

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section

Date October 12, 2006

FROM: Ground Water/Hydrology Section Michael Zwart

SUBJECT: Application G- 16660

Reviewer's Name

Supersedes review of N/A

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: Gary and Sherry Willson County: Harney

A1. Applicant(s) seek(s) 2.0 cfs from one well(s) in the Malheur Lake Basin,
subbasin Quad Map: New Princeton

A2. Proposed use: Irrigation, 126 acres (P) 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	HARN 1475	1	Alluvium	2.0	27S/33E-1 NE-NE	64' S, 1271' W fr NE cor S 1
2						
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	4107	9	9	7/15/85	270	0-20	0-84	None	None	1200	35	P

Use data from application for proposed wells.

A4. Comments:

A5. ☒ Provisions of the Malheur Lake 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:

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) 7C;
- 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: SOWs #183 and #180 are near (<3.5 miles) the well here. These wells are currently displaying small declines or “noise” such as recent or nearby pumping. In recent years, there has been some increased local concerns about water-level declines and pumping interference. Therefore, I believe that a measurement condition is warranted. There are several nearby wells in GRID that were reported to be for irrigation use, but the Department’s interactive mapping program shows few permitted wells. It appears that some unauthorized uses may be occurring.

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	Sand and sandy clay, likely Qal of GW Report #16	☐	☒
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Valley-fill sediments are typically unconfined to semi-confined. The well probably penetrates 5 feet of older basalt or andesite rocks (Tvs) at the bottom.

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	Malheur Lake	4098	4090±	26000±*	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: *Both the surface water elevation and distance to the well will vary as the lake level changes. Currently, the lake is more distant than shown on the quadrangle map. It is very likely that the aquifer penetrated by the well ultimately discharges to Malheur Lake.

Water Availability Basin the well(s) are located within: None

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 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: 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													
(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: This section likely applies. Since Malheur Lake is not flowing, it is not possible to calculate interference as a percentage of natural flow. In using the Wozniak/Hunt analytical model for a nearby application (G-16058), very small values of interference were calculated. There is likely no point to running the model here, since this application is for a smaller quantity and interference will therefore be less. Also, no WAB is designated for this area.

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

References Used: A. R. Leonard, GW Report 16, OWDR, 1970; recent nearby reviews; USGS WSP #841, 1939; local well logs.

D. WELL CONSTRUCTION, OAR 690-200

- D1. Well #: 1 Logid: HARN 1475
- 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).

