

Groundwater Application Review Summary Form

Application # G- 18811 re-review

GW Reviewer Travis Brown Date Review Completed: 5/15/2023

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

May 15, 2023

TO: Application G- 18811 re-review

FROM: GW: Travis Brown
(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 Date 5/15/2023
 FROM: Groundwater Section Travis Brown
Reviewer's Name
 SUBJECT: Application G- 18811 re-review Supersedes review of 8/21/2019
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: Bruce Anderson and Katherine Garvey County: Lane

A1. Applicant(s) seek(s) 0.425 cfs from 1 well(s) in the Willamette Basin,
Upper Willamette subbasin

A2. Proposed use Irrigation (32 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	LANE 6274	2	Alluvium	0.425	15S/04W-30 SESW	2200'S, 20'W of ctr of S 30
2						

* 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	315		12.6	09/30/1968	25	0-6	+6-24.6	-	-	250		

Use data from application for proposed wells.

A4. **Comments:** _____

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) 7N (Annual SWL); 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 _____ 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:** Water levels in the vicinity show relative stability (see attached Hydrograph); therefore, the groundwater resource does not appear to be over appropriated. Water-level reporting conditions in B1(d) are recommended. There are several permitted groundwater rights and registrations within 1 mile of the applicant’s proposed POA but it is unlikely that the applicant’s use would result in injury to these permitted water rights given the moderately high transmissivity and high storativity of the aquifer in the area and its thickness. However, the standard interference conditions in B1(d) are recommended.

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	Older Alluvium of Willamette Valley	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Wells penetrating shallow alluvial deposits in the Willamette Valley typically encounter unconfined aquifer conditions; additionally, well logs for the area generally report similar SWL depths regardless of "First Water" depth implying a single aquifer unit

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	Willamette River	300	300-310	12600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Long Tom River	300	290-310	11760	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: groundwater elevations are similar to surface water elevation implying that water moves freely between surface water and groundwater; there is little relief between the Willamette River watershed and the Long Tom River watershed so there is potential for groundwater impacts from the proposed use to affect the Long Tom River

Water Availability Basin the well(s) are located within: WILLAMETTE R > COLUMBIA R – AB PERIWINKLE CR AT GAGE 14174 also hydraulically connected to Long TOM R > WILLAMETTE R – AB 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 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?
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

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?
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: no surface water sources were evaluated within 1 mile

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 – SW #1: Willamette River													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425
Interference CFS													
(A) = Total Interf.		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
(B) = 80 % Nat. Q		10100	11600	11000	9760	8430	5360	3270	2560	2540	2860	4170	8150
(C) = 1 % Nat. Q		101	116	110	97.4	84.3	53.6	32.7	25.6	25.4	28.6	41.7	81.5
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%

Non-Distributed Wells – SW #2: Long Tom River													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425	0.425
Interference CFS													
(A) = Total Interf.		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
(B) = 80 % Nat. Q		568	697	596	373	215	105	50.6	35.4	32.1	35.3	82.5	364
(C) = 1 % Nat. Q		5.68	6.97	5.96	3.73	2.15	1.05	0.51	0.35	0.32	0.35	0.82	3.64
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%

(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: results of stream-depletion modeling for the proposed use show that impacts to either surface water source will likely be less than 10% of the rate of appropriation.

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:** The applicant’s proposed POAs would be producing from an aquifer that has been found to be hydraulically connected to surface water – specifically the Willamette River and Long Tom River at a distance of over 1 mile. The proposed maximum rate of appropriation is less than 1% of the pertinent adopted perennial streamflow for each month of the WAB. Therefore, per OAR 690-009-0040(4) the POAs are assumed to **not** have the Potential for Substantial Interference

References Used:

Gannett, M. W. and R. R. Caldwell. 1998. *Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington*. USGS Professional Paper 1424-A.

Herrera, N. B., Burns, E. R., and T. D. Conlon. 2014. *Simulation of Groundwater Flow and the Interaction of Groundwater and Surface Water in the Willamette Basin and Central Willamette Subbasin, Oregon*. USGS Scientific Investigations Report 2014-5136.

