Groundwater Application Review Summary Form

Application # G- (\$\frac{1\cdot 7\cdot 7}{2\cdot 7}
GW Reviewer Asian Bookher Date Review Completed: 5/1/2019
Summary of GW Availability and Injury Review:
[] Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.
Summary of Potential for Substantial Interference 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 construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.
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).



MEMO

To:

Kristopher Byrd, Well Construction and Compliance Section Manager

From:

Joel Jeffery, Well Construction Program Coordinator

Subject:

Review of Water Right Application G-18767

Date:

May 16, 2019

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

Applicant's Well #1 (DESC 60151): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Applicants Well #1 may not satisfy hydraulic connection issues.

WATER SUPPLY WELL REPORT	44/40	10011	START CARD#	1024744	
(as required by ORS 537.765 & OAR 690-205-0210)	11/19	/2014	ORIGINAL LOG #	L	
(1) LAND OWNER Owner Well I.D.					
First Name BRENT Last Name GOODMAN		(9) LOCATIO	ON OF WELL (legal d	escription)	
Company			ES Twp 16.00 S N/		E/W WM
Address 64711 OTTER RUN LN		County DESCROT	ES 1WP 10.00 S 1V/	3 Range_11.00 L	
City BEND State OR Zip 97701		Sec 23 SI	1/4 of the <u>SE</u>	1/4 Tax Lot <u>321</u>	
(2) TYPE OF WORK New Well Deepening Conve	ergion	Tax Map Number	or	Lot	73.66
Alteration (complete 2a & 10) Abandonment(co		Lat°	" or		DMS or DD
(2a) PRE-ALTERATION	mprote sar	Long°	et address of well Nea		DMS or DD
Dia + From To Gauge Stl Plstc Wld Thrd		● Stree	et address of well Nea	arest address	
Casing:	1	65320 HWY 20	•		
Material From To Amt sacks/lbs					
Seal:					
(3) DRILL METHOD		(10) STATIC	WATER LEVEL		
Rotary Air Rotary Mud Cable Auger Cable Mud	J.	Cuintin a Wal	Date	SWL(psi) +	SWL(ft)
Reverse Rotary Other		Completed V	I / Pre-Alteration Vell 11/6/2014	- 	
		Completed v	Flowing Artesian?	D=: Holo?	641
(4) PROPOSED USE Domestic Irrigation Community				-	
Industrial/Commericial Livestock Dewatering		WATER BEARIN	IG ZONES Depth wa	ter was first found 6	45.00
Thermal Injection Other	_	SWL Date	From To Est	Flow SWL(psi)	+ SWL(ft)
(5) BORE HOLE CONSTRUCTION Special Standard (A	Attach comy	11/6/2014	645 7770	20	
Depth of Completed Well 770.00 ft.	Attach copy)	11/6/2014	645 770	20	641
BORE HOLE SEAL	· sacks/	 			
Dia From To Material From To A		! 			
	5 S	'			
	132 S				
		(4.4) **/*** * *	0.0		
		(11) WELL L	Ground Elevation	n	
How was seal placed: Method A B XC D	E		Material	From	То
X Other POURED DRY		TOP SOIL		0	2
Backfill placed from ft. to ft. Material		BROWN SANDS		2	8
Filter pack from ft. to ft. Material Size		MILD GRAY LA		8	41
Explosives used: Yes Type Amount			N CONGLOMERATE	41	65
		BROWN SANDS		65	162
(5a) ABANDONMENT USING UNHYDRATED BENTONI	I L	RED CONGLON MILD BROWN		162 182	182
Proposed Amount Actual Amount		HÀRD GRAY L		192	215
(6) CASING/LINER		GRAVELS AND		215	235
Casing Liner Dia + From To Gauge Stl Plstc		HARD GRAY L		235	262
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		RED CINDERS	CONGLOMERATE	262	288
6 1 770 .188	Θ H	HARD GRAY L		288	315
	HH		CONGLOMERATE	315	325
	HH	HARD GRAY L		325	352
Shoe Inside Outside Other Location of shoe(s)		BROKEN BROV		352	360
		HARD GRAY L		360	385
Temp casing Yes Dia From To		BROKEN BROW HARD GRAY L		385	395 429
(7) PERFORATIONS/SCREENS		BROKEN BROW		429	434
Perforations Method FACTORY					131
Screens Type Material	T 1 /	Date Started 10	0/30/2014 Comp	plete <u>11/6/2014</u>	
Perf/ Casing/ Screen Scrn/slot Slot # of Screen Liner Dia From To width length slots	Tele/	(unbonded) Wa	ter Well Constructor Ĉertifi	cation	
Screen LinerDiaFromTowidthlengthslotsPerfLiner6749770.1253.228			work I performed on the co		o alteration or
101 Elici 0 713 770 1123 5 2220			this well is in compliance		
			dards. Materials used and in		
	1 1	the best of my kr	nowledge and belief.		
		License Number	1276 Da	ate 11/19/2014	
(8) WELL TESTS: Minimum testing time is 1 hour					
Pump Bailer • Air Flowing A	rtesian	Signed VINC	ENT MACKEY (E-filed)		
Yield gal/min Drawdown Drill stem/Pump depth Duration (h		(handed) Water	Well Constructor Certificat	ion	
20 770 1	<u>", </u>	l ' '	ibility for the construction, de		or chandenmen
			on this well during the constru		
			g this time is in compliance		
Temperature 53 °F Lab analysis Yes By			dards. This report is true to th		
Water quality concerns? Yes (describe below) TDS amount		License Number		ate 11/19/2014	
From To Description Amount	Units		1120	11/17/2014	
	Щ.	Signed JACK	ABBAS (E-filed)		
·	<u> </u>	Contact Info (opt	ional) JACK ABBAS		·
	i 1	I			

