ATTACHMENT K

**REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND**

**MONITORING WELL INSTALLATION REPORTS**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

**SAN FRANCISCO BAY REGION**

For the General Waste Discharge Requirements for

Discharges of Winery Waste to Land Within the San Francisco Bay Region

Order No. R2-2017-Xxx

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 Regional Water Board staff approves 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 shall 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[[1]](#footnote-1)**

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

**A. General Information:**

1. Purpose of the well installation project
2. Brief description of local geologic and hydrogeologic conditions
3. Proposed monitoring well locations and rationale for well locations
4. Topographic map showing facility location, roads, and surface water bodies
5. 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:**

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

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

1. Diagram of proposed well construction details that depicts
2. Borehole diameter
3. Casing and screen material, diameter, and centralizer spacing (if needed)
4. Type of well caps (bottom cap either screw on or secured with stainless steel screws)
5. Anticipated depth of well, length of well casing, and length and position of perforated interval
6. Thickness, position and composition of surface seal, sanitary seal, and sand pack
7. Anticipated screen slot size and filter pack

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

1. Method of development to be used (e.g., surge, bail, pump, etc.)
2. Parameters to be monitored during development and record keeping technique
3. Method of determining when development is complete
4. Disposal of development water

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

1. Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
2. Datum for survey measurements
3. List well features to be surveyed (e.g., top of casing, horizontal and vertical coordinates, etc.)

**F. Schedule for Completion of Work**

**G. Appendix: Groundwater Sampling and Analysis Plan**

The Groundwater Sampling and Analysis Plan 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:

1. Equipment to be used during sampling
2. Equipment decontamination procedures
3. Water level measurement procedures
4. Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
5. Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
6. Purge water disposal
7. Analytical methods and required reporting limits
8. Sample containers and preservatives
9. Sampling
10. General sampling techniques
11. Record keeping during sampling (include copies of record keeping logs to be used)
12. QA/QC samples
13. Chain of Custody
14. Sample handling and transport

**SECTION 2 - Monitoring Well Installation Report**

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

1. **General Information:**
2. Purpose of the well installation project
3. Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells
4. Number of monitoring wells installed and copies of County Well Construction Permits
5. Topographic map showing facility location, roads, surface water bodies
6. 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.
7. **Drilling Details** (in narrative and/or graphic form):
8. On-site supervision of drilling and well installation activities
9. Drilling contractor and driller’s name
10. Description of drilling equipment and techniques
11. Equipment decontamination procedures
12. Soil sampling intervals and logging methods
13. Well boring log
14. Well boring number and date drilled
15. Borehole diameter and total depth
16. Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
17. Depth to first encountered groundwater and stabilized groundwater depth
18. Detailed description of soils encountered, using the Unified Soil Classification System
19. **Well Construction Details** (in narrative and/or graphic form):
20. Well construction diagram, including:
21. Monitoring well number and date constructed
22. Casing and screen material, diameter, and centralizer spacing (if needed)
23. Length of well casing, and length and position of perforated interval
24. Thickness, position and composition of surface seal, sanitary seal, and sand pack
25. Type of well caps (bottom cap either screw on or secured with stainless steel screws)
26. **Well Development**:
27. Date(s) and method of development
28. How well development completion was determined
29. Volume of water purged from well and method of development water disposal
30. Field notes from well development should be included in report
31. **Well Survey** (survey the top rim of the well casing with the cap removed):
32. Identify the coordinate system and datum for survey measurements
33. Describe the measuring points (e.g., ground surface, top of casing, etc.)
34. Present the well survey report data in a table
35. Include the Registered Engineer or Licensed Surveyor’s report and field notes in appendix
1. Source: Central Valley Regional Water Quality Control Board Order No. R5-2012-0103. [↑](#footnote-ref-1)