McCloughry, J. D., T. J. Wiley, M. L. Ferns, and I. P. Madin. 2010. *Digital Geologic Map of the Southern Willamette Valley, Benton, Lane, Linn, Marion, and Polk Counties, Oregon*. Oregon Dept. of Geology and Mineral Industries. Open File Report O-10-13.

O'Conner, J. E., A. Sarna-Wojcicki, K. C. Wozniak, D. J. Polette, and R. J. Fleck. *Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon*. USGS Professional Paper 1620

Oregon Department of Geology and Mineral Industries, *Geologic Map of Oregon*. <http://www.oregongeology.org/geologicmap/>

OWRD Well Log Database – Accessed 08/21/2019

Woodward, D. G., M. W. Gannett, and J. J. Vaccaro. 1998. *Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington*. USGS Professional Paper 1424-B.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 1 Logid: LANE 6274

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:** reported seal depth is 6 ft

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

Water Availability Tables

Water Availability Analysis

Detailed Reports

WILLAMETTE R > COLUMBIA R - AB PERIWINKLE CR AT GAGE 14174
WILLAMETTE BASIN

Water Availability as of 8/21/2019

Watershed ID #: 30200321 ([Map](#)) Exceedance Level:
 Date: 8/21/2019 Time: 12:53 PM

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	10,100.00	1,370.00	8,730.00	0.00	1,750.00	6,980.00
FEB	11,600.00	4,290.00	7,310.00	0.00	1,750.00	5,560.00
MAR	11,000.00	4,560.00	6,440.00	0.00	1,750.00	4,690.00
APR	9,760.00	4,260.00	5,500.00	0.00	1,750.00	3,750.00
MAY	8,430.00	2,560.00	5,870.00	0.00	1,750.00	4,120.00
JUN	5,360.00	856.00	4,500.00	0.00	1,750.00	2,750.00
JUL	3,270.00	665.00	2,600.00	0.00	1,750.00	855.00
AUG	2,560.00	604.00	1,960.00	0.00	1,750.00	206.00
SEP	2,540.00	518.00	2,020.00	0.00	1,750.00	272.00
OCT	2,860.00	269.00	2,590.00	0.00	1,750.00	841.00
NOV	4,170.00	354.00	3,820.00	0.00	1,750.00	2,070.00
DEC	8,150.00	379.00	7,770.00	0.00	1,750.00	6,020.00
ANN	7,460,000.00	1,240,000.00	6,230,000.00	0.00	1,270,000.00	4,960,000.00

Water Availability Analysis

Detailed Reports

LONG TOM R > WILLAMETTE R - AB MOUTH
WILLAMETTE BASIN

Water Availability as of 8/21/2019

Watershed ID #: 114 ([Map](#)) Exceedance Level:
 Date: 8/21/2019 Time: 12:53 PM

Water Availability Calculation
Consumptive Uses and Storages
Instream Flow Requirements
Reservations