DESC 60151

STATE OF OREGON

Page 1 of 2

WELL I.D. LABEL# L_{116570}

DESC 60151

WELL I.D. L. **START**

ABEL# L	
CARD#	1024744

11/19/2014

continuation page	11/19/2014	ORIGINAL LOG #		
(2a) PRE-ALTERATION	Water Quality C	oncerns		
Dia + From To Gauge Stl Plstc Wld Thrd	From To	Description	Amount	Units
				1
$H \rightarrow H \rightarrow$				
Material From To Amt sacks/lbs				
Material From 10 Ann Sacks/105	,			
	(10) STATIC W	ATED I EXTEI		
(5) BORE HOLE CONSTRUCTION	(10) STATIC W SWL Date Fr		: SWL(psi) +	SWL(ft)
BORE HOLE SEAL	sacks/	om to Estriow	C W L(psi)	T T
Dia From To Material From To Amt				1
				Ī
			 -	1
	 			
	;			
		- 	 -	
FILTER PACK	\	/	<u> </u>	
From To Material Size	(11) WELL LO	G		
	M	aterial	From	To
	HARD GRAY LAV		434	461
,	RED CINDERS CO		461 472	472 493
6) CASING/LINER	BROWN SANDST		493	546
	MILD BROWN LA	VA	546	555
Casing Liner Dia + From To Gauge Stl Plstc Wld	DICO MITOIR IDDI		555	645
	FRACTURED BROWN SANDST		645 751	75 <u>1</u> 770
				ı
	H II			
	$H \mid H \mid$		+	
		- -		
			+	
7) PERFORATIONS/SCREENS	 		 	
Perf/ Casing/Screen - Scrn/slot Slot # of	Tele/		†	
	pipe size			
			 	
		-		
			ļ.·	-
			+	
		· · ·		
				
	Comments/Ren	narks		
(9) WELL TESTS: Minimum testing time in 1 have				
(8) WELL TESTS: Minimum testing time is 1 hour				
Yield gal/min Drawdown Drill stem/Pump depth Duration (h	nr)			
	□ ' 			
 	-			
	-			
	→ Ⅱ			

