PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date **05/08/2015**

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

SUBJECT: Application G- **18048** 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: **James Frommer** County: **Josephine**

A1. Applicant(s) seek(s) **0.037[a]** cfs from **2** well(s) in the **Rogue** Basin, **Jumpoff Joe Cr.** subbasin

A2. Proposed use **Irrigation (5 acre Primary)** Seasonality: **April 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	Granitic Bedrock	0.037[a]	34S/06W-28 NENE	528 ft S, 621 ft W of NE cor S28
2	JOSE 2428	2	Granitic Bedrock	0.037	34S/06W-28 NENE	517 ft S, 714 ft W of NE cor S28
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	1400	45[b]			140		0-20					
2	1400	45	32	11/9/1976	88		0-40			6	13	

Use data from application for proposed wells.

A4. **Comments:** [a] The applicant proposes the use of one proposed well (Well #1) and one existing well (Well #2 – Jose 2428). The applicant originally requested 0.042 cfs but in a recent email from the applicant to the Department (see attached) the applicant reduced the rate to 0.038 cfs (17 gpm). This review uses the rate of 0.038 cfs.
[b] The proposed well is to be located < 100 ft from the existing well and, although deeper, will likely encounter identical geology (i.e., fractured granitic bedrock) and hydrogeologic conditions (confined, first water, SWL, yield, etc.).

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); 'Small' 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 proposed POAs will be producing from fractured granitic rock of the Grants Pass Pluton. This aquifer is low-yielding with reported well yields between < 5 and 60 gpm from driller's logs in the area. The applicant's proposed rate of < 10 gpm from each of the two proposed POAs should be within capacity of the resource without leading to excessive long-term declines.
There are no observation wells in the immediate vicinity of the proposed POAs with sufficient record to establish recent groundwater trends. However, wells throughout the basin completed within the same geologic formation show stable water level trends.

Regarding Injury:
There are several small taxlots near the proposed POAs which are likely to have domestic wells producing from the same fractured rock aquifer system as the applicant's proposed POAs. These low-yield, fractured-rock aquifers can pose problems with interference if use is heavy and distances between wells are small. These problems can be intensified by low-precipitation, dry summer climate cycles. With the applicants small rates there may not be issues with interference but standard interference conditions should be applied.

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	**Fractured granitic bedrock**	☒	☐
2	**Fractured granitic bedrock**	☒	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The well log for the applicant's existing well (JOSE 2428) and other well logs in the area completed in similar bedrock show SWL at higher depths than 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? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Bummer Cr.**	**~1370**	**1240-1500**	**3000**	☒	☐	☐	☐	☐
2	**1**	**Bummer Cr.**	**~1370**	**1240-1500**	**3000**	☒	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The nearest mapped perennial stream to the applicant's proposed POAs is Bummer Creek to the southeast (see Figure 2). There are several intermittent or ephemeral streams closer to the proposed POAs but during a site visit by OWRD staff in the summer of 2014, it was determined that theses streams do not represent perennial surface water.

The shortest distance from the proposed POAs to Bummer Cr. is 3000 ft. However, the land surface considerably slopes southwesterly which likely moves the point where the groundwater intercepted by the applicant's POAs would discharge to Bummer Cr. (i.e., distance of hydraulic connection) farther downstream to a distance of perhaps 4000 ft but still likely within 1 mi. Therefore Section C3a was used to evaluate PSI.

Water Availability Basin the well(s) are located within: Jumpoff Joe Cr > Rogue R – At Mouth (ID# 70984)

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**	☐	☐	**IS70984A**	**4.74**	☐	**3.93**	☐		☐
2	**1**	☐	☐	**IS70984A**	**4.74**	☐	**3.93**	☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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

Comments: The applicant's revised proposed maximum rate of 0.038 cfs (17 gpm) is < 1% of the minimum monthly flows in the Jumpoff Joe Cr WAB (see Figure 1).

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													
(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:
- 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:** The applicant's proposed POAs will be producing from the fractured rock aquifer system. The applicant's existing well is 88 ft deep and so it would likely be intercepting shallow groundwater that would have discharged to surface water downslope from the POA. The proposed well is targeted at 140 ft deep and will likely still be producing from the same shallow groundwater system (therefore hydraulic connection). The applicant's proposed rate (0.038 cfs) is < 1% of the minimum perennial streamflow in Jumpoff Joe Cr. (3.93 cfs) and so **the proposed use will not have potential for substantial interference** under Department rules OAR 690-009.

References Used:

Ramp, L. and N. V. Peterson. 2004. Geologic Map of Josephine County, Oregon. OFR O-04-13

OWRD Well Log Database – Accessed 04/29/2015

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.**

Figure 1: Water Availability Tables

JUMPOFF JOE CR > ROGUE R - AT MOUTH
ROGUE BASIN

Water Availability as of 5/8/2015

Watershed ID #: 70984 (Map) Exceedance Level: 80%

Date: 5/8/2015 Time: 10:27 AM

Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations | Water Rights | Watershed Characteristics

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	65.20	1.00	64.20	0.00	100.00	-35.80
FEB	114.00	1.93	112.00	0.00	100.00	12.10
MAR	102.00	1.37	101.00	0.00	100.00	0.63
APR	53.30	1.93	51.40	0.00	100.00	-48.60
MAY	25.90	2.81	23.10	0.00	40.00	-16.90
JUN	11.30	3.78	7.52	0.00	30.00	-22.50
JUL	6.49	4.92	1.57	0.00	9.48	-7.91
AUG	5.27	4.13	1.14	0.00	6.72	-5.58
SEP	3.93	2.85	1.08	0.00	20.00	-18.90
OCT	4.77	1.22	3.55	0.00	65.00	-61.50
NOV	11.20	0.51	10.70	0.00	65.00	-54.30
DEC	34.00	0.87	33.10	0.00	100.00	-66.90
ANN	60,800.00	1,650.00	59,200.00	0.00	44,300.00	23,500.00

Figure 2: Well Location Map