

Groundwater Application Review Summary Form

Application # G- 19405

GW Reviewer Gabriela Ferreira

Review Completed: August 2, 2024

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

August 2, 2024

TO: Application G- 19405

FROM: GW: Gabriela Ferreira
(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 August 2, 2024
 FROM: Groundwater Section Gabriela Ferreira
 Reviewer's Name
 SUBJECT: Application G- 19405 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: Rex Snow County: Yamhill

A1. Applicant(s) seek(s) 0.067 cfs from 1 well(s) in the Willamette Basin,
Chehalem Creek subbasin

A2. Proposed use Irrigation (16.4 acres) Seasonality: March 1 to October 31

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

POA 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 57939	1	CRB	0.067	3S/2W-10 NWNW	735' S, 520' E FR NW COR, S 10 ¹

* Alluvium, CRB, Bedrock

POA Well	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Drawdown (ft)	Test Type
1	582	0-332	0-332	282-582	555-580	23	N/A	Air

POA Well	Land Surface Elevation at Well (ft amsl)	Depth of First Water (ft bls)	SWL (ft bls)	SWL Date	Reference Level (ft bls)	Reference Level Date
1	805	106	296	5/1/2018	TBD	

Use data from application for proposed wells.

A4. **Comments:** The proposed POA is located approximately 3 miles northeast of Newberg city center. Applicant proposes irrigation of 16.4 acres by one well already constructed (YAMH 57939).

¹The metes and bounds described in the application map to a location approximately 85 feet northeast and on an adjacent property compared to the location provided by latitude/longitude in the well report. This review evaluates based on the location in the well report. **Corrected metes and bounds should be provided prior to issuance of a permit.**

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 applicant's well produces from a confined aquifer, so the pertinent basin rules (OAR 690-502-0240) do not apply.

A6. ☒ **Well #** 1 taps an aquifer limited by an administrative restriction.

Name of administrative area: Chehalem Mountain Groundwater Limited Area

Comments: According to OAR 690-502-0200, groundwater in the basalt aquifers of the Chehalem Mountain Groundwater Limited Area is classified for exempt uses, irrigation, and rural residential fire protection systems only. Permits may be issued, for a period not to exceed five years, for fire protection and for drip or equally efficient irrigation. The amount of water used for irrigation shall further be limited to one acre-foot per acre per year. Permits may be extended for additional five year periods if the Director of the Oregon Water Resources Department finds that the groundwater resource can probably support that extended use.

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) 7IRL;
 - 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 Columbia River Basalt Group groundwater reservoir between approximately 465 ft. and 580 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 location is within the Chehalem Mountains, which is comprised of Columbia River Basalts and tertiary marine sedimentary rocks of the Coast Range. The proposed POA produces from the Columbia River Basalt Group, (CRBG/CRB) Miocene-aged flood-lavas, which consist of a series of layered basalt flows ranging in thickness from about 10 to 100 feet. The Chehalem Mountains are structurally faulted and eroded by several streams in the vicinity, such that laterally continuous basalt flows are truncated, resulting in compartmentalized sections in some areas of the groundwater limited area. Near the proposed POA, tributaries and streams drain to Spring Brook, approximately 600 feet below and to the south (Conlon and others, 2005; Gannett and Caldwell, 1998; Woodward and others, 1998).

Within approximately one mile of the proposed POAs, there are five permanent water rights for irrigation, industrial/manufacturing and municipal use and two temporary permits, producing from wells completed in the CRBG, with several more exempt use (domestic) wells also in the area. Reported maximum yields in the nearby similar wells range up to 120 gpm. Three of the 55 well reports identified in Township 3 South / Range 2 West, Section 10. The requested rate (0.067 cfs, ~30 gpm) is well within the range of reported yields for water wells in this area.

Four CRB wells near the proposed POA were selected for evaluation: YAMH 56904, YAMH 168, WASH 57386, and WASH 3443. The wells were selected based on the proximity, similar construction, and groundwater elevations. Because of the substantial topographical variation, water level trends from all four wells may not be exactly representative of conditions near the POA but were selected to represent similar well completions at nearby elevations. Water level data from two of the

four wells, YAMH 56904 and WASH 3443, indicate declines of approximately 10 to 17 feet over the data record available. The other two of the four wells show generally stable behavior with 7 to 15 feet of water level variability of the available record. Of the four wells, water level behavior observed in YAMH 56904 is likely most analogous to the proposed POA, given its nearby proximity, similar open interval, and groundwater elevations. The observed water level declines may be related to drought from ~2018-2021, as water level trends appear similar to precipitation patterns. There is not a preponderance of evidence to support that the water levels in the CRBG groundwater reservoir are declined excessively or excessively declining; therefore, the groundwater reservoir is not over-appropriated. Due to the very low rate of requested withdrawal and lack of persistent decline trend, the proposed use is considered within the capacity of the resource.

