

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date October 24, 2006

FROM: Ground Water/Hydrology Section Michael Zwart
Reviewer's Name

SUBJECT: Application G- 16668 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: Joseph and Lois Eckley County: Harney

A1. Applicant(s) seek(s) 14.0 cfs from ten well(s) in the Malheur Lake Basin,
 _____ subbasin Quad Map: Northeast Harney Lake

A2. Proposed use: Irrigation, 1148.8 ac (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 50741	1	Volcanic Seds	1.8382	26S/30E-11 NE-NW	1254' S, 1372' E fr NW cor S 11
2	Proposed	2	Volcanic Seds	1.337	26S/30E-11 NW-NE	540' S, 2590' W fr NE cor S 11
3	Proposed	3	Volcanic Seds	1.337	26S/30E-11 NE-NE	495' S, 66' W fr NE cor S 11
4	Proposed	4	Volcanic Seds	2.674	26S/30E-12 NW-SE	2980' S, 2660' E fr NW cor S 12
5	Proposed	5	Volcanic Seds	2.44	26S/30E-13 NE-NE	265' S, 50' W fr NE cor S 13
6	Proposed	6	Volcanic Seds	2.674	26S/31E-18 NW-NE	60' S, 1400' W fr NE cor S 18
7	No Log	7	Volcanic Seds	0.423	26S/31E-17 NW-NE	400' S, 1585' W fr NE cor S 17
8	No Log	8	Volcanic Seds	0.486	26S/31E-17 SE-NW	1386' S, 2508' E fr NW cor S 17
9	HARN 1338	9	Volcanic Seds	1.337	26S/31E-17 SE-NW	2508' S, 2575' E fr NW cor S 17
10	Proposed	10	Volcanic Seds	2.005	26S/31E-17 SW-NE	2535' S, 1250' W fr NE cor S 18

* 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	4136	68	53	11/30/01	132	0-30; 112-121	0-110	0-121	None	1100	46	P
2, 3	4144				130±							
4	4124				130±							
5	4118				130±							
6	4101				100±							
9	4101	60	16	4/25/80	350	0-18	0-150	None	None	450	120	P

Use data from application for proposed wells.

A4. **Comments:** Cinders are described as the water-bearing zone. HARN 50741 amended log shows liner sealed to 121'. No construction information provided for wells 7 and 8 (See recommendation at B3); elevations are estimated as 4103 and 4102 feet. Well 10 is proposed to be 100± feet deep; elevation estimated as 4102 feet. Both wells 1 and 9 case or seal off a shallow saline water-bearing zone. The proposed wells may need to do the same.

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: _____

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
All	Late Tertiary to Quaternary basalt and volcanioclastic sedimentary rocks	<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: Regionally, the aquifer may be more semiconfined to 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?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Harney Lake	4083	4098*	19100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Harney Lake	4085±	4098	20200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Harney Lake	4085±	4098	21100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	1	Harney Lake	4085±	4098	19700	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	1	Harney Lake	4085±	4098	16000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	1	Harney Lake	4085±	4098	14800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	1	Harney Lake	4085±	4098	12500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	1	Harney Lake	4085±	4098	12000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	1	Harney Lake	4085	4098	11000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	1	Harney Lake	4085±	4098	12400	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: *Elevation from quad map (1983). It is generally accepted that Harney and Malheur Lakes are regional discharge areas for the ground-water system in the basin. I expect actual interference will likely be very diffuse.

Water Availability Basin the well(s) are located within: No WAB in this area.

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?
		<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"/>
		<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 #	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?
		<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: 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													
(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, but since the potential interference is likely diffuse and possibly indirect, I believe it is inappropriate to attempt calculation of the potential interference using the Wozniak modification of the Hunt model. In any case, there are no water availability values determined in the area.

Horizontal lines for additional text or notes.

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

Horizontal lines for SW / GW Remarks and Conditions.

References Used: GW Report 16; USGS WSP 841; USGS Map I-680; local well logs; recent reviews in the basin.

Horizontal lines for additional references.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 7, 8 Logid: No well logs

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.

