

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-19203
Date: February 1, 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 #1 (WASH 13354): 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, only 4 sacks of cement and 2 sacks of bentonite were used for the well seal. A calculated minimum of 16 sacks of cement or 32 sacks of bentonite should have been used. 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 75 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is constructed to meet current minimum well construction standards.

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

The original and first copy of this report are to be filed with the

WASH 13354

RECEIVED

WATER WELL REPORT WASH

013354

STATE ENGINEER, SALEM, OREGON 57810

SEP 12 1975

STATE OF OREGON

State Well No. 25/34-2

(Please type or print)

State Permit No.

within 30 days from the date of well completion

WATER RESOURCES DEPT.

Do not write above this line

SALEM, OREGON

(1) OWNER:

Name Richard Soule
Address Rt 2, Box 81 Hillsboro, Or 97123

(2) TYPE OF WORK (check):

New Well [X] Deepening [] Reconditioning [] Abandon []
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary [] Driven []
Cable [X] Jetted []
Dug [] Bored []

(4) PROPOSED USE (check):

Domestic [X] Industrial [] Municipal []
Irrigation [] Test Well [] Other []

CASING INSTALLED:

Threaded [] Welded [X]

OD. Diam. from 0 ft. to 72 ft. Gage 250
Diam. from ft. to ft. Gage
Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? [] Yes [X] No.

Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? [] Yes [X] No

Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? [] Yes [X] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Bailer test 25 gal./min. with 35 ft. drawdown after 1 hrs.
Artesian flow g.p.m.

(9) CONSTRUCTION:

Well seal-Material used cement & bentonite
Well sealed from land surface to 72 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 4 sacks
Number of sacks of bentonite used in well seal 2 sacks
Brand name of bentonite National
Number of pounds of bentonite per 100 gallons
of water lbs./100 gals.
Was a drive shoe used? [] Yes [X] No Plugs Size: location ft.
Did any strata contain unusable water? [] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Washington Driller's well number
1/4 1/4 Section 2 T2S R. 3W W.M.
Bearing and distance from section or subdivision corner C A A

(11) WATER LEVEL: Completed well.

Depth at which water was first found 95 ft.
Static level 93 ft. below land surface. Date 8-31-75
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 192 ft. Depth of completed well 192 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

Table with 4 columns: MATERIAL, From, To, SWL. Rows include brown top soil, red soft clay, soft brown rock, hard brown rock, hard blue basalt, med hard blue basalt, hard blue basalt, med hard brown basalt, hard blue basalt, med hard blue basalt, hard blue basalt.

Work started 8-22 1975 Completed 9-2 1975
Date well drilling machine moved off of well 9-2 1975

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Robert L. Blutschek Date 9-2, 1975
(Drilling Machine Operator)
Drilling Machine Operator's License No. 767

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name JOHN MEEKER WELL DRILLING
Address 2902 Hoover Blvd, Newberg, Or 97132
[Signed] John Meecker
(Water Well Contractor)
Contractor's License No. 111 Date 9-3, 1975



Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301
(503) 986-0900
www.oregon.gov/owrd

Application for
Well ID Number

RECEIVED

AUG 13 2021

Do not complete if the well already has a Well Identification Number.

OWRD

I. OWNER INFORMATION

Current Owner Name (please print): Andrew I. Van Sambeek
Mailing Address: 33399 SW Bald Peak Rd
City, State, Zip: Hillsboro, OR, 97123
Mail Well ID to: [X] SAME AS ABOVE [] In Care Of (C/O)
Name & Address:
City, State, Zip:

II. WELL LOCATION INFORMATION (Please fill out as completely as possible)

Township: 2 S (North / South) Range: 3 W (East / West) Section: 2 1/4 of the SE 1/4
Tax Lot (usually last 3-5 numbers of Tax Map #): 500 County Washington
GPS Coordinates:
Street Address of Well, City: 33399 SW Bald Peak Rd, Hillsboro, OR 97123
If the property had a different street address in the past:

III. GENERAL WELL INFORMATION (Please fill out as completely as possible, AND attach copy of Well Report, if available)

Use of Well (domestic, irrigation, commercial, industrial, monitoring): Domestic
Date Well Constructed (or property built): 9-3-1975 Total Well Depth: 192' Casing Diameter: 6.625"
Owner at time the well was constructed (if known): Richard Soule Well Report # (if known): WASH 13354
Other Information: Well inspection in 2014 lists well depth of 191ft & static level of 108ft so fairly certain well report 013354 is the correct well.

