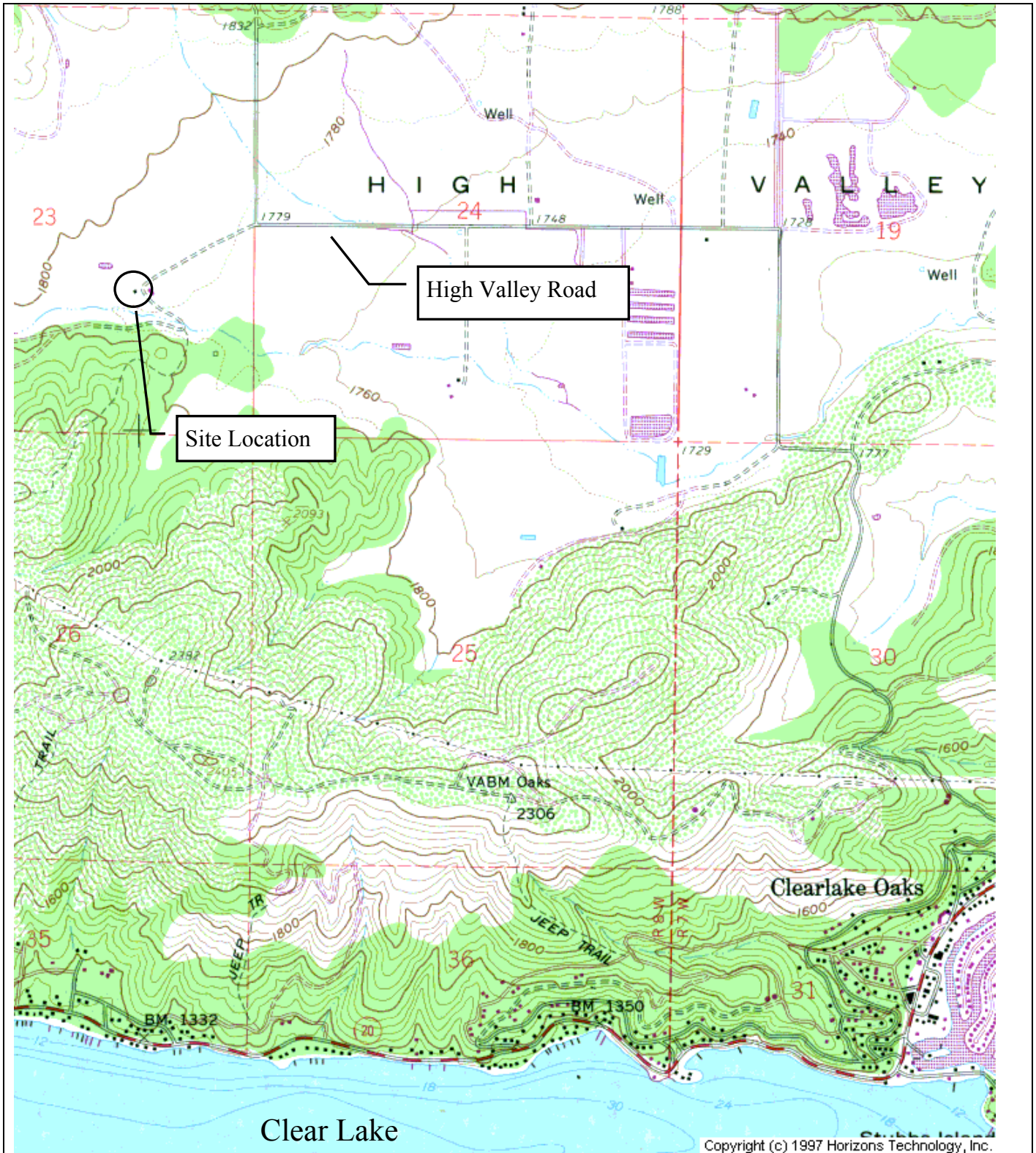
This Order establishes effluent limits for wastewater discharged to the land application area based on background groundwater quality, the treatment capability of the wastewater system, the amount of land

that will be irrigated, and the Groundwater Limitation, which does not allow degradation of the groundwater. The effluent limits are specific for this particular site and operating conditions. This Order also requires an extensive monitoring and reporting program, which includes the process wastewater, ponds, land application area, leachate collection and recovery system, solids, and groundwater. The Discharger is also required to evaluate the groundwater degradation caused by its previous wastewater treatment and disposal system and to propose remedial actions to return impacted groundwater to background groundwater quality.