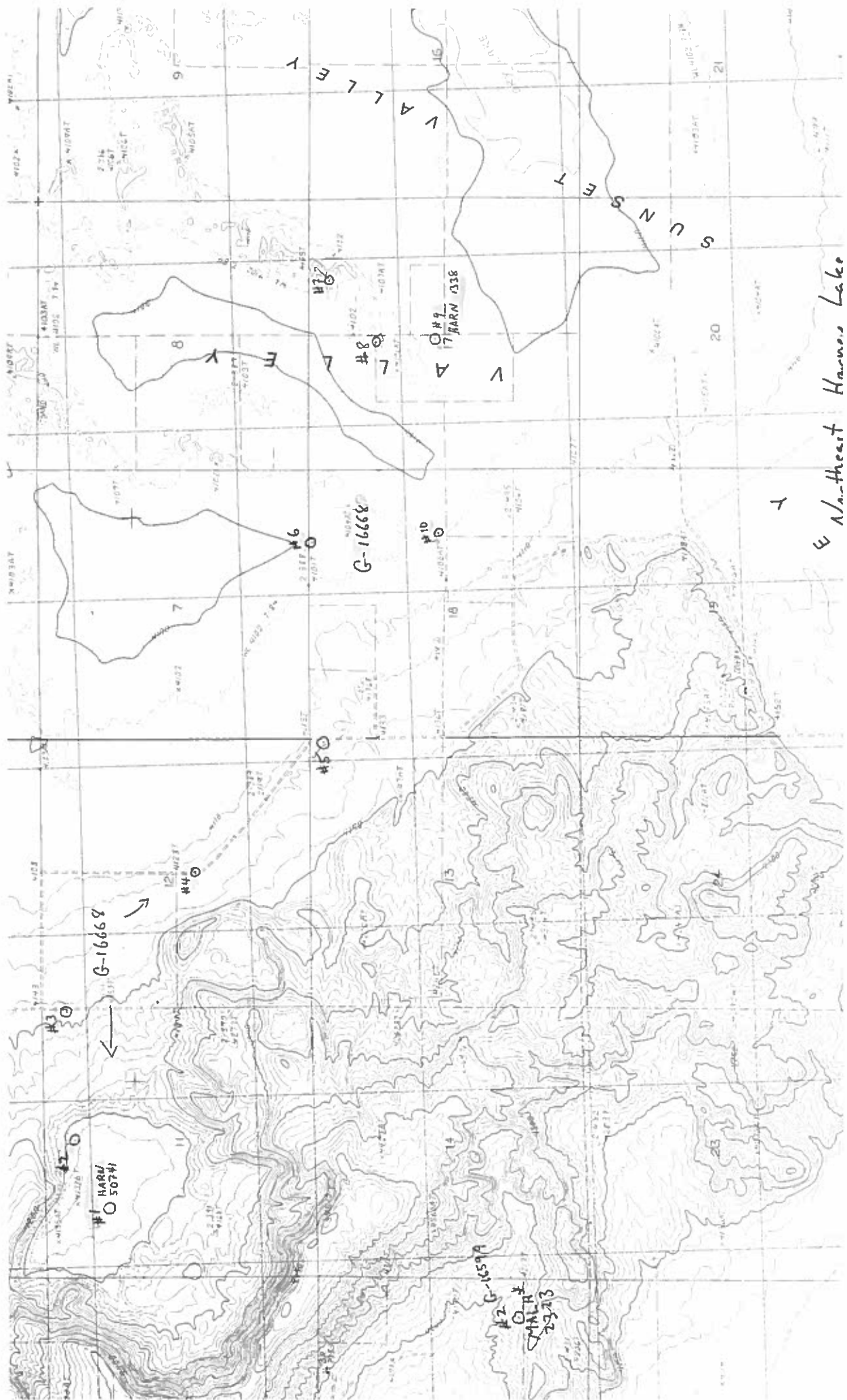
D6. **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.

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).**



Y
E Northwest Harms Lake

G-1668

G-1669

G-1659

HARM 50741

HARM 138

HARM 139

VALLEY

SUNSMY

Y