Groundwater Application Review Summary Form

Application # G- 19480

GW Reviewer James Hootsmans Date Review Completed: 2/28/2025

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 **_February 28, 2025_**

TO: **Application** G-**_19480_**

FROM: **GW:** **_James Hootsmans_**
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ **YES**
☒ **NO** The source of appropriation is hydraulically connected to a State Scenic 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 2/28/2025
FROM: Groundwater Section James Hootsmans
Reviewer's Name
SUBJECT: Application G- **19480** 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: **Wilma Eichler** County: **Yamhill**

A1. Applicant(s) seek(s) 0.05 cfs from 1 well(s) in the Willamette Basin, Middle Willamette subbasin

A2. Proposed use Irrigation Seasonality: April 1 – Sep 30

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 7079	1	**TMVS (Bedrock)**	0.05	5S/4W-21 NESE	*1345' N, 635' W fr SE cor S 21
2						
3						
4						

* 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	290	0-35	0-35, 0-290		250 - 290	10	100	
2								
3								
4								

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	269	275	150	9/26/1979	TBD	TBD
2						
3						
4						

Use data from application for proposed wells.

A4. **Comments:** The applicant proposes one Point of Appropriation (POA) approximately 0.7 miles east of the City of Amity boundaries. The POA, identified as YAMH 7079 on the location map, is a domestic well in the marine sedimentary groundwater system. The applicant proposed to pump 0.05 cfs (approximately 22.44 gallons per minute (gpm)) from the proposed POA. **The total planned annual volume is 36.2 acre feet for 58.8 acres**, with the applicant indicating that the entire property is the place of use, however not all of it will likely be developed and therefore a lower requested rate. Based upon nearby logs and geologic maps, the proposed POA is completed in the marine sedimentary groundwater reservoir. **The full duty is 2.5 acre feet per acre or 148 acre feet.**

*Consultant provided location does not appear to have an existing well based on aerial imagery. Location provided by consultant also does not match the TRS from the well log of YAMH 7079

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 POAs are greater than ¼ mile from the nearest surface water source and are completed in the semi-confined Tertiary Marine Volcanic and Sedimentary Aquifer; therefore, the relevant basin rules (OAR 690-502-0240) do not apply.

A6. ☐ **Well(s) # 1** , _____ , _____ , _____ , _____ , tap(s) an aquifer limited by an administrative restriction.
Name of administrative area: **Amity Hills/Walnut Hill Ground Water Limited Area ** (OAR 690-502-0210)**
Comments: **The proposed POA is situated in the GWLA but as long as it does not develop from the basalt aquifer, the GWLA rules do not apply.**

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) **7RLN, 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 **marine sedimentary** 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 proposed POA are located in the foothills of the Coast Range, which are characterized by low-yielding marine sedimentary rock aquifers. Brownfield and Schlicker (1981) place the POA in the Eocene marine sedimentary rocks, specifically the Keasey Formation of the Keasey-Alsea Group. Surficial geology in the area consists primarily of tuffaceous marine and sedimentary deposits, poorly sorted alluvial deposits to the west, and Columbia River Basalt (upgradient) to the east. Inferred normal faults occur within one half mile of the POAs to the north and east (Schlicker and Brownfield, 1981). The nearest perennial surface water bodies are Salt Creek to the west and Ash Swale to the south, with several intermittent streams within one mile of the POAs.

A survey of well logs in T5S/R4W-Section 21 produced 32 well logs, with reported yields ranging from 0 to 90 gpm (See Well Statistics). The median yield is 10.5 gpm and most logs report claystone or siltstone with occasional sandstone or basalt. This is typical of the low-yield bedrock hydrogeologic unit identified at this location by Conlon et al. (2005). The requested rate of 22.4 gpm (0.05 cfs) should be well within the capacity of the resource, if developed in the marine bedrock.

