Groundwater Application Review Summary Form

Application # G- 19463

GW Reviewer Stacey Garrison Date Review Completed: 2/10/2025

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 10 2025_**

TO: **Application** G-**_19463_**

FROM: **GW: _Stacey Garrison_**
(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 2/10/2025
FROM: Groundwater Section Stacey Garrison
Reviewer's Name
SUBJECT: Application G- **19463** 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: **Athena-L LLC** County: **Clackamas**

A1. Applicant(s) seek(s) 0.39 cfs from 1 well(s) in the Willamette Basin, Molalla-Pudding subbasin

A2. Proposed use Nursery [a] Seasonality: Nov 1 – Feb 29[a]

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	CLAC 12603	1	Alluvium	0.39[b]	4S/1E-28 SE-NW	10.75 CH S, 0.5 CH W fr NW Cor DLC 43[c]

* 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	225	0 to 20	0 to 157		116 to 125	370	110	Pump

Use data from application for proposed wells.

A4. **Comments:** POA/POU are 3 miles southeast of Aurora, OR.
[a] Applicant indicates Use as Irrigation with Period of Use November 1 – February 29 and maximum duty of 4.5 acre-feet/acre/year. However, per OAR 690-502-0040 (4)(c) and (6), Irrigation use is limited to the irrigation season which is March 1 through October 31. In addition, typical provisions for the Willamette Basin include limiting Irrigation use to a maximum duty of 2.5 acre-feet/acre/year. Nursery use is available year-round and typically limited to a maximum duty of 5.0 acre-feet/acre/year for Nursery-Containerized and 2.5 acre-feet/acre/year for Nursery-In-ground. **This review assumes Nursery use at a maximum duty of 4.5 acre-feet/acre/year for the applicant-specified period of use from November 1 – February 29.** NOTE-at the proposed rate of 0.39 cfs (175 gpm), it will not be possible to achieve the maximum duty of 139 acre-feet within the proposed period of use; for a period of use from November 1-February 29 (121 days) at a rate of 0.39 cfs (175 gpm), the maximum duty volume would be 93.6 or approximately 3 acre feet per acre over 30.93 acres.
[b] POA CLAC 12603 is also authorized for irrigation of 46.9 ac at a maximum rate of 0.39 cfs (175 gpm) and maximum annual duty of 2.5 acre-feet/acre/year under Certificate 83608**. If a permit is issued, it should include a provision that prohibits simultaneous use with Certificate 83608, or if used in combination with Certificate 83608, the combined maximum rate not to exceed 0.39 cfs (175 gpm).**
[c] There is a discrepancy between the mapped location of the POA as indicated on the applicant's map and the metes-and-bounds description using the Department's PLSS projection. The mapped location is coincident with the Department's existing location for the POA (CLAC 12603), the metes-and-bounds location is 47 ft southeast; the mapped location is used.
[d] Well head elevation estimated based on LIDAR measurements at well location (Watershed Sciences, 2009).

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. Per OAR 690-502-0240, the relevant basin rules do not apply.

A6. ☐ **Well(s) #** _____ , _____ , _____ , _____ , _____ , tap(s) an aquifer limited by an administrative restriction.
Name of administrative area: _____

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) 7RLN , medium water use ;

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 **alluvial** 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 POA/POU are located on 20 to 40 ft thick fine-grained Missoula Flood deposits, which overlie the 20 ft thick Willamette Aquifer. The POA utilizes a sand and gravel layer within the 800 ft thick Willamette Confining Unit, which underlies the Willamette Aquifer (O'Connor et al., 2001; Gannett and Caldwell, 1998). Within a mile of the POA the sand and gravel water-bearing zones, WBZs, of the Willamette Confining Unit are between 21 and 355 ft bls [-156 to 172 ft amsl] and range in thickness from 4 to 315 ft[a].

A review of statistics for nearby well records was completed and compared with the proposed rate of 0.39 cfs (~175 gpm) for this application (see Well Statistics). The median reported well yield is 40 gpm and the maximum reported well yield is 2,500 gpm. The proposed rate for this application is 438% of the median and 7% of the maximum reported yield; of the 334 wells included, only 62 have yields greater than the proposed rate of 0.39 cfs (175 gpm). Within one mile of the POAs, the median well yield is 200 gpm and the maximum is 1,370 gpm. The well log of the POA (CLAC 12603) reports a yield of 370 gpm, indicating the proposed rate of use of 0.39 cfs (~175gpm) is likely within the capacity of the groundwater resource.

Water levels are steady (see Water Level Measurements in Nearby Wells). There are four observation wells within a mile of the POA, all with recent water level data. There have been declines in the past, but the most recent data indicate water levels are steady or increasing. There are 33 groundwater POAs on 40 groundwater rights within one mile of the POA.

