

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 2/11/2019
 FROM: Groundwater Section Jen Woody Reviewer's Name
 SUBJECT: Application G- 18730 Supersedes review of 12/21/2018 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: Mitchell Regal County: Yamhill

A1. Applicant(s) seek(s) 0.11 cfs from 2 well(s) in the Willamette Basin,
 _____ subbasin

A2. Proposed use Irrigation of 76.3 acres Seasonality: March 10-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	YAMH 53959	1	Marine Sedimentary Bedrock	0.11	T3S/R5W-16 NW SE	1525' N, 1915' W fr SE cor S 16
2	Proposed	2	Marine Sedimentary Bedrock	0.11	T3S/R5W-16 NW SE	1620' N, 1610' W fr SE cor S 16
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	652	109	73	11/11/2004	182	0-50	0-59	41-182	142-182	11.5	unk	air
2	620	TBD	41*	*	200	0-50	0-100	TBD	TBD	TBD	TBD	TBD

Use data from application for proposed wells.

A4. **Comments:** *Well 2 is proposed with 200 feet total depth; construction details to be determined during drilling.

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, therefore the pertinent rules (OAR 690-502-240) to not apply.

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: _____

Comments: N/A

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) 7c, 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 marine sedimentary rock 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 site is located in the foothills of the Coast Range, which are characterized by low-yielding marine sedimentary rock aquifers. A survey of well logs in T3S/R5W-Section 16 produced 17 well logs, with reported yields ranging from 0 to 19 gpm. The median yield is 5 gpm and most logs report claystone or siltstone with occasional sandstone or basalt. This is typical of the low-yield bedrock hydrogeologic unit identified at this location by Conlon et al. (2005). The closest marine sedimentary rock wells with water level data are located two miles to the southeast of the subject well; nearby groundwater development from the marine sediments is otherwise limited to exempt uses. Because there are no nearby water level data available, the groundwater resource cannot be determined to be over-appropriated. Water level data from marine sedimentary rock wells in Sections 23 and 24 show a reasonably stable trend at the current level of use (see Figure 3). In the event this permit is issued, water use and water level monitoring conditions are recommended to address resource sustainability questions.

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	Marine Sedimentary Bedrock Aquifer	<input checked="" 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 confinement evaluation: Nearby well logs in the marine sedimentary bedrock aquifer show static water levels rise above water-bearing zone. This indicates 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	Russell Creek	580	480-600	1540-4100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Russell Creek	580*	480-600	1800-4100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Beaver Creek	580	360-600	3800-5820	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Beaver Creek	580*	360-600	3500-5280	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<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"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Water-table maps, where they exist, generally show flow paths that converge on local perennial streams. The water level at the subject well is above perennial reaches of the nearby creeks, and the creeks have incised through several hundred feet of marine sediments. Groundwater from the uplands likely discharges to surface water down-gradient, providing baseflow or spring flow to sustain nearby perennial reaches of the creek.

Water Availability Basin the well(s) are located within: Watershed ID #: 70745 PANTHER CR > N YAMHILL R - 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 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	<input type="checkbox"/>	<input type="checkbox"/>	N/A	N/A	<input type="checkbox"/>	5.18	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	N/A	N/A	<input type="checkbox"/>	5.18	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	N/A	N/A	<input type="checkbox"/>	5.18	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	N/A	N/A	<input type="checkbox"/>	5.18	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>
		<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 #	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?
	<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"/>		<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: The proposed pumping rate (0.11 cfs) is greater than 1% of the 80% exceedance natural flow, so PSI is assumed per 690-09.

* There is no appropriate model to estimate stream depletion from pumping in fractured rock that is incised by streams or discharges to point sources such as springs. Therefore, the percentage of interference at 30 days is not calculated.

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													
(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: N/A

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 well would be producing from an aquifer that has been found to be hydraulically connected to surface water. The Department finds that the proposed use will have the Potential for Substantial Interference per OAR 690-009.

References Used: _____
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.

US Geological Survey Topographic Map, Fairdale Quadrangle.

OWRD water level and well log databases, includes reported water levels.

Woodward, D.G., and others, 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 #: _____ Logid: N/A _____

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.**

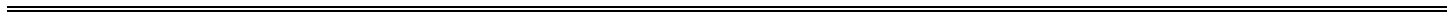


Figure 1. Water Availability Tables

Water Availability Analysis Detailed Reports

PANTHER CR > N YAMHILL R - AT MOUTH WILLAMETTE BASIN

Water Availability as of 12/20/2018

Watershed ID #: 70745 ([Map](#))

