PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section   Date   **May 22, 2009**

FROM: Ground Water/Hydrology Section   **Michael Zwart**
                                             Reviewer's Name

SUBJECT: Application G- **17189**   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:**Renee Baker & Joseph Buermann**   County: **Harney**

A1.   Applicant(s) seek(s) **3.6** cfs from **two** well(s) in the **Malheur Lake** Basin,
                                     subbasin   Quad Map: **Northwest Harney Lake**

A2.   Proposed use: **Irrigation, 291.2 acres**   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**	**5**	**Volcanic seds.**	**2.083**	**26S/30E-17 NW-NE**	**100' S, 2540' W fr NE cor S 17***
2	**Proposed**	**6**	**Volcanic seds.**	**1.571**	**26S/30E-18 NE-NE**	**105' S, 200' W fr NE cor S 18**
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
5	**4190**	**50**	**30**		**200**	**0-20**	**0-100**	**None**	**None**			
6	**4120**	**50**	**30**		**200**	**0-20**	**0-100**	**None**	**None**			

Use data from application for proposed wells.

A4.   **Comments: Well #5 located on map as described above, but the metes and bounds lists the westerly distance as 1540 feet, which I suspect is an error. I also suspect that the static water level of well #5 will be deeper than at well #6, due to the difference in land surface elevation.**

A5. ☒   **Provisions of the <u>Malheur Lake</u>**   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:

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 <u>ground water</u>* 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) __**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: Region Manager Ivan Gall recommends use of condition 7N in the Malheur Lake basin. SOW #177 was dropped in the early 1990s, but water levels were generally stable. Permit condition required measurements for other nearby wells are not yet sufficient to determine local water-level stability.**
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

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
5, 6	**Likely volcanic, pyroclastic and sedimentary rocks (Tvs)**	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Water levels in nearby wells are above the depth where ground water was first encountered. Regionally, this aquifer is likely unconfined and discharges to Harney or Malheur Lakes.

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? YES NO ASSUMED	Potential for Subst. Interfer. Assumed? YES NO
5	**1**	**Harney Lake**	**4090±**	**4090±**	**12400***	☒ ☐ ☐	☐ ☒
6	**1**	**Harney Lake**	**4090±**	**4090±**	**12700***	☒ ☐ ☐	☐ ☒
						☐ ☐ ☐	☐ ☐
						☐ ☐ ☐	☐ ☐
						☐ ☐ ☐	☐ ☐
						☐ ☐ ☐	☐ ☐
						☐ ☐ ☐	☐ ☐
						☐ ☐ ☐	☐ ☐
						☐ ☐ ☐	☐ ☐
						☐ ☐ ☐	☐ ☐

Basis for aquifer hydraulic connection evaluation: *The lake level has a large influence on the distance to the wells, which is likely greater than is estimated above. The head relationship suggests that hydraulic connection is likely.

Water Availability Basin the well(s) are located within: No WAB data in this area.

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?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts <u>by total appropriation</u> 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?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: __**This section does not apply.**__

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
(A) = Total Interf.												
(B) = 80 % Nat. Q												
(C) = 1 % Nat. Q												

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
(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: This section applies, but calculation of potential interference is not necessary without WAB data available.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

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: Local well logs; local recent reviews; GW Report 16, by Leonard, 1970; Greene, Walker, and Corcoran, 1972, Geologic Map of the Burns Quadrangle, Oregon, USGS Miscellaneous Geologic Investigations Map I-680; Memo by Ivan Gall, 1/15, 2008, Stream Assessment for Division 9 Review in the Malheur Lakes Basin.
_____
_____
_____
_____

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).**