Surface water flows into two drainage channels, one along the south west side of the property which drains into Schindler Creek, and another channel along the northwest side of the property which drains into the main channel below the property. Both these channels drain into Clear Lake.

GJC:~~9-Nov-05~~~~25-Oct-05~~

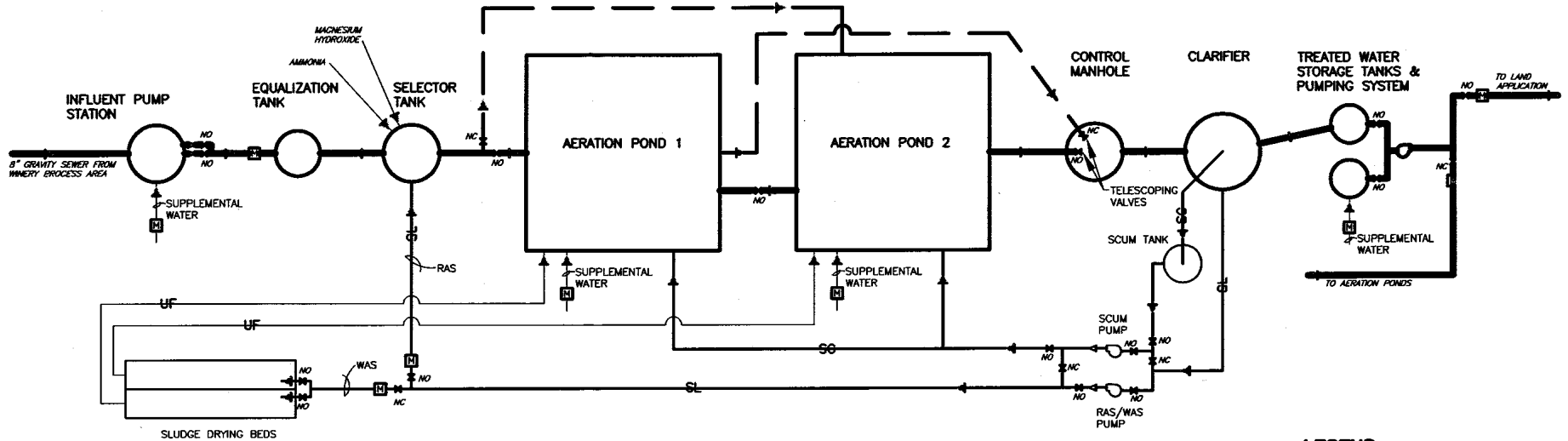
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Drawing Reference:
 U.S.G.S
 TOPOGRAPHIC MAP
 7.5 MINUTE QUAD
 Photorevised 1975

SITE LOCATION MAP
 Brassfield Estates Winery
 Clearlake Oaks Quadrangle
 Lake County
 Section 23 of T14N, R8W

approx. scale
 1 in. = 1,800 ft.



SCHMATIC

LEGEND

- PRIMARY FLOW PATH
- - -** ALTERNATE FLOW PATH
- SL —** SLUDGE FLOW PATH
- SG —** SCUM FLOW PATH
- NO —** NORMALLY OPEN
- NC —** NORMALLY CLOSED
- UF —** UNDERFLOW
- V —** VALVE
- C —** CHECK VALVE
- FM —** FLOW METER
- P —** PUMP

