Groundwater Application Review Summary Form

Application # G- <u>1870 4</u>	
GW Reviewer J. Hackett	Date Review Completed: 11/14/2018
Summary of GW Availability and Injury Review:	
[] Groundwater for the proposed use is either over a amounts requested without injury to prior water right capacity of the groundwater resource per Section B of the groundwater	its, OR will not likely be available within the
Summary of Potential for Substantial Interference R	eview:
[] 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 conserved form. Foute through Well Construction and Constru	

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 November 14,20 18 **MEMO** Application G-18704 TO: GW: J. Hackett FROM: **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) 14 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 _____ 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



MEMO

To:

Kristopher Byrd, Well Construction and Compliance Section Manager

From:

Joel Jeffery, Well Construction Program Coordinator

Subject:

Review of Water Right Application G-18704

Date:

November 19, 2018

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Josh Hackett reviewed the application. Please see Josh's groundwater review and the Well Log.

Applicant's Well #1 (LINN 7136): 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 well report indicates that the top terminal height of the well casing only extends to eight inches above land surface. In order to meet minimum standards it must be extended to at least twelve inches above the finished ground surface or pumphouse floor, and a minimum of twelve inches above the local surface runoff level. In addition, the annular seal also does not meet minimum well construction standards. In order to meet minimum standards, the annular seal must be extended to a depth of 37 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 (LINN 7136) 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.

NOTICE TO WATER WELL CONTRACTOR The original and first color of this report are to be MAY 1 1 1972 STATE WELL REPORT STATE OF OREGON STATE ENGINEER, SALEM, OREGON 97310 Within 30 days from the Gate A LEM OREGON OF the Color of well completion. SALEM OREGON of write above this line)

State Well No.

State Permit No. ...

(1) OWNER:	(10) LOCATION OF WELL:	75 - 1		
Name Walter Underwood	T •			·
Address 3532 Dunlap Ave., Albany, Ore. 97321				
	14 14 Section 4 T. 11S	71	Ų	W.M.
(2) TYPE OF WORK (check):	Bearing and distance from section or subdivis	ion corner		
New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐				- 12 St. 6
If abandonment, describe material and procedure in Item 12.	(44) ****			
(3) TYPE OF WELL: (4) PROPOSED USE (check):	(11) WATER LEVEL: Completed w	æll.		-,*-
Potany D Driven D	Depth at which water was first found	16		ft.
Cable Jetted Domestic Lindustrial Municipal	Static level 12 ft. below land	surface. D	ate 5-	3-72
Dug Bored I Irrigation Test Well Other	Artesian pressure lbs. per squar	re inch. D	ate	
CASING INSTALLED: Threaded Welded Y	(19) WELL LOG			
6" Diam. from+811 ft. to7.9½ ft. Gage17#	(12) WELL LOG: Diameter of well		_	
"Diam. from ft. to ft. Gage	Depth drilled 80 ft. Depth of compl			O ft.
ft. to ft. Gage	Formation: Describe color, texture, grain size	and structu	re of r	naterials;
PERFORATIONS: Porforotoda X von G No.	and show thickness and nature of each stratus with at least one entry for each change of forma	tion Repor	t each	hanga in
reflorated? 41 res \(\) No.	position of Static Water Level and indicate prin	cipal water	r-bearin	ng strata.
Type of perforator used Acetylene Torch	MATERIAL	From	To	SWL
Size of perforations 3/8 in. by 12 in.	Top Soil	0	2	
	Brown Clay	2	3	
perforations from ft. to ft.	Brown Clay & Gravel	3	18	
perforations from ft. to ft.	Dirty Gravel	18	23	
(7) SCREENS: Well screen installed? Yes X No	Brown Clay & Gravel	23	32	
Manufacturer's Name	Brown Clay	32	40	
Type Model No.	Blue Clay	40	43	
Diam Slot size Set from ft. to ft.	Blue Clay & Gravel	43	46	
Diam Slot size Set from ft. to ft.	Black Sand & Gravel	46	53	
	Black Sandy Clay	53	65	
(8) WELL TESTS: Drawdown is amount water level is lowered below static level	Black Sand & Gravel		78	-
Was a pump test made? ☐ Yes ☑ No If yes, by whom?	Black Clay & Gravel	78	80	
Yield: gal./min. with ft. drawdown after hrs.				
" " "				
H H H H				
Bailer test 70 gal./min. with 71/2 ft. drawdown after 11/2 hrs.				
A margin flows	7.4			
perature of water Depth artesian flow encountered	14 12			
To the checountered	Work started 4-28 1972 Complete	d 5-3		19 72
(9) CONSTRUCTION:	Date well drilling machine moved off of well	5-3		1972
Well seal—Material used Bentonite	Drilling Machine Operator's Certification:			-
Well sealed from land surface to 18 ft.	This well was constructed under my	direct s	uperv	vision.
Diameter of well bore to bottom of sealin.	Materials used and information reported best knowledge and belief.	above are	true	to my
Diameter of well bore below seal6 in.	sain some file till	marc 5/	6	1077
Number of sacks of cement used in well seal sacks	(Drilling Machine Operator)	Date	¥,	192
Number of sacks of bentonite used in well seal sacks	Drilling Machine Operator's License No	436		
Brand name of bentonite Oregon Bentonite	Water Well Contractor's Contistant			
Number of pounds of bentonite per 100 gallons	Water Well Contractor's Certification:			
of water lbs./100 gals.	This well was drilled under my jurisdic true to the best of my knowledge and beli	ction and	this re	port is
Was a drive shoe used? Yes \(\sum \) No Plugs Size: location ft.				
Did any strata contain unusable water? Yes X No Type of water? depth of strata	Name Merle Warren Well Drill (Person, firm or corporation)	(Type	or print	;)
goper or strata	Address Rt. 1. Box 84, Tanger	it. Ore	97	2389
Method of sealing strata off	[Signed] ///le/ Harre	n		
Was well gravel packed? Yes No Size of gravel:	(Water Well Contra			······································
Gravel placed from ft. to ft.	Contractor's License No182 Date	5/	4	19/2
/IICE ADDITIONAL CO				

