

Approved: 

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Travis Kelly, Well Construction Compliance Coordinator
Subject: Review of Water Right Application G-19196
Date: January 5, 2022

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 #2 (WASH 57621): Based on a review of the Well Report, Applicant's Well #2 seems to protect the groundwater resource.

The construction of Applicant's Well #2 may not satisfy hydraulic connection issues.

STATE OF OREGON WATER SUPPLY WELL REPORT

SEP 11 2001

WELL I.D. # L 50495 START CARD # 139320

Instructions for completing this report are on the back of this form. WATER RESOURCES DEPT. SALEM, OREGON

(1) LAND OWNER Well Number Name TEUFEL NURSERY #2 Address 12345 NW BARNES RD. City PORTLAND State OR Zip 97229

(2) TYPE OF WORK [X] New Well [] Deepening [] Alteration (repair/recondition) [] Abandonment

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

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

(5) BORE HOLE CONSTRUCTION: Special Construction approval [] Yes [X] No Depth of Completed Well 1090. Explosives used [] Yes [X] No Type Amount

Table with columns: HOLE (Diameter, From, To), SEAL (Material, From, To), Sacks or pounds. Includes entries for 14-3/4, 10, and 8-3/4 diameters.

How was seal placed: Method [] A [] B [X] C [X] D [] E [] Other Backfill placed from ft. to ft. Material Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER: Diameter From To Gauge Steel Plastic Welded Threaded Casing: 10" +1-960 .250 [X] [] [X] [] Liner: Drive Shoe used [] Inside [] Outside [] None Final location of shoe(s) 10" shoe @ 960'

(7) PERFORATIONS/SCREENS: Table with columns: From, To, Slot size, Number, Diameter, Tele/pipe size, Casing, Liner. Includes rows for Perforations and Screens.

(8) WELL TESTS: Minimum testing time is 1 hour [] Pump [] Bailer [X] Air [] Artesian Flowing Yield gal/min Drawdown Drill stem at Time 400+ 475 1 hr. 375-380 275 2 hrs.

Temperature of water 66°F Depth Artesian Flow Found Was a water analysis done? [X] Yes By whom AMJ Did any strata contain water not suitable for intended use? [] Too little [] Salty [] Muddy [] Odor [] Colored [] Other Depth of strata:

(9) LOCATION OF WELL by legal description: County WASHINGTON Latitude Longitude Township 1N N or S Range 3W E or W. WM. Section 15 NE 1/4 SW 1/4 Tax Lot 1600 Lot Block Subdivision Street Address of Well (or nearest address) 35600 NW ZION CHURCH RD

(10) STATIC WATER LEVEL: 68 ft. below land surface. Date 09/06/01 Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES: Table with columns: From, To, Estimated Flow Rate, SWL. Includes entries for 1022, 1035, and 1080 depths.

(12) WELL LOG: Table with columns: Material, From, To, SWL. Includes entries for Brown clay, Soft silty gray clay, Sticky gray clay, etc.

Date started 05/24/01 Completed 09/06/01 (unbonded) Water Well Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards.

(bonded) Water Well Constructor Certification: I accept responsibility for the construction, 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.

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL I.D. # L 50495
START CARD # 139320

Instructions for completing this report are on the last page of this form.

(1) LAND OWNER
Well Number
Name TEUFEL NURSERY #2
Address 12345 NW BARNES RD.
City PORTLAND State OR Zip 97229

(2) TYPE OF WORK
[X] New Well [] Deepening [] Alteration (repair/recondition) [] Abandonment

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

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [] Yes [X] No Depth of Completed Well 1090
Explosives used [] Yes [X] No Type Amount

Table with columns: HOLE Diameter, From, To, Material, SEAL From, To, Sacks or pounds

How was seal placed: Method [] A [] B [] C [] D [] E
[] Other

Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:
Table with columns: Diameter, From, To, Gauge, Steel, Plastic, Welded, Threaded
Casing:
Liner:

Drive Shoe used [] Inside [] Outside [] None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
[] Perforations Method
[] Screens Type Material

Table with columns: From, To, Slot size, Number, Diameter, Tele/pipe size, Casing, Liner

(8) WELL TESTS: Minimum testing time is 1 hour
[] Pump [] Bailer [] Air [] Flowing [] Artesian
Yield gal/min Drawdown Drill stem at Time
1 hr.