WATER RESOURCES DEPARTMENT MEMO Date: 5/1/2019 TO: Application: G-18767 FROM: GW: Aurora Bouchier (Reviewer's Name) SUBJECT: Scenic Waterway Interference & General/Local Surface Water Evaluation for Deschutes Ground Water Study Area The source of appropriation is within or above the Deschutes Scenic Waterway. Use the Scenic Waterway condition (Condition 7J). PREPONDERANCE OF EVIDENCE FINDING UNDER ORS 390.835: Department has found that there is a preponderance of evidence that the proposed use of ground water will measurably reduce the surface water flows necessary to maintain the free-flowing character of the Deschutes _____ Scenic Waterway in quantities necessary for recreation, fish and wildlife. LOCALIZED IMPACT FINDING The proposed use of ground water will have a localized impact to surface water in the River/Creek Subbasin. If the localized impact box above is checked, then the water use under any right issued pursuant to this application is presumed to have a localized impact on surface water within the identified subbasin. Mitigation of the impact, originating from within the Local Zone of Impact identified by the Department, will be required before a permit may be issued for the proposed use. If the localized impact box above is not checked, then the water use under any right issued pursuant to this application is presumed to have a general (regional) impact on

surface water. Mitigation of the impact, originating anywhere within the Deschutes Basin above the Madras gage, will be required before a permit may be issued for the proposed

use.

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO:			Rights Se				an 11		=5	<u>5/1/201</u>	<u>.9</u>		
FROM	:	Ground	iwater Se	ection		Aurora Revie	C Bouchie ewer's Name	er					
SUBJE	CT:	Applic	ation G-	18767				eview of <u>na</u>]	Date of Rev	view(s)	
OAR 69 welfare, to determent the pres	90-310-1 safety armine who umption	30 (1) The nd health ether the criteria.	ne Departm n as descri presumpti This revie	bed in ORS on is establi w is based	resume that 537,525. Do shed. OAR upon availa	a propose epartment 690-310- able infor	ed grounded staff revie 140 allows mation an	vater use will e w groundwate the proposed d agency poli	r applicat use be mo cies in pl	ions un odified ace at	nder OAl or condi the time	R 690-31 tioned to of evalu	0-140 meet ation.
A1.	Applica	nt(s) seel	k(s) <u>0.00</u>	1 cfs from	n <u>1</u>	well((s) in the _	Deschutes					_Basin,
				General ZOI				•					
A2.	Propose	ed use	Nur	sery (0.23 a	cres)	Seas	sonality: _	Year-round					
A3.	Well an	d aquifer	data (att a	ach and nui	nber logs f	or existin	g wells; m	ark proposed	wells as	such u	ınder loş	gid):	
Well	Logic	i	Applicant' Well #	s Propose	ed Aquifer*	Prop Rate	osed (cfs)	Location (T/R-S QQ-				s and bou	
1	DESC 60	151	1	Desc	hutes Fm	0.0		16S/11E-23 N		2250' N, 1200' E fr NW co 1032' S, 1254' W fr E 14 S			
3						<u> </u>		-				_	
4 5													
	ım, CRB,	Bedrock											
	W/-11	Finat.	. 1		Well	Seal	Casina	Liner	Perforat	iono I	Well	Descri	
Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Depth (ft)	Interval (ft)	Casing Intervals (ft)	Intervals (ft)	Or Scre		Yield (gpm)	Draw Down (ft)	Test Type
1	3366	645	641	11/6/2014	770	0-243	-2-243	1-770	749-7	70	20	-	A
	ſ												
Llog doto	from one	liantion fo	or proposed	walla									
A4.	Commo	ents: <u>Th</u>	e applicati				•	se of 0.23 acre				nds listed	l on the
	with the	nearest n of the	discharge nearest su	area (Desch rface water :	utes River) source (also	approxim the Desc	nately 12 m hutes River	Fm. Groundy iles distant. Tr.). The well is 505-0500-062	he water located v	level ii	the wel	l is belov	the
A5. 🛚	manage (Not all	ment of g	les contair	ter hydraulio 1 such provi	cally connections:	cted to sur	face water	rules relative to	are not,	activa	ted by th	is application	ation.
A6. 🗌	Name o	f admini	strative ar	, , _ ea:	, ,	,	, t	ap(s) an aquife	er limited	by an	administ	rative res	