A Theis (1935) drawdown analysis was conducted to assess the potential well-to-well interference with the neighboring groundwater right due to pumping of the proposed POA in the amounts requested. Hydraulic parameters used for the analyses were derived from regional data and studies (Pumping Test Reports; Conlon et al., 2003, 2005; Woodward et al., 1998) or are within a typical range of values for the parameter within the hydrogeologic regime (Freeze and Cherry, 1979). To be conservative, it was assumed that pumping would occur for the full irrigation season at the maximum rate, irrespective

of time to reach the total annual volume (182 days). Results indicate that the proposed use is not likely to cause well-to-well interference with YAMH 7059 (the closest well) that exceeds the threshold under the standard condition for alluvial aquifers in the Willamette Basin. (see Theis Drawdown Analysis, attached).

The closest observation well to the proposed POA is YAMH 7141 is approximately 3900 feet to the southeast, however it is completed in alluvium. The closest current observation well that is completed in the marine sedimentary groundwater reservoir is YAMH 157, about 8000 feet away from the proposed POA. Both these current observation wells indicate water levels remaining stable. Nearby groundwater development from the marine sediments is otherwise limited to exempt uses. Water level data from marine sedimentary rock wells in Sections 16, 21, 22 and 27 show a reasonably stable trend at the current level of use and do not suggest long-term decline (See Water-Level Measurements in Nearby Wells).

In order to protect senior users and the groundwater resource, the conditions specified in B1(d)(i) and B2(c) are recommended for any permit issued pursuant to this application.

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
	Marine Volcanic/Sedimentary Bedrock Aquifer	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Nearby well logs in the marine sedimentary bedrock aquifer show static water levels rise above water-bearing zone. This indicates confined aquifer conditions.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Tributary to Ash Swale**	**100 - 200**	**135 – 150**	**3350**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Groundwater elevations in the applicants wells and nearby wells are above the surface water elevations of Ash Swale, indicating groundwater flow is towards the stream. The hydraulic connection is likely very weak due to the low permeability of the marine sedimentary bedrock underlying the stream.

Water Availability Basin the well(s) are located within: Salt CR > S Yamhill R – At Mouth (WID 73562)

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**	☐	☐	**NA**	**NA**	☐	**9.6**	☐	*****	☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

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

Comments: The requested rate is below 1% of 80% Natural Flow for the WAB.
* There is no model readily available for accurately estimating stream interference in the fractured bedrock aquifer system. Stream interference at 30 days was not calculated but is expected to be very low (<<25%) due to the low permeability and porosity of the marine sedimentary bedrock aquifer system.

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-19480

Brownfield, M.E., and Schlicker, H.G., 1981, Preliminary geologic map of the Amity and Misson Bottom Quadrangles, Oregon: Portland, Oreg., Oregon Dept. of Geology and Mineral Industries Open-File Report O-81-5, scale 1:24,000.

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, Scientific Investigations Report 2005-5168: U. S. Geological Survey, Reston, VA.

Freeze, R.A. and J.A. Cherry, 1979. Groundwater, Prentice Hall, Englewood Cliffs, New Jersey, 604p

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground-water storage: American Geophysical Union transactions, v. 16, p. 519-524.

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, 82 p.