The nearest groundwater user to the POA (CLAC 12603) is CLAC 12589, located approximately 911 ft east of the POA and at an elevation of 193 ft amsl. It is likely the proposed use would cause some degree of well-to-well interference with CLAC 12589. To assess the degree of drawdown, a Theis drawdown analysis was conducted for the proposed use (see attached Theis Drawdown Analysis). **Results indicate that the proposed use is likely to cause well-to-well interference with CLAC 12589 that exceeds the threshold under the standard condition for alluvial aquifers in the Willamette Basin. The proposed use is therefore not likely in the capacity of the resource.**

Based on this analysis of the available data and under the assumptions previously identified, groundwater for the proposed use is not likely within the capacity of the resource; if a permit is issued for this application, the conditions in B1(d)(i) and B2(c) are recommended to protect senior users and the groundwater resource.
NOTE: This evaluation considers a conservative scenario for the nearest authorized POA not owned by the applicant. Other authorized POAs in the area may also experience an increase in interference as a result of this application, although to a lesser extent than the scenario evaluated here.

[a] Well logs within one mile: CLAC 13471, CLAC 12589, CLAC 12605/12604, CLAC 12603, CLAC 12650, CLAC 12612, CLAC 20198, CLAC 61258, CLAC 13433, CLAC 12582/61277, CLAC 20074, CLAC 18019, CLAC 52276, CLAC 51664, CLAC 12637, CLAC 12649, CLAC 12647, CLAC 12608, CLAC 12617, CLAC 12414.

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	**Alluvial**	☒	☐

Basis for aquifer confinement evaluation: The POA (CLAC 12603) reports a SWL above the top of the WBZ. Within one mile of the POA, fifteen other wells also report a SWL above the top of the WBZ; three wells report a SWL within or near the WBZ (CLAC 20074, CLAC 52276, CLAC 51644)[a]. Many of the sand and gravel lenses are confined by the predominantly fine-grained Willamette Confining Unit utilized by wells in this area, and the 20 to 40 ft thick Missoula flood deposits provide a confining layer to wells within the thin Willamette Aquifer (O'Connor et al., 2001; Gannett and Caldwell, 1998)..

[a] Well logs within one mile: CLAC 13471, CLAC 12589, CLAC 12605/12604, CLAC 12603, CLAC 12650, CLAC 12612, CLAC 20198, CLAC 61258, CLAC 13433, CLAC 12582/61277, CLAC 20074, CLAC 18019, CLAC 52276, CLAC 51664, CLAC 12637, CLAC 12649, CLAC 12647, CLAC 12608, CLAC 12617, CLAC 12414.

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**	**Gribble Creek**	**129 to 185**	**169 to 188**	**2,327**	☒	☐	☐	☐	☒
1	**2**	**Creamery Creek**	**129 to 185**	**188 to 193**	**3,800**	☐	☒	☐	☐	☒
1	**3**	**Wheeler Creek**	**129 to 185**	**132 to 170**	**2,900**	☒	☐	☐	☐	☒
1	**4**	**Bear Creek**	**129 to 185**	**127 to 132**	**5,600**	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: The water table elevation is between 140 and 160 ft amsl and groundwater elevation is above or coincident with the surface water elevation for SW 1 (Gribble Creek), SW 3 (Wheeler Creek), and SW 4 (Bear Creek), indicating groundwater discharges to surface water (O'Connor et al., 2001; Gannett and Caldwell, 1998). The surface water drainage of these streams has not incised below the top of the WBZs in the Willamette Confining Unit within a mile of the POA; hydraulic connection to for SW 1 (Gribble Creek), SW 3 (Wheeler Creek), and SW 4 (Bear Creek) is likely but anticipated to be inefficient due to the low vertical permeability of the overlying fine-grained sediments. The streambed of SW 2 (Creamery Creek) is above the SWL and WBZs of the Willamette Confining Unit, and hydraulic connection is not likely.

[a] Well logs within one mile: CLAC 13471, CLAC 12589, CLAC 12605/12604, CLAC 12603, CLAC 12650, CLAC 12612, CLAC 20198, CLAC 61258, CLAC 13433, CLAC 12582/61277, CLAC 20074, CLAC 18019, CLAC 52276, CLAC 51664, CLAC 12637, CLAC 12649, CLAC 12647, CLAC 12608, CLAC 12617, CLAC 12414.

Water Availability Basin the well(s) are located within:
MOLALLA R>WILLAMETTE R-AT MOUTH**:** SW 1 (Gribble Creek) and SW 2 (Creamery Creek)
PUDDING R>MOLALLA R-AB MILL CREEK: SW 3 (Wheeler Creek) and SW 4 (Bear Creek)

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**	☐	☐	**IS69796 A**	**500**	☐	**637**	☐	**<25%**	☐
1	**3**	☐	☐			☐	**363**	☐	**<25%**	☐
1	**4**	☐	☐			☐	**363**	☐	**<25%**	☐

Comments: Potential depletion (interference with) SW 1 (Gribble Creek) by proposed pumping at the POA (CLAC 12603) was estimated using Hunt 2003 analytical model. Hydraulic parameters used for the model were derived from regional data or studies of the hydrogeologic regime (OWRD Well Log Query Report; Conlon et al., 2003, 2005; Iverson, 2002; McFarland and Morgan, 1996; Woodward et al., 1998) or are within a typical range of values for the parameter within the hydrogeologic regime (Freeze and Cherry, 1979; Domenico and Mifflin, 1965). See attached "Stream Depletion Analysis" for the specific parameters used in the analysis. The Hunt 2003 analytical model results indicate that depletion of (interference with) SW 1 due to pumping of the proposed POA is anticipated to be much less than 25 percent of the well discharge at 30 days of continuous pumping.