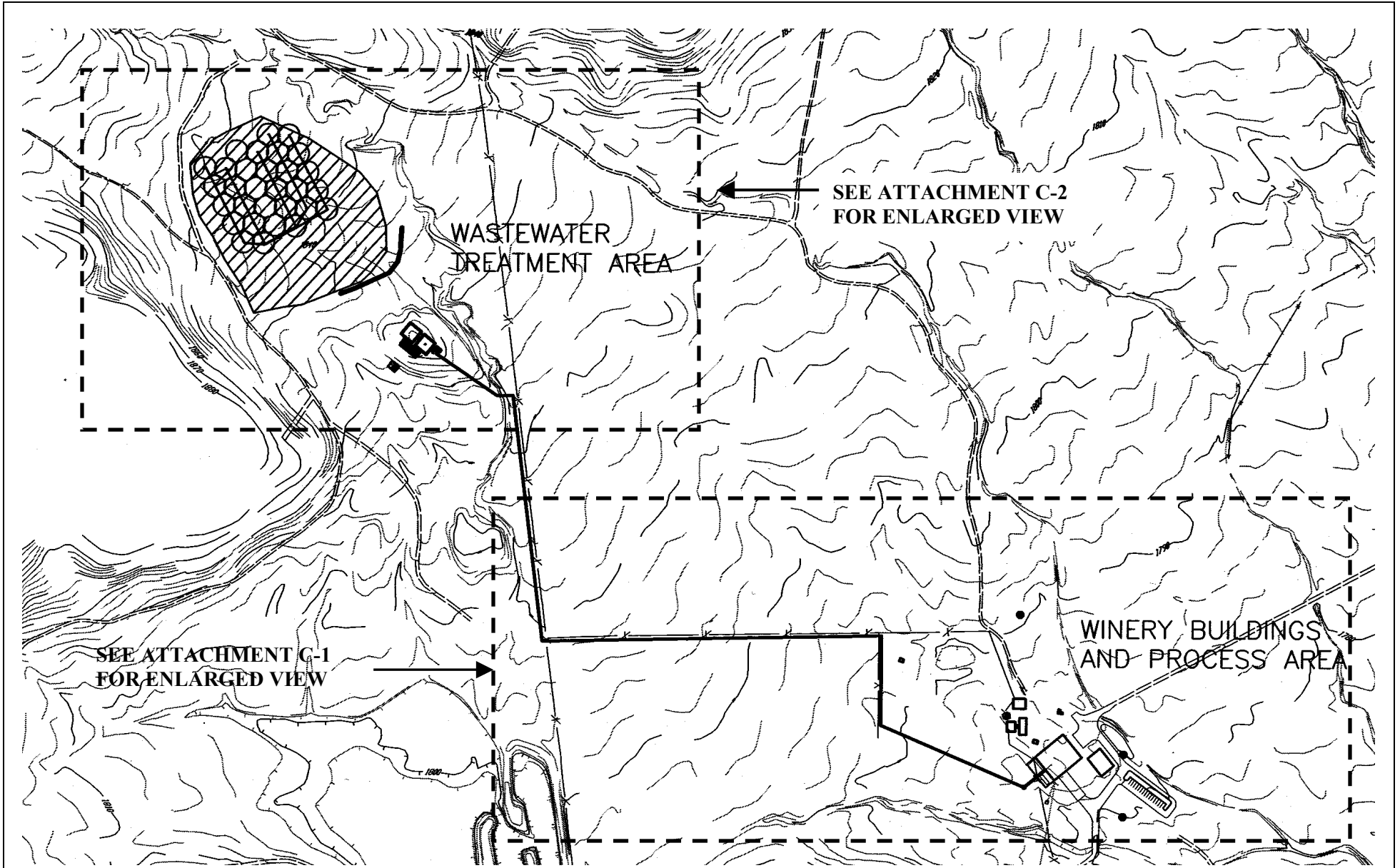
DRAWING REFERENCE:
Haling & Associates

WASTEWATER TREATMENT SYSTEM SCHEMATIC

BRASSFIELD ESTATE WINERY
