

Groundwater Application Review Summary Form

Application # G- 19344

GW Reviewer Dennis Orlowski Date Review Completed: December 29, 2023

Summary of GW Availability and Injury Review:

☐ Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

☒ There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

☐ The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO

December 29, 2023

TO: Application G- 19344

FROM: GW: Dennis Orlowski
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

- ☐ YES The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries
- ☒ NO
-
- ☐ YES Use the Scenic Waterway Condition (Condition 7J)
- ☒ NO
-
- ☐ Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below
-
- ☐ Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in [Enter] Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section
 FROM: Groundwater Section Dennis Orłowski
 Reviewer's Name
 SUBJECT: Application G- 19344 Supersedes review of _____
 Date of Review(s) December 29, 2023

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. This review is based upon available information and agency policies in place at the time of evaluation.*

A. GENERAL INFORMATION: Applicant's Name: Bountiful Farms Nursery County: Marion

A1. Applicant(s) seek(s) 1.5596 cfs from two well(s) in the Willamette Basin,
Mill Creek/Pudding River subbasin

A2. Proposed use Nursery (88.94 acres) Seasonality: Year round

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

POA Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	MARI 1599	1	Alluvium	1.5596	T5S/R1W-6 NW-NE	775' S, 1770' W of NE cor S6
2	MARI 70617	2	Alluvium	1.5596	T5S/R1W-6 NW-NE	1040' S, 2230' W of NE cor S6

* Alluvium, CRB, Bedrock

POA Well	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Drawdown (ft)	Test Type
1	160	0-100	0-160	--	133-142	750	103	Pump
2	327.5	0-37	2-267, 301-327.5	--	270-301	1000	149	Pump

POA Well	Land Surface Elevation at Well (ft amsl)	Depth of First Water (ft bls)	SWL (ft bls)	SWL Date	Reference Level (ft bls)	Reference Level Date
1	180	112	22	12/01/1972		
2	183	133.50	98	9/30/2022		

Use data from application for proposed wells.

A4. **Comments:** The proposed POA/POU area is located about 1.5 to 2 miles north-northeast of the City of Woodburn in the French Prairie region.

One of the proposed POA, MARI 1599 ("Well 1"), is also an authorized POA for certificate 47838, which is for seasonal irrigation (March 1 – October 31) of 62.3 acres at a maximum authorized pumping rate of 0.78 cfs.

The other proposed POA, MARI 70617 ("Well 2"), was recently proposed to be added as an APOA to certificate 47838. The groundwater technical review for the corresponding transfer application T-14137 was completed on 6/22/2023, and transfer T-14137 is currently being processed by OWRD. For this review it was assumed that T-14137 would be approved, and thus the maximum instantaneous pumping rate for both POA would be 2.3396 cfs (being the sum of 1.5596 cfs for this application and 0.78 cfs for certificate 47838).

A5. ☒ **Provisions of the** Willamette Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water ☐ **are**, or ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)

Comments: Both proposed POA obtain groundwater from a confined aquifer, so the pertinent basin rules (OAR 690-520-0240) do not apply.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: _____
 Comments: Not applicable.

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

- a. ☐ is over appropriated, ☒ is not over appropriated, or ☐ cannot be determined to be over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b. ☐ will not or ☐ will likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
- c. ☐ will not or ☐ will likely to be available within the capacity of the groundwater resource; or
- d. ☒ will, if properly conditioned, avoid injury to existing groundwater rights or to the groundwater resource:
 - i. ☒ The permit should contain condition #(s) Medium water-use reporting; 7C (7-yr measurements);
 - ii. ☒ The permit should be conditioned as indicated in item 2 below.
 - iii. ☐ The permit should contain special condition(s) as indicated in item 3 below;

- B2.
- a. ☐ **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;
 - b. ☐ **Condition** to allow groundwater production from no shallower than _____ ft. below land surface;
 - c. ☒ **Condition** to allow groundwater production only from the alluvial groundwater reservoir ~~between approximately~~ _____ ft. and _____ ft. below land surface;
 - d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Groundwater availability remarks:** Both proposed POA, MARI 1599 and MARI 70617, obtain groundwater from confined water-bearing sand and gravel deposits of the Willamette Aquifer system. These deposits are overlain by more than 80 ft of low-permeability silts and clays (Willamette Silt) (Conlon and others, 2005; Gannett and Caldwell, 1998; Woodward and others, 1998).