In order to protect senior users and the resource Condition 7IRL (Willamette Basalt with reference levels) is strongly recommended for any permit in order to protect senior users and the resource. The reference level for the proposed POA will be determined once the well is constructed and static water level data is available; if applicable based on the reported static water level data, the reference level will be correlated to water levels observed in YAMH 56904.

Additionally, the source of water for this permit shall be the water-bearing zones in the Columbia River Basalt Group that occur in well YAMH 57939 between depths of 465 and 580 feet. The well shall not be deepened or altered such that water is produced from other aquifers in the Columbia River Basalt Group.

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	CRB	☒	☐

Basis for aquifer confinement evaluation: The well report indicates the SWL is 296 ft bls, approximately 200 feet above the water-bearing zone from 465 to 580 feet bls, indicating a confined aquifer or series of aquifers. The CRB aquifers (interflows) are generally confined by dense interflow zones that restrict vertical movement of groundwater.

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	Tributary to Spring Brook	510	600 - 185	1,500	☒	☐	☐	☐	☒
1	2	Chicken Creek	510	800 – 600	3,400	☒	☐	☐	☐	☒
1	3	Baker Creek	510	1,030 - 775	3,700	☐	☒	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: Several streams are present within one mile of the proposed POA. SW 1 and SW 2 are considered to be hydraulically connected on the basis of similar elevations and presence of springs (as noted by spring water rights) above where surface water bodies are mapped as going from ephemeral to perennial (NHD, 2014; USGS, 2017). SW 3 is at higher elevations within one mile of the proposed POA and is not hydraulically connected within one mile.

Water Availability Basin the well(s) are located within:

SW 1 WID # 182 WILLAMETTE R > COLUMBIA R - AB MOLALLA R

SW 2 WID # 30201006: TUALATIN R > WILLAMETTE R - AT GAGE 14207500

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?	Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	☐	☐	NA	NA	☐	3830	☐	NA	☐
1	2	☐	☐	NA	NA	☐	46.80	☐	NA	☐

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 #		Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: C3a: Interference at 30 days cannot be appropriately modeled within a structurally deformed basalt aquifer(s).

C3b: Not applicable

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: _____

_____**References Used:** Application File G-19405

Water well reports and data: WASH 3443, WASH 57386, YAMH 168, YAMH 56904, YAMH 57902

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, Professional Paper 1424-A, 32 p: U. S. Geological Survey, Reston, VA.

Oregon Lidar Consortium (OLC), 2016, OLC metro 2014 lidar project, Oregon Department of Geology & Mineral Industries, Portland, OR, November 30.

United States Geological Survey, 2017, *Newberg quadrangle*, Oregon [map], 1:24,000, 7.5 minute topographic series, U.S. Department of the Interior, Reston, VA.

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.

D. WELL CONSTRUCTION, OAR 690-200

- D1. Well #: 1 Logid: YAMH 57939
- 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

WILLAMETTE R > COLUMBIA R - AB MOLALLA R	
WILLAMETTE BASIN	
Water Availability as of 7/27/2024	
Watershed ID #: 182 (Map)	Exceedance Level: 80% ▾
Date: 7/27/2024	Time: 7:54 PM

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	21,400.00	2,300.00	19,100.00	0.00	1,500.00	17,600.00	
FEB	23,200.00	7,490.00	15,700.00	0.00	1,500.00	14,200.00	
MAR	22,400.00	7,260.00	15,100.00	0.00	1,500.00	13,600.00	
APR	19,900.00	6,910.00	13,000.00	0.00	1,500.00	11,500.00	
MAY	16,600.00	4,250.00	12,300.00	0.00	1,500.00	10,800.00	
JUN	8,740.00	1,980.00	6,760.00	0.00	1,500.00	5,260.00	
JUL	4,980.00	1,810.00	3,170.00	0.00	1,500.00	1,670.00	
AUG	3,830.00	1,650.00	2,180.00	0.00	1,500.00	681.00	
SEP	3,890.00	1,390.00	2,500.00	0.00	1,500.00	997.00	
OCT	4,850.00	753.00	4,100.00	0.00	1,500.00	2,600.00	
NOV	10,200.00	887.00	9,310.00	0.00	1,500.00	7,810.00	
DEC	19,300.00	975.00	18,300.00	0.00	1,500.00	16,800.00	
ANN	15,200,000.00	2,250,000.00	13,000,000.00	0.00	1,090,000.00	11,900,000.00	

