Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE # # G - 17898

ROUTED TO: Water Rights

TOWNSHIP/
RANGE-SECTION: 125/5W - 12, 13

CONDITIONS ATTACHED?: [✓] yes [ ] no

REMARKS OR FURTHER INSTRUCTIONS:
Well identification and well construction need to be clarified.

Reviewer: Karl C. Wozniak

WATER RESOURCES DEPARTMENT MEMO November 6, 2014

TO: **Application G-** 17898

FROM: Karl Woeniak **- Groundwater Section**

SUBJECT: **Scenic Waterway Interference Evaluation**

_____ YES
The source of appropriation is within or above a Scenic Waterway
__✓__ NO

_____ YES
Use the Scenic Waterway condition (condition 7J)
__✓__ NO

_____ Per ORS 390.835, the Groundwater Section is able to calculate groundwater interference with surface water that contributes to a Scenic Waterway. The calculated interference distribution is provided below.

_____Per ORS 390.835, the Groundwater Section is unable to calculate groundwater interference with surface water that contributes to a scenic waterway; therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface flows necessary to maintain the free-flowing character of a scenic waterway.

DISTRIBUTION OF INTERFERENCE

Calculate interference as the percentage of annual consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.839, do not fill in the table but check the "unable" option above, thus informing the Water Rights Section that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in the _____ Scenic Waterway by the following amounts, expressed as a proportion of the annual consumptive use pumped from the well.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date November 6, 2014

FROM: Groundwater Section Karl Wozniak
Reviewer's Name

SUBJECT: Application G- 17898 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: WK&K Land, Ltd County: Benton

A1. Applicant(s) seek(s) 1.783 cfs from 2 well(s) in the Willamette Basin, subbasin Quad Map: Riverside

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	**???**	Corner Well	Alluvium	**1.783**	12S/05W-13 NE/NE	1331' W, 168' S fr NE cor S13
2	???	Driveway Well	Alluvium	1.783	12S/05W-12 SE/SE	1167' W, 970' N fr SE cor S12
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	223	?	?	?	?	?	?	?	?	?	?	?
2	221	?	?	?	?	?	?	?	?	?	?	?

Use data from application for proposed wells.

A4. **Comments:** The application indicates that the Corner Well is BENT 5189 (the authorized POA on cancelled GR-2731 and cancelled certificate 32610) and that the Driveway Well is BENT 5180 (the authorized POA on GR-2727). However these older water rights (see map in file GR-2727) show these wells to be about about ¼ mile east of the locations of the Corner Well and the Driveway Well as described in the current application. This suggests that the wells listed on application G-17898 do not correspond to BENT 5189 or BENT 5180. It seems likely the proposed POAs were replacement wells drilled more recently than BENT 5189 or BENT 5180. However, no obvious candidates were found in the OWRD well log database. The wells occur within the Holocene floodplain of the Willamette River and are likely to be relatively shallow and completed in Holocene alluvium as this is the only productive aquifer in the area. In the absence of well logs, this review presumes that the well construction is unknown and that water will be produced from the alluvial aquifer.

A5. ☐ **Provisions of the** Willamette 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: The wells are greater than ¼ from a surface water source so the pertinent rules (OAR 690-502-0240) do not apply.

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) **7e, large 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 wells occur within the Holocene floodplain of the Willamette River. The floodplain sediments has productive sand and gravel beds that probably range up to 40 feet thick in the local area and are capable of high well yields. Published reports show that the water table elevation in the floodplain aquifer is closely tied to stream stage in the Willamette River. Irrigation and domestic well densities are quite low in the surrounding area. Since the aquifer is unconfined and likely to have a high specific yield, hydraulic interference with nearby wells should be minimal. Observation wells are not available in the immediate area but groundwater levels are unlikely to decline over time as pumping from the wells will be buffered by capture from nearby ponds and streams. These factors indicate that groundwater is unlikely to be over appropriated in the area and should be available within the capacity of the resource without injury to prior 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	**Alluvial Aquifer**	☐	☒
2	**Alluvial Aquifer**	☐	☒
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: General knowledge indicates that the Holocene flood deposits are unconfined.

