Groundwater Application Review Summary Form

Application # G- 18774

GW Reviewer M. Thomas **Date Review Completed:** 06-07-19

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:

[X] 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.

✓ si civil

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 06-07 ,2019

TO: **Application G-** 18774

FROM: **GW:** M. Thorne
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☒ YES
☐ NO
The source of appropriation is within or above a Scenic Waterway

☒ 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 Rogue 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
0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager

From: Joel Jeffery, Well Construction Program Coordinator

Subject: Review of Water Right Application G-18774

Date: June 10, 2019

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 (JOSE 59246): Based on a review of the Well Report, Applicant's Well #1 appears to protect the groundwater resource.

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

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

JOSE 59246
1/2/2014

WELL I.D. LABEL# L 113752
START CARD # 1021780
ORIGINAL LOG #

(1) LAND OWNER
Owner Well I.D.
First Name DREW Last Name MCCAMBLE
Company
Address 460 BROWNS RD.
City WILLIAMS State OR Zip 97544

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION
	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE
[X] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION
Special Standard [ ] (Attach copy)
Depth of Completed Well 200.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
10	0	39	Bentonite Chips	0	39	19	S
6	39	200					

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other DRY POURED
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	6	X	2	118	.250	●	○	X	
○	●	4		0	200	sch 40	○	●		
○	○						○	○		
○	○						○	○		
○	○						○	○		

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s) 118
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS
Perforations Method Saw Cut
Screens Type Material

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
Perf	Liner	4	180	200	.188	4	60	

(8) WELL TESTS: Minimum testing time is 1 hour
○ Pump ○ Bailer ● Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
20		200	1

Temperature 52 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)
County JOSEPHINE Twp 39.00 S N/S Range 5.00 W E/W WM
Sec 2 NW 1/4 of the NW 1/4 Tax Lot 202
Tax Map Number Lot
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
(●) Street address of well ( ) Nearest address
460 BROWNS RD. WILLIAMS, OR 97544

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	11/21/2013			19

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 153.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
11/21/2013	153	154	10			19
11/21/2013	167	168	5			19
11/21/2013	194	196	5			19

(11) WELL LOG
Ground Elevation

Material	From	To
Brown Clay & Boulders	0	6
Tan Clay & Boulders	6	28
Tan Clay & Cobbles	28	32
Brown & White Granite Med Hard	32	59
Brown & White Granite some Grey	59	178
Brown & White Granite	178	186
Dark Grey Granite Med Hard	186	194
Brown & White Granite Med Hard	194	196
Grey Granite Hard	196	200

Date Started 11/21/2013 Complete 11/21/2013

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number Date
Signed

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1835 Date 1/2/2014
Signed KEVIN D GILL (E-filed)
Contact Info (optional) Clouser Drilling Inc.

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version:

Page 1 of 1

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

JOSE 59246
1/2/2014

WELL I.D. LABEL# L 113752
START CARD # 1021780
ORIGINAL LOG #

(1) LAND OWNER
Owner Well I.D.
First Name DREW Last Name MCCAMBLE
Company
Address 460 BROWNS RD.
City WILLIAMS State OR Zip 97544

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION
	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE
[X] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION
Special Standard [ ] (Attach copy)
Depth of Completed Well 200.00 ft.

BORE HOLE

Dia	From	To
10	0	39
6	39	200

SEAL

Material	From	To	Amt	sacks/lbs
Bentonite Chips	0	39	19	S

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other DRY POURED
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●		6	X	2	118	.250	●		X	
	●	4		0	200	sch 40		●		

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s) 118
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS
Perforations Method Saw Cut
Screens Type Material

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
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( ) Pump ( ) Bailer (●) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
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Temperature 52 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

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County JOSEPHINE Twp 39.00 S N/S Range 5.00 W E/W WM
Sec 2 NW 1/4 of the NW 1/4 Tax Lot 202
Tax Map Number Lot
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
(●) Street address of well ( ) Nearest address
460 BROWNS RD. WILLIAMS, OR 97544

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	11/21/2013			19

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 153.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
11/21/2013	153	154	10			19
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(11) WELL LOG
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Dark Grey Granite Med Hard	186	194
Brown & White Granite Med Hard	194	196
Grey Granite Hard	196	200

Date Started 11/21/2013 Complete 11/21/2013

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number Date
Signed

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1835 Date 1/2/2014
Signed KEVIN D GILL (E-filed)
Contact Info (optional) Clouser Drilling Inc.