Because only the distance is expected to vary between the POA and surface water sources, only the POA-SW pair with the shortest distance (in this case, the POA and SW 1) was analyzed quantitatively for interference (stream depletion). All other POA-SW pairs would presumably result in less interference due to their greater separation relative to the POA and SW 1. Therefore, the interference of both proposed POA with all surface water sources within 1 mile are anticipated to result in much less than 25 percent of the well discharge at 30 days of continuous pumping.

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: N/A-Q is not distributed.

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-streams within one mile evaluated above.

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-19463

Pumping Test Files: CLAC 12292, CLAC 12612, CLAC 13299, CLAC 20198, CLAC 20346, CLAC 50080, CLAC 52842, CLAC 55589, CLAC 13440, CLAC 61258, CLAC 12567, CLAC 17693, CLAC 62924, CLAC 20074, CLAC 51664, CLAC 12545, CLAC 12647, CLAC 12608, CLAC 12400, CLAC 12546.

Well Reports: CLAC 13471, CLAC 12589, CLAC 12605/12604, CLAC 12603, CLAC 12650, CLAC 12612, CLAC 20198, CLAC 61258, CLAC 13433, CLAC 12582/61277, CLAC 20074, CLAC 18019, CLAC 52276, CLAC 51664, CLAC 12637, CLAC 12649, CLAC 12647, CLAC 12608, CLAC 12617, CLAC 12414.

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.

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.

Hunt, B., 2003, Unsteady stream depletion when pumping from semiconfined aquifer: Journal of Hydrologic Engineering, January/February, 2003.

Iverson, J., 2002, Investigation of the hydraulic, physical, and chemical buffering capacity of Missoula flood deposits for water quality and supply in the Willamette Valley of Oregon: Unpublished M.S. thesis, Oregon State University, 147 p.

O'Connor, J.E., Sarna-Wojcick, A., Woznikak, K.C., Polette, D.J., Fleck, R.J., 2001, Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon; U.S. Geological Survey, Professional Paper 1620, 51 p.

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.

United States Geological Survey, 2013, National Elevation Dataset (NED) [DEM geospatial data]. 1/9th arc-second, updated 2013.

Watershed Sciences, 2009, LIDAR remote sensing data collection, Department of Geology and Mineral Industries, Willamette Valley Phase I, Oregon: Portland, OR, December 21.

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.**

Water Availability Tables

Oregon Water Resources Department
Water Availability Analysis

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Water Availability Analysis
Detailed Reports

MOLALLA R > WILLAMETTE R - AT MOUTH
WILLAMETTE BASIN
Water Availability as of 2/3/2025

Watershed ID #: 69796 (Map)
Date: 2/3/2025

Exceedance Level: 80%
Time: 9:48 AM

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	1,870.00	155.00	1,720.00	0.00	500.00	1,220.00
FEB	2,010.00	145.00	1,870.00	0.00	500.00	1,370.00
MAR	1,830.00	113.00	1,720.00	0.00	500.00	1,220.00
APR	1,530.00	86.90	1,440.00	0.00	500.00	943.00
MAY	927.00	98.40	829.00	0.00	500.00	329.00
JUN	431.00	120.00	311.00	0.00	500.00	-189.00
JUL	204.00	187.00	17.40	0.00	200.00	-183.00
AUG	139.00	157.00	-17.60	0.00	100.00	-118.00
SEP	134.00	83.20	50.80	0.00	150.00	-99.20
OCT	188.00	39.90	148.00	0.00	450.00	-302.00
NOV	637.00	79.90	557.00	0.00	500.00	57.10
DEC	1,700.00	150.00	1,550.00	0.00	500.00	1,050.00
ANN	1,320,000.00	85,400.00	1,240,000.00	0.00	295,000.00	966,000.00

Oregon Water Resources Department
Water Availability Analysis

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Water Availability Analysis
Detailed Reports

MOLALLA R > WILLAMETTE R - AT MOUTH
WILLAMETTE BASIN
Water Availability as of 2/3/2025

Watershed ID #: 69796 (Map)
Date: 2/3/2025

Exceedance Level: 80%
Time: 9:49 AM

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

Detailed Report of Instream Flow Requirements

Instream Flow Requirements in Cubic Feet per Second

Application #	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
IS69796A	CERTIFICATE	500.00	500.00	500.00	500.00	500.00	500.00	200.00	100.00	150.00	450.00	500.00	500.00
IS89609A	APPLICATION	13.00	13.00	13.00	6.62	4.67	2.65	2.85	2.38	2.13	3.20	13.00	13.00
Maximum		500.00	500.00	500.00	500.00	500.00	500.00	200.00	100.00	150.00	450.00	500.00	500.00