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:** _____

_____

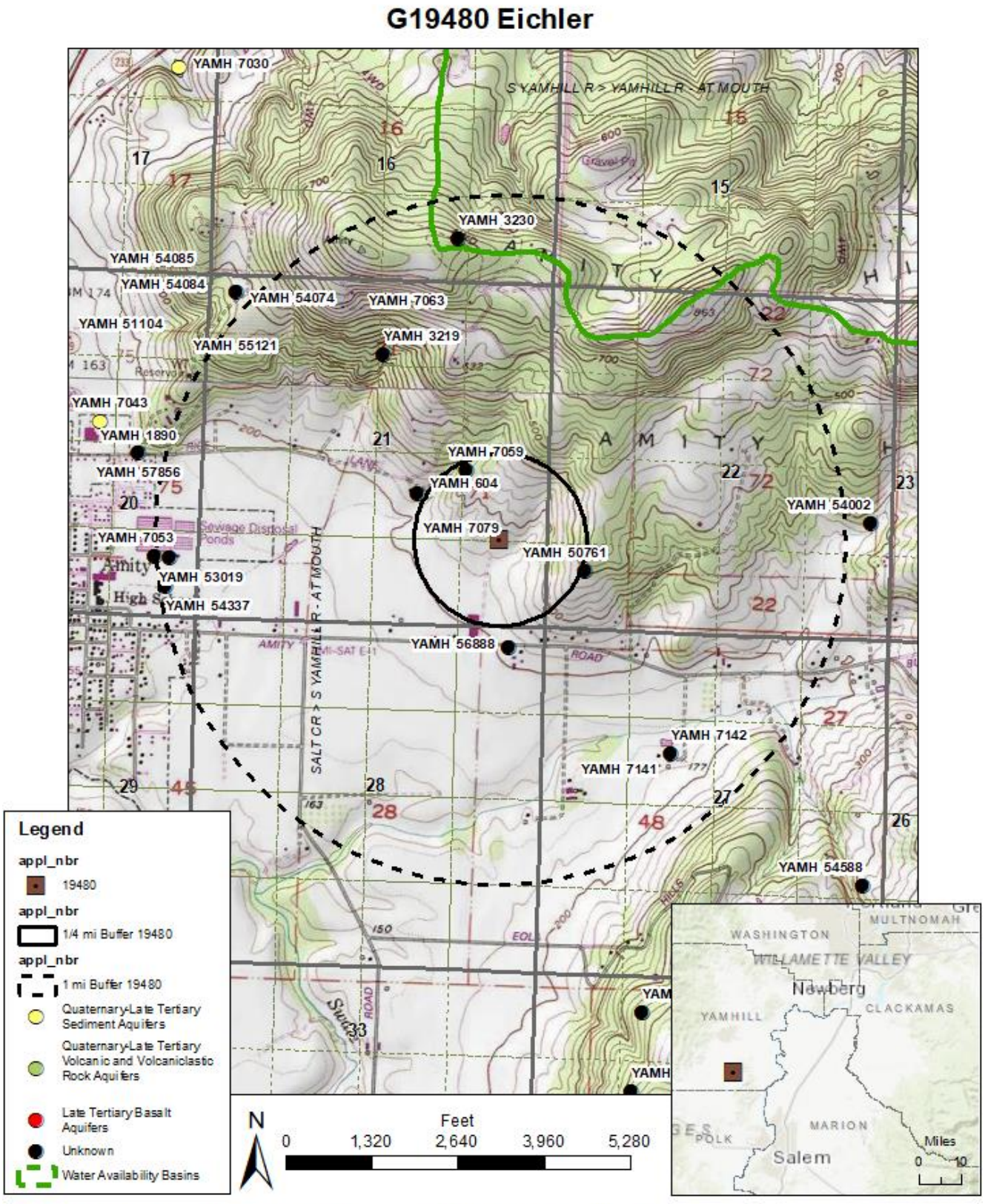
_____

_____

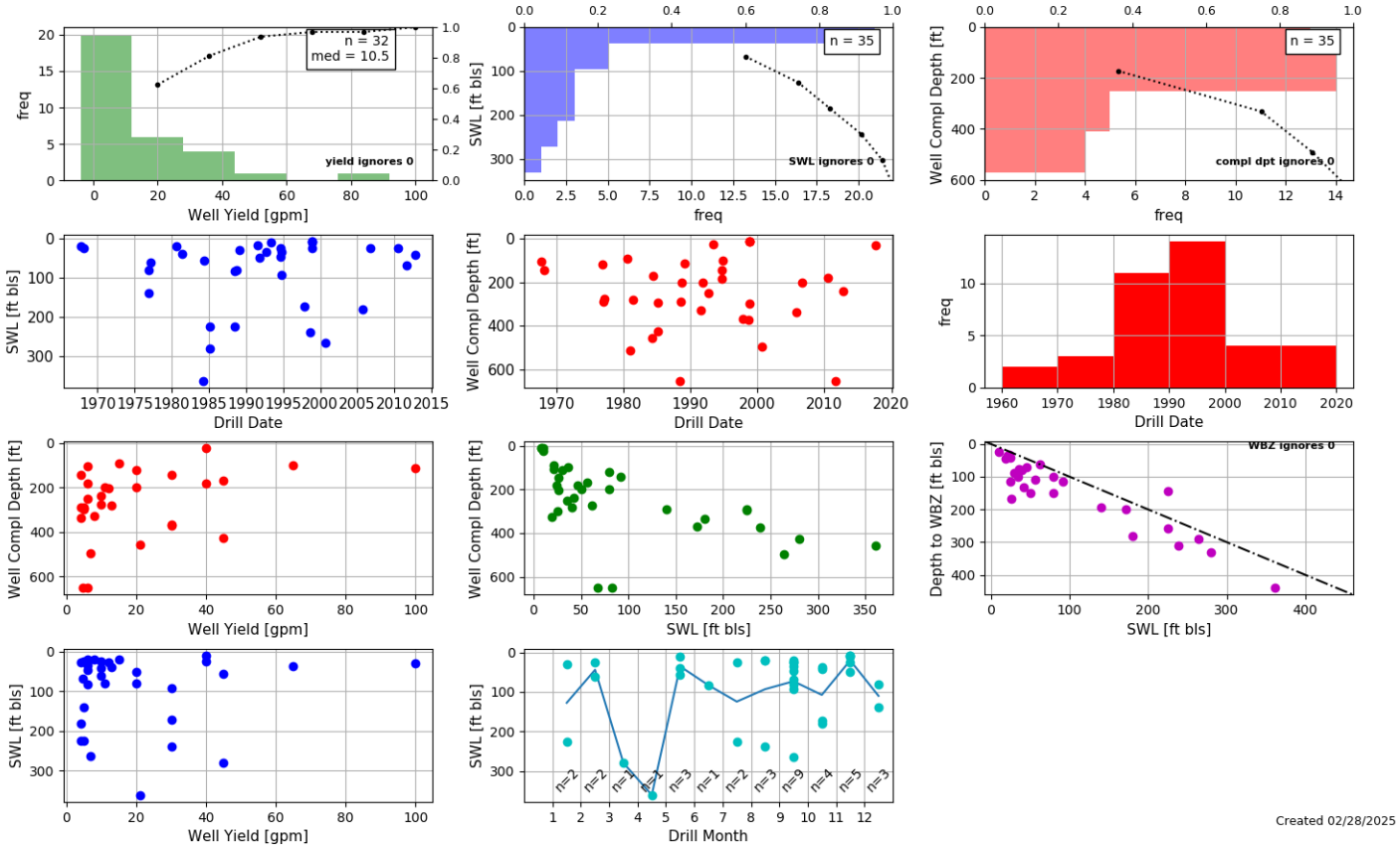
_____

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

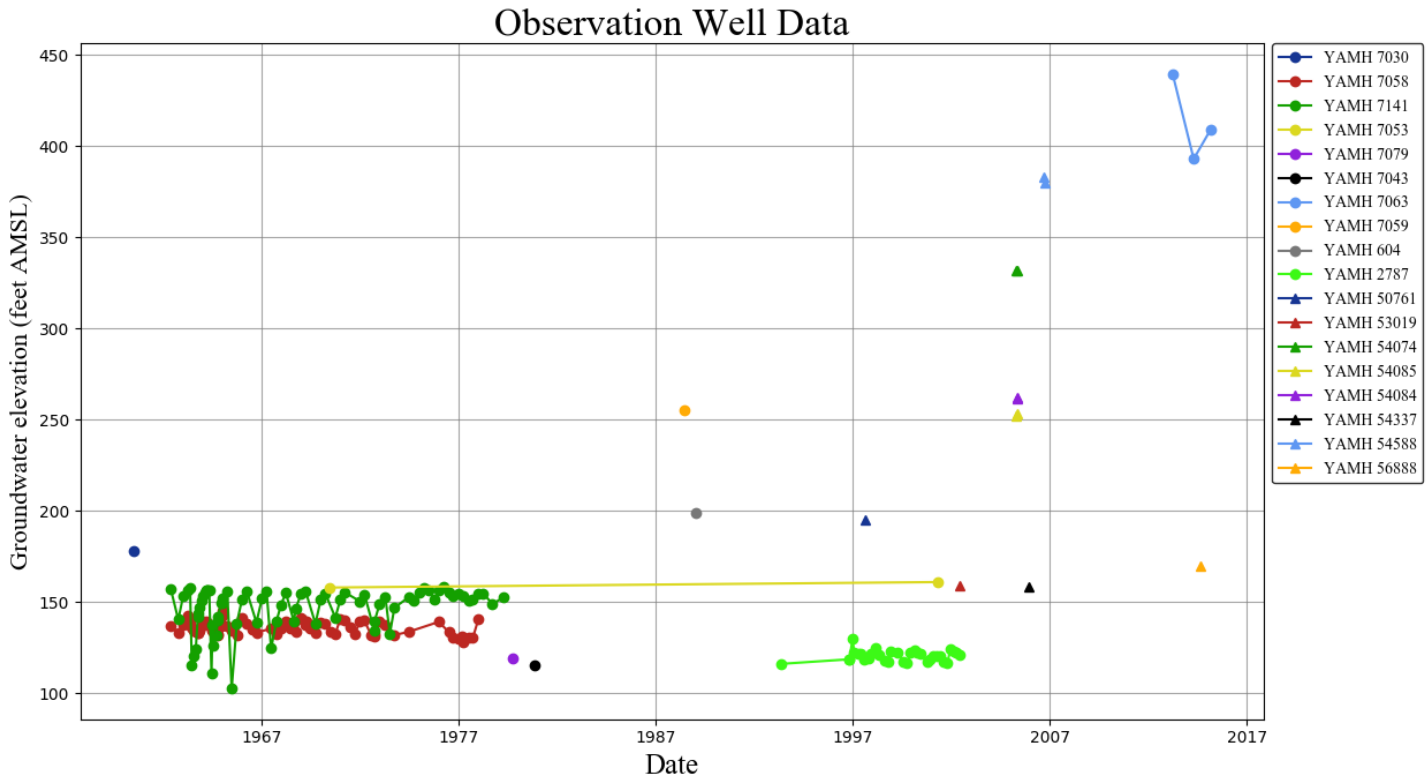
