Groundwater Application Review Summary Form

Application # G- 18450	
GW Reviewer M. Thoma	Date Review Completed: 08-16-18
Summary of GW Availability and Injury Review:	
[] Groundwater for the proposed use is either over amounts requested without injury to prior water right capacity of the groundwater resource per Section B of	hts, OR will not likely be available within the
Summary of Potential for Substantial Interference F	Review:
[] There is the potential for substantial interference	per Section C of the attached review form.
Summary of Well Construction Assessment:	
The well does not appear to meet current well coreview form. Route through Well Construction and a straight of the straight of	

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO <u>08-16</u> ,20_/8									8		
TO:		Applica	ation G	18	450		-				
FROM	1:	GW: _	M, (Řeviewe	<i>Tho</i> r's Name	ma)		_				
SUBJI			aterwa			Evalua	tion				
	YES NO	The source of appropriation is within or above a Scenic Waterway									
	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.										
	interference the Detthat t	rence w epartme he pro	835, the ith surfactor is unposed on the initial initi	ace wate nable to use wil	er that o o find t II meas	contribu hat the surably	tes to a re is a reduce	scenic prepone the s	waterwa deranc urface	ay; then e of evi water	efore, dence
Calcula calcula	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.										
Water	way by	the follo	t is calcowing an	nounts							Scenic use by
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	!	1									



MEMO

To:

Kristopher Byrd, Well Construction and Compliance Section Manager

From:

Joel Jeffery, Well Construction Program Coordinator

Subject:

Review of Water Right Application G-18450

Date:

August 21, 2018

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Mike Thoma reviewed the application. Please see Mike's Groundwater Review and the Well Log.

Applicant's Well #1 (LANE 301): Based on a review of the Well Report, Applicant's Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The Water Supply Well Report reveals that this well was improperly abandoned. In order to meet minimum well construction standards, Applicants Well #1 must be cleaned out to the natural bottom and completely filled with an appropriate sealing material.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 (LANE 301) unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards.

Bringing Applicant's Well #1 into compliance with minimum well construction standards may not satisfy hydraulic connection issues.

165/4W/16

STATE OF OREGON / / ///// (O)		0/7-7
WATER WELL REPORT WATER RE (as required by ORS 537.765)	SOURCES DEPT M. OREGON (START CARD) #	5532
(1) OWNER: Well Number:	(9) LOCATION OF WELL by le	
Name Shadow Hill's Country Club	County LANE Latitude	
Address 925/2 RIVER Rd	Township Nor Range	Longitude
City Tune Lion City State ORE Zip 97448	Section 16 4	E OLVY, WWI.
(2) TYPE OF WORK:	Tax Lot #5 Lot Block	Subdivision
New Well Deepen Recondition A Abandon	Street Address of Well (or nearest address) 🗻	
(3) DRILL METHOD		
Rotary Air Rotary Mud Cable	(10) STATIC WATER LEVEL:	
U Other	ft. below land surface.	Date 10-1-90
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation	Artesian pressure ib. per squ	
☐ Thermal ☐ Injection ☐ Other	(11) WATER BEARING ZONE	
(5) BORE HOLE CONSTRUCTION:	Depth at which water was first foun 25/2	ta26/2)(30:to31)
Special Construction approval Yes No Depth of Completed Well 472 ft.	From To	Estimated Flow Rate SWL
Yes No L M Explosives used Type Amount	25/2 26/2	15 gpm 1/2
HOLE SEAL Amount	36 ' 3/'	15 gpm 7/3
Diameter From To Material From To sacks or pounds		· · · · · · · · · · · · · · · · · · ·
14" 0 18 10" B 478 - D 25%	(12) WELLLOG: Crowd elevetic	
10" 18 475 252 27	Ground elevation	
	Material Case Case Case Case Case Case Case Case	From To SWL
How was seal placed: Method	CIAY, BROWN	3 25%
Other	ORNUE!	25 26 7/2
Backfill placed from 31 ft, to 472 ft. Material Urill Cutting. Gravel placed from 253-245530-31 ft. Size of gravel & "Round"	CINY BROWN	26/3 30 0
	9RHUE!	30 31 75
(6) CASING/LINER: Diameter From To Gauge Steel Plastic Welded Threaded	Elay Brown	31 4775
Casing:	CIRY, GRAY	47/2
none		
Liner:		
Final location of shoe(s)		
(7) PERFORATIONS/SCREENS:		
Perforations Method		
Screens Type Material		<u> </u>
Slot Tele/pipe From To size Number Diameter size Casing Liner		
none		
	Dota storted 9-25-90 Comp	10 1 00
		leted 10-1-90
(8) WELL TESTS: Minimum testing time is 1 hour	(unbonded) Water Well Constructor Cer I certify that the work I performed on	tification:
Pump Bailer Air Artesian	abandonment of this well is in compliance	with Oregon well construction
Yield gal/min Drawdown Drill stem at Time	standards. Materials used and information re knowledge and belief.	ported above are true to my best
16 25/2 / 1 hr.	•	WWC Number
	Signed	Date
	(bonded) Water Well Constructor Certific	
Temperature of water Depth Artesian Flow Found	I accept responsibility for the construct work performed on this well during the const	tion, alteration, or abandonment
Was a water analysis done? Yes By whom Was a water analysis done?	work performed during this time is in	compliance with Oregon well
Did any strata contain water not suitable for intended use? Too little Salty Muddy Odor Colored Other	construction standards. This report is true t	
Depth of strata:	Signed Sterald Willson	WWC Number <u>639</u> Date /0-/-90
	U	