Oregon Water Resources Department
Water Availability Analysis

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Water Availability Analysis
Detailed Reports

PUDDING R > MOLALLA R - AB MILL CR
WILLAMETTE BASIN
Water Availability as of 2/3/2025

Watershed ID #: 151 (Map)
Date: 2/3/2025

Exceedance Level: 80%
Time: 9:54 AM

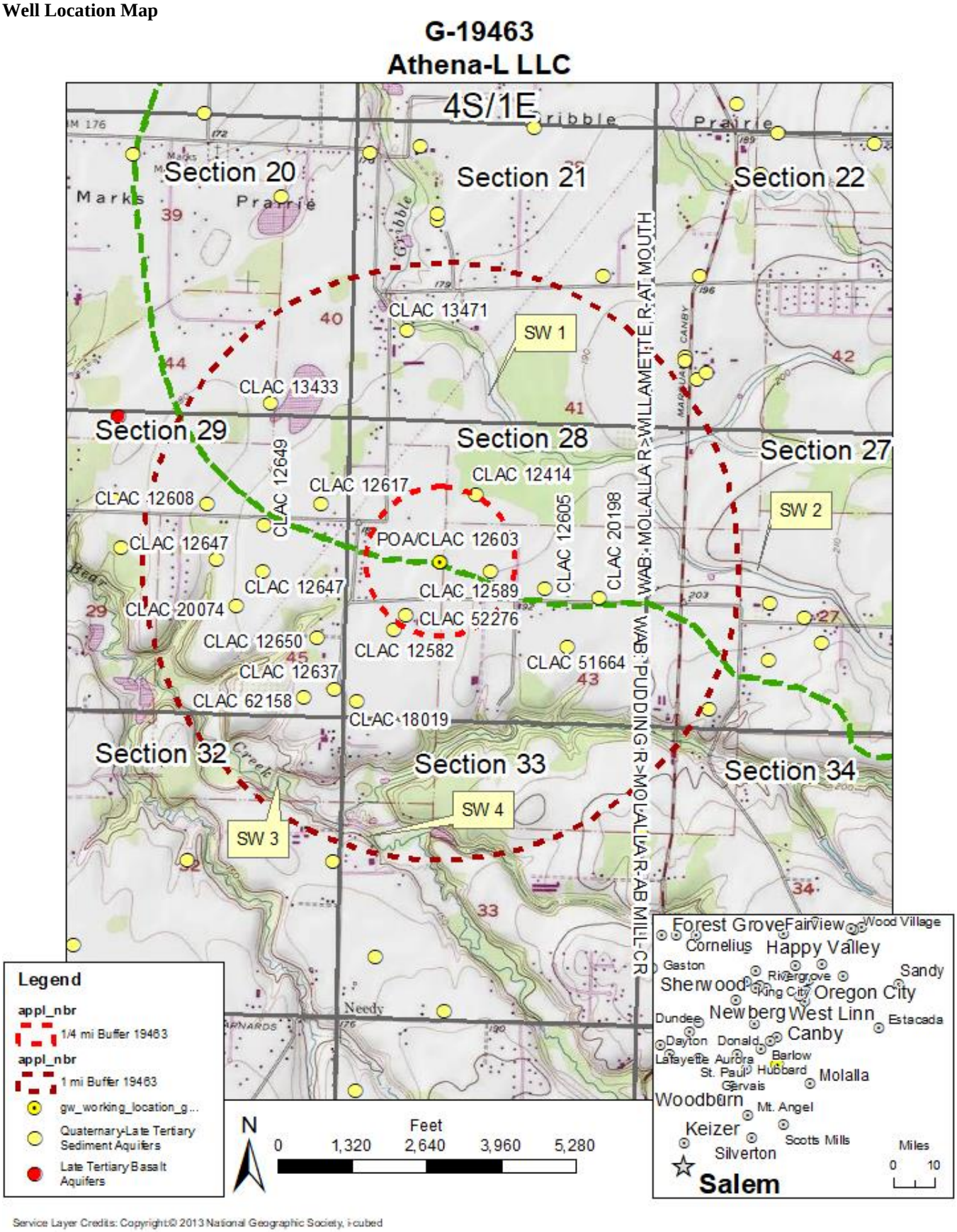
Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations
Water Rights | Watershed Characteristics

