

# Groundwater Application Review Summary Form

Application # G- 19017

GW Reviewer Jen Woody Date Review Completed: 03/24/2023

## 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**

**03/24/2023**

**TO:**            **Application G- 19017**

**FROM:**       **GW: Jen Woody**  
                    (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 03/24/2023  
 FROM: Groundwater Section Jen Woody  
 Reviewer's Name  
 SUBJECT: Application G- 19017 Supersedes review of 10/02/2020  
 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: Kristof Farms, Attn: Nicholas Kristof and Sherl WuDunn  
 County: Yamhill

A1. Applicant(s) seek(s) 0.0223 cfs up to 7.5 acre-feet from 2 wells in the Willamette Basin,  
Yamhill subbasin

A2. Proposed use Irrigation Seasonality: March 1- October 31

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	YAMH 1409	1	Low-yield bedrock	0.0223	2S/4W-23 NW ¼ NW ¼	1270' S, 805' E fr NW cor S 23
2	Proposed	2	Low-yield bedrock	0.0223	2S/4W-23 NW ¼ NW ¼	1310' S, 920' E fr NW cor S 23
3						
4						

\* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SW L 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	732	unknown	70	4/30/2019	200	0-30	0-200	n/a	30-200	10	20	bailer
2	732*	unknown	70*	4/30/2019	250	0-40	0-250	n/a	40-250	10*		

Use data from application for proposed wells.

A4. **Comments:** \*water level and yield estimates based on YAMH 1409.

A5.  **Provisions of the** Willamette 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: The wells produce from a confined aquifer so the pertinent basin rules (OAR 690-502-0240) do not apply.

A6.  **Well(s) #** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction.  
 Name of administrative area: n/a  
 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, 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 low-yield bedrock aquifer 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 applicant proposes to use 2 wells for irrigation use at a maximum rate of 0.0223 cfs (10 gpm). The wells are located in the uplands east of Yamhill Creek and southwest of Wapato Creek in the North Yamhill watershed. The wells are completed in the Yamhill Formation which is part of the low-yield bedrock aquifer system consisting of Tertiary marine sedimentary and volcanic rocks. Productive zones in the unit are likely to be water-bearing fractures and considerable anisotropy is expected in the aquifer. The low-yield unit is characterized by low permeability, low porosity, low well yield, and excessive pumping drawdowns. It is generally not capable of producing sustainable yields for irrigation of high water-use crops. The OWRD well log database indicates 127 well logs with a median well yield of 10 gpm in sections 13, 14, 22, 23 (T 2S/4W) and a distribution that is skewed toward lower values. Actual yields are likely to be lower since most of the reported yields are based on air tests which tend to overestimate yields in completed wells.

Nearby, long-term water level data are sparse. The nearest observation wells are located greater than a mile from the subject wells and show stable water levels over recent decades. There are no irrigation groundwater rights located within a mile. Domestic well density is also low within the general area but there are approximately 6 developed tax lots within 1/2 mile that are likely associated with houses that depend on domestic well water. Although the likely anisotropy of the aquifer makes it difficult to predict the potential for interference with existing wells, the general low yield of the aquifer indicates that it would be prudent to include water-level monitoring and water-use monitoring conditions.

**Special Condition:** For the same reasons, a condition is recommended to limit the maximum duty to 1 acre foot per acre per year and a requirement to use drip, or equally efficient, irrigation methods if a permit is issued (see OAR 690-502-0040(7)).

Section B1a of this review was updated according to the Iverson (2023) memo. The water level data from nearby wells represents the same groundwater sources as the proposed use, represents current hydrologic conditions and established a sufficient interannual water level trend that does not meet the Division 8 definition of excessively declining or declined excessively (OAR 690-008-0001(4)(d)). Therefore the reviewer finds B1a “ is not over appropriated”.

**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	Low-yield bedrock aquifer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Low-yield bedrock aquifer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** Well logs generally indicate static water levels above the production zones in the low-yield aquifer system, indicating the aquifer is confined.

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	Wapato Creek	662	660	1670	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Wapato Creek	662	660	1600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Yamhill Creek	662	280-350	4490-5280	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Yamhill Creek	662	280-350	4490-5280	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** Water levels in local wells in the bedrock uplands (above stream levels) show hydraulic heads that are above or coincident with local stream levels. This is consistent with general observations and published reports in the Willamette basin that indicate that the water table in the low-yield bedrock aquifer system generally mimics topography and discharges to local streams (see Conlon et al., 2005). The subject wells are within 1 mile of Wapato and Yamhill Creeks which are shown as perennial streams on USGS 7.5-minute topographic maps. Wapato Creek is evaluated for hydraulic connection at the elevation of the water level in the well.