LAKE COUNTY

ORDER NO. R5-2005-0159

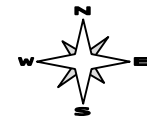
ATTACHMENT B

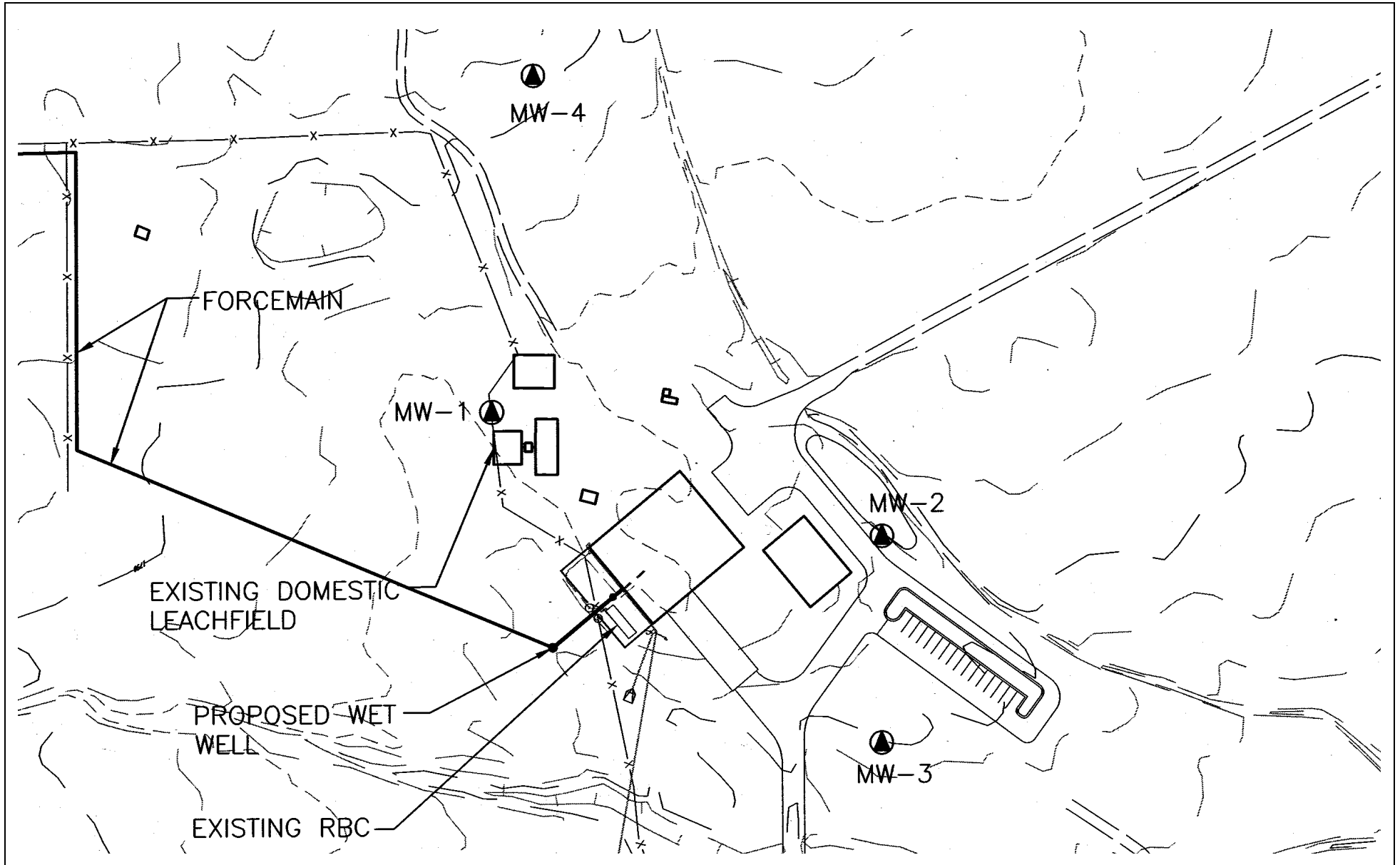


DRAWING REFERENCE:

