

Groundwater Review Summary Form

Application # G- 18337

GW Reviewer M. Thoma Date Review Completed: 11.16.16

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).

MEMO

11/16, 2016

FROM: GW: M. Thome
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ YES

☒ NO The source of appropriation is within or above a Scenic waterway

☐ YES

☒ NO Use the Scenic Waterway condition (Condition 7J)

☐ 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 _____ Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

[illegible]

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date November 16, 2016

FROM: Groundwater Section Michael J. Thoma
Reviewer's Name

SUBJECT: Application G- 18337 Supersedes review of _____
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: Gregory Mason County: Lane

A1. Applicant(s) seek(s) 0.05 cfs from 2 well(s) in the Willamette Basin,
_____ subbasin

A2. Proposed use Irrigation and Agricultural (5.34 ac) Seasonality: year-round

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	Proposed	1	Bedrock	0.05	18S/01W-36 NWSW	400'S & 50'E of W ¼ cor S36
2	NLOG	2	Bedrock	0.05	18S/01W-36 NWSW	1000'S & 300'E of W ¼ cor S36
3						
4						

* 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	960	*			**							
2	870	*			**							

Use data from application for proposed wells.

A4. **Comments:** *The applicant's wells are proposed; given the high relief and fractured-bedrock nature of the aquifer *First Water* and SWL cannot be estimated from other wells in the area

****No well log was identified for Well #2 and no well depth was provided for the proposed well; see Section B2 for conditions pertinent to well construction and Section D.**

A5. ☒ **Provisions of the** Willamette (OAR 690-502) 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: _____

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.

Name of administrative area: _____
Comments: _____

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;
 - 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 _____ a single aquifer source _____ 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: There is a single permitted groundwater POA in the area and same aquifer system as the proposed POA and there are no OWRD observation well data within several miles. Therefore, groundwater over-appropriation cannot be determined.

Regarding Special Condition B2c: since the applicant has not provided a depth for the proposed well it should be stated on the permit that the wells be constructed to produce from a single aquifer source within the bedrock aquifer system.

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	Volcanoclastics of W. Cascades	☒	☐
2	Volcanoclastics of W. Cascades	☒	☐

Basis for aquifer confinement evaluation: There is limited well log data available for the area and aquifer system of the proposed POAs but most show SWL above *First Water*, indicating confined aquifer 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	Fall Creek Lake	840*	800-840	2650	☒	☐	☐	☐	☐
2	1	Fall Creek Lake	840*	800-840	2190	☒	☐	☐	☐	☐
1	2	Fall Cr	840*	680-720	5150	☒	☐	☐	☐	☐
2	2	Fall Cr	840*	680-720	4500	☒	☐	☐	☐	☐
1	3	Little Fall Cr	840*	680-720	2450	☒	☐	☐	☐	☐
2	3	Little Fall Cr	840*	680-720	3100	☒	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: GW elevations are estimated to be above SW elevations suggesting groundwater is flowing towards and discharging to surface water. Connection with Little Fall Cr was based on the assumption that the high water level in Fall Cr Lake induces a groundwater gradient across the watershed divide between Fall Cr and Little Fall Cr toward Little Fall Cr and that pumping from the proposed POAs may reduce that gradient and thus reduce groundwater flow.

*Groundwater elevations could not be determined from nearby well logs because of a lack of available data so groundwater elevation was estimated at the elevation where the steep slopes of the applicant's property transitions to more gentle slopes downhill (i.e., groundwater is likely close to the surface near the transition)

Water Availability Basin the well(s) are located within: Fall Cr > M Fk Willamette R – At Mouth (ID# 537)

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	☐	☐	NA	NA	☐	54.9	☐	**	☐
2	1	☐	☐	NA	NA	☐	54.9	☐	**	☐
1	2	☐	☐	NA	NA	☐	54.9	☐	**	☐
2	2	☐	☐	NA	NA	☐	54.9	☐	**	☐
1	3	☐	☐	MF110	10	☐	54.9	☐	**	☐
2	3	☐	☐	MF110	10	☐	54.9	☐	**	☐
		☐	☐			☐		☐		☐

Comments: Instream right MF110 is for Little Fall Cr at its mouth (see Cert. 59547)

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?
			☐			☐		☐		☐

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		No surface water sources beyond 1 mile were evaluated											
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
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:

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:
- ☐ The permit should contain condition #(s) _____;
 - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** The applicant's proposed well would be producing from an aquifer that has been found to be hydraulically connected to surface water at a distance of < 1 mile. However, the reviewer is unable to find a preponderance of evidence that the proposed use will have the Potential for Substantial Interference (PSI) with surface water.

References Used: OWRD Well Log Database – accessed 09/20/2016

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 2 Logid: NLOG

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) No well log or identification of a well log was provided for Well #2; therefore well construction is unknown.

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

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

Water Availability Tables

FALL CR > M FK WILLAMETTE R - AT MOUTH
WILLAMETTE BASIN

Water Availability as of 9/20/2016

Watershed ID #: 537 ([Map](#))

Exceedance Level: 80% ▾

Date: 9/20/2016

Time: 8:41 AM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

Watershed Characteristics

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	500.00	180.00	320.00	0.00	40.00	280.00
FEB	605.00	554.00	51.40	0.00	40.00	11.40
MAR	617.00	497.00	120.00	0.00	40.00	80.10
APR	464.00	427.00	37.10	0.00	40.00	-2.86
MAY	307.00	172.00	135.00	0.00	40.00	95.40
JUN	165.00	2.34	163.00	0.00	40.00	123.00
JUL	86.40	2.47	83.90	0.00	40.00	43.90
AUG	57.60	2.02	55.60	0.00	40.00	15.60
SEP	54.90	1.13	53.80	0.00	40.00	13.80
OCT	63.00	0.34	62.70	0.00	40.00	22.70
NOV	192.00	0.29	192.00	0.00	40.00	152.00
DEC	445.00	0.29	445.00	0.00	40.00	405.00
ANN	392,000.00	109,000.00	282,000.00	0.00	29,000.00	253,000.00

Well Location Map