TUALATIN R > WILLAMETTE R - AT GAGE 14207500	
WILLAMETTE BASIN	
Water Availability as of 7/27/2024	
Watershed ID #: 30201006 (Map)	Exceedance Level: 80% ▾
Date: 7/27/2024	Time: 7:55 PM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

Watershed Characteristics

Water Availability Calculation

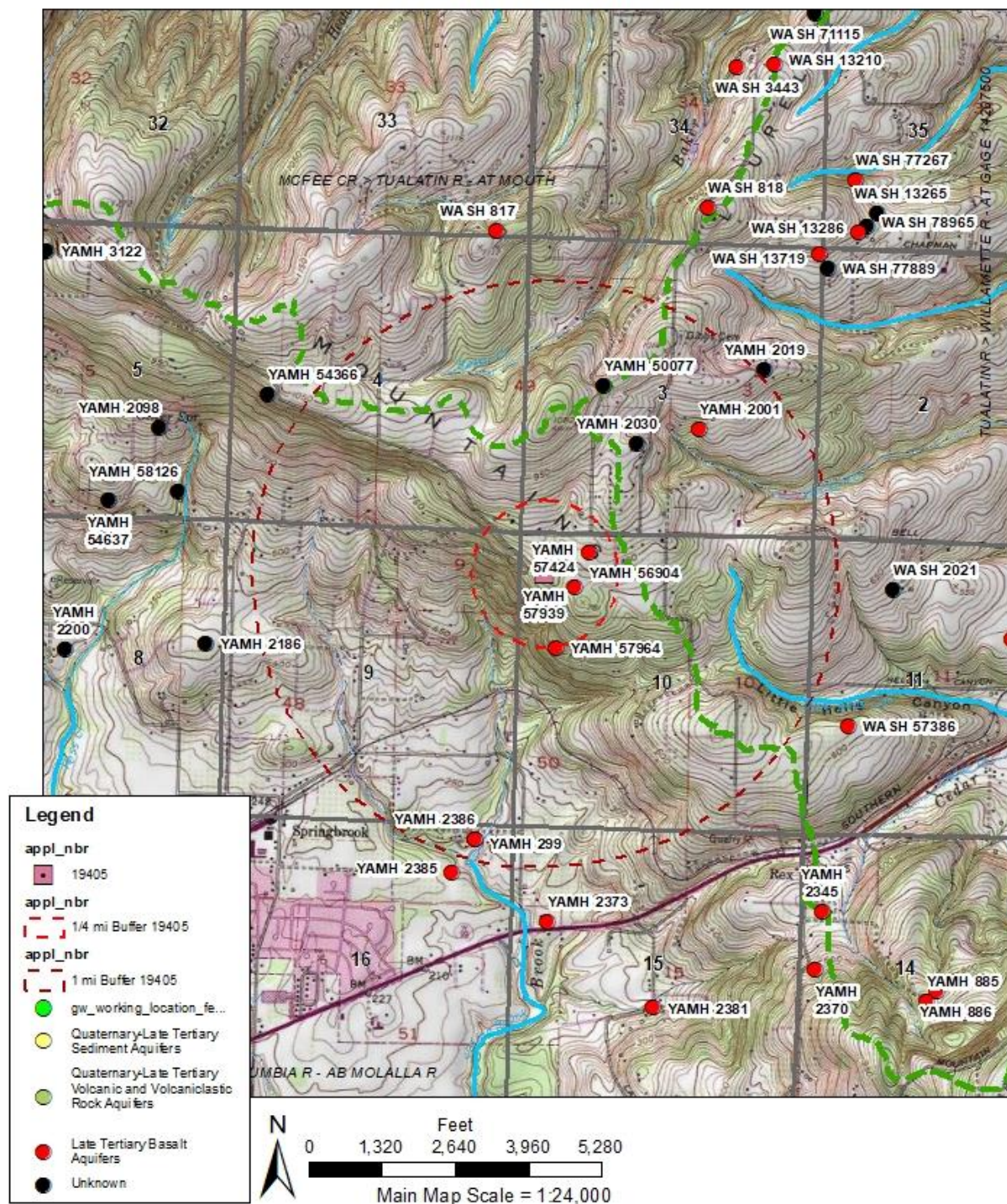
Monthly Streamflow in Cubic Feet per Second