Groundwater level data for several alluvial aquifer wells in the area shows relative long-term stability (see attached hydrograph). One nearby well, MARI 50856, exhibited moderately-declining water levels from ~2018 until ~2021; however, that period coincided with drought conditions in this area, and more recent measurements show a modest recovering trend coincident with the lessening of drought conditions. In this area seasonal fluctuations in alluvial aquifer groundwater levels can be moderately high, on the order of 10-15 ft, so there is the potential for seasonal pumping interference.

Well yields reported for each proposed POA range from about 500 to 1000 gpm (~1.1 to 2.2 cfs). While a single well might not be able to sustainably maintain the full combined rate possibly authorized for these two wells (2.3396 cfs, ~1050 gpm), it is probable that one well could provide most of the allocation, at least for limited periods.

Proposed POA MARI 70617 (“Well 2”) is relatively near to domestic use well MARI 56254, which is about 650 feet away. For the T-14137 groundwater technical review, it was found that pumping of MARI 70617 under the parameters of certificate 47838 (0.78 cfs non-stop for 245 days) would be “...unlikely to deprive MARI 56254 or similar well of water to which it is legally entitled.” With this current application, MARI 70617 could conceivably be pumped at a higher rate (theoretically as much as 2.3396 cfs), which would increase the amount of interference in MARI 56254. However, MARI 56254 is only 131 feet deep, which is relatively quite shallow compared to almost all other wells in the area. Furthermore, MARI 56254 (and all other nearby wells) does not fully penetrate the alluvial aquifer system in this area, which is at least several hundred feet thick (Gannett and Caldwell, 1998). Consequently, injury would not be found for MARI 56254 or other nearby wells that do not fully penetrate the alluvial aquifer system in this area.

These factors indicate that water for the proposed use is not over-appropriated and is likely available within the capacity of the resource, but if a permit is granted the recommended permit conditions should be included to monitor and protect the resource and other groundwater rights in the area.

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Alluvium	☒	☐
2	Alluvium	☒	☐

Basis for aquifer confinement evaluation: The proposed POA, MARI 1599 and MARI 70617, obtain groundwater from sand and gravel deposits of the Willamette Aquifer, which in this area is confined by more than 80 ft of low-permeability silts and clays (Willamette Silt). In the central Willamette Valley, Conlon and others (2005) report that fine-grained deposits (silt and clay) of 'more than 40 ft' thickness typically create confined conditions in the underlying water-bearing sand/gravel deposits. Furthermore, static groundwater levels in both the POA and nearby wells are above the top of water-bearing units within the aquifer. These factors indicate that both proposed POA obtain groundwater from a confined aquifer system.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Mill Creek	~145-165	148-152 ^a	3900	☒	☐	☐	☐	☒
2	1	Mill Creek	~145-165	148-152 ^a	4250	☒	☐	☐	☐	☒
1	2	Senecal Creek	~145-165	152-158 ^a	4100	☒	☐	☐	☐	☒
2	2	Senecal Creek	~145-165	152-158 ^a	3940	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: The range of estimated groundwater elevations in the alluvial aquifer are coincident with or just above the elevations of SW1 and SW2. Furthermore, water table maps in the area indicate that groundwater in the alluvial aquifer system flows towards and discharges into local streams incised in the Willamette Silt (Conlon and others, 2003, 2005; Gannett and Caldwell, 1998). These facts indicate that the alluvial aquifer and local streams are hydraulically connected.

^a Estimated surface water elevations are for perennial reaches within approximately one mile of the two proposed POA, estimated from LIDAR data (Watershed Sciences, 2009).

Water Availability Basin the well(s) are located within: WID ID#: 30200901 Mill Creek > Pudding River – at mouth

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	☐	☐			☐	1.88	☒	<25%	☒
2	1	☐	☐			☐	1.88	☒	<25%	☒
1	2	☐	☐			☐	1.88	☒	<25%	☒
2	2	☐	☐			☐	1.88	☒	<25%	☒

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: C3a: **the requested rate (1.5596 cfs) is greater than one percent (0.0188 cfs) of the 80% natural exceedance flow for SW1 and SW2 (1.88 cfs). Consequently, per OAR 690-009-0040c, the Potential for Substantial Interference (PSI) is assumed.**

Based on previous technical evaluations completed for similar nearby wells (e.g., groundwater reviews for applications G-19001, G-18531), interference with either SW1 or SW2 is not anticipated to exceed 25 percent of the rate of withdrawal within the first 30 days of continuous pumping.

