

# PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date 1/30/2009

FROM: Ground Water/Hydrology Section Donn Miller  
Reviewer's Name

SUBJECT: Application G- 17159 Supersedes review of none  
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: Kevin Kent County: Clackamas

A1. Applicant(s) seek(s) 0.5 cfs from one well(s) in the Sandy Basin,  
Cedar Creek subbasin Quad Map: Bull Run

A2. Proposed use: general nursery/general ag Seasonality: year round

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

| Well<br>1 | Logid      | Applicant's<br>Well # | Proposed<br>Aquifer* | Proposed<br>Rate(cfs) | Location<br>(T/R-S QQ-Q) | Location, metes and bounds, e.g.<br>2250' N, 1200' E fr NW cor S 36 |
|-----------|------------|-----------------------|----------------------|-----------------------|--------------------------|---------------------------------------------------------------------|
| 1         | CLAC 65463 | 1                     | Cemented gravel      | 0.5                   | 2S/5E-21 SE NE           | 910'N, 715'W fr E ¼ cor S 21                                        |
| 2         |            |                       |                      |                       |                          |                                                                     |
| 3         |            |                       |                      |                       |                          |                                                                     |
| 4         |            |                       |                      |                       |                          |                                                                     |
| 5         |            |                       |                      |                       |                          |                                                                     |

\* Alluvium, CRB, Bedrock

| Well | Well<br>Elev<br>ft msl | First<br>Water<br>ft bls | SWL<br>ft bls | SWL<br>Date | Well<br>Depth<br>(ft) | Seal<br>Interval<br>(ft) | Casing<br>Intervals<br>(ft) | Liner<br>Intervals<br>(ft) | Perforations<br>Or Screens<br>(ft) | Well<br>Yield<br>(gpm) | Draw<br>Down<br>(ft) | Test<br>Type |
|------|------------------------|--------------------------|---------------|-------------|-----------------------|--------------------------|-----------------------------|----------------------------|------------------------------------|------------------------|----------------------|--------------|
| 1    | 1185                   | E190                     | 153           | 10/17/08    | 242                   | 0-180                    | 0-180                       | 82-202                     | 202-242                            | 24                     | --                   | A            |
|      |                        |                          |               |             |                       |                          |                             |                            |                                    |                        |                      |              |
|      |                        |                          |               |             |                       |                          |                             |                            |                                    |                        |                      |              |
|      |                        |                          |               |             |                       |                          |                             |                            |                                    |                        |                      |              |
|      |                        |                          |               |             |                       |                          |                             |                            |                                    |                        |                      |              |
|      |                        |                          |               |             |                       |                          |                             |                            |                                    |                        |                      |              |

Use data from application for proposed wells.

A4. **Comments:** Originally, the application sought four wells. That was changed to only well #1 that was built in 2008. The log does not indicate first water but the description of the water-bearing zone suggests to me that the top of it is the first significant water. The cemented gravel aquifer can either be identified as the undifferentiated fine-grained sediments of the Portland Basin reports of the USGS or the Troutdale formation of the WRD GW report.

At this point, I assume that the one well is capable of 0.5 cfs.

A5. ☐ **Provisions of the Sandy** 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: NA  
Comments: NA

**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) 7F, 7G;
  - 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): \_\_\_\_\_

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- B3. **Ground water availability remarks:** There is limited water level data available for this aquifer in section 21. I assume that water levels are not in decline based on the level of use. Further, the data for wells in section 17 show a high level of water level stability.

The well proposes use from the undifferentiated fine-grained aquifer. It sounds like a poor source but really isn't. There is probably an overlying aquifer that is not reported on the well log. That shallower aquifer occurs within 100 feet of land surface in local wells and static levels are usually less than 50 feet. Yields are generally less there than they are in the deeper aquifer. The Sandy basin rules require water level measuring and reporting and decline limits.

