

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date September 17, 2013

FROM: Groundwater Section J. Hackett
Reviewer's Name

SUBJECT: Application G- 17643 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: Jay Ronald Hess County: Linn

A1. Applicant(s) seek(s) 0.23 cfs from 3 well(s) in the Willamette Basin,
 _____ subbasin Quad Map: Crawfordsville

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	0.23	14S/1W-18 NW-NE	1220'S, 1520'W fr NE cor S 18
2	Proposed	2	Alluvium	0.23	14S/1W-18 SW-NE	1560'S, 1530'W fr NE cor S 18
3	Proposed	3	Alluvium	0.23	14S/1W-18 SE-NE	2050'S, 1060'W fr NE cor S 18
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	460				150 est.							
2	465				150 est.							
3	475				150 est.							

Use data from application for proposed wells.

A4. **Comments:** _____

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 applicant's wells are not located within 1/4 mile of the nearest surface water source, so the pertinent basin rules 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, 7N _____;
 - 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 in an area that contains floodplain deposits of the Calapooia River from land surface to depths of 50-150 feet. The floodplain deposits consist of unconsolidated mixed-grained sediments (gravels, sands, silts and clays).

No water levels from nearby are available to assess the stability of the resource, this suggests a need for long-term water level monitoring.

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"/>
2	alluvium	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	alluvium	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Static water levels reported on driller's logs for nearby wells rise above the elevations of water-bearing zones indicating confined 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	Calapooia River	430	430-480	1475	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Calapooia River	430	430-480	1700	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Calapooia River	430	430-480	2300	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Brush Creek	430	430-480	1800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Brush Creek	430	430-480	1540	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	2	Brush Creek	430	430-480	1530	<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"/>

Basis for aquifer hydraulic connection evaluation: Water levels in the shallow alluvial aquifer are coincident with the elevations of nearby stream reaches. This suggests hydraulic connection between the aquifer and local surface water sources.

Water Availability Basin the well(s) are located within: 76: CALAPOOIA R > WILLAMETTE 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"/>	MF76A	20.00	<input checked="" type="checkbox"/>	22.70	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	MF76A	20.00	<input checked="" type="checkbox"/>	22.70	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
3	1	<input type="checkbox"/>	<input type="checkbox"/>	MF76A	20.00	<input checked="" type="checkbox"/>	22.70	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	N/A		<input type="checkbox"/>	22.70	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	N/A		<input type="checkbox"/>	22.70	<input checked="" type="checkbox"/>	<25%	<input checked="" type="checkbox"/>
3	2	<input type="checkbox"/>	<input type="checkbox"/>	N/A		<input type="checkbox"/>	22.70	<input checked="" type="checkbox"/>	<25%	<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"/>

(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 ground water 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**

References Used:

Gannett, Marshall W., and Caldwell, Rodney R., 1998, Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington: U. S. Geological Survey Professional Paper 1424-A, 32p, 8 plates.

Conlon and others, 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S Geological Survey Scientific Investigations Report 2005-5168.

Woodward and others, 1998, Hydrogeologic framework of the Willamette lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B,

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

**Water Availability Analysis
Detailed Reports**

**CALAPOOIA R > WILLAMETTE R - AB MOUTH
WILLAMETTE BASIN**

Water Availability as of 9/17/2013

Watershed ID #: 76

Exceedance Level:

Date: 9/17/2013

Time: 7:39 AM

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	592.00	2.90	589.00	0.00	20.00	569.00
FEB	650.00	2.85	647.00	0.00	20.00	627.00
MAR	575.00	2.16	573.00	0.00	20.00	553.00
APR	423.00	1.84	421.00	0.00	20.00	401.00
MAY	234.00	6.86	227.00	0.00	20.00	207.00
JUN	111.00	12.50	98.50	0.00	20.00	78.50
JUL	49.00	19.40	29.60	0.00	20.00	9.63
AUG	26.00	13.80	12.20	0.00	20.00	-7.82
SEP	22.70	7.25	15.40	0.00	20.00	-4.55
OCT	29.60	1.38	28.20	0.00	20.00	8.22
NOV	133.00	1.89	131.00	0.00	20.00	111.00
DEC	499.00	2.86	496.00	0.00	20.00	476.00
ANN	404,000.00	4,590.00	399,000.00	0.00	14,500.00	385,000.00

Detailed Report of Instream Flow Requirements

Instream Flow Requirements in Cubic Feet per Second

Application #	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MF76A	CERTIFICATE	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Maximum		20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Well Location Map

G-17643, Hess

1:24,000 scale