**Water Availability Basin the well(s) are located within:** Watershed ID #: 7074 N YAMHILL R > YAMHILL R - AT MOUTH; also affects Watershed ID # 30201013 TUALATIN R > WILLAMETTE R - AT GAGE 14206500

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	Instream Water Right Q	Qw > 1% ISWR?	80% Natural Flow	Qw > 1% of 80% Natural	Interference @ 30 days (%)	Potential for Subst. Interfer.
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				ID	(cfs)		(cfs)	Flow?		Assumed?
<b>1</b>	<b>1</b>	<input type="checkbox"/>	<input type="checkbox"/>	<b>n/a</b>	<b>n/a</b>	<input type="checkbox"/>	<b>54.20</b>	<input type="checkbox"/>	*	<input type="checkbox"/>
<b>2</b>	<b>1</b>	<input type="checkbox"/>	<input type="checkbox"/>	<b>n/a</b>	<b>n/a</b>	<input type="checkbox"/>	<b>54.20</b>	<input type="checkbox"/>	*	<input type="checkbox"/>
<b>1</b>	<b>2</b>	<input type="checkbox"/>	<input type="checkbox"/>	<b>n/a</b>	<b>n/a</b>	<input type="checkbox"/>	<b>16.60</b>	<input type="checkbox"/>	*	<input type="checkbox"/>
<b>2</b>	<b>2</b>	<input type="checkbox"/>	<input type="checkbox"/>	<b>n/a</b>	<b>n/a</b>	<input type="checkbox"/>	<b>16.60</b>	<input type="checkbox"/>	*	<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.

Table with 11 columns: 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: \*Interference @ 30 days was not calculated in Table C3a because of the lack of a readily available suitable model for fractured bedrock aquifer systems and a lack of knowledge about likely anisotropy in the low-yield bedrock aquifer system.

PSI, as defined in OAR 690-09-040, is not triggered by the proposed use.

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.

Tables for Non-Distributed Wells and Distributed Wells. Columns include Well SW#, Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec. Rows include 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: All impacts are expected to be with local streams within 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:** PSI, as defined in OAR 690-09-040, is not triggered by the proposed use.

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**References Used:** Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005. Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Gannett, M.W. and Caldwell, R., 1998. Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

Iverson, J., February 6, 2023, OWRD Memorandum: Clarification of current policy for determining over-appropriation in section B1a of the Public Interest Review for Groundwater Applications.

O’Connor, J.E., Sarna-Wojcicki, A., Wozniak, K.C., Polette, D.J., and Fleck, R.J., 2001: U.S. Geological Survey Professional Paper 1620.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998. Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82p.

Frank, F.J., and Collins, C.A., 1978. Groundwater in the Newberg area, northern Willamette Valley, Oregon: Oregon Water Resources Department Groundwater Report No. 27, 77p.



**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:** n/a  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

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## Water Availability Tables

## Water Availability Analysis Detailed Reports

TUALATIN R > WILLAMETTE R - AT GAGE 14206500  
WILLAMETTE BASIN

Water Availability as of 10/1/2020

Watershed ID #: 30201013 ([Map](#))

Exceedance Level:80%

Date: 10/1/2020

Time: 8:35 AM

## 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	1,090.00	389.00	701.00	0.00	100.00	601.00
FEB	1,420.00	449.00	971.00	0.00	100.00	871.00
MAR	1,140.00	333.00	807.00	0.00	100.00	707.00
APR	676.00	273.00	403.00	0.00	100.00	303.00
MAY	332.00	141.00	191.00	0.00	100.00	90.90
JUN	179.00	151.00	27.80	0.00	100.00	-72.20
JUL	80.90	183.00	-102.00	0.00	100.00	-202.00
AUG	44.30	142.00	-97.20	0.00	100.00	-197.00
SEP	54.20	121.00	-66.90	0.00	94.50	-161.00
OCT	69.40	58.10	11.30	0.00	100.00	-88.70
NOV	160.00	187.00	-26.70	0.00	100.00	-127.00
DEC	758.00	377.00	381.00	0.00	100.00	281.00
ANN	751,000.00	169,000.00	593,000.00	0.00	72,100.00	542,000.00

