

Groundwater Application Review Summary Form

Application # G- 18562 (Re-Review)

GW Reviewer Ben Scandella, Dennis Orlovski

Date Review Completed: 1/23/2019

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).

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 1/23/2019
 FROM: Groundwater Section Benjamin Scandella, Dennis Orlowski
 Reviewer's Name
 SUBJECT: Application G-18562 Supersedes review of 5/17/2018
 Date of Review(s)

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: BRIAN BATESKY; TOMOCHAN TRUFFIERES, LLC
 County: BENTON

- A1. Applicant(s) seek(s) 0.1114 CUBIC FOOT PER SECOND from 1 well(s) in the Willamette Basin,
Muddy Creek subbasin
- A2. Proposed use IRRIGATION (4.87 acres) Seasonality: MARCH 1 THROUGH OCTOBER 31
- A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

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	BENT 55528	1	Bedrock	0.111	14S/6W-26 NE-NW	125' S, 1740' E fr NW cor S 26
2						
3						
4						
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	470	91	32	5/26/2017	125	0-38	2-38	5-125	45-125	30	11	4-hr pump

Use data from application for proposed wells.

- A4. **Comments:** The applicant's well is approximately 17 miles SSW of Corvallis and 1 mile west of Alpine.
- 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: The well produces from a confined aquifer, so the pertinent basin rules (OAR 690-502-0240) 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) 7N (Annual measurement condition), Medium water-use reporting;
 - 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 Bedrock 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:** The subject property is in the Coast Range foothills, which in this area are composed primarily of marine sedimentary rocks. The marine sedimentary rocks are part of a low-yield bedrock aquifer system that generally has low porosity, low permeability, and low well yield. Most of the available pore space in this unit is likely to occur in fractures where groundwater is confined by the low-permeability matrix (Frank, 1976).

The proposed POA (BENT 55528) is completed in the low-yield bedrock aquifer which is overlain by about 31 feet of clay at the well site in section 26, T 14S, R 6W. The water table occurs near the top of the bedrock, whereas water was first encountered during drilling more than 60 feet below that. Reported well yields in section 26 range from 0 to 80 gallons per minute (gpm) but the median yield is 5 gpm (based on 49 water wells with reported yields in the OWRD well log database). A well test in Well #1 on 6/28/2017 reported a steady maximum drawdown of 11 ft over 4 hours of pumping at 30 gpm, so the applicant may be able to realize the requested 50 gpm rate.

A cluster of 7 wells is located approximately 0.4 miles south, and 2 other exempt use wells are located within 0.5 miles. Depending on the hydraulic connectivity of the fractured-rock aquifer system, these wells may be susceptible to interference from the proposed use. Limited water-level data show no evidence of long-term declines (see hydrograph below), but if a permit is granted, the recommended permit conditions should be included to monitor and protect the resource and nearby wells.

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	Bedrock	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: General experience indicates that the low-yield bedrock aquifer is typically confined. Also, the well log indicates first water at 91 feet and a static water level of 31 feet, consistent with confined conditions.

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	Hawley Creek / Hammer Creek	435	300-400	2500	☒	☐	☐	☐	☒
1	2	Larson Creek	435	340-490	3370	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: The water-level elevation in the well is above the elevation of local reaches of SW #1 and falls within the upper range of elevations of SW #2 within 1 mile. The water level in Well #1 was measured in May, which means that it may be relatively high due to seasonal winter recharge and would likely occur at a lower elevation if measured in the late summer or autumn. The coincidence of water levels suggests that the well is hydraulically connected with both streams. The efficiency of the connection is likely to be low because low-permeability confining materials (bedrock matrix and alluvial clays) occur between the river and water-bearing zones in the well. A poorly to moderately efficient connection between the well and the river will result in very low, short term impacts to the river. However, all pumping from the well will ultimately be at the expense of the river.

Water Availability Basin the well(s) are located within: MUDDY CR > MARYS R – AB EVERGREEN CR (WID 30200320.)

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 source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and 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?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	☐	☐	N/A	N/A	☐	6.10	☒	<<25	☒
1	2	☐	☐	N/A	N/A	☐	6.10	☒	<<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 #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Because of the complexity of the fractured-rock hydrologic system, no model is readily available to estimate impacts to the river. However, impacts at 30 days are likely to be much lower than 25% because of the presence of low permeability materials between the well and the stream. **Despite this, the proposed rate is greater than 1% of the 80% Natural Flow, so PSI was found for both SW #1 and SW #2.**

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
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:** This re-review found PSI based on the proposed rate vs. the 80% Natural Flow in the WAB.

References Used:

Application file: G-18562

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.

Frank, F.J., 1976, Ground Water in the Harrisburg-Halsey Area, southern Willamette Valley, Oregon: U.S. Geological Survey Water Supply Paper 2040, 45p.

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, 32p.

OWRD water level database, includes reported water levels, accessed 5/16/2018.

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, 82p.