SUBMITTED BY (please print): Andrew I. Van Sambeek
PHONE: 503-515-3714 EMAIL &/or FAX: avansambeek@frontier.com

Send application to: Oregon Water Resources Department 725 Summer St NE, Suite A, Salem, Oregon 97301, fax to (503) 986-0902, or you are welcome to email the completed form to Ladeena.K.Ashley@oregon.gov.

For Official Use Only by the Oregon Water Resources Department:

Received Date:
8-13-21

Well Report Number:
WASH 13354

Well Identification #:
L-143847

Groundwater Application Review Summary Form

Application # G- 19203

GW Reviewer Jen Woody Date Review Completed: 11/29/2021

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

11/29/2021

TO: Application G- 19203

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 11/29/2021
 FROM: Groundwater Section Jen Woody
 Reviewer's Name
 SUBJECT: Application G- 19203 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: Andrew I. Van Sambeek County: Washington

A1. Applicant(s) seek(s) 0.0069 cfs up to 0.17 acre-feet/year from 1 well(s) in the Willamette Basin, Tualatin River subbasin

A2. Proposed use Irrigation and Nursery Seasonality: June 1-Sept 15 and Jan 1-Dec 31, respectively

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 13354	1	CRBG	0.0069	2S/3W-2 NW ¼ SE ¼	1750' N, 100' E fr S ¼ cor S 2*
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	612	95	93	8/31/1975	193	0-72	0-72	n/a	n/a	25	35	bail

Use data from application for proposed wells.

A4. **Comments:** *no metes and bounds provided in the application. This location is estimated after plotting the well in ArcGIS.

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 proposed use is from a confined aquifer, so the relevant basin rules do not apply.

A6. **Well(s) #** 1, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: Chehalem Mountain Groundwater Limited Area

Comments: OAR 690-502-0200: "Groundwater from basalt aquifers in the Chehalem Mountain GWLA is classified for exempt uses, irrigation, and rural residential fire protection systems only. Permits may be issued for a period not exceeding five years, for fire protection and for drip or equally efficient irrigation, provided that the Director finds the proposed use and amount do not pose a threat to the groundwater resource or existing permit holders. The amount of water used for irrigation shall be further limited to one acre-foot per acre per year."
A portion of the requested use is nursery, which may not fall within the allowable uses of the GWLA.

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, 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 a single aquifer within 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 exceeding 1000 feet in this area (Conlon et al., 2005). Each 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.

The subject well is located within a basalt aquifer affected by the Chehalem Groundwater Limited Area rules. Wells in this groundwater administrative area are sensitive to overdraft. Nearby water level data indicate a downward trend; WASH 52276 and WASH 67972 show a decline exceeding 15 feet over the period of record. The subject well has two available reported water level measurements showing 15 feet of decline, but the second one is reported within a year without providing a month or day which makes it difficult to determine if this is a seasonal fluctuation or a long-term trend. However, the subject well has an open interval that is coincident with that at WASH 52276, which shows a decline that would trigger the standard 15 foot Willamette Basin Basalt decline limit. This indicates the aquifer does not have the capacity to support the current level of use without water level decline. Therefore new uses are not within the capacity of the resource.

This well is within the Chehalem Mountain Groundwater Limited Area. If a permit is issued, conditioning per Section A6 is required.

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
	Columbia River Basalt Group	<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 well log reports a static water level that rises above the water-bearing zone, 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	Unnamed tributary to Christensen Creek	420-540	420-540	430	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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"/>	<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. The open interval in the subject well is coincident with or above perennial reaches of nearby creeks. The creeks have incised through several hundred feet of CRBG. Groundwater from the uplands likely discharges to surface water, providing baseflow or spring flow to sustain nearby perennial reaches of the creek.

Water Availability Basin the well(s) are located within: Watershed ID # 30201006: Tualatin River> Willamette River – 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?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	n/a	n/a	<input type="checkbox"/>	46.80	<input type="checkbox"/>	*	<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"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<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.