## Water Availability Analysis Detailed Reports

### N YAMHILL R > YAMHILL R - AT MOUTH WILLAMETTE BASIN

Water Availability as of 9/29/2020

Watershed ID #: 70746 ([Map](#))

Exceedance Level:80%

Date: 9/29/2020

Time: 2:41 PM

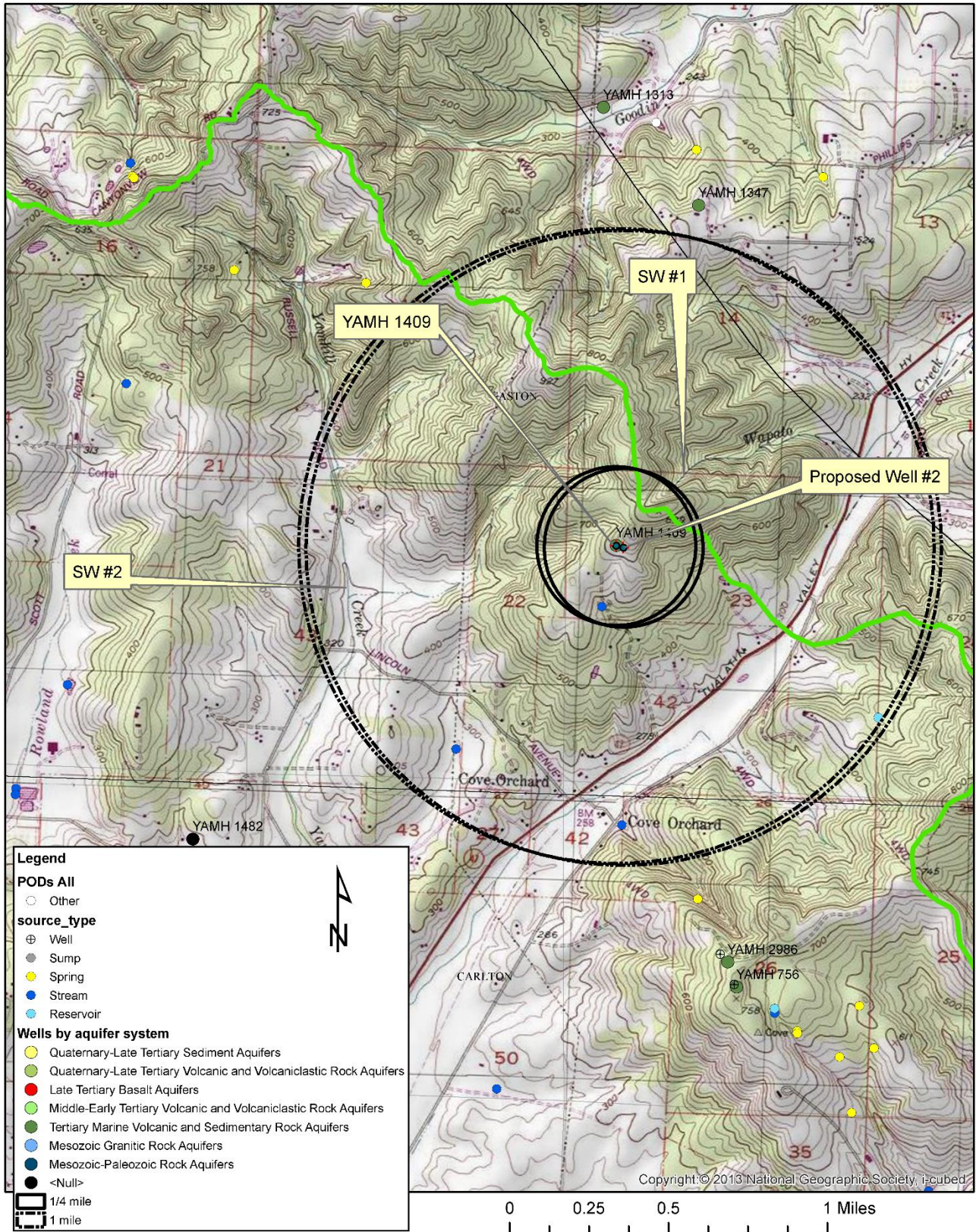
## Water Availability Calculation

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

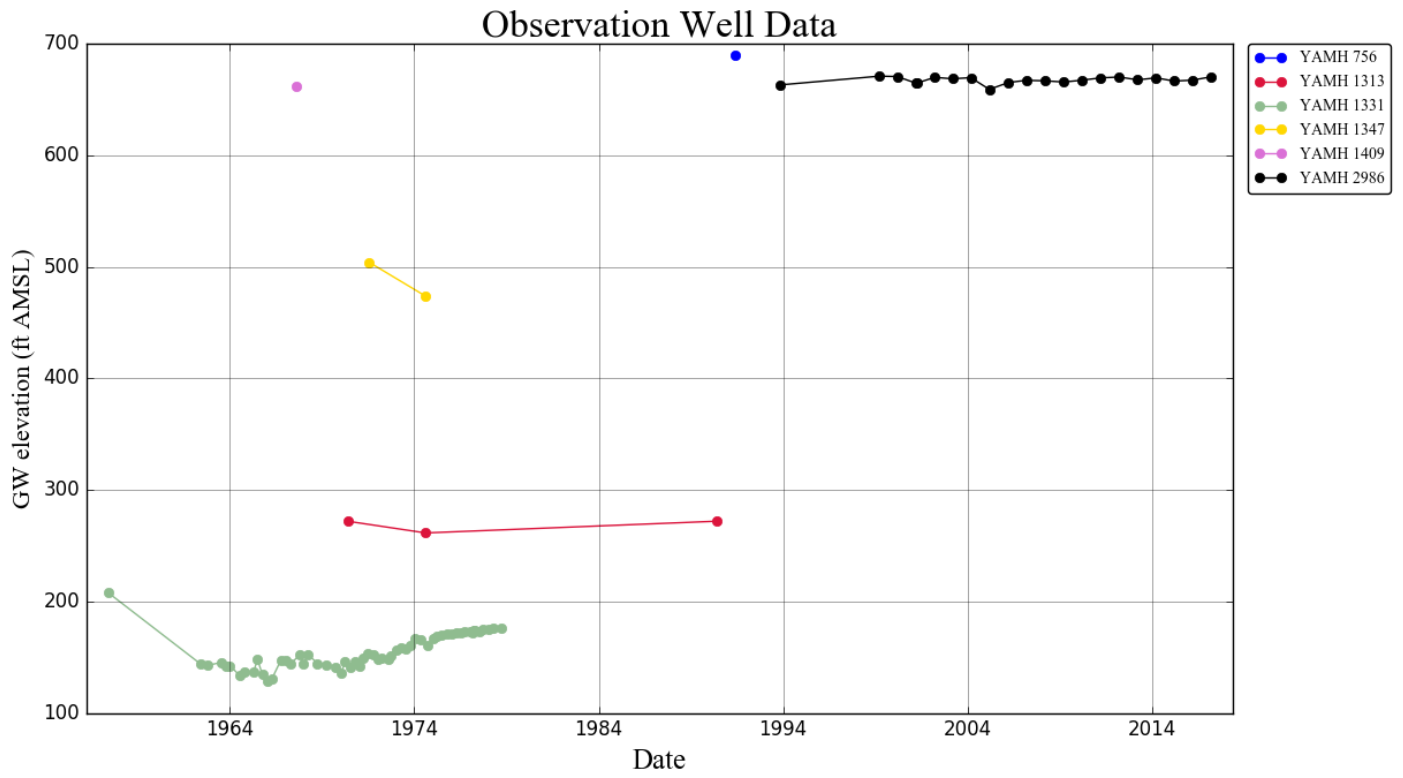
Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	395.00	30.20	365.00	0.00	70.00	295.00
FEB	485.00	30.80	454.00	0.00	70.00	384.00
MAR	379.00	22.40	357.00	0.00	70.00	287.00
APR	240.00	23.50	217.00	0.00	70.00	147.00
MAY	124.00	22.80	101.00	0.00	70.00	31.20
JUN	63.60	26.10	37.50	0.00	40.00	-2.48
JUL	30.70	30.70	0.04	0.00	15.00	-15.00
AUG	22.70	28.20	-5.54	0.00	10.00	-15.50
SEP	17.40	21.40	-4.05	0.00	10.00	-14.00
OCT	16.60	13.40	3.18	0.00	10.00	-6.82
NOV	68.90	20.00	48.90	0.00	70.00	-21.10
DEC	338.00	29.60	308.00	0.00	70.00	238.00
ANN	249,000.00	18,000.00	231,000.00	0.00	34,600.00	197,000.00

