PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO:		Wate	r Rights S	ection				Date	e Octob	er 24, 200	6	
FROM	:	Grou	nd Water/	Hydrology	Section _		ael Zwart					
SUBJE	ECT:	Appl	cation G-	16668			persedes re	view of	N/A			
		търъ				-	p - 1 - 0 - 0 - 0			Date of Re	view(s)	
D-10-1				. «DOTION!	CD CIT		_					
				MPTION;				C			. Cat 1	nar.
UAR 0	90-310-1.	30 (1)	ine Depart	ment snatt p	resume the	at a propos	ed groundw	ater use will	ensure the p	reservation	of the put	blic 10.140
weijare	, sajety at	ia neai	ın as aescr	ibea in OKS	J37,J23, I	Departmen	i stali reviev	y ground wat	er application	ns under OA	K 090-3	10-140
								he proposed agency poli				
me bres	umpuon	CHICHA	. Tills revi	ew is dased	upon avai	HADIE IIHOI	ination and	agency pon	icies in piace	at the time	oi evaiu	tation.
A. <u>GE</u>	NERAL	INFO	RMATIO	<u>DN</u> : A	pplicant's	Name:	Joseph an	d Lois Eck	ley	County: H	larney	
A1.	Applica	nt(s) se	eek(s) <u>14.</u>	D cfs from	n ten			Malheur I	A CONTRACTOR			_ Basin,
	-					subb	asın Qu	ad Map: <u>N</u>	<u>ortheast Ha</u>	rney Lake_		
A2.	Propose	d use	Irr	igation, 114	R R ac (P)	Sea	onality:	March 1 to	n October 3	1		
A3.							onanty	rk proposed	wells as su	h under lo	aid).	
Well	Logi	id	Applicant		posed	Propos		Location		tion, metes		
			Well#		uifer*	Rate(c		/R-S QQ-Q)		0' N, 1200' E		
1	HARN 5		1		nic Seds	1.838	ightarrow	0E-11 NE-N		' S, 1372' E		
2	Propo		2	_	nic Seds	1.337		0E-11 NW-I	_	' S, 2590' W		
3 4	Propo Propo		3	_	nic Seds	1.337		30E-11 NE-N		5' S, 66' W I		
5	Propo		5		inic Seds	2.674		0E-12 NW- 30E-13 NE-N		0' S, 2660' E 5' S, 50' W I		
6	Propo		6		inic Seds	2.674		1E-18 NW-		S, 1400' W		
7	No L		7		mic Seus	0.423		1E-17 NW-		' S, 1585' W		
8	No L		8	_	mic Seds	0.486	_	1E-17 NW-		5, 1363 W		
9	HARN		9		mic Seds	1.337		1E-17 SE-N		3' S, 2575' E		
10	Propo		10		nic Seds	2.005	_	1E-17 SW-I		5' S, 1250' W		
	um, CRB,							12 1, 0 11 1	,,,,	,		
	, . ,											
	Well	First		SWL	Well	Seal	Casing	Liner	Perforation	s Well	Draw	Test
Well	Elev	Wate	f fible	Date	Depth	Interval	Intervals	Intervals	Or Screen:		Down	Type
	ft msl	ft bls			(ft)	(ft)	= (ft)	(ft)	(ft)	(gpm)	(ft)	
1	4136	68	53	11/30/01	132	0-30;	0-110	0-121	None	1100	46	P
2, 3	4144				130±	112-121		-		-		-
4	4124				130±					_	1	-
5	4118				130±							$\vdash \vdash \vdash$
6	4101				100±							
9	4101	60	16	4/25/80	350	0-18	0-150	None	None	450	120	P
Use data	from app	lication	for proposed	l wells.					•	·		
A4.								N 50741 am				
No con	struction	infort	nation pro	vided for w	ells 7 and	8 (See rec	ommendatio	on at B3); el	evations are	estimated :	as 4103 a	<u>nd</u>
shallow	et. Well	IU IS P	roposed to	e. The pro	<u>et deep; el</u>	evation es	timated as 4	102 feet. B	oth wells 1 a	nd 9 case o	r seal off	<u>a</u>
snamov	saune w	ater-o	earing zon	e. The pro	posea well	<u>is may nee</u>	<u>a to ao tne :</u>	same.				
A5. 🛛	Provisi	ions of	the Malhe	ur Lake			Rasin n	ıles relative t	n the develo	nment class	ification	and/or
115.					cally conn	ected to su	rface water	are, or	are not ac	tivated by tl	nis annlic	ation
				n such provi					<u> </u>		s wpp::-e	
					/			— XII NOV				
A6. 🗌	Well(s)	#		,	,	,	, ta	p(s) an aquif	er limited by	an adminis	trative res	striction.
				ea:								
	Comme	nts:										

