

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date April 24, 2015

FROM: Groundwater Section Karl Wozniak
Reviewer's Name

SUBJECT: Application G- 17988 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 ground water 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: Bob Gabriel County: Clackamas

A1. Applicant(s) seek(s) 2.2 cfs from seven well(s) in the Willamette Basin,
Pudding R./Molalla R. subbasin Quad Map: Canby

A2. Proposed use Irrigation Seasonality: March 1 to 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	Proposed	1	Alluvium	2.2	3S/1E-30 SW-NW	1080' S, 65' E fr NW* S 30
2	Proposed	2	Alluvium	2.2	3S/1E-30 SW-NW	1155' S, 75' E fr NW* S 30
3	CLAC 20355	3	Alluvium	2.2	3S/1E-30 SE-NW	150' S, 1415' E fr NW* S 30
4	CLAC 20344	4	Alluvium	2.2	3S/1E-30 SE-NW	750' S, 1430' E fr NW* S 30
5	Proposed	5	Alluvium	2.2	3S/1E-30 SW-NW	340' S, 45' E fr NW* S 30
6	CLAC 59086	6	Alluvium	2.2	3S/1E-30 SW-NE	3638' N, 3810' E fr SW cor S 30
7	Proposed	7	Alluvium	2.2	3S/1E-30 SW-NW	425' S, 105' E fr NW* S 30

* 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	161				120-260	0-20	100-250		80-250			
2	162				120-260	0-20	100-250		80-250			
3	182	101	62	06/17/95	130	0-85	0-130		101-125	110		Air
4	160	92	50	06/14/95	120	0-90	0-92	98-116	92-116	130		Air
5	161				120-260	0-20	100-250		80-250			
6	180	90	110	04/19/2003	280	0-150	0-226.6	247.1-263.2	180.6-247.1	216	67	Pump
7	162				120-260	0-20	100-250		80-250			

Use data from application for proposed wells.

A4. **Comments:** *Metes & bounds for all wells except #6 are referenced from the NW corner of the SW 1/4 of the NW 1/4 of Section 30. Wells 3 & 4 (CLAC 20355 & CLAC 20344) were listed on application G-15923, filed by a previous property owner, which was denied because of a finding of PSI with the Pudding River. CLAC 20355 was drilled to a total depth of 343 feet but the portion of the hole below 130 feet was abandoned prior to final completion of the well. CLAC 20344 was drilled to a total depth of 363 feet but the portion of the hole below 120 feet was abandoned prior to final completion of the well. No productive water-bearing zones appear to have been found below the final completion depths in these wells.

A5. **Provisions of the Willamette** Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water are, or are not, activated by this application. (Not all basin rules contain such provisions.)
 Comments: The wells all produce 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: _____

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

B1. **Based upon available data**, I have determined that ground water* 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 ground water 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 ground water 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 ground water resource; or
- d. **will, if properly conditioned**, avoid injury to existing ground water rights or to the ground water resource:
 - i. The permit should contain condition #(s) 7C, Large 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 ground water production from no deeper than _____ ft. below land surface;
- b. **Condition** to allow ground water production from no shallower than _____ ft. below land surface;
- c. **Condition** to allow ground water production only from the _____ ground water 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 Ground Water 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. **Ground water availability remarks:** The applicant’s wells are located on a terrace that is 80-100 feet above the Pudding River and Molalla floodplains to the east and about 100-120 feet above the Willamette River to the north. The terrace is underlain by about 700 feet of mostly fine-grained sediments. The upper 80-90 feet of sediments correspond to the Willamette Silt which is predominantly silt with some clay and sand. Productive sands and gravels are generally found just below the base of the Willamette Silt but rarely have a cumulative thickness that exceeds 30 feet. Thin sand and gravel beds also occur below depths of 130 feet but do not appear to be of widespread extent. The Willamette, Molalla, and Pudding Rivers are incised completely through the Willamette Silt. On the terrace, the water table occurs within the Willamette Silt at depths of 30-50 feet. The water table drops sharply at the margins of the terrace to levels coincident with the Willamette, Molalla, and Pudding Rivers.

Groundwater levels in nearby wells appear to be reasonably stable over time as shown on the attached hydrograph. This is consistent with the presence of nearby streams which should buffer groundwater production over time. However, the limited thickness of the productive sands suggests that seasonal interference could become an issue, especially in late summer months. However, no data is available to suggest that seasonal interference is currently an issue. The lack of pertinent data indicates the need for a water-level measurement and reporting condition.

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

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

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
All	Alluvium	<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: Water-bearing zones are overlain by clay or silt beds that act as confining layers.

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	Putdng River	120	75	2950	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Putdng River	120	75	2950	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Putdng River	120	75	2250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	1	Putdng River	120	75	2025	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	1	Putdng River	120	75	3350	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	1	Putdng River	70	75	650	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	1	Putdng River	120	75	3275	<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"/>

Basis for aquifer hydraulic connection evaluation: Published water table maps show that groundwater in the alluvial aquifer system flows toward and discharges into the Willamette, Putdng, and Molalla Rivers. The main productive sand and gravel beds just below the Willamette Silt are at the same elevation as the coarse-grained floodplain and riverbed sediments of the adjacent streams. Therefore, these shallow water-bearing zones are expected to have an efficient connection with local streams. Deeper sand and gravel beds will have a less efficient connection to local streams.