MEMO

October 12, 2006

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

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

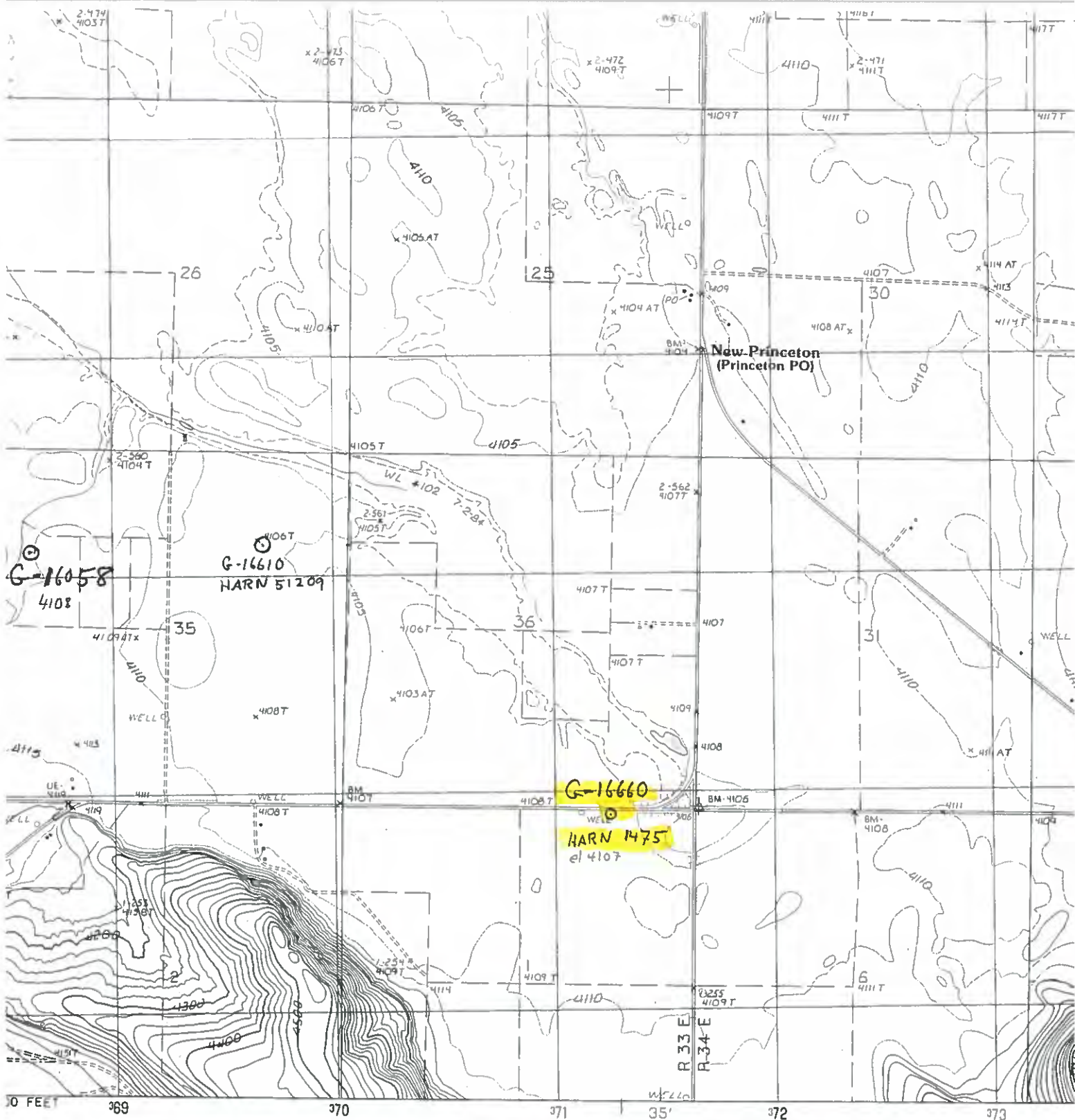
Per ORS 390.835, the Ground Water Section is able to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below.

Per ORS 390.835, the Ground Water Section is **unable** to calculate ground water 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 water flows necessary to maintain the free-flowing character of a scenic waterway.**

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in _____ Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

[illegible]



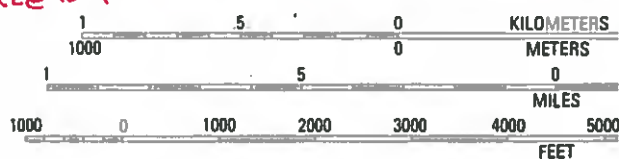
THE UNITED STATES GEOLOGICAL SURVEY
 AERIAL PHOTOGRAPHS TAKEN.....1984
1986. MAP EDITED.....1990
LAMBERT CONFORMAL CONIC
 UNIVERSAL TRANSVERSE MERCATOR.....ZONE 11
 STATE GRID TICKS.....OREGON, SOUTH ZONE
 ATION.....1°04' WEST
 ORTH DECLINATION.....17°00' EAST
NATIONAL GEODETIC VERTICAL DATUM OF 1929
 M.....1927 NORTH AMERICAN DATUM
 : predicted North American Datum of 1983,
 action lines as shown by dashed corner ticks
 and 83 meters east)
 private inholdings within the boundaries of any
 reservations shown on this map

PROVISIONAL MAP
 Produced from original
 manuscript drawings. Infor-
 mation shown as of date of
 field check.

2

New Princeton

SCALE 1:24



CONTOUR INTERVAL
 SUPPLEMENTARY CONTOUR I

To convert meters to feet multi-
 To convert feet to meters multi-

THIS MAP COMPLIES WITH NATIONAL M
 FOR SALE BY U. S. GEOLC
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