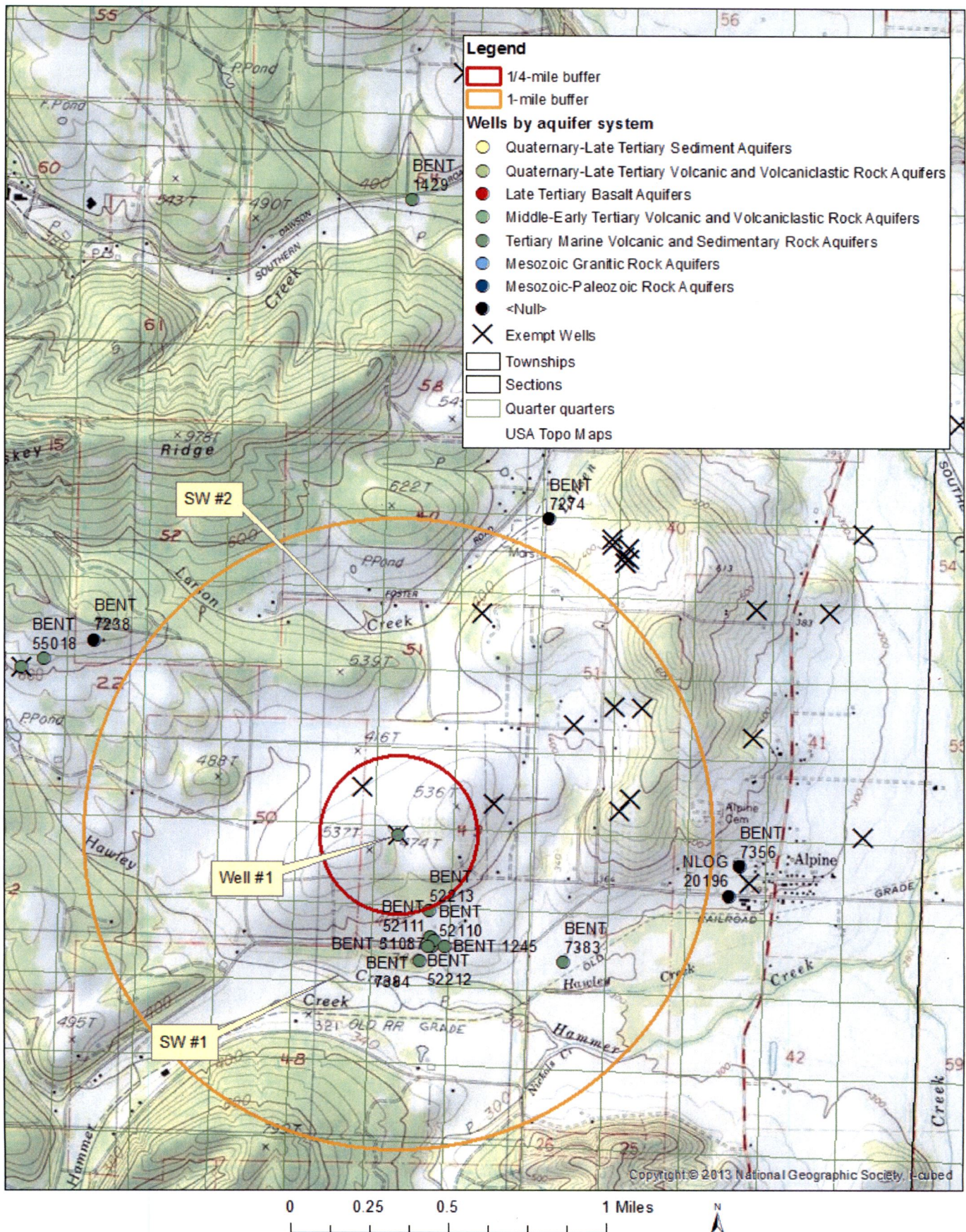
D. WELL CONSTRUCTION, OAR 690-200

- 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.**

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION						
watershed ID #: 30200320		MUDDY CR > MARYS R - AB EVERGREEN CR			Exceedance Level: 80	
Time: 2:33 PM		Basin: WILLAMETTE			Date: 05/15/2018	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	168.00	3.02	165.00	0.00	0.00	165.00
FEB	191.00	2.74	188.00	0.00	0.00	188.00
MAR	166.00	2.45	164.00	0.00	0.00	164.00
APR	88.50	1.77	86.70	0.00	0.00	86.70
MAY	51.00	4.66	46.30	0.00	0.00	46.30
JUN	27.00	8.24	18.80	0.00	0.00	18.80
JUL	13.90	13.80	0.13	0.00	0.00	0.13
AUG	8.30	11.10	-2.77	0.00	0.00	-2.77
SEP	6.10	5.76	0.34	0.00	0.00	0.34
OCT	7.10	0.94	6.16	0.00	0.00	6.16
NOV	19.20	1.05	18.20	0.00	0.00	18.20
DEC	118.00	2.81	115.00	0.00	0.00	115.00
ANN	105,000	3,530	102,000	0	0	102,000

Well location map: G-16246 (Batesky / Tomochan)
T14S / R6W - S26



Water-Level Trends in Nearby Wells