Water Availability Calculation

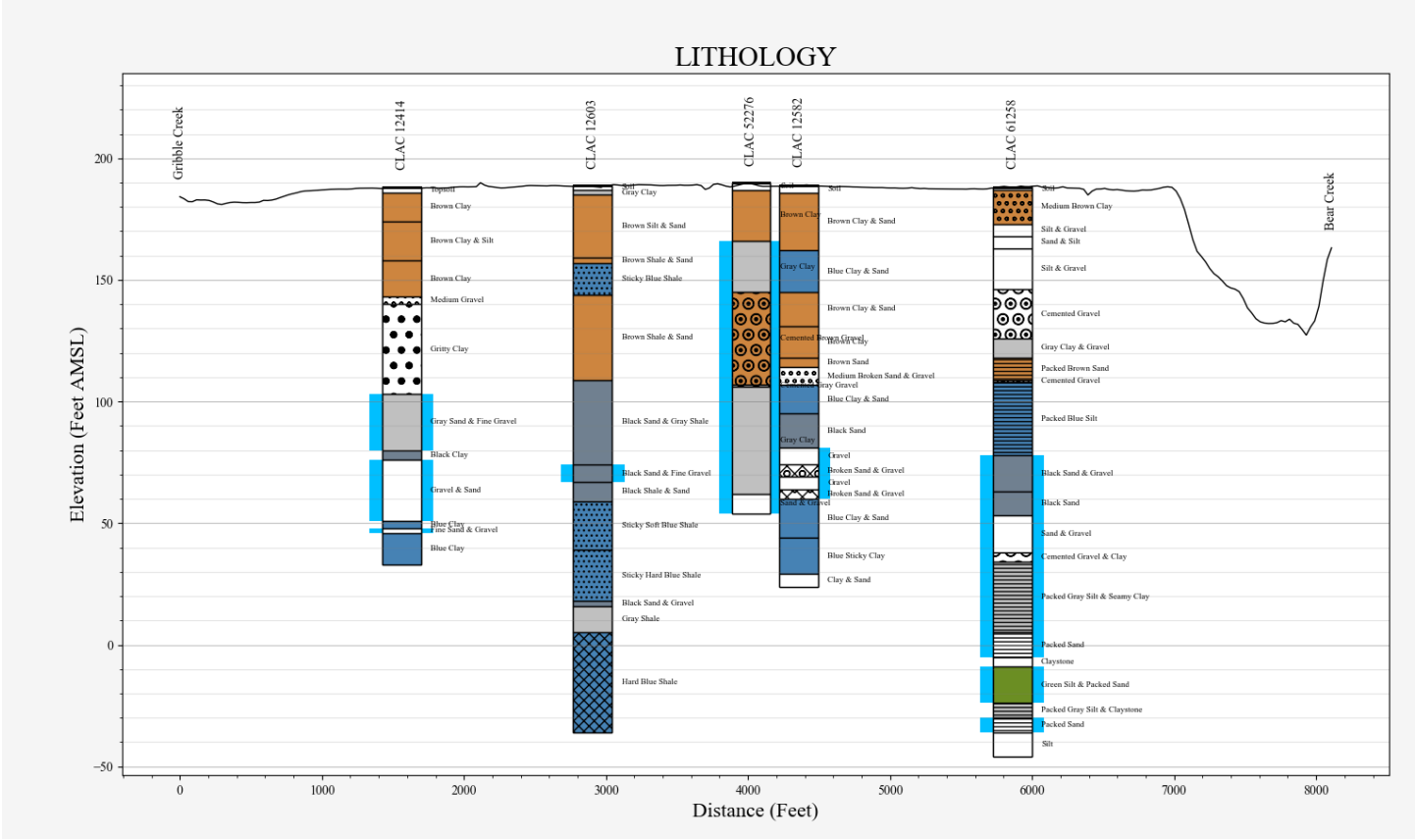
Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

