Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE # # G-17744

ROUTED TO: Water Rights - Mary

TOWNSHIP/
RANGE-SECTION: 26S/29E-18

CONDITIONS ATTACHED?: [✓] yes [ ] no

REMARKS OR FURTHER INSTRUCTIONS:

Reviewer: Mike Zwart

WATER RESOURCES DEPARTMENT

MEMO December 20, 2013

TO: **Application G-** 17744

FROM: **GW:** Mike Zwart
(Reviewer's Name)

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 ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below.

☐ Per ORS 390.835, the Groundwater 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.**

DISTRIBUTION OF INTERFERENCE

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.

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

SUPERSEDED 8/12/14

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date **December 20, 2013**

FROM: Groundwater Section **Mike Zwart**
Reviewer's Name

SUBJECT: Application G- **17744** 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 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: **William and Lori Peila** County: **Harney**

A1. Applicant(s) seek(s) **2.67** cfs from **two** well(s) in the **Malheur Lake** Basin, **Silver Creek** subbasin Quad Map: **Stinking Lake**

A2. Proposed use **Irrigation, 160 acres** Seasonality: **April 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	**Proposed**	**5**	**Alluv./Volcanics***	**2.67**	**26S/29E-18 NE-SE**	**1320' S, 0' W fr E ¼ cor S 18**
2	**Proposed**	**6**	**Alluv./Volcanics**	**2.67**	**26S/29E-18 NE-SE**	**1020' S, 0' W fr E ¼ cor S 18**
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	**4118**				**400**	**0-40±**						
2	**4117**				**400**	**0-40±**						

Use data from application for proposed wells.

A4. **Comments:** ***The application states "basalt" as the intended aquifer, but the proposed well construction does not differ from that originally proposed in file G-17677. The intent is to seal into basalt and two well logs were provided that describe basalt in the subsurface, but these are four or more miles to the east of this site. See additional comments at C1 and C6.**

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: _____

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) 7N;
   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:** Condition 7N is typically used in this part of the Malheur Lake Basin.

This application is about seven miles west of the western part of an area of the Malheur Lake Basin, known as the Weaver Springs area, for which the Department has concerns about the groundwater resource. As a result, several years ago, the Department selected about 15 wells for quarterly water-level monitoring. Most of those wells are displaying year-to-year water-level declines. As a result, the Department is currently finding that groundwater is not available within the capacity of the resource in that area. The positive findings here are based on the significant distance from that area of the basin and on the lack of more local water-level data with an adequate period of record to conclude whether or not water levels are stable. However, given the documented water-level declines there, and elsewhere in the basin, and the fact that several of the permitted groundwater rights there are not yet developed, it is possible that the proposed use here will result in water level declines that will eventually exceed one or more of the triggers in the measurement condition that is being recommended.

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
1,2	**Basin-fill sediments (Qal and Tvs of GW Report #16)**	☐	☒
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: **Groundwater in the basin fill is generally unconfined and hydraulically connected to surface water, including Malheur and Harney Lakes. There is no local evidence that multiple aquifers are available in this area. In most parts of the basin, the Department considers the basin-fill deposits and underlying volcanic sediments to be a single source of groundwater.**

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**	**Silver Creek**	**4110±**	**4112**	**3800**	☒	☐	☐	☐	☒
2	**1**	**Silver Creek**	**4110±**	**4112**	**4100**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: **The likely head relationship with Silver Creek and the proposed wells suggests an efficient hydraulic connection.**

Water Availability Basin the well(s) are located within: **Silver Cr > Harney Lk ab unn stream (31200408).**

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**	☐	☐			☐	**2.22**	☒	**<25%**	☒
2	**1**	☐	☐			☐	**2.22**	☒	**<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: ______________________________

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 ground water 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** **This application is apparently seeking to modify the proposed well construction from that originally proposed in file G-17677 in an effort to avoid a finding of PSI. This file includes two similarly located wells and proposes to case and seal them into basalt, but the proposed seal depth is the same (±40 feet) as originally proposed. Two well logs were included as "examples of nearby wells" that penetrate basalt (HARN 51141 and HARN 2323). These wells are not in fact very local to the site here and their construction may not have any relevance to the local conditions. There are not many local well logs on file, but two much closer wells, HARN 1311 and HARN 1312, do not report any basalt at depths of 154 and 109 feet, respectively. As stated above, the Department considers the basin-fill deposits and underlying volcanic sediments to be a single source of groundwater. The Tertiary volcanic sediments often include basalt layers, but most wells that penetrate basalt do not report multiple heads (static water levels) as drilling progresses. My findings are the same as were made for file G-17677, based on the proposed well construction, including the seal depth, and the local well logs on file. There may be a local or regional confining layer at depth in this area that would, if properly sealed into, result in a finding of no hydraulic connection with the nearest reach of Silver Creek. Unfortunately, there are no local well logs on file that are relatively deep and it is therefore speculative as to whether any deeper aquifer is available in this area and, if so, at what depth. However, the proposed well construction here is not likely to result in the development of a deep confined aquifer. If such aquifer is available, the wells will certainly need to be cased and sealed well beyond ±40 feet and perhaps several hundred feet below land surface.**

References Used: **Local well logs; local recent reviews; GW Report 16, by Leonard, 1970; Greene, Walker, and Corcoran, 1972, Geologic Map of the Burns Quadrangle, Oregon, USGS Miscellaneous Geologic Investigations Map I-680; Memo by Ivan Gall, 1/15, 2008, Stream Assessment for Division 9 Review in the Malheur Lakes Basin.**

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

WATER WELL REPORT
STATE OF OREGON

Harney 1311

RECEIVED
DEC 22 1981
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 26S/29E-17cd

State Permit No. .....