Temperature of water Depth Artesian Flow Found
Was a water analysis done? [] Yes By whom
Did any strata contain water not suitable for intended use? [] Too little
[] Salty [] Muddy [] Odor [] Colored [] Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County WASHINGTON Latitude Longitude
Township 1N N or S Range 3W E or W. WM.
Section 15 NE 1/4 SW 1/4
Tax Lot 1600 Lot Block Subdivision
Street Address of Well (or nearest address) 35600 NW ZION CHURCH RD

(10) STATIC WATER LEVEL:
68 ft. below land surface. Date 09/06/01
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 1022

Table with columns: From, To, Estimated Flow Rate, SWL

(12) WELL LOG:
Ground Elevation

Table with columns: Material, From, To, SWL
Black basalt, occ. brkn. streaks 1050 1070 68
Brown basalt, inter. brkn. 1070 1080 68
Black basalt, broken 1080 1088
Gray-black basalt, hard 1088 1090 68

RECEIVED
SEP 11 2001
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 05/24/01 Completed 09/06/01

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, 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.
Signed WWC Number Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, 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.
Signed [Signature] WWC Number 1266 Date 09/06/01

Groundwater Application Review Summary Form

Application # G- 19196

GW Reviewer Jen Woody Date Review Completed: 11/19/2021

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

11/19/2021

TO: Application G- 19196

FROM: GW: Jen Woody
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

NO

YES Use the Scenic Waterway Condition (Condition 7J)

NO

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 11/19/2021
 FROM: Groundwater Section Jen Woody
 Reviewer's Name
 SUBJECT: Application G- 19196 Supersedes review of n/a
 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: Teufel Nursery Inc. County: Washington

A1. Applicant(s) seek(s) 0.44 cfs from 1 well(s) in the Willamette Basin,
Tualatin River subbasin

A2. Proposed use nursery 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	WASH 57621	2	CRBG	0.44	1N/3W-15 NE ¼ SW ¼	165' E, 130' N fr center ¼ cor S 15
2						
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	175	1022	68	9/06/2001	1090	0-60, 800-960	0-960	n/a	n/a	400	unk	air

Use data from application for proposed wells.

A4. **Comments:** _____

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: 690-502-0240 classifies use from unconfined alluvial aquifers. This application proposes use from a confined aquifer in the CRBG, so this rule is not activated.

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) 7I, Large 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 a single aquifer in the Columbia River Basalt Group _____ 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’s proposed wells will produce from one or more water-bearing zones in the Columbia River Basalt Group (CRBG), a series of lava flows with a composite thickness that ranges from 600 to 700 feet in this area (Conlon et al., 2005). Basalt at this location is overlain by over 1000 feet of sediments. Each basalt flow is characterized by a series of internal features, including a thin rubble zone at the contact between flows and a thick, dense, low porosity and low permeability interior zone. In some cases, sedimentary layers were deposited during the time between basalt flow emplacements. A flow top, sedimentary interbed and flow bottom are collectively referred to as an interflow zone. Unconfined groundwater occurs near the weathered top of the basalts, but most water occurs in interflow zones at the contacts between lava flows. CRBG flow features result in a series of stacked, thin aquifers that are confined by dense flow interiors. The low permeability of the basalt flow interiors usually results in little connection between stacked aquifers, which generally results in tabular aquifers with unique water level heads (Reidel et al., 2002). _____

Groundwater for the proposed use cannot be determined to be over-appropriated due to insufficient available data regarding rates of recharge and the current quantity of groundwater withdrawals from the aquifer system. However, long term groundwater-level trends at other deep basalt wells (greater than 1000 feet) in the Tualatin Subbasin have declined approximately 15 feet since 1988 (see Figure 3). This magnitude of decline activates standard Willamette Valley Basalt water level decline triggers, indicating groundwater is not available from this aquifer for new appropriation. Based on similar water level elevations, recent Aquifer Storage and Recovery testing by the City of Cornelius (at WASH 73617) affects the same aquifer this application is proposing to use. Upward trends in 2019-2020 may be in part related to ASR testing. The

universally low storativity of CRBG aquifers limit their potential productivity, both in rate and total volume. If this permit is issued, water level monitoring and reporting conditions are recommended to protect the resource and other users. _____

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	Columbia River Basalt Group Aquifer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: The reported static water level rises hundreds of feet above the first water-bearing zone, indicating a confined 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?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Water-bearing zones are reported in the confined interflow zones of the CRBG. In this location, there are over 1000 feet of sediments overlying the basalts. The well is cased and sealed through the sediments, into the basalts. Because the well is sealed to hundreds of feet below the streambed, there is no effective hydraulic connection between the well and surface water within one mile.