Mill Creek (SW 1) and Senecal Creek (SW 2) are not fully incised through the Willamette Silt in this area. Thus, the depletion of these local streams by proposed POA will be attenuated, *but not eliminated*, by the low vertical hydraulic conductivity (permeability) of the Willamette Silt and other clays and silts that lie between the deeper sands and gravels and the stream beds. Net impacts will be small at the onset of pumping, but will increase with time until a new equilibrium between local recharge and discharge is reached. After that time, surface water depletion is expected to be relatively constant throughout the year.

C3b: not applicable.

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: Not applicable.

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5. ☐ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:
- i. ☐ The permit should contain condition #(s) _____;
 - ii. ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** **If the requested rate were to be reduced to less than 0.0188 cfs, then PSI would no longer be assumed.**

References Used: Application file: G-19344; groundwater review application T-14137.

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005. Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Conlon, T.D., Lee, K.K., and Risley, J.R., 2003. Heat tracing in streams in the central Willamette Basin, Oregon, in Stonestrom, D.A. and Constantz, Jim, eds., Heat as a tool for studying the movement of groundwater near streams: U.S. Geological Survey Circular 1260, chapter 5, p. 29-34.

Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

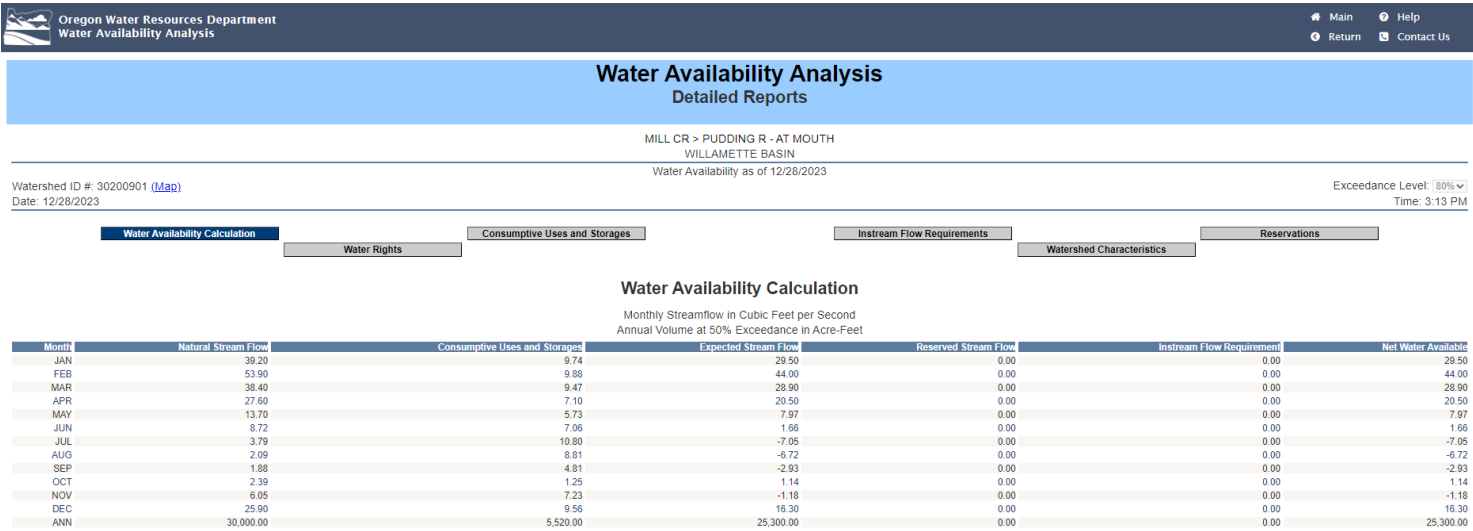
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

**Application G-19344 Bountiful Farms Nursery
T5S, R1W, S6**



Water Availability Table



Water-Level Measurements in Nearby Wells