### Well Location Map

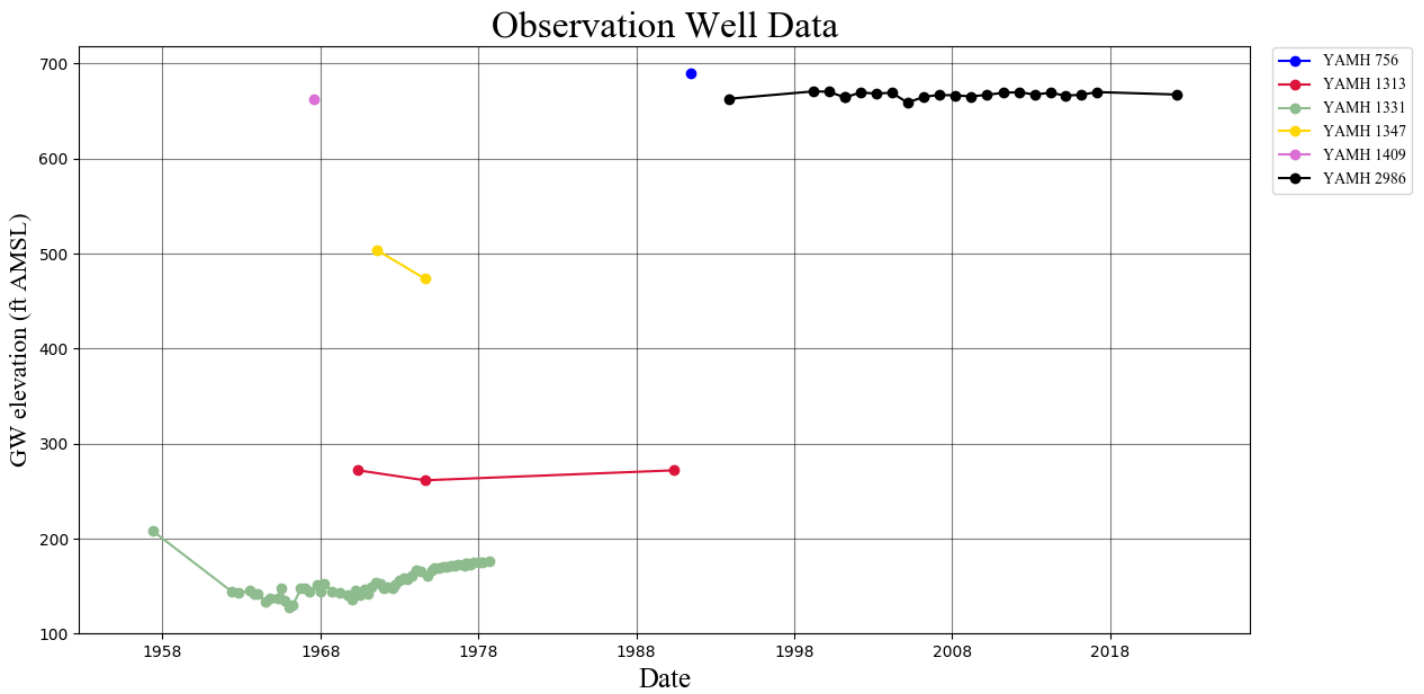
#### G-19017 Kristof 2S/4W Section 23 NW 1/4 NW 1/4



### Water-Level Measurements in Nearby Wells



Hydrograph updated 3/24/2023:



Approved: 

# MEMO

**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Travis Kelly, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-19017  
**Date:** October 12, 2020

The attached application was forwarded to the Well Construction and Compliance Section by the Groundwater Section. Jen Woody reviewed the application. Please see Jen's Groundwater Review and the Well Report.

Applicant's Well #1 (YAMH 1409): 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 problem is that according to the Water Supply Well Report, the well was not sealed to the proper depth. Also, the Well Report indicates that the well head is flush with land surface. In order to meet minimum well construction standards, the well head must be extended so that it is at least one-foot above land surface and the well must be resealed with an approved grout to a minimum depth of 35 feet below land surface.

My recommendation is that the Department not issue a permit for Applicant's Well #1 (YAMH 1409) 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.

The repair of Applicant's Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (Proposed Well): Is a proposed well, therefore it cannot be reviewed for construction. Construction of the proposed well shall be completed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240. During construction of the well, specific attention should be paid to ensure sealing requirements are met and that the well does not commingle aquifers.

The proposed Well #2 may not satisfy hydraulic connection issues.