Water Availability Basin the well(s) are located within: 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 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"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

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.**

Figure 1. Water Availability Tables

Water Availability Analysis Detailed Reports

TUALATIN R > WILLAMETTE R - AT GAGE 14206500
WILLAMETTE BASIN

Water Availability as of 11/17/2021

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

Exceedance Level:80%

Date: 11/17/2021

Time: 2:27 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	1,090.00	389.00	701.00	0.00	100.00	601.00
FEB	1,420.00	450.00	970.00	0.00	100.00	870.00
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	378.00	380.00	0.00	100.00	280.00
ANN	751,000.00	169,000.00	592,000.00	0.00	72,100.00	542,000.00

Figure 2. Well Location Map

Teufel Nursery Inc.
G19196
T1N/R3W-Section 15

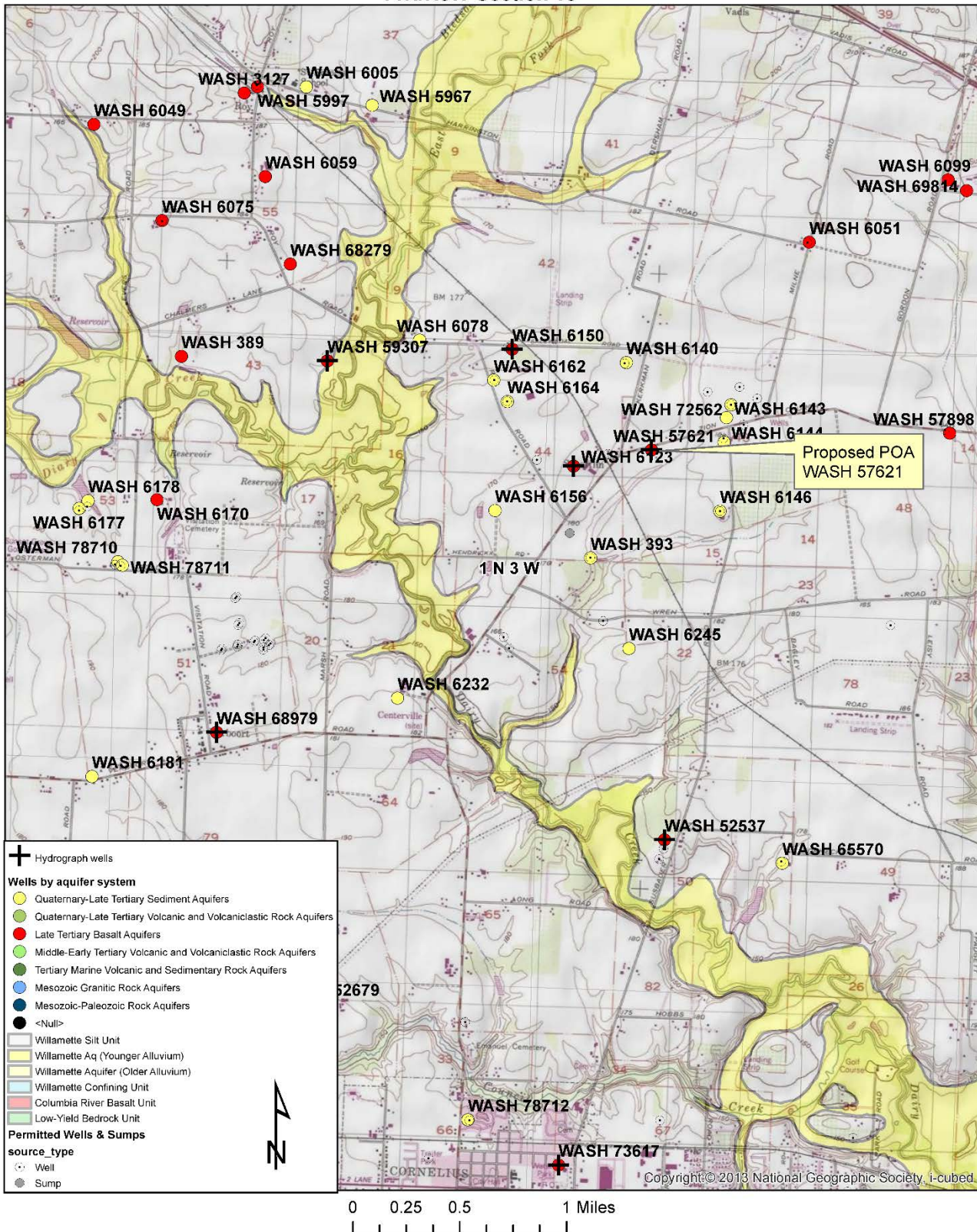


Figure 3. Water-Level Measurements in Nearby Wells