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 period of the proposed use: a. □ is over appropriated, □ is not over appropriated, or □ cannot be determined to be 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 fine 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)	ation	G- <u>16668</u>	continued	Date: Octob	per 24, 2006
a. □ is over appropriated, □ is not over appropriated, or ☒ cannot be determined to be over appropriated during 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 find 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)TN ii. □ The permit should contain special condition(s) as indicated in item 2 below. iii. □ The permit should contain special condition(s) as indicated in item 3 below; 2. a. □ Condition to allow ground water production from no deeper than ft. below land surface; b. □ 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 like 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 Growater Section. Describe injury —as related to water availability—that is likely to occur without well reconstruction (interference senior water rights, not within the capacity of the resource, etc):	ROUN	ND WATER AVAI	LABILITY CONSIDERATION	IS, OAR 690-310-130, 400	<u>-010, 410-0070</u>
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 fine 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: The permit should contain condition #(s) TN	Bas	sed upon available da	ıta, I have determined that ground wa	ter* for the proposed use:	
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) TN 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; 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 like 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 senior water rights, not within the capacity of the resource, etc):	a.	period of the pro	posed use. * This finding is limited		
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; a. Condition to allow ground water production from no deeper than	Ъ.				
i.	c.	☐ will not or ☐	will likely to be available within the c	apacity of the ground water re	esource; or
a. Condition to allow ground water production from no deeper than	d.	i. 🛛 The per	rmit should contain condition #(s)	7N	ground water resource:
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 like 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 Grawater Section. Describe injury —as related to water availability—that is likely to occur without well reconstruction (interference senior water rights, not within the capacity of the resource, etc): Ground water availability remarks: There is increasing local concern about ground-water availability in the Harney Valley, but not in this particular area as of yet.		iii. The per	mit should contain special condition(s) as indicated in item 3 below	<i>y</i> ;
c. Condition to allow ground water production only from the 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 like 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 Grewater Section. Describe injury—as related to water availability—that is likely to occur without well reconstruction (interference senior water rights, not within the capacity of the resource, etc): Ground water availability remarks: There is increasing local concern about ground-water availability in the Harney Valley, but not in this particular area as of yet.	a.	☐ Condition to al	low ground water production from no	deeper than	ft. below land surface;
 d.	b.	Condition to al	low ground water production from no	shallower than	ft. below land surface;
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 Great Water Section. Describe injury—as related to water availability—that is likely to occur without well reconstruction (interference senior water rights, not within the capacity of the resource, etc): Ground water availability remarks: There is increasing local concern about ground-water availability in the Harney Valley, but not in this particular area as of yet.	c.	Condition to all water reservoir b	ow ground water production only from the permanent of the	n the ft. below la	ground ground surface;
Ground water availability remarks: There is increasing local concern about ground-water availability in the Harney Valley, but not in this particular area as of yet.	d.	occur with this u issuance of the p	se and without reconstructing are cite	ed below. Without reconstruct	ion, I recommend withholding
Harney Valley, but not in this particular area as of yet.		Describe injury - senior water rights	as related to water availability— that i , not within the capacity of the resour	s likely to occur without well ce, etc):	reconstruction (interference w/
Harney Valley, but not in this particular area as of yet.					
Harney Valley, but not in this particular area as of yet.		- 732 ST			
I recommend that any permit issued exclude wells 7 and 8 until the applicant provides well construction informat	Gro <u>Ha</u>	ound water availabil	ity remarks: <u>There is increasing l</u> in this particular area as of yet.	ocal concern about ground-	water availability in the
				antil the applicant provides	well construction information.
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Date: October 24, 2006

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 volcaniclastic sedimentary rocks		
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(00 00 040 (2) (2) Tantanian C II .			7	

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.