Exceedance Level:80%

Date: 12/20/2018

Time: 12:48 PM

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	117.00	4.99	112.00	0.00	25.00	87.00
FEB	150.00	5.04	145.00	0.00	25.00	120.00
MAR	119.00	4.12	115.00	0.00	25.00	89.90
APR	72.10	4.34	67.80	0.00	25.00	42.80
MAY	33.20	5.64	27.60	0.00	25.00	2.56
JUN	16.10	6.26	9.84	0.00	6.00	3.84
JUL	8.77	7.67	1.10	0.00	4.00	-2.90
AUG	6.10	6.95	-0.85	0.00	3.00	-3.85
SEP	5.18	4.90	0.28	0.00	3.00	-2.72
OCT	8.85	2.99	5.86	0.00	5.00	0.86
NOV	19.60	3.22	16.40	0.00	25.00	-8.62
DEC	92.20	4.77	87.40	0.00	25.00	62.40
ANN	72,200.00	3,680.00	68,500.00	0.00	11,800.00	56,700.00

Figure 2. Well Location Map

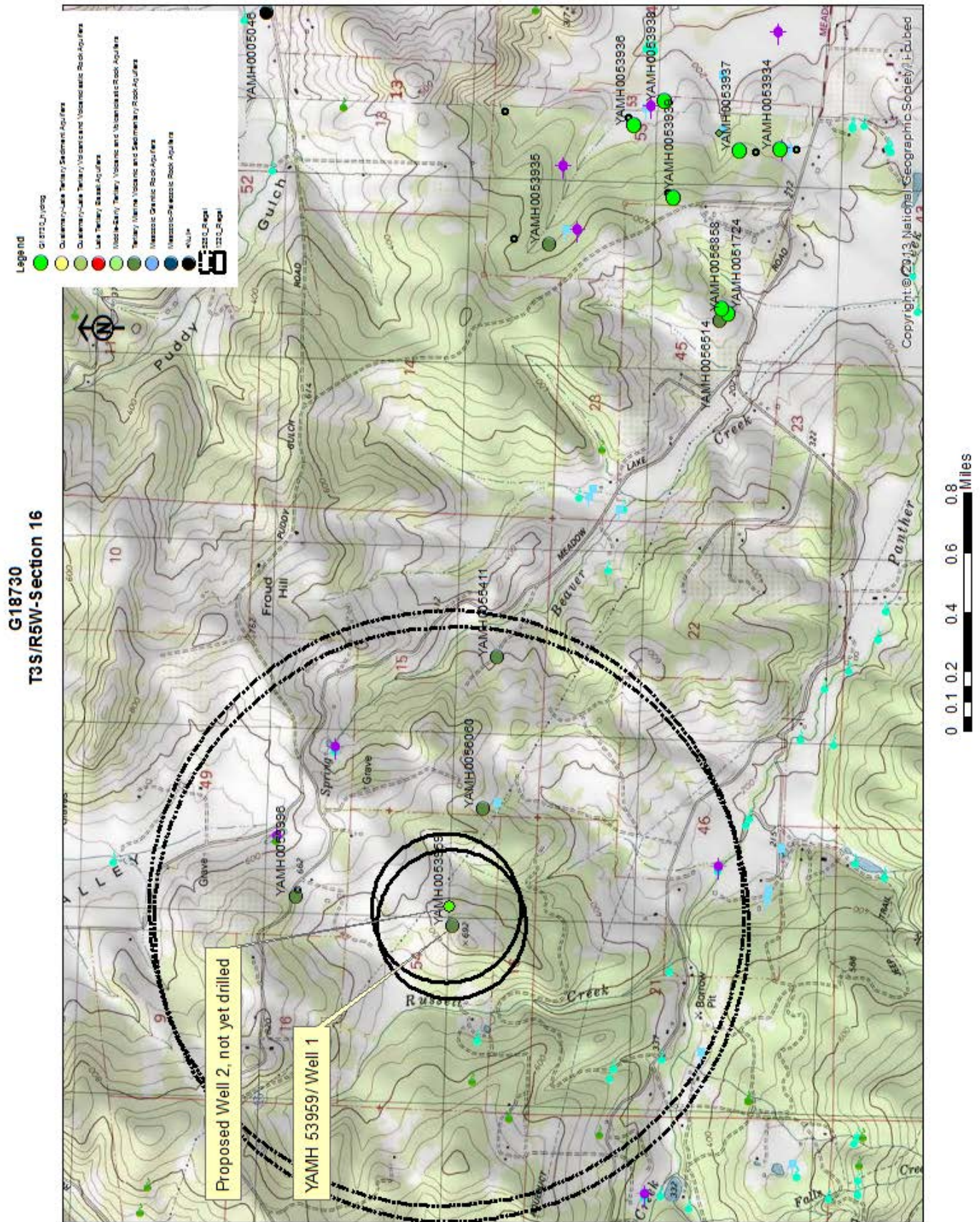


Figure 3. Water-Level Trends in wells located in T3S/R5W-Sections 23 & 24 are stable; there are no time series water level data available in Section 16 (location of subject wells).