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**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    | Cemented gravel             | <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:** well report entries describe confinement when the water-bearing zone is deeper than the resulting static water level

**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<br>ft msl | SW Elev<br>ft msl | Distance<br>(ft) | Hydraulically Connected?            |                                     |                          | Potential for Subst. Interfer. Assumed? |                                     |
|------|------|-----------------------------|-------------------|-------------------|------------------|-------------------------------------|-------------------------------------|--------------------------|-----------------------------------------|-------------------------------------|
|      |      |                             |                   |                   |                  | YES                                 | NO                                  | ASSUMED                  | YES                                     | NO                                  |
| 1    | 1    | Cedar Creek                 | 1032              | 970               | 1800             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>                | <input checked="" type="checkbox"/> |
| 1    | 2    | Un. Trib Badger Ck to east  | 1032              | 1140              | 2200**           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                | <input checked="" type="checkbox"/> |
| 1    | 3    | Un. Trib Badger Ck to north | 1032              | 1155              | 1100**           | <input checked="" type="checkbox"/> | <input checked="" 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"/>            |
|      |      |                             |                   |                   |                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>            |

**Basis for aquifer hydraulic connection evaluation:** proximity, head relationships, aquifer outcropping at creek

**\*\*The two unnamed tribs are hydraulically connected at a greater distance than noted but less than one mile and at elevations below 1000' amsl.**

**Water Availability Basin the well(s) are located within:** Cedar Creek>Sandy River @ mouth and consideration to (Sandy>Columbia-AB Bull RunCreek)

**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"/> | IS71480 A               | 8.96 to 60                   | <input checked="" type="checkbox"/> | 7.22 to 48.70          | <input checked="" type="checkbox"/> | 9.4                        | <input checked="" type="checkbox"/>     |
| 1    | 2    | <input type="checkbox"/> | <input type="checkbox"/> | SR389A                  | 406-600                      | <input type="checkbox"/>            | 331-1240               | <input type="checkbox"/>            | 2.5                        | <input type="checkbox"/>                |
| 1    | 3    | <input type="checkbox"/> | <input type="checkbox"/> | SR389A                  | 406-600                      | <input type="checkbox"/>            | 331-1240               | <input type="checkbox"/>            | 2.5                        | <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 # |  | Q <sub>w</sub> > 5 cfs?  | Instream Water Right ID | Instream Water Right Q (cfs) | Q <sub>w</sub> > 1% ISWR? | 80% Natural Flow (cfs) | Q <sub>w</sub> > 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: NA

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      |     |     |     |     |     |     |     |     |     |     |     |     |     |
| (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:** NA

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

C6. **SW / GW Remarks and Conditions** It appears that the well can impact flows at Cedar Creek to the south as well as unnamed tributaries to Badger Creek/Sandy River to the north and east. This is based on proximity, head relationships, and geology. The aquifer outcrops at Cedar Creek but does not outcrop at the unnamed tribs. The WAB (water availability basin) for Cedar Creek provides some very limiting numbers. The PSI (potential for substantial interference) analysis on Cedar Creek makes comparisons of the proposed rate to the relatively small values for the in-stream water right flows and the natural flows. In both cases the 1% standards are exceeded. This is not the case for the unnamed tribs as their WAB is lower in the watershed where flows are higher.

Even if the connection with the unnamed tribs is questionable, the analyses there do not lead to PSI.

I don't know that the PSI issue can be totally overcome by the applicant. One approach is to lower the proposed rate to 0.072 cfs. This makes PSI disappear but would likely result in a lower rate than desired. Subsequent filing for the same rate might be a strategy to get additional rate.

**References Used:** well logs, file G-17159, OWRD GW Report #29, USGS OFR 90-126, USGS WRIS 90-4196, USGS WSP 2470-A

D1.      **Well #:** NA                      **Logid:** \_\_\_\_\_

a. ☐ review of the well log;

b. ☐ field inspection by \_\_\_\_\_

c. ☐ report of CWRE \_\_\_\_\_

d. ☐ other: (specify) \_\_\_\_\_

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) \_\_\_\_\_

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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.

D7. ☐ Well construction deficiency has been corrected by the following actions: \_\_\_\_\_

[illegible]

\_\_\_\_\_, 200\_\_\_\_

(Enforcement Section Signature)

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