Basis for aquifer confinement evaluation: Regionally, the aquifer may be more semiconfined to unconfined,

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	Harney Lake	4083	4098*	19100			
2	1	Harney Lake	4085±	4098	20200			
3	1	Harney Lake	4085±	4098	21100			
4	1	Harney Lake	4085±	4098	19700			
5	1	Harney Lake	4085±	4098	16000			
6	1	Harney Lake	4085±	4098	14800			
7	1	Harney Lake	4085±	4098	12500			
8	1	Harney Lake	4085±	4098	12000			
9	1	Harney Lake	4085	4098	11000			
10	1	Harney Lake	4085±	4098	12400			

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 < 1/4 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?
					700					

Application	G-16668
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Date	October 24	2006	
Date:	October 24	, 2000	

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?

				1 1				
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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							77				
Well SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	%	9%	%	%	%	₩	9/0	%	%	%	9/6	. %
Well Q as CFS		lu .										
Interference CFS												
	`								,	17		
Distributed Well												
Well SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS												
Interference CFS		İ										
	%	%	%	%	%	1/4	%	%	%	%	%	%
Well Q as CFS												
Interference CFS												
	9/0	%	%	1/6	/-	1/6	%	9/6	%	%	%	%
Well Q as CFS												
Interference CFS												
	%	%	%	9/6	%	%	%	%	%	%	%	%
Well Q as CFS												
Interference CFS						i						
	%	0/0	%	1/6	%	%	%	%	9/0	%	9/4	11/0
Well Q as CFS			7.1									
Interference CFS						<u> </u>						
	9/6	%	9/0	%	%	0/0	%	%	0/0	%	0/0	9/0
Well Q as CFS											-	
Interference CFS												
(A) = Total Interf.												
(B) = 80 % Nat. Q		Ï										
(C) = 1 % Nat. Q												
(D) = (A) > (C)	1	V .	1	1	V	1	1	1	1	1	1	1
$(E) = (A / B) \times 100$	%	%	%	9/0	0/6	%	%	9/0	9/0	%	%	%

(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.

Version: 08/15/2003

0	ndirect, I believe it is inappropriate to attempt calculation of the potential interference using the Wozniak modific If the Hunt model. In any case, there are no water availability values determined in the area.
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(690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Rights Section.
]	If properly conditioned, the surface water source(s) can be adequately protected from interference, and/or ground wate 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;
w	/ CW Remarks and Conditions
W	/ GW Remarks and Conditions
W	/ GW Remarks and Conditions
W	/ GW Remarks and Conditions
w	/ GW Remarks and Conditions
w	/ GW Remarks and Conditions
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Date: October 24, 2006

Application G-16668 continued

Appl	cation G-16668continued Date: October 24, 2006
D. <u>V</u>	ELL CONSTRUCTION, OAR 690-200
D1.	Well #: 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 report of CWRE d. other: (specify)
D3.	THE WELL construction deficiency: a.
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.
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.
THI	S 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).

WATER RESOURCES DEPARTMENT

FROM: GW: Michael Zward (Reviewer's Name) SUBJECT: Scenic Waterway Interference Evaluation YES NO NO YES 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. The calculated 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.	ME	OM							00	tobe	24.	200_6
The source of appropriation is within or above a Scenic Waterway YES 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. 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.	FRO		GW:	Mich	ac (Zwar Name)	<u>+</u>	aluation	1			
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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 inScenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.	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											
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	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											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