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**	**East Channel Willamette R**	**205**	**205**	**2450**	☒	☐	☐	☐	☒
1	**2**	**Willamette River Main Ch**	**205**	**205**	**1900**	☒	☐	☐	☐	☒
2	**1**	**East Channel Willamette R**	**205**	**205**	**1550**	☒	☐	☐	☐	☒
2	**2**	**Willamette River Main Ch**	**205**	**205**	**2575**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Published water table maps indicate that groundwater flows toward and discharges into the Willamette River and nearby tributary and distributary channels. Seasonal groundwater levels are known to respond to stream stage in the floodplain aquifer.

Water Availability Basin the well(s) are located within: WILLAMETTE R> COLUMBIA R- AB PERIWINKLE CR AT GAGE 14174

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**	☐	☐	**MF 184**	**1750**	☐	**2540**	☐	**<25%**	☐
1	**2**	☐	☐	**MF 184**	**1750**	☐	**2540**	☐	**<25%**	☐
2	**1**	☐	☐	**MF 184**	**1750**	☐	**2540**	☐	**<25%**	☐
2	**2**	☐	☐	**MF 184**	**1750**	☐	**2540**	☐	**<25%**	☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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: A number of gravel quarries occur in the area between the wells and the river. This complex geometry precludes the use of a simple analytical model for stream depletion estimates. The quarries are filled with water at the level of the water table and should be efficiently connected to the floodplain aquifer. As the cone of depression from the pumping wells reaches these quarries, the wells should be able to capture most of their production from the water in the quarries. Therefore, it is unlikely that pumping from the wells will result in >25% of stream depletion after 30 days. Ultimately, however, all water pumped from the wells will be produced at the expense of surface water flows.

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: _____

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**_____

References Used: Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** Corner Well – Uncertain Well Log **Logid:** Uncertain

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) **The applicant indicates that the Corner Well = BENT 5189 but the location of the corner well does not correspond to the location of BENT 5189 as described in GR-2731 (see map in file GR-2727) or on certificate 32610. No other likely well log could be found in the OWRD well log database so this review will presume that the well does not meet our well construction standards unless we are provided with evidence to the contrary.**

D3. **THE WELL construction deficiency or other comment is described as follows:** See comments in D2d above.

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

D1. **Well #:** Driveway Well – Uncertain Well Log **Logid:** Uncertain

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) **The applicant indicates that the Driveway Well = BENT 5180 but the location of the corner well does not correspond to the location of BENT 5180 as described in GR-2727 (see map in file GR-2727). No other likely well log could be found in the OWRD well log database so this review will presume that the well does not meet our well construction standards unless we are provided with evidence to the contrary.**

D3. **THE WELL construction deficiency or other comment is described as follows:** See comments above.

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

Watershed ID	Exceedance Level	Month	Natural Stream Flow	Consump-tive Use	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Avail	Download Date
30200321	80	JAN	10,100	1,370	8,730	0	1,750	6,980	11/6/2014
30200321	80	FEB	11,600	4,280	7,320	0	1,750	5,570	11/6/2014
30200321	80	MAR	11,000	4,560	6,440	0	1,750	4,690	11/6/2014
30200321	80	APR	9,760	4,260	5,500	0	1,750	3,750	11/6/2014
30200321	80	MAY	8,430	2,540	5,890	0	1,750	4,140	11/6/2014
30200321	80	JUN	5,360	856	4,500	0	1,750	2,750	11/6/2014
30200321	80	JUL	3,270	662	2,610	0	1,750	858	11/6/2014
30200321	80	AUG	2,560	601	1,960	0	1,750	209	11/6/2014
30200321	80	SEP	2,540	517	2,020	0	1,750	273	11/6/2014
30200321	80	OCT	2,860	269	2,590	0	1,750	841	11/6/2014
30200321	80	NOV	4,170	353	3,820	0	1,750	2,070	11/6/2014
30200321	80	DEC	8,150	376	7,770	0	1,750	6,020	11/6/2014
30200321	80	ANN	7,460,000	1,230,000	6,230,000	0	1,270,000	4,960,000	11/6/2014

G-17898, WK&K Land, Ltd