(1) OWNER:
Name Mike Stafford
Address
City Boise State Idaho

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☐ Driven ☐
Rotary Mud ☐ Dug ☐
[redacted] ☒ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐
Thermal: Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
12 " Diam. from 0 ft. to 154 ft. Gauge .250
" Diam. from ft. to ft. Gauge

[redacted] LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? ☒ Yes ☐ No
Type of perforator used Roscoe Moss, Louvered
Size of perforations 1/8 in. by 3 in.
824 perforations from 120 ft. to 144 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
[redacted] a pump test made? ☒ Yes ☐ No If yes, by whom? Aqua Sales, Inc.
[redacted]ld: 300 gal./min. with 120 ft. drawdown after 3 hrs.
" " " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
[redacted]esian flow g.p.m.
[redacted]mperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No ☒
Well seal—Material used cement
Well sealed from land surface to 20 ft.
Diameter of well bore to bottom of seal 24 in.
Diameter of well bore below seal 24 in.
Number of sacks of cement used in well seal 3½ yards sacks
How was cement grout placed? gravity
Was pump installed? no Type HP Depth ft.
Was a drive shoe used? ☐ Yes ☒ No Plugs 12" Size: location 154 ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☒ Yes ☐ No Size of gravel: 3/8 minus
Gravel placed from 20 ft. to 154 ft.

(10) LOCATION OF WELL:
County Harney Driller's well number
SE ¼ SW ¼ Section 17 T. 26S R. 29 E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 41 ft.
Static level 15' 6" ft. below land surface. Date Nov. 10, 79
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing
Depth drilled 154 ft. Depth of completed well 154 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Topsoil	0	1	
Clay, yellow	1	5	
Clay, Brown/sand	5	12	
Clay, yellow	12	22	
Clay, green	22	41	
Sand, medium, black/clay	41	46	15'6"
Clay, blue	46	58	" "
Clay, gray/Black sand	58	92	" "
Clay, gray	92	112	" "
Clay, black	112	114	" "
Clay, gray	114	119	" "
Sand, medium, gray	119	127	" "
Clay, gray	127	154	" "

Work started Nov. 2 19 79 Completed Dec. 17 19 79
Date well drilling machine moved off of well Dec. 18 19 79

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] John V. Cotter (Drilling Machine Operator) Date 12-20, 1979
Drilling Machine Operator's License No. 1331

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Cotter Drilling & Irrigation (Person, firm or corporation) (Type or print)
Address P.O. Box 876 Crane, Oregon 97732
[Signed] John V. Cotter (Water Well Contractor)
Contractor's License No. 773 Date May 15, 19 81

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

ORIGINAL
File Original, and Duplicate with the STATE ENGINEER, SALEM, OREGON

13/2 Harney

WATER WELL DRILLERS REPORT

STATE OF OREGON

RECEIVED
DEC 4 1957
STATE ENGINEER
SALEM, OREGON

Do Not Fill In — State Well No. 26/29-18 H
State Permit No.

(1) OWNER:

Name A.A. HURLBURT
Address BOX 569
Burns, Oreg

(2) LOCATION OF WELL:

County HARNEY Owner's number, if any—
R. F. D. or Street No. Box 569
Bearing and distance from section or subdivision corner
SE¼ x NE¼
Sec 18 T 26 R 29

(3) TYPE OF WORK (check):

New well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒ Stock

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Dug Well ☐

CASING INSTALLED:

Threaded ☒ Welded ☐

FROM	ft. to	ft.	Diam.	Gage or Wall
0		54	6"	.250

Type and size of shoe or well ring ?
Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:

Type of perforator used
SIZE of perforations in., length, by in.

FROM	ft. to	ft.	perf per foot	No. of rows

SCREENS:

Give Manufacturer's Name, Model No. and Size

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No
If yes, note depth of strata

FROM	ft. to	ft.

METHOD OF SEALING

(9) WATER LEVELS:

Depth at which water was first found ft.
Standing level ~~before perforating~~ 6'6" ft.
Standing level after perforating ft.
Log Accepted by:
[Signed] A.A. Hurlburt Owner Dated Nov. 11, 1957

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
" " " "
" " " "
Artesian flow g.p.m.
Shut-in pressure lbs. per square inch.
Bailer test 35 g.p.m. with 6 ft. drawdown
Temperature of water 49 Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Diameter of well, 6 inches.
Total depth ft. Depth of completed well 104 ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

ft. to	ft.	
0	56'6"	?
56'6"	58'	Gravel
58"	79	Compacted sediment
79"	84	sand gravel & binder
84"	85"	gravel - loose
85	87	sand & gravel & binder
87"	89	soft compacted sediment
89"	96	sand & gravel & binder
96"	104"	soft compacted sediment

Ground elevation at well site feet above mean sea level.
Work started 11-8 1957 Completed 11-11 1957

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME CALVIN C. BRAM
(Person, firm, or corporation) (Typed or printed)
Address 12120 S.E. FOSTER RD. Portland, Oreg.
Driller's well number
[Signed] Calvin C. Bram (Well Driller)
License No. 222 Dated 11-15, 1957

Application G-17744, William and Lori Peila