

Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE # # C-17482

ROUTED TO: Water Rights

TOWNSHIP/

RANGE-SECTION: 45/1W-8

CONDITIONS ATTACHED?: yes no

REMARKS OR FURTHER INSTRUCTIONS:

See conditions on page 2.

Reviewer: Karl C. Wozniak

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date November 7, 2011

FROM: Ground Water/Hydrology Section Karl Wozniak
Reviewer's Name

SUBJECT: Application G- 17482 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: Norman & Marie Zeller County: Marion

A1. Applicant(s) seek(s) 0.446 cfs from 1 well(s) in the Willamette Basin,
Ryan subbasin Quad Map: Woodburn

A2. Proposed use Irrigation Seasonality: March 1 – 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	0.446	04S/01W-08 SW/NW	1495' S, 225' E fr NW cor S 8
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	182				140-220	0-20	140-220					

Use data from application for proposed wells.

A4. **Comments:** The applicant submitted nearby well logs and three bids for a new well. The nearby wells produce from the alluvial aquifer unit. The bids were for wells that ranged from 140-220 feet deep. This indicates that alluvium is the proposed aquifer unit.

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 well will 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) 7B, 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 alluvial 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 proposed well site is underlain by about 100 feet of Willamette Silt which is underlain by about 100 feet mixed-grained sediments. Columbia River Basalt occurs at a depth of about 200 feet. A wedge of sand and gravel beneath the Willamette Silt thickens to the east but thins dramatically to the west. This is probably an old Willamette River channel which is inset into relatively fine-grained sediments. Within the old channel deposits sands and gravels predominate and well yields and specific capacities are high; outside of the channel, silts and clays predominate and well yields and specific capacities are much lower. Long-term water-level trends in a nearby observation well (MARI 308) are relatively stable with a subdued correlation to decadal climate trends. Seasonal water-level fluctuations however, have increased to about 65 feet compared to about 40 feet prior to 1985. The increased seasonal fluctuations correlate to increased appropriation from the local aquifer system. The aquifer can probably sustain some additional development but any substantial increase in seasonal fluctuations (>20 feet) is likely to have adverse impacts on nearby wells. Because of the complex aquifer geometry, it is difficult to predict what level of additional stress will produce this response. Our general opinion is that the current application is not likely to have that large of an impact. However, decline and hydraulic interference conditions are warranted by the underlying uncertainties. A water-use reporting condition is necessary to gage the impact on our nearby observation well which, in turn, will allow us to more effectively evaluate impacts to nearby wells and to more effectively evaluate the capacity of the local aquifer system.

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
1	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: General knowledge indicates that the water table occurs at shallow depths in the Willamette Silt which confines the underlying sand and gravel aquifer.

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	Ryan Creek	150	85-120	2500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Yergen Creek	150	100-120	3900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	3	Willamette River	150	55	5600	<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: Published water table maps indicate that groundwater flows toward and discharges into local streams.

Water Availability Basin the well(s) are located within: Willamette R > Columbia R -- AB Molalla R

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"/>			<input type="checkbox"/>	3830	<input type="checkbox"/>	<<25%	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	3830	<input type="checkbox"/>	<<25%	<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"/>		<input 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: Interference at 30 days was not modeled but modeling in similar circumstances shows that the presence of a thick layer of Willamette Silt between the streams and the productive sand and gravel beds is likely to keep interference well below 25%.

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		%	%	%	%	%	%	%	%	%	%	%	%

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

D2. **THE WELL does not 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:**

- a. constitutes a health threat under Division 200 rules;
- b. commingles water from more than one ground water reservoir;
- c. permits the loss of artesian head;
- d. permits the de-watering of one or more ground water reservoirs;
- e. other: (specify) _____

D4. **THE WELL construction deficiency is described as follows:** _____

D5. **THE WELL** a. was, or was not constructed according to the standards in effect at the time of original construction or most recent modification.

b. I don't know if it met standards at the time of construction.

D6. **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.

THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL

D7. Well construction deficiency has been corrected by the following actions: _____

_____, 200____.
(Enforcement Section Signature)

D8. **Route to Water Rights Section (attach well reconstruction logs to this page).**

Water Availability Tables

WILLAMETTE R > COLUMBIA R - AB MOLALLA R
WILLAMETTE BASIN

Water Availability as of 11/7/2011

Watershed ID #: 182

Exceedance Level: 80%

Date: 11/7/2011

Time: 2:53 PM

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage 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	21,400.00	2,160.00	19,200.00	0.00	1,500.00	17,700.00
FEB	23,200.00	7,340.00	15,900.00	0.00	1,500.00	14,400.00
MAR	22,400.00	7,120.00	15,300.00	0.00	1,500.00	13,800.00
APR	19,900.00	6,780.00	13,100.00	0.00	1,500.00	11,600.00
MAY	16,600.00	4,100.00	12,500.00	0.00	1,500.00	11,000.00
JUN	8,740.00	1,820.00	6,920.00	0.00	1,500.00	5,420.00
JUL	4,980.00	1,640.00	3,340.00	0.00	1,500.00	1,840.00
AUG	3,830.00	1,490.00	2,340.00	0.00	1,500.00	844.00
SEP	3,890.00	1,240.00	2,650.00	0.00	1,500.00	1,150.00
OCT	4,850.00	618.00	4,230.00	0.00	1,500.00	2,730.00
NOV	10,200.00	753.00	9,450.00	0.00	1,500.00	7,950.00
DEC	19,300.00	830.00	18,500.00	0.00	1,500.00	17,000.00
ANN	15,200,000.00	2,150,000.00	13,100,000.00	0.00	1,090,000.00	12,000,000.00

