

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date February 4, 2016

FROM: Groundwater Section Michael J. Thoma
Reviewer's Name

SUBJECT: Application G- 18189 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 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: Greg Alexander County: Josephine

A1. Applicant(s) seek(s) 0.045 cfs from 1 well(s) in the Rogue Basin,
Jumpoff Joe Cr subbasin

A2. Proposed use Nursery (2.5 ac Primary) Seasonality: year-round

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	JOSE 58044	1	Bedrock	0.045	35S/06W-9 SWNE	1507'S, 2613'W of NE cor S 09
2						
3						

* 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	1030	117	32	9/18/2008	140	0-26	+1.5-98.5			20		A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☒ **Provisions of the Rogue (OAR 690-515)** 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: _____

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

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 (7-year SWL); '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 _____ 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 applicant's well is producing from the fractured granitic aquifer of the Grants Pass Pluton. Overall, this area / aquifer has shown stable water level trends over the past several decades but there are no current OWRD observation wells in the immediate area surrounding the proposed POA. Therefore the department is unable to determine if groundwater is or is not over-appropriated. Since most groundwater use in the area is limited to domestic use and since the applicant's proposed rate is fairly small, it is unlikely that the additional use will cause injury to existing groundwater rights.

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	Bedrock of Grants Pass Pluton	☒	☐
		☐	☐

Basis for aquifer confinement evaluation: higher reported SWL that reported 'first-water' on the applicant's well log; general trend of increasingly confined conditions with depth that is characteristic of the fractured-rock aquifer and is expressed on nearby well logs

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	Bannister Cr	1000	980-1020	2900	☒	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: coincident groundwater and surface water elevations; fractured, high-relief nature of aquifer

Water Availability Basin the well(s) are located within: Jumpoff Joe Cr > Rogue R – AB Louse Cr (ID# 71032)

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	☐	☐	IS71032	2.51	☒	1.98	☒	see comments	☒
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

Comments: Interference @ 30 d could not be estimated because the terrain (high-relief slopes) and geology (fractured bedrock aquifer) do not meet model assumptions of the widely accepted techniques for determining stream depletion (e.g., Hunt 1999, 2003).

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?
			☐			☐		☐		☐

- 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													
(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: _____

- 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:
- ☐ The permit should contain condition #(s) _____;
 - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

- C6. **SW / GW Remarks and Conditions:** The aquifer that the applicant's well is producing from has been determined by the Department to be hydraulically connected to Bannister Cr, a tributary to Jumpoff Joe Cr. The requested rate is > 1% of both the minimum instream flow and the minimum monthly streamflow which therefore leads to the Department assuming that the proposed use will have the Potential for Substantial Interference under OAR 690-009 Rules. **Only if the requested rate were dropped to < 0.0198 cfs (8.9 gpm) would the use be allowed.**

References Used:

Hunt, B. 1999. *Unsteady Stream Depletion from Ground Water Pumping*. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

Hunt, B. 2003. *Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer*. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

Smith, J. G., N. J. Page, M. G. Johnson, B. C. Moring, F. Gray. 1982. Preliminary Geologic Map of the Medford 1 by 2 Degree Quadrangle, Oregon and California. USGS Open-file Report 82-955

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**

JUMPOFF JOE CR > ROGUE R - AB LOUSE CR																																																																																																									
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Water Availability as of 2/4/2016																																																																																																									
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Date: 2/4/2016				Time: 1:49 PM																																																																																																					
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Water Availability Calculation Monthly Streamflow in Cubic Feet per Second Annual Volume at 50% Exceedance in Acre-Feet <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Month</th> <th>Natural Stream Flow</th> <th>Consumptive Uses and Storages</th> <th>Expected Stream Flow</th> <th>Reserved Stream Flow</th> <th>Instream Flow Requirement</th> <th>Net Water Available</th> </tr> </thead> <tbody> <tr><td>JAN</td><td>34.50</td><td>0.42</td><td>34.10</td><td>0.00</td><td>31.00</td><td>3.08</td></tr> <tr><td>FEB</td><td>60.70</td><td>0.47</td><td>60.20</td><td>0.00</td><td>31.00</td><td>29.20</td></tr> <tr><td>MAR</td><td>54.80</td><td>0.44</td><td>54.40</td><td>0.00</td><td>31.00</td><td>23.40</td></tr> <tr><td>APR</td><td>28.60</td><td>0.90</td><td>27.70</td><td>0.00</td><td>31.00</td><td>-3.30</td></tr> <tr><td>MAY</td><td>13.90</td><td>1.28</td><td>12.60</td><td>0.00</td><td>20.10</td><td>-7.48</td></tr> <tr><td>JUN</td><td>6.21</td><td>1.69</td><td>4.52</td><td>0.00</td><td>11.80</td><td>-7.28</td></tr> <tr><td>JUL</td><td>3.41</td><td>2.18</td><td>1.23</td><td>0.00</td><td>3.37</td><td>-2.14</td></tr> <tr><td>AUG</td><td>2.67</td><td>1.84</td><td>0.83</td><td>0.00</td><td>4.84</td><td>-4.01</td></tr> <tr><td>SEP</td><td>1.98</td><td>1.29</td><td>0.69</td><td>0.00</td><td>2.51</td><td>-1.82</td></tr> <tr><td>OCT</td><td>2.56</td><td>0.59</td><td>1.97</td><td>0.00</td><td>4.06</td><td>-2.09</td></tr> <tr><td>NOV</td><td>6.38</td><td>0.28</td><td>6.10</td><td>0.00</td><td>16.20</td><td>-10.10</td></tr> <tr><td>DEC</td><td>18.50</td><td>0.38</td><td>18.10</td><td>0.00</td><td>31.00</td><td>-12.90</td></tr> <tr><td>ANN</td><td>32,600.00</td><td>712.00</td><td>31,900.00</td><td>0.00</td><td>13,100.00</td><td>19,300.00</td></tr> </tbody> </table>								Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available	JAN	34.50	0.42	34.10	0.00	31.00	3.08	FEB	60.70	0.47	60.20	0.00	31.00	29.20	MAR	54.80	0.44	54.40	0.00	31.00	23.40	APR	28.60	0.90	27.70	0.00	31.00	-3.30	MAY	13.90	1.28	12.60	0.00	20.10	-7.48	JUN	6.21	1.69	4.52	0.00	11.80	-7.28	JUL	3.41	2.18	1.23	0.00	3.37	-2.14	AUG	2.67	1.84	0.83	0.00	4.84	-4.01	SEP	1.98	1.29	0.69	0.00	2.51	-1.82	OCT	2.56	0.59	1.97	0.00	4.06	-2.09	NOV	6.38	0.28	6.10	0.00	16.20	-10.10	DEC	18.50	0.38	18.10	0.00	31.00	-12.90	ANN	32,600.00	712.00	31,900.00	0.00	13,100.00	19,300.00
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Well Location Map