Water Availability Basin the well(s) are located within: 69998: PUDDING R > MOLALLA R - AT MOUTH; 69796: MOLALLA R > WILLAMETTE R - AT MOUTH; 181: WILLAMETTE R > COLUMBIA 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"/>	69998A	40.0	<input checked="" type="checkbox"/>	67.9	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	69998A	40.0	<input checked="" type="checkbox"/>	67.9	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
3	1	<input type="checkbox"/>	<input type="checkbox"/>	69998A	40.0	<input checked="" type="checkbox"/>	67.9	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
4	1	<input type="checkbox"/>	<input type="checkbox"/>	69998A	40.0	<input checked="" type="checkbox"/>	67.9	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
5	1	<input type="checkbox"/>	<input type="checkbox"/>	69998A	40.0	<input checked="" type="checkbox"/>	67.9	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
6	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	69998A	40.0	<input checked="" type="checkbox"/>	67.9	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
7	1	<input type="checkbox"/>	<input type="checkbox"/>	69998A	40.0	<input checked="" type="checkbox"/>	67.9	<input checked="" type="checkbox"/>	<25%	<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 #	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"/>			<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: Although the wells will all, to various degrees, interfere with the Pudding, Molalla, and Willamette Rivers, they are all closest to the Pudding River which will be the principal impacted stream. The Pudding River WAB has the lowest natural flows and instream water rights so it will be the limiting WAB affecting this application. Therefore, the wells were not evaluated against the other WABs. Interference at 30 days was not modeled because of the complexity of the shallow alluvial aquifer in the area (it transitions from confined beneath the terrace to unconfined in the adjacent floodplains) but is expected to be less than 25% after 30 days based on professional judgement.

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.

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.

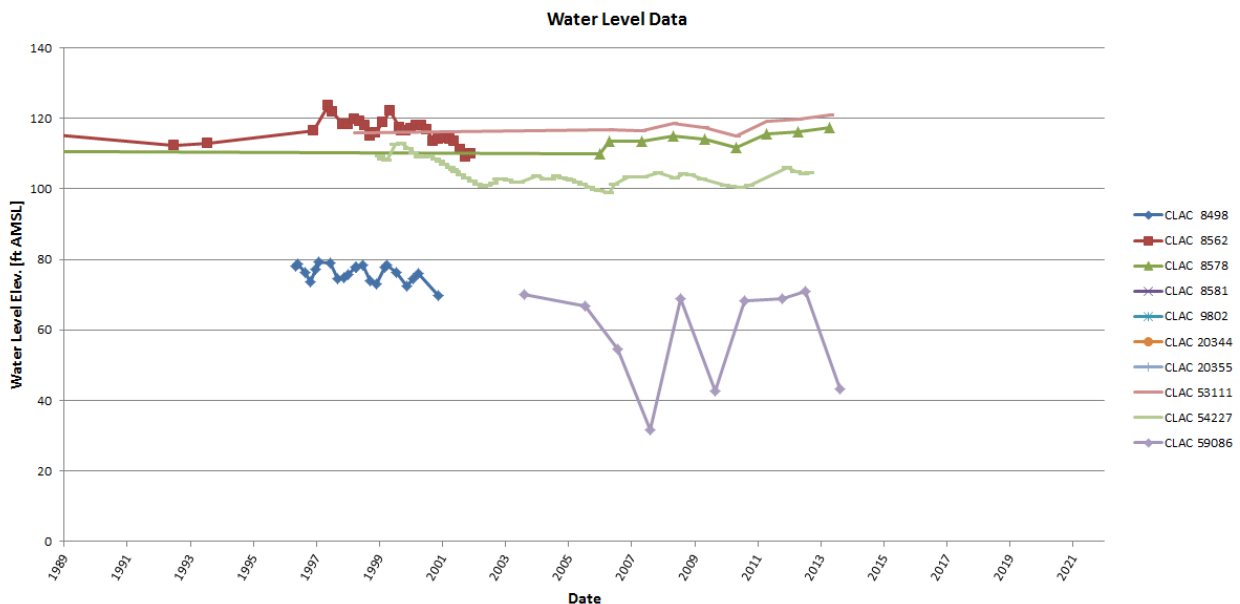
Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

Watershed ID #: 69998 PUDDING R > MOLALLA R - AT MOUTH Exceedance Level: 80
 Time: 4:30 PM Basin: WILLAMETTE Date: 04/23/2015

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	1,120.00	130.00	990.00	0.00	80.00	910.00
FEB	1,260.00	121.00	1,140.00	0.00	80.00	1,060.00
MAR	1,080.00	91.00	989.00	0.00	80.00	909.00
APR	834.00	64.40	770.00	0.00	80.00	690.00
MAY	448.00	60.40	388.00	0.00	80.00	308.00
JUN	231.00	82.50	148.00	0.00	60.00	88.50
JUL	111.00	127.00	-16.10	0.00	50.00	-66.10
AUG	71.60	105.00	-33.30	0.00	40.00	-73.30
SEP	67.90	61.40	6.48	0.00	40.00	-33.50
OCT	91.50	16.90	74.60	0.00	60.00	14.60
NOV	364.00	55.00	309.00	0.00	80.00	229.00
DEC	1,010.00	124.00	886.00	0.00	80.00	806.00
ANN	748,000	62,700	686,000	0	48,900	642,000

Nearby Groundwater Levels in the Alluvial Aquifer



Well Location Map

Application G-17988, Gabriel