Haling & Associates
Approximate Scale
1 inch = 440 feet

**SITE PLAN
BRASSFIELD ESTATE WINERY
LAKE COUNTY**

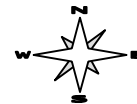


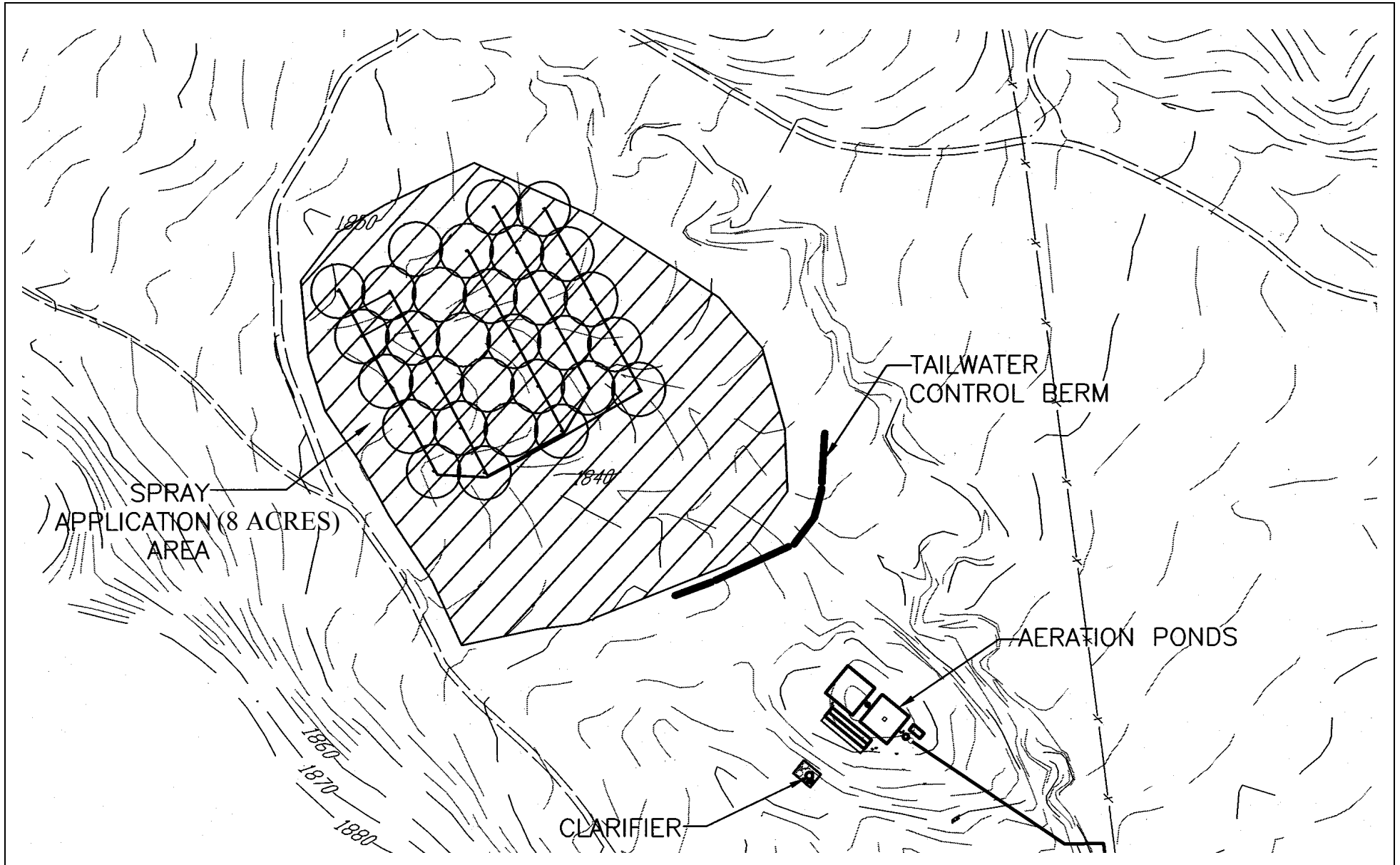


DRAWING REFERENCE:

Haling & Associates
Approximate Scale
1 inch = 175 feet

SITE PLAN (Detailed)
BRASSFIELD ESTATE WINERY
LAKE COUNTY





DRAWING REFERENCE:

Haling & Associates
Approximate Scale
1 inch = 175 feet

SITE PLAN (Detailed)
BRASSFIELD ESTATE WINERY
LAKE COUNTY





California Regional Water Quality Control Board Central Valley Region



Alan C. Lloyd, Ph.D.
Agency Secretary

Robert Schneider, Chair

Arnold Schwarzenegger
Governor

Sacramento Main Office
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Phone (916) 464-3291 Fax (916) 464-4780
Internet Address: <http://www.waterboards.ca.gov/centralvalley>

ORDER NO. R5-2005-0159 ATTACHMENT D REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 - Monitoring Well Installation Workplan and Groundwater Sampling and Analysis Plan

The monitoring well installation workplan shall contain the following minimum information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals (if appropriate) and logging methods

C. Monitoring Well Design (in narrative and/or graphic form):

- Diagram of proposed well construction details
 - Borehole diameter
 - Casing and screen material, diameter, and centralizer spacing (if needed)
 - Type of well caps (bottom cap either screw on or secured with stainless steel screws)
 - Anticipated depth of well, length of well casing, and length and position of perforated interval

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- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

Method of development to be used (i.e., surge, bail, pump, etc.)

Parameters to be monitored during development and record keeping technique

Method of determining when development is complete

Disposal of development water

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):

Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey

Datum for survey measurements

List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. **Appendix: Groundwater Sampling and Analysis Plan (SAP)**

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
 - General sampling techniques
 - Record keeping during sampling (include copies of record keeping logs to be used)
 - QA/QC samples
- Chain of Custody
- Sample handling and transport

SECTION 2 - Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:

Purpose of the well installation project

Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells

Number of monitoring wells installed and copies of County Well Construction Permits

Topographic map showing facility location, roads, surface water bodies

Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

On-site supervision of drilling and well installation activities

Drilling contractor and driller's name

Description of drilling equipment and techniques

Equipment decontamination procedures

Soil sampling intervals and logging methods

Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form):

Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

E. Well Development:

Date(s) and method of development

How well development completion was determined

Volume of water purged from well and method of development water disposal

Field notes from well development should be included in report

F. Well Survey (survey the top rim of the well casing with the cap removed):

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix