PUBLIC HEALTH DIVISION
Drinking Water Services
Kate Brown, Governor

Oregon Health Authority

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May 9, 2022

Jenny Burger
Yamhill Valley Vineyards
16250 W Oldsville Rd
McMinnville, OR 97128

Re: Wells and Storage (PR#51-2022)
Yamhill Valley Vineyards (PWS ID#95676)
Conditional Approval

Dear Jenny:

Thank you for your submittal to the Oregon Health Authority's Drinking Water Services (DWS) of plan review information for the Wells and Storage for Yamhill Valley Vineyards. On March 28, 2022, our office received images of well heads and pressure tanks. On April 26, 2022, our office received a plan review fee of $825.

Under OAR 333-061-0060(1)(b), submittals must be prepared by a Professional Engineer registered in Oregon, unless exempted by DWS. Note that by utilizing this exemption, the water system takes full responsibility for the project.

The project includes review of a fully constructed new system with three wells, six pressure tanks, two cisterns and a sediment filter. Well #1 is located near the house on the Southeast side of the property. Well #3 is located west of the barn and Well #4 is located next to the warehouse. Water flows from Wells #1, #3, and #4 to a 4000-gal concrete cistern, with two pressure tanks between Well #1 and the cistern. From the 4000-gal cistern, the water flows through two additional pressure tanks to a second 3000-gal cistern. After the 3000-gal cistern are two more pressure vessels and a sediment filter, before entering the piping to the winery and barn with a toilet room.

A regional geologist in our program reviewed the as built wells. He noted the following:

Well #1:

- The well is drilled to a depth of 110 ft. The well is cased and sealed to a depth of 40 ft, ten feet into the low permeability siltstone (shale) bedrock that overlies the aquifer. A perforated liner was installed that helps keep the hole open but doesn't keep water from entering the well through the annular space between the liner and the borehole wall. Therefore, water can enter the well through the uncased portion of the well between 40 and 110 ft below ground.
- This well draws water from a fractured siltstone (shale) aquifer. According to the well log, the fracture/water-bearing zone occurs at a depth of 75 ft and is overlain by 45 ft of unfractured siltstone and 28 ft of silt (clay). The unfractured siltstone and silt act as a confining layer. Water within the aquifer is under pressure, rising 40 ft above the fracture zone to a depth of 35 ft below ground.
- Sensitivity analysis results suggest that well construction does not contribute to overall sensitivity of the well to local land use practices and aquifer characteristics are not highly sensitive to local land use practices.

Well #3

- This well was drilled to a depth of 237 ft. The well is cased and sealed to a depth of 25 ft, sixteen feet into the low permeability siltstone (shale) bedrock that overlies the first water-bearing zone intercepted by the well. A perforated liner was installed that helps keep the hole open, but doesn't keep water from entering the well through the annular space between the liner and the borehole wall. Therefore, water can enter the well through the uncased portion of the well between 25 and 237 ft below ground.
- This well draws water from a fractured siltstone/sandstone aquifer. According to the well log, the first water-bearing fracture occurs at a depth of 71 ft and is overlain by 62 ft of unfractured siltstone. The unfractured siltstone acts as a confining layer. Water within the aquifer is under pressure, rising 46 ft above the first fracture to a depth of 25 ft below ground.
- Sensitivity analysis results suggest that well construction does not contribute to overall sensitivity of the well to local land use practices and the aquifer characteristics are not highly sensitive to local land use practices.

Well #4

- This well was drilled to a depth of 141 ft. The well is cased and sealed to a depth of 18.5 ft, seven and a half feet into the low permeability sandstone bedrock that overlies the water-bearing zone intercepted by the well. This well was later altered (YAMH53729) and a liner with a screen was installed. The annular space between the liner and the borehole wall was sand-packed from 25 to 128 ft below ground level. The liner and sand pack helps keep the hole open but doesn't keep water from entering the

well through the annular space between the liner and the borehole wall. Therefore, water can enter the well through the uncased portion of the well between 25 and 237 ft below ground.