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK. Form Version:

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 06/07/2019

FROM: Groundwater Section Michael Thoma
Reviewer's Name

SUBJECT: Application G- 18774 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: **Yoram & Jai B Levy** County: **Josephine**

A1. Applicant(s) seek(s) 0.01 cfs from 1 well(s) in the Rogue Basin, Applegate subbasin

A2. Proposed use Nursery (5.0 acres) Seasonality: Year-round

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	JOSE 59246	1	Bedrock	0.01	39S/05W-2 NWNW	1290'S, 850'E of NE cow S 2
2						

* 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	1500	153	19	11/21/2013	200	0-39	2-118	0-200	180-200	20		A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☐ **Provisions of the** Rogue (OAR 690-515) 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) **7C (7-yr); 7J (Scenic); 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 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:** There are limited water level data in the aquifer and vicinity of the applicant's proposed POA so Capacity of the Resource cannot be determined and water-level reporting conditions in B1(d) are recommended. There are few permitted groundwater rights within 1 mile of the applicant's proposed POA, the nearest that could be affect being Cert. 43054 at 0.37 miles and GR 3124 at 0.39 miles, but given the low rate of appropriation and generally low transmissivity of the aquifer in the area it is unlikely that the applicant's use would result in injury to these permitted water rights. However, standard interference conditions should be applied.

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	**Fractured bedrock of Grayback Pluton**	☒	☐
		☐	☐

Basis for aquifer confinement evaluation: Reported '*SWL*' is above '*First Water*' on the well log for the applicant's POA indicating some level of confinement. Additionally, geologic mapping along with well logs in the area shows alluvial fan deposits overlying the granitic bedrock with also will be contributing to confinement of the bedrock 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 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**	**E Fk Williams River**	**~1480**	**1405**	**1850**	☒	☐	☐	☐	☒
1	**2**	**Williams Cr**	**~1480**	**1380-1400**	**2070**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: groundwater elevations are above surface water elevations implying that groundwater is flowing towards and discharging to surface water.

Note: nearby Cherry Gulch was not evaluated on this review as a Surface Water Source under OAR 690-009 because it is not likely perennial and there are no permitted surface water PODs between the nearest point on the gulch to the applicant's proposed POA and the confluence of the gulch with Williams Creek

Water Availability Basin the well(s) are located within: Williams Cr > Applegate R – At Mouth (ID# 70981)

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 < 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**	☐	☐	**Cert. 72665**	**0.60**	☒	**1.89**	☐	**< 10%**	☒
1	**2**	☐	☐	**Cert. 72669**	**2.37**	☐	**1.89**	☐	**< 10%**	☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

Comments: Stream-depletion was estimated using the Hunt (2003) stream-depletion model with parameter values taken from nearby pump-tests or representing a range of values expected for this or similar aquifer systems.

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-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													
(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: No Surface Water Sources were evaluated beyond 1 mile

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 applicant's proposed POA would be producing from an aquifer that has been found to be hydraulically connected to surface water – specifically the E Fk Williams River and Williams River – at a distance of less than 1 mile. The proposed maximum rate of appropriation is less than 1% of the pertinent adopted perennial streamflow but **more than 1%** of the adopted instream water right for the E. Fk Williams River (Cert. 72665). Per OAR 690-009-0040(4) the POA is **assumed to have** the Potential for Substantial Interference with the E Fk Williams River

References Used:

Hunt, B. 2003. *Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer.* Journal of Hydrologic Engineering. Vol 8(1), pp 12-19

Ramp, L. and Peterson, N. 2004. *Geologic Map of Josephine County, Oregon*. Oregon Dept. of Geol. and Mineral Industries, OFR O-04-13.

Oregon Department of Geology and Mineral Industries, *Geologic Map of Oregon*. http://www.oregongeology.org/geologicmap/