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: * There is no appropriate model to estimate streamflow depletion from pumping in CRBG interflow zones that are incised by streams or discharge to point sources such as springs. Therefore, the percentage of interference at 30 days is not calculated.

PSI is triggered because the well is hydraulically connected to and located less than ¼ mile from SW #1. The point of hydraulic connection is identified as where the elevation of the subject well’s open interval intersects the streambed.

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: n/a

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: 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.

US Geological Survey Topographic Maps, Laurelwood and Scholls Quadrangles.

OWRD water level and well log databases, includes reported water levels.

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 14207500
WILLAMETTE BASIN

Water Availability as of 11/22/2021

Watershed ID #: 30201006 ([Map](#))

Exceedance Level:80%

Date: 11/22/2021

Time: 3:07 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	1,290.00	345.00	945.00	0.00	250.00	695.00
FEB	1,640.00	402.00	1,240.00	0.00	250.00	988.00
MAR	1,300.00	285.00	1,010.00	0.00	250.00	765.00
APR	833.00	224.00	609.00	0.00	250.00	359.00
MAY	407.00	137.00	270.00	0.00	250.00	19.70
JUN	191.00	157.00	34.20	0.00	130.00	-95.80
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	-74.10	0.00	94.50	-169.00
OCT	52.00	38.50	13.50	0.00	100.00	-86.50
NOV	183.00	172.00	10.80	0.00	250.00	-239.00
DEC	967.00	331.00	636.00	0.00	250.00	386.00
ANN	913,000.00	155,000.00	767,000.00	0.00	137,000.00	649,000.00

