

Groundwater Application Review Summary Form

Application # G- 19357

GW Reviewer Phillip I. Marcy Date Review Completed: 04/18/2023

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).

WATER RESOURCES DEPARTMENT

MEMO

April 18, 2023

TO: **Application G- 19357**

FROM: **GW: Phillip I. Marcy**
 (Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic
 NO Waterway or its tributaries

YES
 NO Use the Scenic Waterway Condition (Condition 7J)

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 [Enter] Scenic 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

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 04/18/2023
 FROM: Groundwater Section Phillip I. Marcy
 Reviewer's Name
 SUBJECT: Application G- 19357 Supersedes review of _____
 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 groundwater 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: Aaron and Laura Leboutillier County: Malheur

A1. Applicant(s) seek(s) 0.078 cfs from 2 well(s) in the Malheur Basin,
 _____ subbasin

A2. Proposed use Irrigation (6.10 acres); Supplemental Irrigation (3.40 acres); Nursery Use (0.50 acres)
 Seasonality: April 1 - Oct. 31 (primary); April 1 – Oct. 31 (supplemental); Nov. 1 – March 31 (nursery)

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	MALH 54523	1	Alluvium	0.044	18S/47E-4 SW-NW	400'S, 185'W fr NW 1/16 th cor S 4
2	Proposed	2	Basalt	0.078	18S/47E-4 SE-NW	15'S, 245'E fr NW 1/16 th cor S 4
3						
4						

* 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	2185	40	40	04/17/2020	60	0-40	0-50	None	50-60	35	20	Pump
2	2178	NA	NA	NA	200	0-40	+2-50	Unknown	Unknoww	NA	NA	NA

Use data from application for proposed wells.

A4. Comments: Application G-19357 proposes to develop groundwater from two wells, an alluvial well drilled in 2020 and a second well proposed to be completed into basalt. If Well 2 is constructed to the proposed depth, it is unlikely to encounter basalt. Nearby well logs to similar or greater depths do not report basalt. MALH 1347, located in the NE corner of the NW corner of Section 4 was drilled to a depth of 400', and does not report any volcanic rock to that depth. Therefore, the proposed Well 2 on this application will be reviewed as producing from alluvium.

A lower rate is proposed for Well 1, while Well 2 is proposed to retain the full rate of the proposed authorization.

A5. **Provisions of the** Malheur Basin rules relative to the development, classification and/or management of groundwater 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: _____

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

B1. **Based 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) 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;

- 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): _____

B3. **Groundwater availability remarks:** The proposed groundwater appropriation is located in an area of little non-exempt groundwater development within the City of Ontario and away from large-scale irrigation projects. Therefore, there is little groundwater data available and no evidence of over-appropriation. The proposed pumping rate of 0.078 CFS (35 GPM) is unlikely to cause excessive drawdown in any neighboring well that fully penetrates the alluvial aquifer. Considering that the existing POA well (Well 1) penetrates 20' of saturated gravel aquifer, and conditions appear to be unconfined at this location, a Theis calculation of drawdown at 500' from this well predicts less than 3.5' after 365 days of continuous pumping, using a range of conductivity values widely accepted for gravels.

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	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Alluvium	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: The submitted log for Well 1 (MALH 54523) indicates that the static water level does not rise above the level where groundwater was first encountered. In addition, there does not appear to be a widespread low permeability unit overlying the gravel aquifer to provide local confinement.

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	Malheur River	2144	2136	5300	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Malheur River	~2140	2136	5220	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Snake River	2144	2140	4700	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Snake River	~2140	2140	4100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: There is no barrier to prevent groundwater movement between the proposed aquifer and local surface water sources, except a thin deposit of fine-grained sediments within the stream channels themselves.

Water Availability Basin the well(s) are located within: The proposed wells are located in an area with no WAB, near the Snake River. The Malheur River, slightly further away is within WAB “Malheur R > Snake R – At Mouth” (#31011701).

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 (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, 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?
1	1	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>	<<25%	<input type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	NA	<input type="checkbox"/>	<<25%	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	83.80	<input type="checkbox"/>	<<25%	<input type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	83.80	<input type="checkbox"/>	<<25%	<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"/>

Comments: The POA wells lie just outside of the WAB associated with the mouth of the Malheur River before it meets the Snake River. The proposed pumping rates do not surpass the 1% of 80% exceedance rate for the Malheur River (September). Interference to local surface waters is anticipated to be much less than 25% of the total pumping rate at 30 days, due primarily to the distances between the proposed well locations and surface water sources.

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													
(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: _____

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 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:** The proposed use is not anticipated to cause substantial interference with local surface water sources.

References Used: Theis, C.V., 1941, The effect of a well on the flow of a nearby stream: Am. Geophys.Union Trans., v. 22, pt.3, p. 734-738.

Gannett, M.W., 1990, Hydrogeology of the Ontario Area, Malheur County, Oregon: State of Oregon Water Resources Department, Ground Water Report No. 34.