OWRD Well Log Database – Accessed 06/07/2019

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

Water Availability Analysis
Detailed Reports

WILLIAMS CR > APPLEGATE R - AT MOUTH
ROGUE BASIN

Water Availability as of 6/7/2019

Watershed ID # 70981 (Map) Exceedance Level: 80%
Date 6/7/2019 Time: 8:56 AM

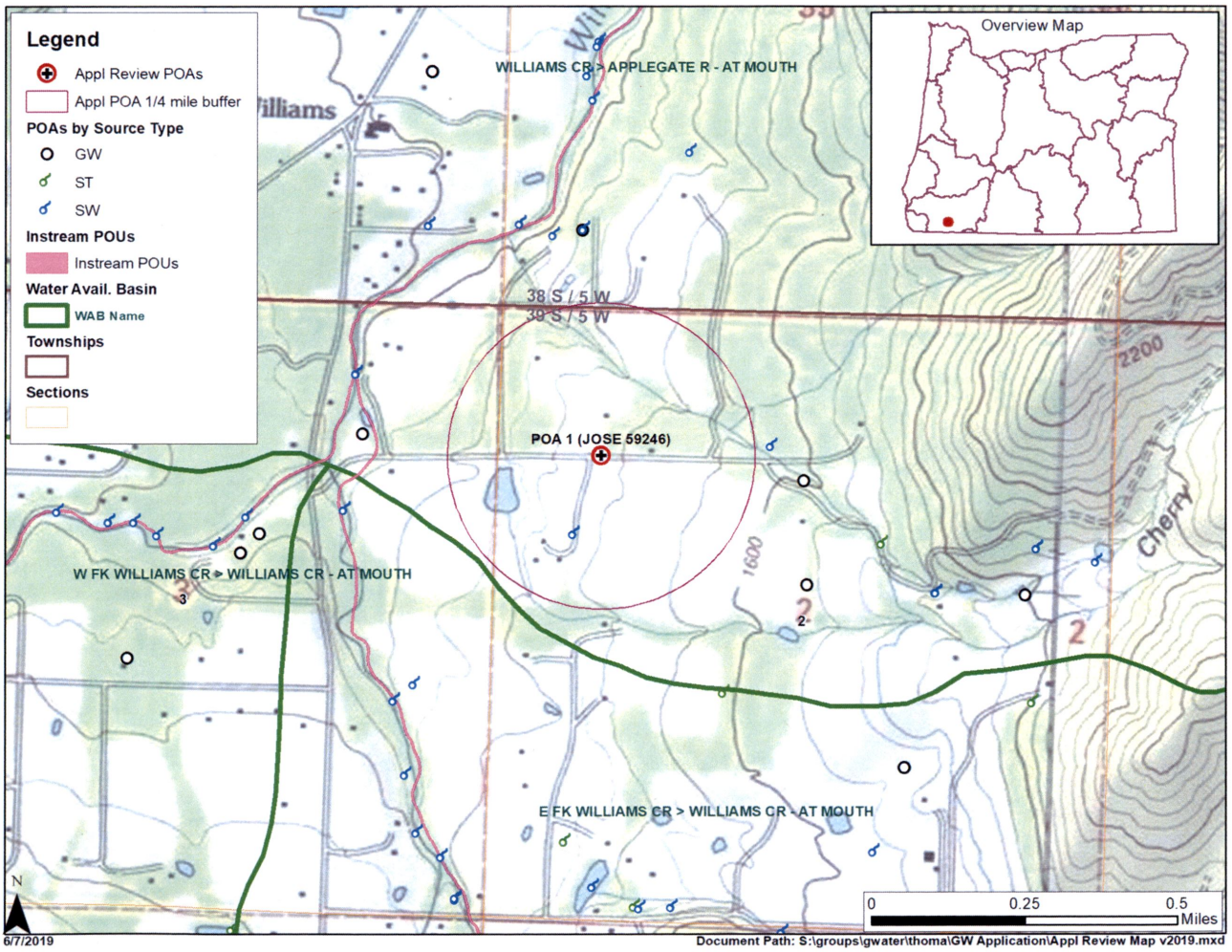
Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations
Water Rights | Watershed Characteristics

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	67.30	1.09	66.20	0.00	110.00	-43.80
FEB	110.00	1.49	109.00	0.00	110.00	-1.49
MAR	107.00	1.09	106.00	0.00	110.00	-4.09
APR	62.70	3.69	59.00	0.00	110.00	-51.00
MAY	29.50	5.80	23.70	0.00	65.00	-41.30
JUN	10.30	8.12	2.18	0.00	40.00	-37.80
JUL	4.24	10.90	-6.61	0.00	15.00	-21.60
AUG	2.68	9.02	-6.34	0.00	5.00	-11.30
SEP	1.89	6.01	-4.12	0.00	50.00	-54.10
OCT	2.28	2.14	0.14	0.00	80.00	-79.90
NOV	6.60	0.45	6.15	0.00	80.00	-73.80
DEC	32.30	0.75	31.60	0.00	110.00	-78.40
ANN	54,800.00	3,060.00	52,600.00	0.00	53,300.00	15,200.00

Well Location Map



Stream-Depletion Model Results

PyHunt stream depletion analysis tool

Application type:	G
Application number:	18774
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.01
Pumping duration (days):	365
Pumping start month number (3=March)	1

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1850	1850	1850	ft
Aquifer transmissivity	T	100	300	500	ft2/day
Aquifer storativity	S	0.001	0.0005	0.0001	-
Aquitard vertical hydraulic conductivity	Kva	0.05	0.01	0.005	ft/day
Aquitard saturated thickness	ba	20.0	20.0	20.0	ft
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Aquitard specific yield	Sya	0.1	0.05	0.01	-
Stream width	ws	50	50	50	ft

Stream depletion for Scenario 2:

Days	10	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	2	2	3	4	5	6	6	7	8	9	10	11	11
Depletion (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00