Figure 2. Well Location Map

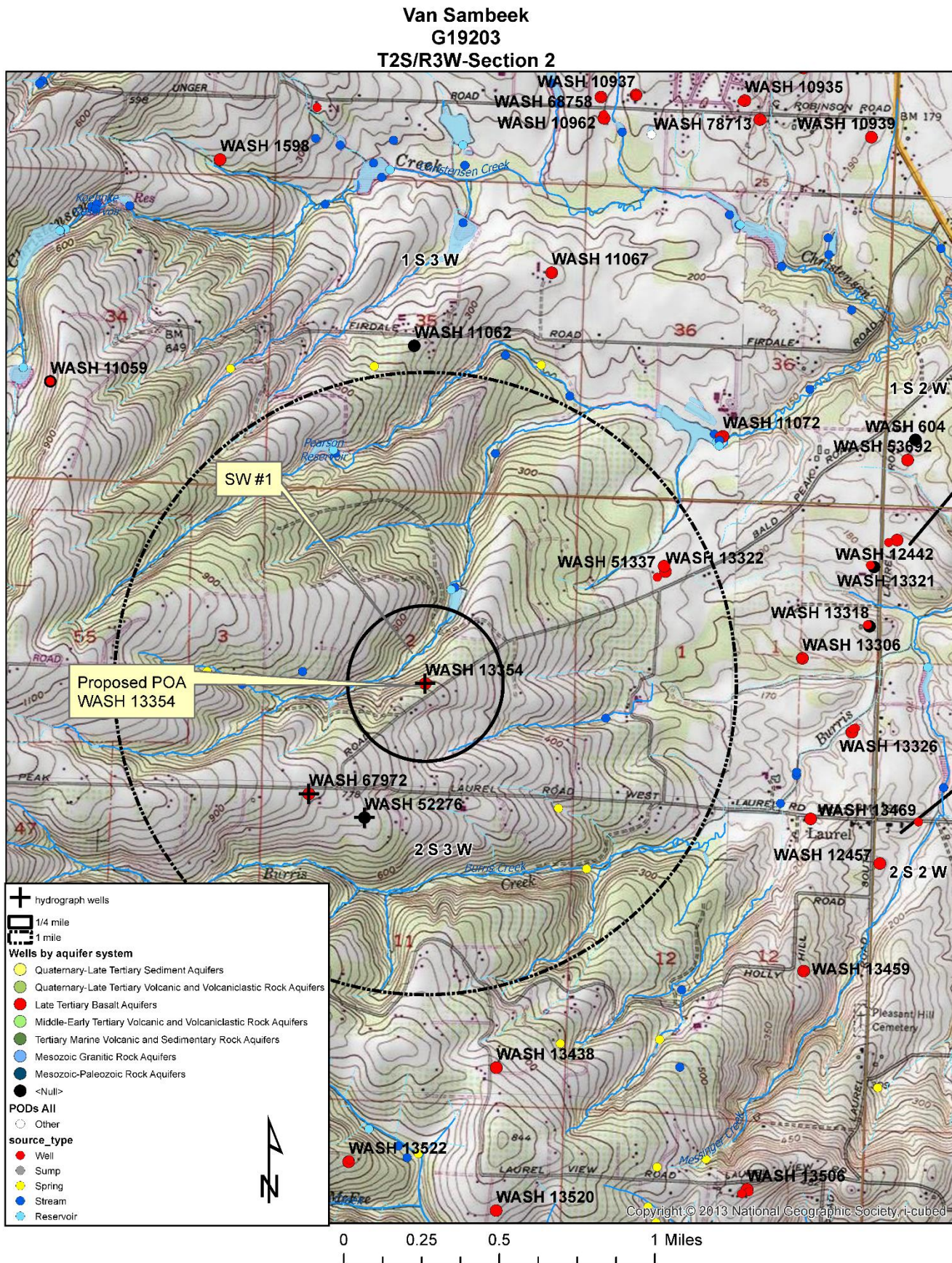


Figure 3. Water-Level Measurements in Nearby Wells. WASH 13354 measurement in 2014 was reported without a month or day.