Well Location Map



Well Statistics



Water-Level Measurements in Nearby Wells



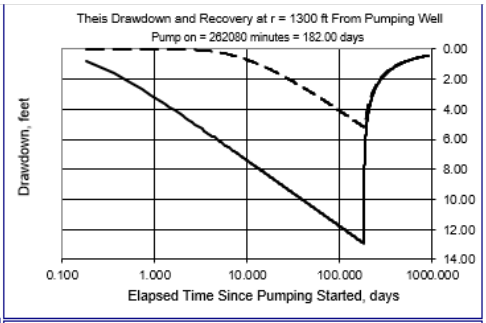
Theis Interference Analysis

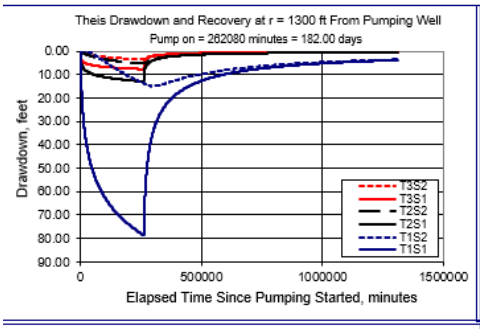
Theis Time-Drawdown Workshe v.5.00

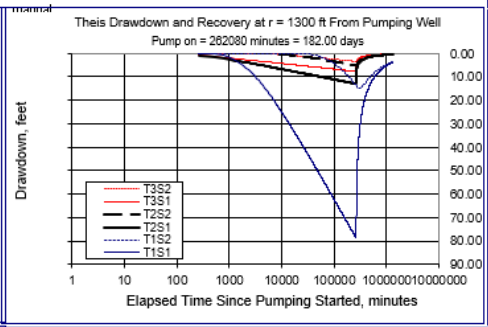
Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and radial distance, r, from a pumping well for 3 different T values and 2 different S values.
Written by Karl C. Wozniak September 1992. Last modified December 17, 2019