Local well logs, GWIS water level database.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

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 _____;
- d. other: (specify) _____

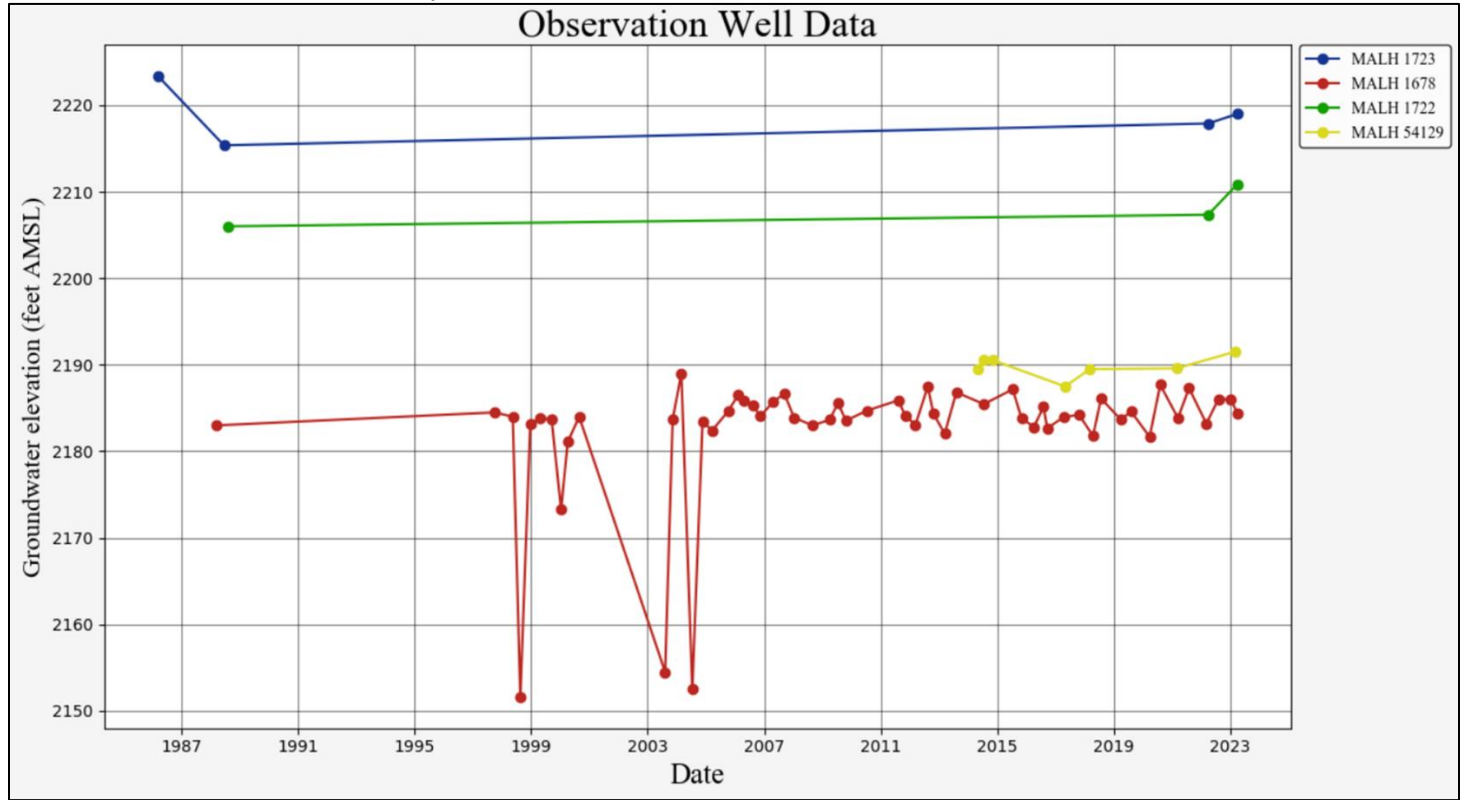
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION						
Watershed ID #: 31011701			MALHEUR R > SNAKE R - AT MOUTH		Exceedance Level: 80	
Time: 3:39 PM			Basin: MALHEUR		Date: 04/17/2023	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	154.00	427.00	-273.00	0.00	0.00	-273.00
FEB	267.00	626.00	-359.00	0.00	0.00	-359.00
MAR	467.00	911.00	-444.00	329.00	0.00	-774.00
APR	780.00	1,060.00	-279.00	470.00	0.00	-749.00
MAY	524.00	959.00	-435.00	0.00	0.00	-435.00
JUN	324.00	859.00	-535.00	0.00	0.00	-535.00
JUL	150.00	688.00	-538.00	0.00	0.00	-538.00
AUG	99.90	542.00	-442.00	0.00	0.00	-442.00
SEP	83.80	377.00	-293.00	0.00	0.00	-293.00
OCT	106.00	210.00	-104.00	0.00	0.00	-104.00
NOV	135.00	223.00	-87.90	0.00	0.00	-87.90
DEC	132.00	297.00	-165.00	0.00	0.00	-165.00
ANN	338,000	433,000	29,500	48,200	0	0

Water-Level Measurements in Nearby Wells



Water levels from wells upgradient of the proposed POA wells do not suggest that the proposed source aquifer is over-appropriated.

This Interference Analysis

Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		365		d	
Radial distance from pumped well:	r		500		ft	Q conversions
Pumping rate	Q		0.078		cfs	35.01 gpm
Hydraulic conductivity	K	30	100	300	ft/day	0.08 cfs
Aquifer thickness	b		20		ft	4.68 cfm
Storativity	S 1		0.1			6,739.20 cfd
	S 2		0.05			0.15 af/d
Transmissivity Conversions	T f2pd	600	2000	6000	ft ² /day	<input type="button" value="Recalculate"/>
	T ft2pm	0.41666667	1.38888889	4.16666667	ft ² /min	
	T gpd/ft	4488	14960	44880	gpd/ft	