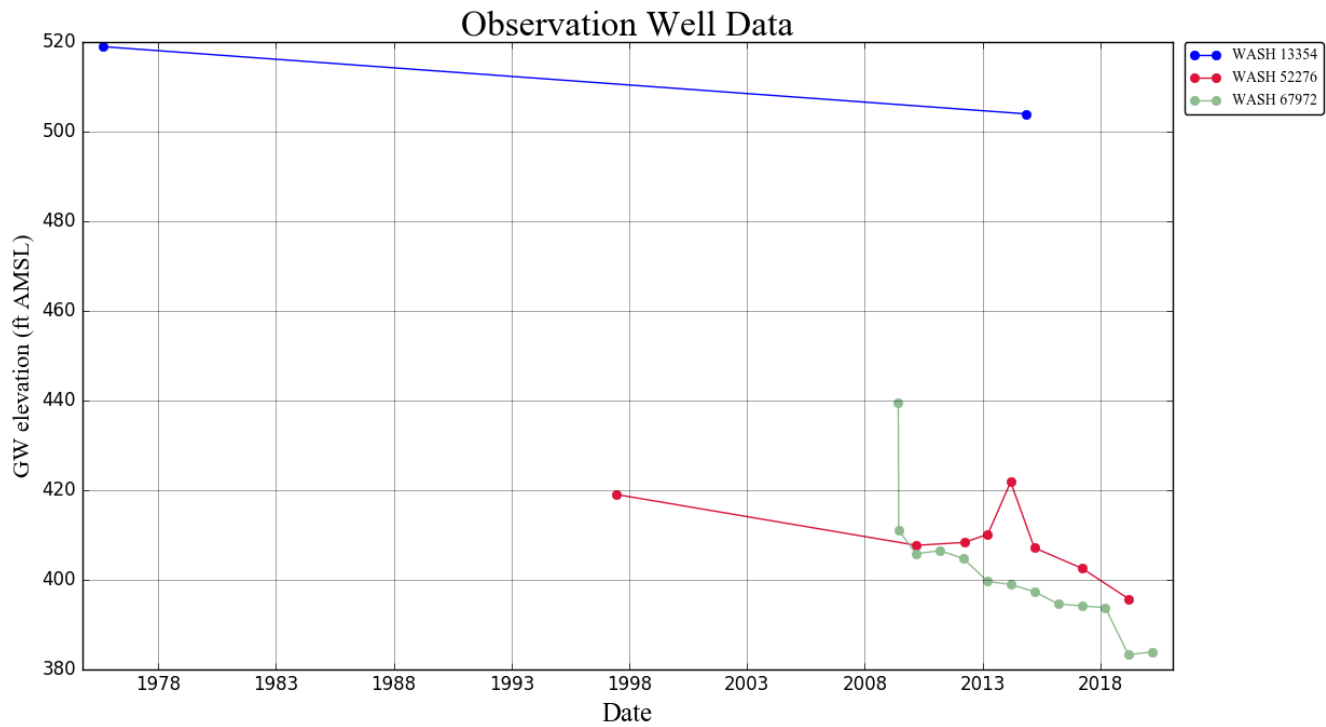


Figure 4. Cross Sectional Diagram

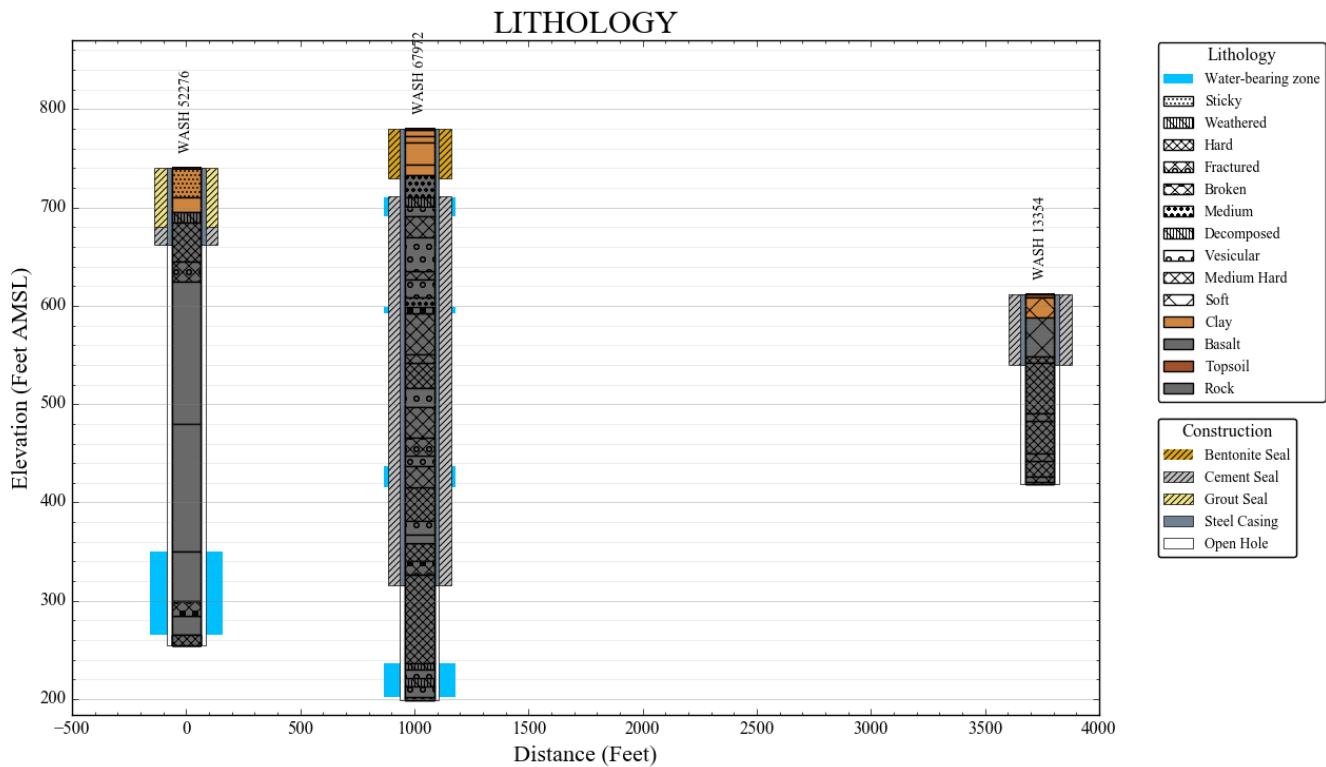


Figure 5. Broader set of nearby basalt wells with January - April water level data. Basalt wells located within approximately 2 miles of the subject well show declining water levels from 1950 through 2000. Lower elevation wells show some stability after approximately 2005, while upper elevation wells show declines at the current level of use. The subject well (WASH 13354) has a water level elevation above 500 feet, placing it in the upper elevation category in this context.