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO:	Л.		er Rights S		•	N.C. L.	-1 Th		Date	08/16/	2018		
FRON	/1:	Grou	indwater S	ection			el Thoma						
SUBJ	ECT:	Ann	lication G-	18450					iew of			•	
2020	201.	PP		10100		. 24,	porocac	, 10 , ,			Date of Re	view(s)	
					CD OTTO		/						
				<u>MPTION;</u>									
										nsure the prese			
										applications u			
										ise be modified cies in place at			
the pre	sumption	CHIEH	a. This revi	ew is paseu	upon avan	abie ililut	знанон а	anu a	agency pond	des in place at	. me ume	or evan	iauon.
A. <u>GE</u>	ENERAL	INF	ORMATIO	<u>ON</u> : A	pplicant's N	Vame:	Shadow	Hills	s Country (Club (County: _	Lane	
,A1.	Applica	nt(s) s	eek(s) <u>0.0</u>	9 cfs froi	n <u>2</u>	well((s) in the		Willamette				_ Basin,
						subb	asin						
A2.	Propose	d use	Irri	gation		Seas	sonality:	<u>Ap</u>	<u>r. 1 – Sept. 1</u>	l (154 days)			
A3.	Well an	d aqui	fer data (att	ach and nu	mber logs i	for existin	g wells;	marl	k proposed	wells as such	under log	gid):	
Well	Logic		Applicant	'S Propos	ed Aquifer*	Prop	osed		Location	Location	n, metes a	nd bound	s, e.g.
			Well #						T/R-S QQ-Q)		, 1200' E i		
2	LANE 3 PROPOS		1 2		lluvium Iluvium	0.0			5/04W-16 SESI 5/04W-16 SESI		-		
3	FROFOS	ED	. 4	A	Huviuii	 	00	103	104W-10 SESI	3 03 00 00	E, 1550 II	OIII 3 W CO	DEC 30
	ium, CRB,	Bedro	ck		-	1							-
	, ,												
ŀ	Well	Firs	1 (1 () 1	SWL	Well	Seal	Casing		Liner	Perforations	Well	Draw	Test
Well	Elev	Wate	r fthle	Date	Depth	Interval	Interva	ls_	Intervals	Or Screens	Yield	Down	Type
1	ft msl	ft bl. 25.5		10/1/1990	(ft) 47.5	(ft) ??	(ft) None	-	(ft) None	(ft)	(gpm) 16	(ft) 25.5	P
2	350	-	-	-	-	-	- 110110			-	-	-	 -
Use dat	a from app	lication	for proposed	i wells.									
A4.	Comm	·	The well les	41 for Wall	(I ANIE 20	11) ronorta	it on a M	au W	Valland Aba	<i>ndon</i> implying	that tha		
A4.				d; there is no					ven and Aba	naon mipiying	mai me i	iew weii	was
									tion of prop	osed well cons	truction '	The rema	ainder
•										Well #2 equal			
	(46.5 ft)												
			,										
•										•			
A5. 🛚		ions o	f the Willar	mette (OAR	690-502)		Basi	n rule	es relative to	the developm	ent, class	ification	and/or
						cted to sur	face wat	er _	led are, or led	are not, activa	ated by th	iis applic	ation.
				n such provi									
	Comme	nts:	<u> </u>										
			•	•						•			
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A6. ∟	J vven(s)	fodmi	inictrative of	,, , _		,	,	tap((s) an aquife	r limited by an	administ	rative res	striction.
	Comme	nte:	msuanve al	.ca									
	Comme					-							