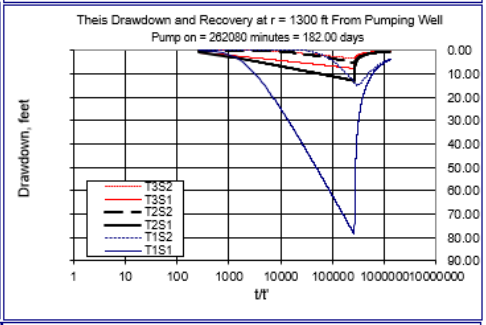
Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		182		d	
Radial distance from pumped well:	r		1300		ft	Q conversions
Pumping rate	Q		0.05		cfs	22.44 gpm
Hydraulic conductivity	K	0.2	1.8	3.3	ft/day	0.05 cfs
Aquifer thickness	b		100		ft	3.00 cfm
Storativity	S_1		0.00005			4,320.00 cfd
	S_2		0.003			0.10 af/d
Transmissivity Conversions	T_f2pd	20	180	330	ft2/day	
	T_ft2pm	0.0138889	0.125	0.2291667	ft2/min	Recalculate
	T_gpdpft	149.6	1346.4	2468.4	gpd/ft	

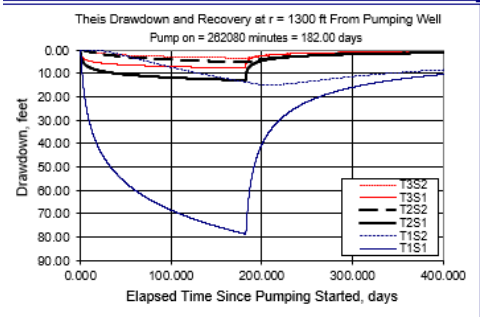
Use the Recalculate button if recalculation is set to manual

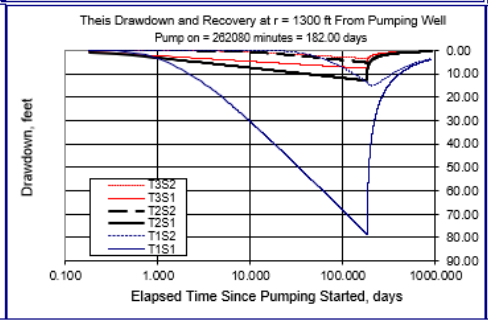


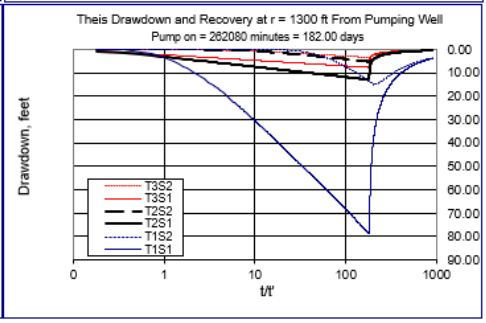












Water Availability Tables

Water Availability Analysis
Detailed Reports

SALT CR > S YAMHILL R - AT MOUTH
WILLAMETTE BASIN
Water Availability as of 2/28/2025

Watershed ID #: 73562 (Map)
Date: 2/28/2025

Exceedance Level: 80%
Time: 1:14 PM

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

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	154.00	18.90	135.00	0.00	0.40	135.00
FEB	168.00	16.50	152.00	0.00	0.40	151.00
MAR	143.00	13.70	129.00	0.00	0.40	129.00
APR	75.10	5.85	69.20	0.00	0.40	68.80
MAY	43.90	7.30	36.60	0.00	0.40	36.20
JUN	27.30	14.90	12.50	0.00	0.40	12.10
JUL	18.30	18.40	-0.06	0.00	0.40	-0.46
AUG	12.90	14.70	-1.79	0.00	0.40	-2.19
SEP	9.76	7.39	2.37	0.00	0.40	1.97
OCT	10.00	1.19	8.83	0.00	0.40	8.43
NOV	22.40	4.48	17.90	0.00	0.40	17.50
DEC	107.00	17.40	89.60	0.00	0.40	89.10
ANN	92,900.00	8,490.00	84,500.00	0.00	290.00	84,300.00

Download Data (Text - Formatted , Text - Tab Delimited , Excel)