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO:			Rights S					Date	eN	lovember 1	4, 2018	
FROM	:	Groun	nawater S	ection			<u>kett</u> ewer's Name					
SUBJE	ECT:	Appli	cation G-	18704				review of		Date of	Review(s)	
DUDI		EDEGE	DDEGE	MOTION	CROUN							
OAR 69 welfare, to determ	90-310-1 safety a mine wh	30 (1) 7 and healt ether the	The Depart th as descr e presumpt	<i>ibed in ORS</i> ion is establi	resume tha 537.525. D ished. OAR	t a propose Department 1 690-310-	ed grounds staff revie 140 allows	water use will a ew groundwate the proposed ad agency poli	er applicati use be mo	ons under (dified or co	OAR 690-3 nditioned t	10-140 o meet
A. <u>GE</u> I	NERAL	INFO	RMATIO	<u>ON</u> : A	pplicant's N	Name:	Walter &	Gale Underw	ood	_ County	: Linn	
A1.	Applica	ant(s) see	ek(s) <u>0.0</u>	43 cfs from	n <u>1</u>			Willamette				Basin,
A2.	Propose	ed use _	Nu	rsery		Seas	sonality: _	Year-Round				
A3.	Well ar	nd aquife	er data (att	ach and nu	mber logs	for existin	g wells; m	ark proposed	wells as s	uch under	logid):	
Well	Logic	d	Applicant Well #	's Propos	ed Aquifer*	Prop Rate	osed (cfs)	Location (T/R-S QQ		Location, n 2250' N, 12		
1	LINN 7	136	1	A	lluvium	0.0		11S/3W-4 SE			0' W fr W1/1	
3												
5						-						
	ım, CRB,	Bedrock										
Well	Well Elev ft msl 222	First Water ft bls 46	SWL ft bls	SWL Date 5/3/1972	Well Depth (ft) 80	Seal Interval (ft) 0-18	Casing Intervals (ft) 0-79	Liner Intervals (ft)	Perforati Or Scree (ft) 70-79		d Down	Test Type B
Use data	from app	lication f	for proposed	l wells								
A4.	Comm											
A5. 🛚	manage (Not all Comme	ement of basin ru ents: <u>Th</u>	ules contai e applican	iter hydraulion n such provi t's well is no	cally conne sions.) ot located w	cted to sur	face water ile of the n	rules relative t are, or	are not,	activated by ce, so the p	this appli	cation.
A6. 🗌	Name of	of admin	istrative an	rea:				ap(s) an aquif				

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B1.	Bas	ed upon available data, I have determined that groundwater* for the proposed use:
	a.	is over appropriated, is not over appropriated, <i>or</i> 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.	\square will not or \square 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 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 than ft. below land 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.	Will	undwater availability remarks: The applicant's well is 80 feet deep and produces from sands and gravels of the amette Aquifer (Conlon, 2005). Nearby water level data is sparse, so I recommend including a water level measurement lition in the permit.

Date: November 14, 2018

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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		\boxtimes

Basis for aquifer confinement evaluation: Water-bearing sands and gravels in the applicant's wells are overlain by approximately 10 feet of mixed-grain size alluvium, indicating the well produces from a unconfined to partially confined aquifer.

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 1/4 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	Willamette River	210	180	3600		

Basis for aquifer hydraulic connection evaluation: Water levels in local wells are above the elevation of the nearby reach of the Willamette River, and water table maps of the area suggest that groundwater discharges to the river. These factors suggest a hydraulic connection between the aguifer system and the river.

Water Availability Basin the well(s) are located within: WILLAMETTE R > COLUMBIA R - AB MILL CR AT GAGE 14191000

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 \(\subseteq \text{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			MF183A	1300		3620		<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.

The state of the s		S 19 19 19 19 19 19 19 19 19 19 19 19 19	TI	m esa aco.						
	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: Modeling in similar circumstances suggests that due to the large distance between the applicant's well and the Willamette River, and the presence of fine-grained material in the riverbed, pumping impacts will be less than 25% of the pumping rate after 30 days.