Version: 05/07/2018

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1.	Bas	sed 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) 7C (7-yr SWL); Medium 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 than50ft. below kind 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):
В3.	repo wat	bundwater availability remarks: There is a State Observation Well less than 1 mile from the proposed POAs that orts long-term, stable water level data implying that the groundwater in the area is not over-appropriated. However, stable er levels, when taken with the amount of groundwater development in the area, are indicative of an efficient hydraulic nection to surface water, which is addressed in Section C. Injury to existing water rights is unlikely given the low rate of
		ropriation and high transmissivity of the aquifer, but the conditions in Section B1(d) are recommended.

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	. Alluvium		⊠ .
2	Alluvium		\boxtimes
-			

Basis for aquifer confinement evaluation: information from nearby well logs suggest that the aquifer in the area, at the proposed depth of the wells, is 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	Unnamed Trib. to Willamette R.	345	345	2080*		
2	1	Unnamed Trib. to Willamette R.	345	345	4010		
2	2	Flat Creek	345	345	3000		
		·					

Basis for aquifer hydraulic connection evaluation: incision of nearby streams is to the elevation of the groundwater level reported on the well log for Well #1 and other well logs from nearby wells; unconfined nature of aquifer

Water Availability Basin the well(s) are located within: Willamette R > Columbia R - AB Periwinkle Cr at Gage 14174 (WAB ID# 30200321)

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?
1	1			NA*	NA		2540		< 0.01	
2	1			NA*	NA		2540		< 0.01	
2	2			NA*	NA		2540		< 0.01	
										

Comments: *There is an instream water right on the Willamette River but it does not extend to the unnamed tributary; there is no instream water right on Flat Cr.

<u>Interference</u> @ 30 days was estimated using the Hunt (1999) stream-depletion model and aquifer parameters appropriate for this type of material.

^{*} distance to SW#1 is below the point where the stream is mapped as perennial on the NHD coverage which corresponds to where the incision of the stream is approx. equal to the reported groundwater elevation, suggesting this is the nearest point of perennial hydraulic connection.

Ovalantic	e <mark>d and</mark> on and			as in C3	a above.								
		-		Instr		nstream	0577.5	80%	6 Qv	v > 1%	Interferer	P	otential
	SW		Qw			Water	Qw > 1%	Natur	ral o	f 80%	@ 30 da	ve fo	r Subst.
_	#		5 cfs	١ ١	-	Right Q	ISWR?	Flov		atural	(%)	, 11	nterfer.
				II		(cfs)	15 11 10.	(CIS		low?			sumed'
	1		_	N		NA	<u> </u>	2540		ᆜ	<0.01		ऱ
	2			N	<u>A</u>	NA		2540	0		< 0.01		ᆜ
													
Comme	nte•			/						<u> </u>			<u> </u>
This table	e of the encor	e propo npasses	sed pump	oing rate. derations	Limit eva required	luation to	the effect (5)(a), (b	s that will o), (c) and	occur up	to one ye	than one near after puincluded of	mping be	
I on-Distribu Well SW		' ells Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TON BW	"	%	%	%	%	%	%	- %	% %	%			100
Well Q as CF	S							1					
nterference CI	FS	·											
istributed V		247	H at 1 - 2g	*. * * * * * * * * * * * * * * * * * *	, 44 ⁵ Mg. 14	ger Car da	N. P.	. 50 giring a	.* 4 * 5.3			,	
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Well Q as CF	-												
oj jankiji i ja		*.	x; * .e	- A		1 8	4.				. 4.5.7.7°	11. 1. 1. 1. 1.	13
A) = Total Inte													
B) = 80 % Nat.	-												
C) = 1 % Nat.	Q			* 2 * * * * *	<u> </u>	L.,				<u> </u>	<u> </u>		
$\overline{(D) = (A) > (C)}$	<u> </u>	V	√ ·	√	V	1	√ ·	V	√ ·	<i>3</i>		N. C.	1
$E) = (A / B) \times 10$	- + -	%	%	%	%	%	%	%	%	%	%	%	97
= total interfe S; (D) = high Basis for	nlight th	ne checki nct evalu	mark for e uation:	ach month	where (A)) is greater 1	han (C); ((E) = total in	nterference	e divided t	y 80% flow	as percen	tage.
. 🗌 If pro	perly (rmit car	n be regu		is found t	o substant		tely protection for the telegraph te			nce, and/or	groundw	ater us

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References Used:

Gannett, M. W. and R. R. Caldwell. 1998. Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington. USGS Professional Paper 1424-A.