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	1,290.00	346.00	944.00	0.00	250.00	694.00
FEB	1,640.00	403.00	1,240.00	0.00	250.00	987.00
MAR	1,300.00	286.00	1,010.00	0.00	250.00	764.00
APR	833.00	224.00	609.00	0.00	250.00	359.00
MAY	407.00	137.00	270.00	0.00	250.00	19.50
JUN	191.00	157.00	34.10	0.00	130.00	-95.90
JUL	90.30	199.00	-109.00	0.00	100.00	-209.00
AUG	68.60	167.00	-98.50	0.00	100.00	-198.00
SEP	46.80	121.00	-74.20	0.00	94.50	-169.00
OCT	52.00	38.60	13.40	0.00	100.00	-86.60
NOV	183.00	172.00	10.80	0.00	250.00	-239.00
DEC	967.00	332.00	635.00	0.00	250.00	385.00
ANN	913,000.00	155,000.00	767,000.00	0.00	137,000.00	649,000.00

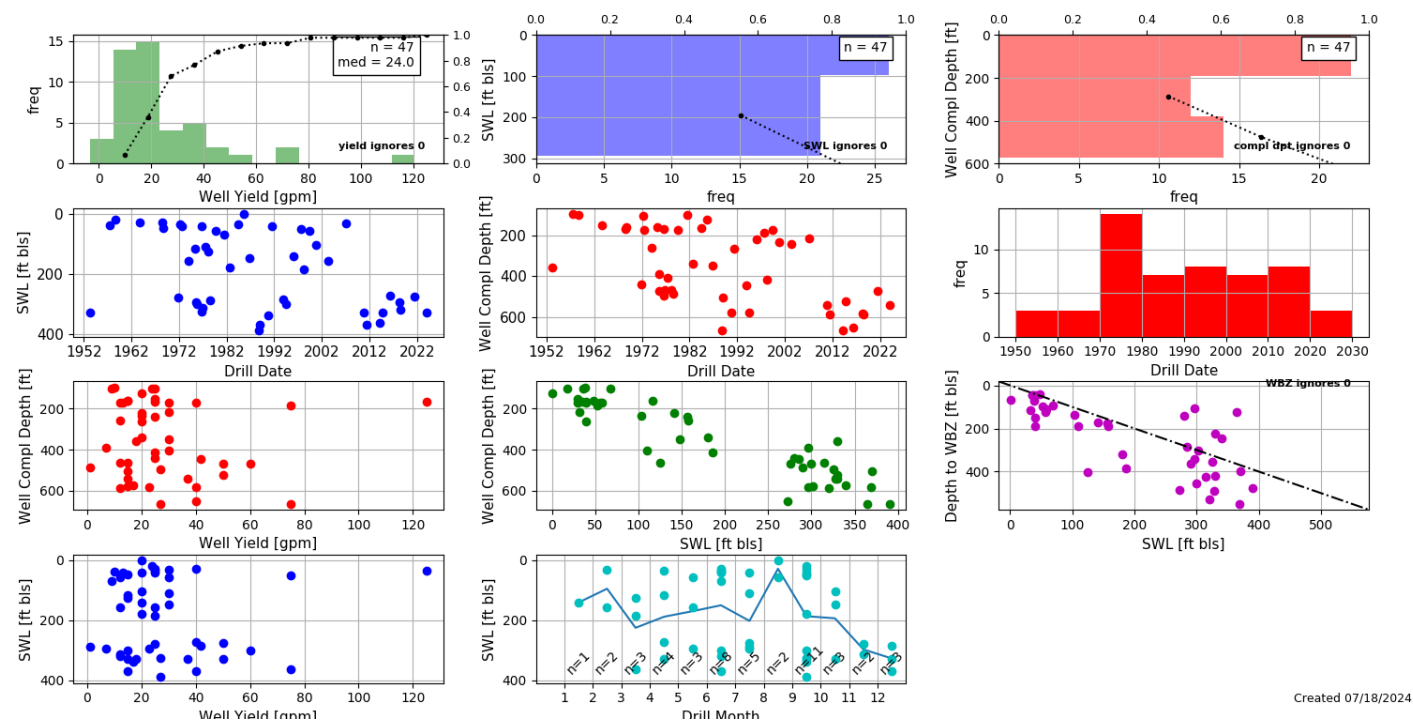
Well Location Map

App G-19405 Snow 3S - 2W / Section 10



Service Layer Credits: Copyright© 2013 National Geographic Society, i-cubed

Well Statistics



Water-Level Measurements in Nearby Wells