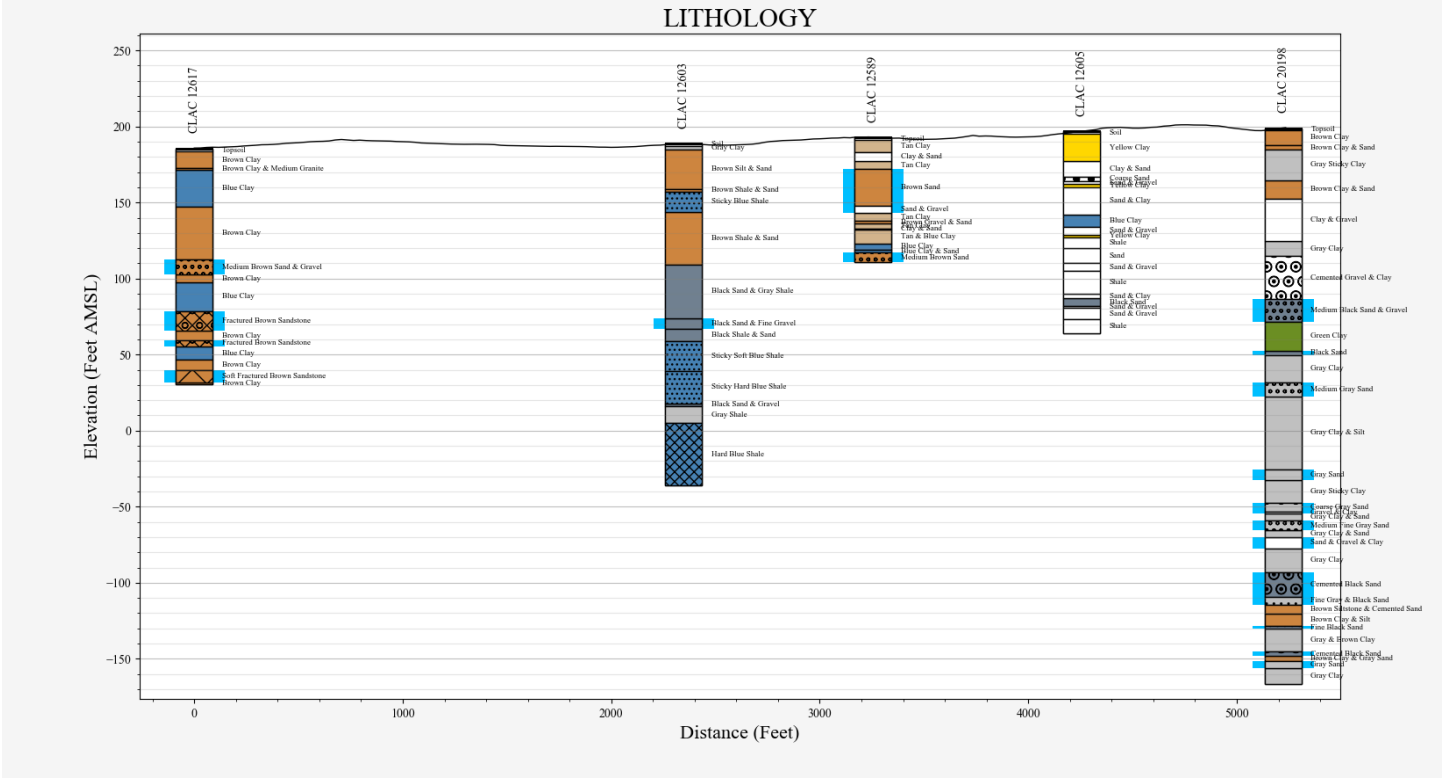
Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	1,040.00	125.00	915.00	0.00	80.00	835.00
FEB	1,180.00	115.00	1,070.00	0.00	80.00	985.00
MAR	1,010.00	76.60	933.00	0.00	80.00	853.00
APR	787.00	52.40	735.00	0.00	80.00	655.00
MAY	425.00	51.00	374.00	0.00	80.00	294.00
JUN	224.00	73.20	151.00	0.00	50.00	101.00
JUL	109.00	115.00	-6.28	0.00	40.00	-46.30
AUG	71.00	94.50	-23.50	0.00	36.00	-59.50
SEP	67.30	53.60	13.70	0.00	36.00	-22.30
OCT	91.60	11.50	80.10	0.00	50.00	30.10
NOV	363.00	48.60	314.00	0.00	80.00	234.00
DEC	957.00	118.00	839.00	0.00	80.00	759.00
ANN	706,000.00	56,400.00	650,000.00	0.00	46,500.00	606,000.00