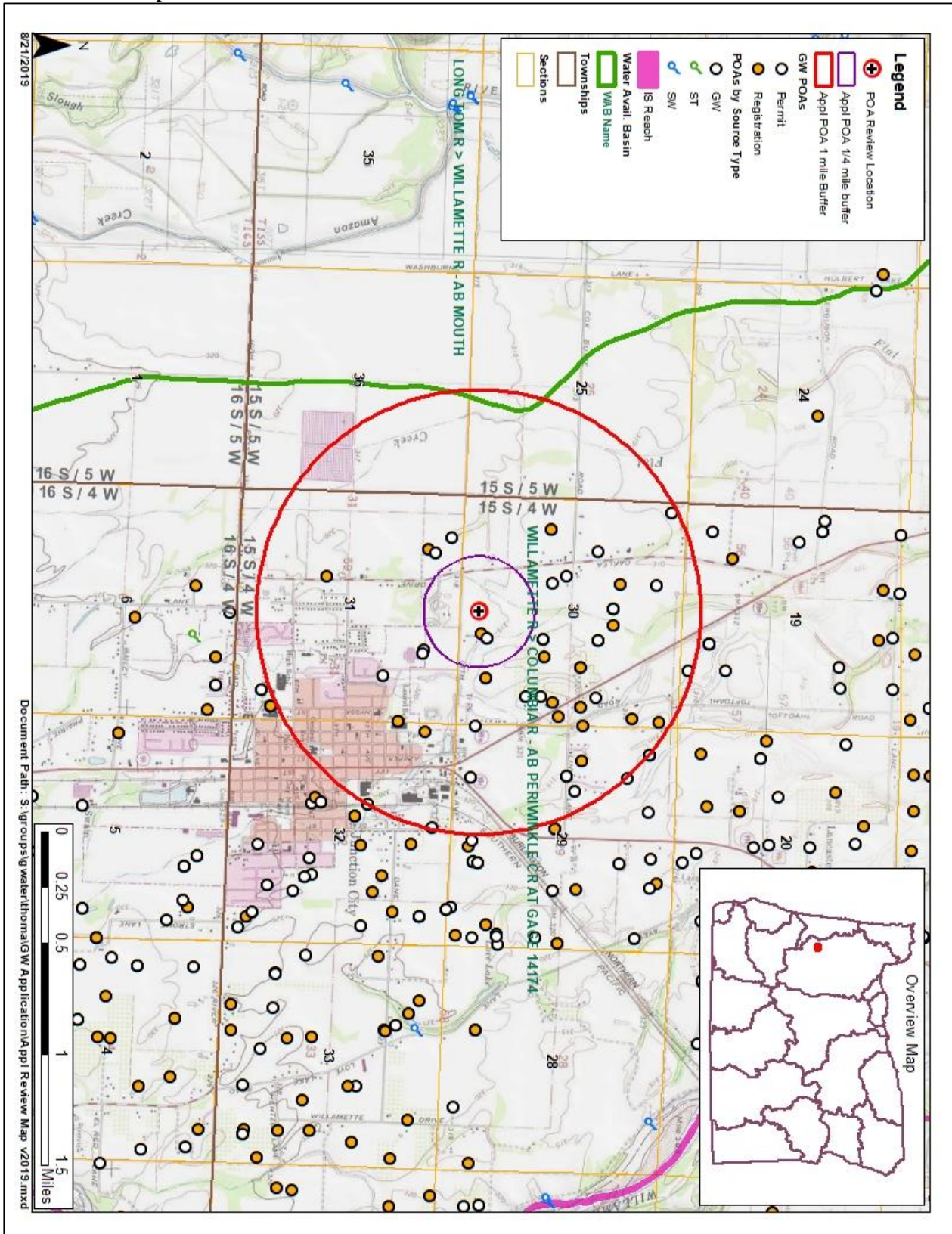
Water Rights
Watershed Characteristics

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	568.00	149.00	419.00	0.00	0.00	419.00
FEB	697.00	389.00	308.00	0.00	0.00	308.00
MAR	596.00	555.00	41.00	0.00	0.00	41.00
APR	373.00	250.00	123.00	0.00	0.00	123.00
MAY	215.00	63.80	151.00	0.00	0.00	151.00
JUN	105.00	29.50	75.50	0.00	0.00	75.50
JUL	50.60	47.80	2.83	0.00	0.00	2.83
AUG	35.40	38.80	-3.36	0.00	0.00	-3.36
SEP	32.10	21.40	10.70	0.00	0.00	10.70
OCT	35.30	5.69	29.60	0.00	0.00	29.60
NOV	82.50	5.45	77.00	0.00	0.00	77.00
DEC	364.00	106.00	258.00	0.00	0.00	258.00
ANN	362,000.00	99,300.00	262,000.00	0.00	0.00	262,000.00

Well Location Map



Hydrograph

Observation Well Data