- This well draws water from a fractured siltstone/sandstone aquifer. According to the well log, the first water-bearing zone occurs at a depth of 88 ft and is overlain by 77 ft of unfractured sandstone and 8 ft of silt. The unfractured sandstone and silt act as a confining layer. Water within the aquifer is under pressure, rising 69 ft above the first fracture to a depth of 19 ft below ground.
- Sensitivity analysis results suggest that well construction does not contribute to overall sensitivity of the well to local land use practices and aquifer characteristics are not highly sensitive to local land use practices.

The plans are approved with the following conditions:

Wells #1, #3, & #4:

- Wells must not be located at sites which are prone to flooding. Information must be submitted that demonstrates that the well will not be subjected to flooding. Generally, a flood zone map indicating the location of the well with respect to the 100-year flood level is sufficient.
- Provisions must be made for determining the depth to water surface in the well under pumping and static conditions.
- Piping arrangements must include provisions for pumping the total flow from the well to waste.
- A casing vent with a screened return bend must be provided. If a pitless adapter was installed, the caps are typically vented.
- Coliform bacteria, nitrate and arsenic sample results must be submitted. These samples must be obtained from the well head raw water sample tap.

Wells #3 & #4:

- A method of determining the total output of the well must be provided (typically a flowmeter is used for this purpose).
- A sample tap at the well head must be provided.
- Piping arrangements must include provisions for pumping the total flow from the well to waste.
- A reinforced concrete slab must be poured around the well casing at ground surface. The slab must be sloped to drain away from the casing.

Wells #1 & #4:

- Since the well is drilled in a confined aquifer and located near a road, OAR 333-061-0050(2)(a)(D) applies. This rule allows DWS to waive the setback requirement for a road or parking lot that is located within 100' of a well. In order to approve this setback issue, information must be submitted that demonstrates how the well is "…protected against contamination from surface runoff or hazardous liquids which may be spilled on the roadway and is protected from unauthorized access".

Well #1:

- Please provide a statement that there are no pressure sewer lines or septic drain fields within 50 feet of the well and no gravity sewer lines or septic tanks within 100 feet of the well.
- Unless a pitless adapter is installed, a well house must be provided. If the well house is not a small dog-house style, then it must be provided with light and heat. In all cases it must be lockable.

Well #4:

- A watertight sanitary seal must be provided.

Pressure tanks:

- Bypass piping around the pressure tanks must be provided to permit operation of the system while a tank is being maintained or repaired (schematic or photo showing how this requirement is met would be acceptable).
- All items in contact with potable water must meet NSF Standard 61 or equivalent.

Cisterns:

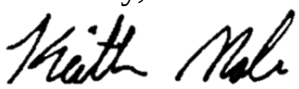
- Concrete reservoirs must be provided with sufficient reinforcing to prevent the formation of cracks, and water stops and dowels must be placed at construction joints. Poured-in-place wall castings must be provided where pipes pass through the concrete.
- Screen vent(s) must be provided above the highest water level. Please provide information on the screen used in the ventilator cap.
- Finished water storage facilities must have watertight roofs.
- Ground-level reservoirs that are located partially below ground must have footing drains discharging to daylight to carry away ground water which may accumulate around the perimeter of the structure.
- The outlet end of the drain/overflow must be fitted with angle-flap valve or equivalent protection and must discharge with an airgap to a watercourse or storm drain capable of accommodating the flow.

- An access manhole must be provided to permit entry to the interior for cleaning and maintenance. When the access manhole is on the roof of the reservoir there must be a curbing around the opening and a lockable watertight cover that overlaps the curbing.

Until we receive verification that the conditions have been met and final approval has been issued, the Wells and Storage are not approved for use. Documentation demonstrating how the above conditions were met should reference Plan Review #51-2022 and can be emailed to me at keith.male@dhsoha.state.or.us.

If you have any questions, please feel free to call me at (503) 939-1322.

Sincerely,



Keith Male, EIT
Regional Engineer
Drinking Water Services

ec: Julie Wray, DWS
Carrie Gentry, PE, OHA/DWS
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Brian Hawkins, Food Safety, Oregon Department of Agriculture
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