Well Location Map

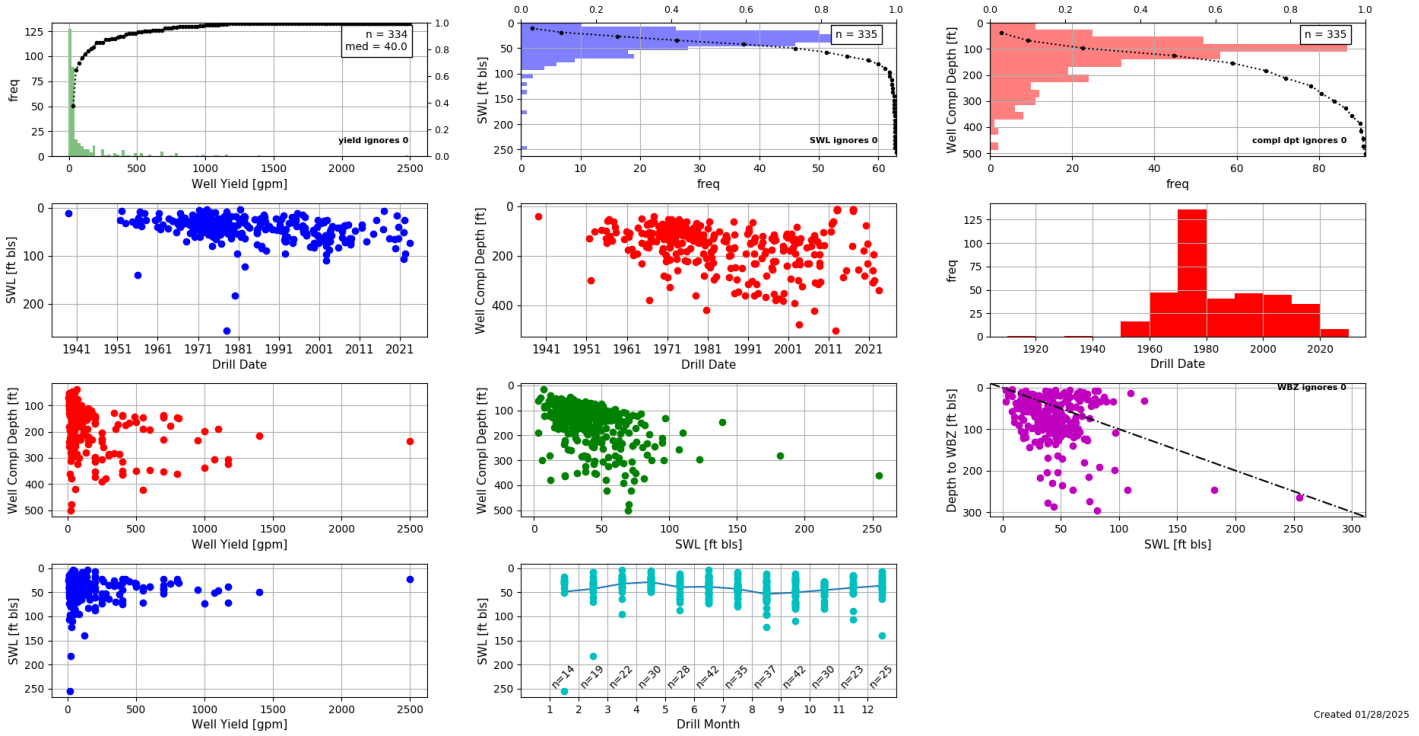


Cross-Section

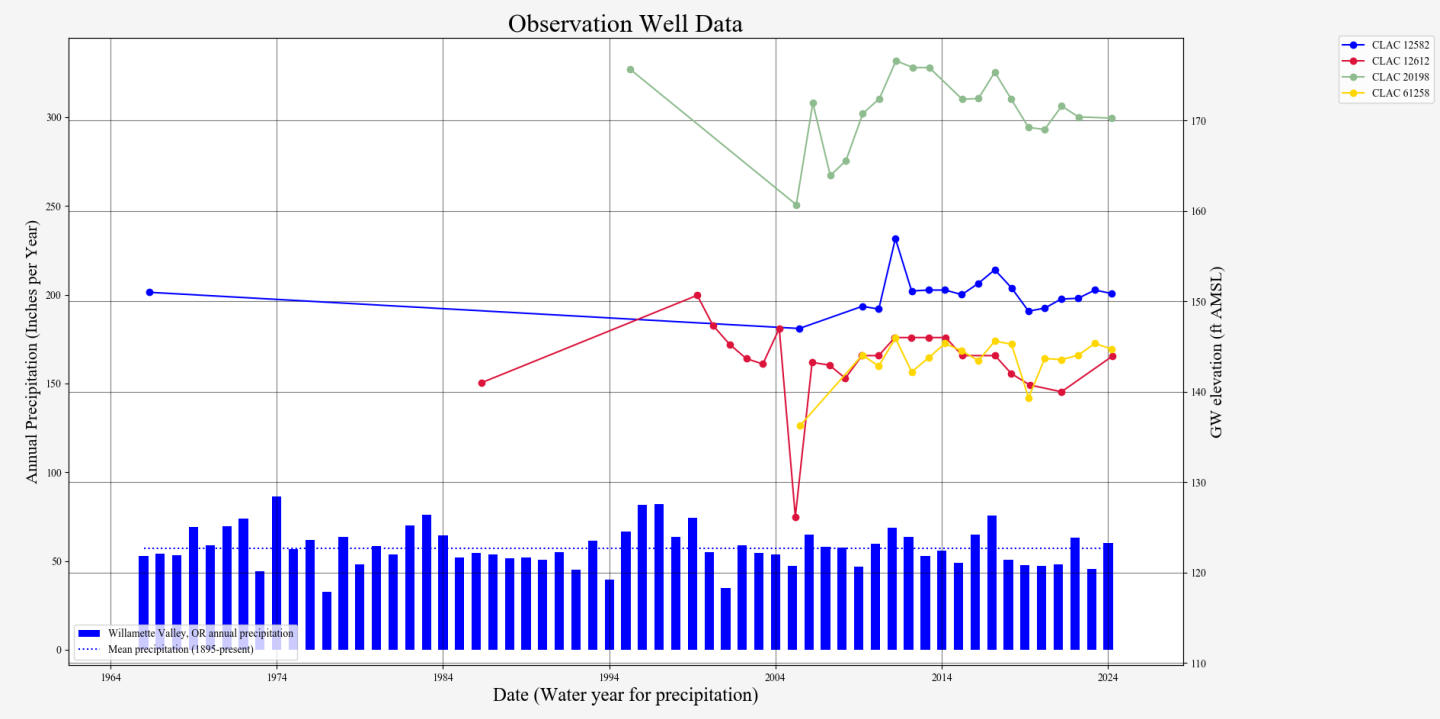




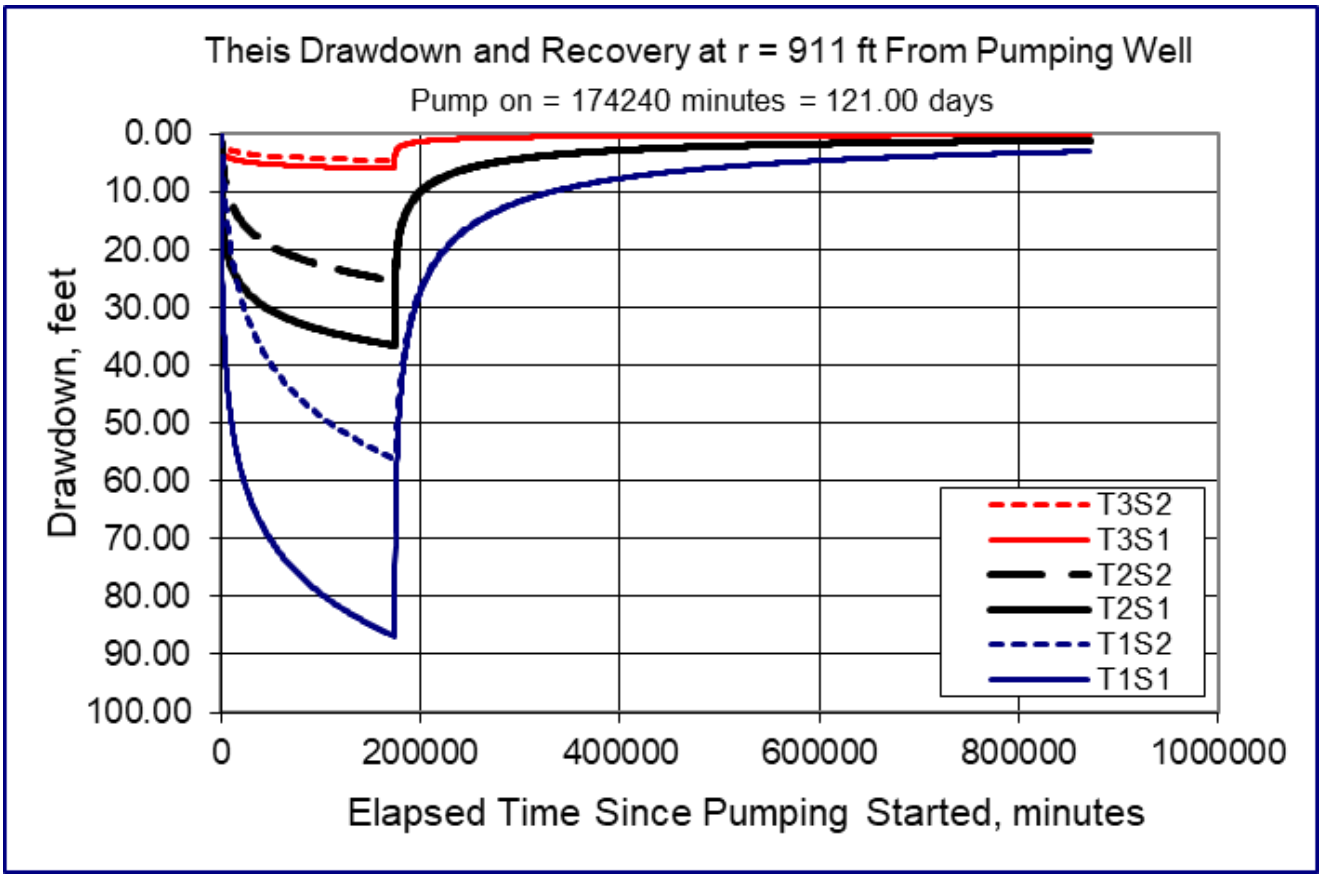
Well Statistics



Water-Level Measurements in Nearby Wells



Theis Interference Analysis



Radial distance from pumping well (r)=911 ft [estimated radial distance to nearest user, CLAC 12589]
Pumping Rate (Q)= 0.39 cfs (~175 gpm)
Aquifer Transmissivity (T1)= 1,497 gpd/ft (200 ft^2/day), (T2)= 4,115 gpd/ft (550 ft^2/day), (T3)= 32,060 gpd/ft (4,286 ft^2/day)
Storativity (s1) = 0.0001, (s2) = 0.001 [Conlon et al 2005, Table 1 and 2 values for LSU]
Total pumping time= 121 days [Nov 1-Feb 29]

Stream Depletion (Hunt) Model Analysis

Application type:	G
Application number:	19463
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.38997
Pumping duration (days):	121
Pumping start month number (3=March)	11
Plotting duration (days)	365

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	200.0	330.0	330.0	ft
Aquifer transmissivity	T	200	550	4286	ft2/day
Aquifer storativity	S	0.0001	0.0005	0.001	-
Aquitard vertical hydraulic conductivity	Kva	0.05	0.05	0.05	ft/day
Aquitard saturated thickness	ba	35	35	35	ft
Aquitard thickness below stream	babs	10	10	10	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	20	20	20	ft

Stream depletion for Scenario 2:

Days	10	90	120	150	180	210	240	270	300	330	360	30	60
Depletion (%)	3	5	5	2	2	2	2	1	1	1	1	4	4
Depletion (cfs)	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02