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

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.
a.	Condition to allow groundwater production from no deeper than ft. below land surface;
ь.	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):
	senior water rights, not within the capacity of the resource, etc).
<u>A n</u>	bundwater availability remarks: learby State Observation Well (DESC 5045, located approximately 7.6 miles to the southeast) was monitored periodically m 1979 through 2016. It shows a relatively steady decline of approximately 37 feet over the period of record.
<u>A n</u>	earby State Observation Well (DESC 5045, located approximately 7.6 miles to the southeast) was monitored periodically
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C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. (590-09-040	1):	Evaluation	of ac	uifer	confinement:
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- Aquifer or Proposed Aquifer	Confined	Unconfined
		, 🔲
r confinement evaluation:		
t	·	

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				
]						
			ſ				

Basis for aquifer hydraulic connection evaluation:	
·	
Water Availability Basin the well(s) are located within:	
```	

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 \( \subseteq \) 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?
<b></b>		<u> </u>						<u> </u>		
						-	<u> </u>			
				_						

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-D	istributed	Wells											
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS											-		
Interfer	rence CFS												
<b>D</b>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			•						<u> </u>	et 1	ί, '	- 5 5 5 T
	outed Well		E-t-	M	A	M	T	T1	A	0	0-4	NT	D
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
337-11 (	Q as CFS	%	%	%	%	%	%	%	%	%	%	%	%
	rence CFS											-	
merter	Tence CFS												
111 11 /	0.000	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													_
Interfer	rence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interfer	rence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
	Q as CFS								_				
Interfer	rence CFS												
		, %	%	%	. %	%	%	%	%	%	%	%	%
	Q as CFS												
Interfer	rence CFS	ļ											
		%	%	%	%	%	%	%	%	%	%	%	%
Well (	Q as CFS											•	
	rence CFS												
(4)		,			*		· ./ · .				\\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.		
	otal Interf.												
(B) = 80 %  Nat.  Q													
(C) = 1	% Nat. Q					. ,	<u> </u>						<del></del>
(D) = (A) > (C)		√ /	✓	<i>√</i>	√s	1	1	1	1	√	1	<b>√</b>	1
$(E) = (A / B) \times 100$		%	%	%	%	%	%	%	%	%	%	%	%

5 Date: 5/1/2019 Page Application G-18767 (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: 690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water C4b. Rights Section. C5. If properly conditioned, the surface water source(s) can be adequately protected from interference, and/or groundwater 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: **References Used:** Application file: G-18767.

Gannett, Marshall W., Lite, Kenneth E. Jr., Morgan, David S., and Collins, Charles A., 2001, Ground-Water Hydrology of the Upper Deschutes Basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report 00-4162.

Gannett, Marshall W., and Lite, Kenneth E. Jr., 2013, Analysis of 1997-2008 Groundwater Level Changes in the Upper Deschutes Basin, Central Oregon: U.S. Geological Survey Scientific Investigations Report 2013-5092.

Lite, Kenneth E. Jr., and Gannett, Marshall W., 2002, Geologic Framework of the Regional Ground-Water Flow System in the Upper Deschutes Basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report 02-4015.

OWRD water levels and well log database.

#### D. WELL CONSTRUCTION, OAR 690-200

D1.	Well #:1 Logid: DESC 60151	
D2.	THE WELL does not appear to 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 or other comment is described as follows:	
D4. [	Route to the Well Construction and Compliance Section for a review of existing well construction.	

#### Water-Level Trends in Nearby Wells