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-Di	istributed	Wells											
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
	as CFS												
Interfer	ence CFS												
Distrib	uted Well	S											
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfer	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS	,	p										8
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
(A) = To	tal Interf.	Т											
(B) = 80	% Nat. Q												
	% Nat. Q					,							
(D) = (A) > (C)	7.1						-	- ,	T			
	/ 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.

	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 groundwater 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;
21	V / GW Remarks and Conditions:
9	7 / G W Remarks and Conditions.
_	
_	
	eferences Used: Gannett and Caldwell, 1998, Geologic Framework of the Willamette Lowland Aquifer System, Oregon ashington, USGS Professional Paper 1424-A
W	ashington, USGS Professional Paper 1424-A
W	
W W	ashington, USGS Professional Paper 1424-A oodward, Gannett and Vaccaro, 1998, Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and ashington, USGS Professional Paper 1424-B
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Application G-18704

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1.	Well #:	Logid:	
2.	a. review of the wb. field inspectionc. report of CWRI	by	•
03.	THE WELL construction	on deficiency or other comment is desc	cribed as follows:
4. 🗆		struction and Compliance Section for a	a review of existing well construction.

Water Availability Tables

WILLAMETTE R > COLUMBIA R - AB MILL CR AT GAGE 14191000 WILLAMETTE BASIN

Water Availability as of 11/13/2018

Watershed ID #: 183 (Map)

Exceedance Level:

Page

80% 🔻

Time: 4:09 PM

Date: 11/13/2018

Water Availability Calculation

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

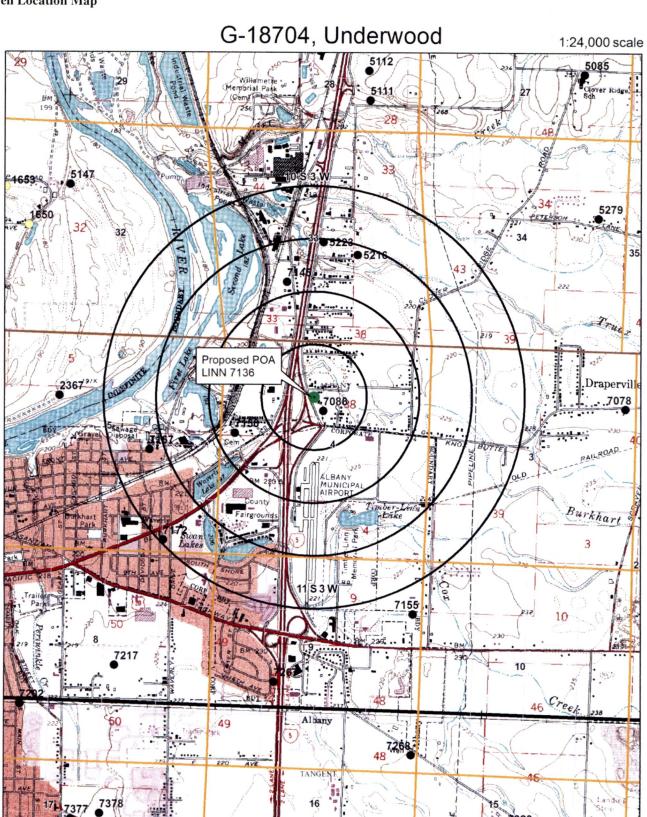
Month	Natural Stream (Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	18,400.00	2,240.00	16,200.00	0.00	1,300.00	14,900.00
FEB	20,100.00	7,420.00	12,700.00	0.00	1,300.00	11,400.00
MAR	19,600.00	7,210.00	12,400.00	0.00	1,300.00	11,100.00
APR	18,000.00	6,870.00	11,100.00	0.00	1,300.00	9,830.00
MAY	15,500.00	4,170.00	11,300.00	0.00	1,300.00	10,000.00
JUN	8,310.00	1,680.00	6,630.00	0.00	1,300.00	5,330.00
JUL	4,710.00	1,440.00	3,270.00	0.00	1,300.00	1,970.00
AUG	3,620.00	1,330.00	2,290.00	0.00	1,300.00	994.00
SEP	3,680.00	1,150.00	2,530.00	0.00	1,300.00	1,230.00
OCT	4,650.00	742.00	3,910.00	0.00	1,300.00	2,610.00
NOV	9,400.00	851.00	8,550.00	0.00	1,300.00	7,250.00
DEC	16,700.00	911.00	15,800.00	0.00	1,300.00	14,500.00
ANN	13,500,000.00	2,150,000.00	11,300,000.00	0.00	942,000.00	10,400,000.00

Detailed Report of Instream Flow Requirements

Instream Flow Requirements in Cubic Feet per Second

Applicatio n #	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MF183A	APPLICATI ON	00	00	00	00	00	00	00	00	00	00	00	00
Maximum		1,300. 00											

Date: November 14, 2018



1,000

2,000

4,000

6,000

8,000