Herrera, N. B., Burns, E. R., and T. D. Conlon. 2014. Simulation of Groundwater Flow and the Interaction of Groundwater and Surface Water in the Willamette Basin and Central Willamette Subbasin, Oregon. USGS Scientific Investigations Report 2014-5136.

Hunt, B. 1999. Unsteady Stream Depletion from Ground Water Pumping. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

O'Conner, J. E., A. Sarna-Wojcicki, K. C. Wozniak, D. J. Polette, and R. J. Fleck. Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon. USGS Professional Paper 1620

OWRD Well Log Database - Accessed 8/16/2018.

Woodward, D. G., M. W. Gannett, and J. J. Vaccaro. 1998. Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington. USGS Professional Paper 1424-B.

D. WELL CONSTRUCTION, OAR 690-200

D1.	Well #:1 Logid:LANE 301
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
	u.
Ď3.	THE WELL construction deficiency or other comment is described as follows: The well log does not report that any casing was installed
	•
D4.	Menute to the Well Construction and Compliance Section for a review of existing well construction.

Water Availability Tables

Water Availability Analysis Detailed Reports

WILLAMETTE R > COLUMBIA R - AB PERIWINKLE CR AT GAGE 14174 WILLAMETTE BASIN

Water Availability as of 8/16/2018

Watershed ID #: 30200321 (Map)

Date: 8/16/2018

Exceedance Level: 80% V

Time: 11:45 AM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

Watershed Characteristics

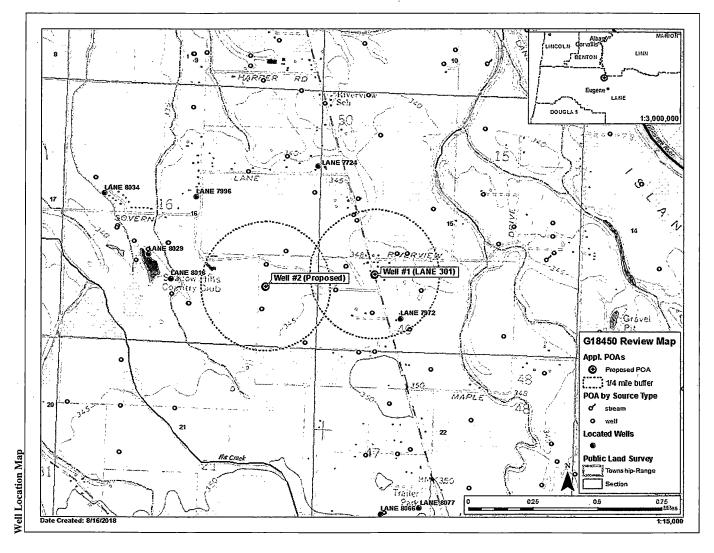
Date: 08/16/2018

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second Annual Volume at 50% Exceedance in Acre-Feet

	Annual Volume at 50% Exceedance in Acte-1 est									
Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available				
JAN	10,100.00	1,370.00	8,730.00	0.00	1,750.00	6,980.00				
FEB	11,600.00	4,290.00	7,310.00	0.00	1,750.00	5,560.00				
MAR	11,000.00	4,560.00	6,440.00	0.00	1,750.00	4,690.00				
APR	9,760.00	4,260.00	5,500.00	0.00	1,750.00	3,750.00				
MAY	8,430.00	2,560.00	5,870.00	0.00	1,750.00	4,120.00				
JUN	5,360.00	856.00	4,500.00	0.00	1,750.00	2,750.00				
JUL	3,270.00	662.00	2,610.00	0.00	1,750.00	858.00				
AUG	2,560.00	601.00	1,960.00	0.00	1,750.00	209.00				
SEP	2,540.00	517.00	2,020.00	0.00	1,750.00	273.00				
OCT	2,860.00	270.00	2,590.00	0.00	1,750.00	840.00				
NOV	4,170,00	355.00	3,820.00	0.00	1,750.00	2,070.00				
DEC	8,150.00	380.00	7,770.00	0.00	1,750.00	6,020.00				
ANN	7,460,000.00	1,240,000.00	6,230,000.00	0.00	1,270,000.00	4,960,000.00				

Version: 05/07/2018 .



Water-Level Trends in Nearby Wells

