

Groundwater Application Review Summary Form

Application # G- 19439

GW Reviewer James Hootsmans Date Review Completed: 11/18/2024

Summary of GW Availability and Injury Review:

☐ Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

☐ There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

☐ The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO

November 18, 2024

TO: Application G- 19439

FROM: GW: James Hootsmans
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ **YES** The source of appropriation is hydraulically connected to a State Scenic
☐ **NO** Waterway or its tributaries

☐ **YES**
☐ **NO** Use the Scenic Waterway Condition (Condition 7J)

☐ Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below

☐ Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in [Enter] Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 11/18/2024
 FROM: Groundwater Section James Hootsmans
 Reviewer's Name
 SUBJECT: Application G- 19439 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: Cornucopia Orchards County: Marion

A1. Applicant(s) seek(s) 0.1336 cfs from 1 well(s) in the Willamette Basin,
 _____ subbasin

A2. Proposed use Irrigation, Future Pond fill Seasonality: May to September (Irrigation), June to September (Pond Fill)

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	MARI 70030	1	Sandstone Bedrock Aquifer	0.1336	10S/2W-7	
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	210	0-78	0-78	0-130	130-210	60		
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	361	40	100	9/17/2021		
2						
3						
4						

Use data from application for proposed wells.

A4. **Comments:** The applicant proposes existing well MARI 70030 as one new Point of Appropriation (POAs) developing groundwater from the sandstone bedrock aquifer of the Willamette Basin.

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 POA wells are not located within ¼ mile of a perennial surface water source, therefore the pertinent basin rules do not apply.

A6. ☐ **Well(s) #** 1, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: NA

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; 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 _____ 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 (MARI 70030) is situated on an elevated terrace above the floodplain of the Santiam and North Santiam Rivers, approximately 0.6 miles east of the City of Jefferson, Oregon. The terrace is mapped as surficial weathered terrace gravels (QTgs in McClaughry et al. 2010). The unit is described as unconsolidated to semi-consolidated deposits of clay, silt, sand and volcaniclastic gravel preserved as incised terrace remnants along the margins of the Southern Willamette Valley. These terraces are incised by the local surface water bodies, indicating hydraulic connection to the aquifer system with the rivers. Well logs of domestic wells along the terrace indicate more consolidated layers of claystone and sandstone with depth that occur at or below the floodplain elevations of the local rivers. Wiley (2006) maps the sandstones as part of the Eugene Formation interbedded with other clay formations.

Available water level data are sparse, and display seasonal fluctuation within the aquifer system, but do not indicate or suggest long-term groundwater elevation declines in the area of the proposed use (see attached hydrographs). The closest observation well with a long period of record is LINN 1877, multiple sections away (approximately 4.9 miles).

The closest proximity senior water right (Claim GR-1174*IR) is located 670' west of the proposed POA. At this distance, a Theis drawdown calculation utilizing typical values for sands and gravels and a bulk aquifer thickness of 100' anticipate less than 25' of drawdown after one year of pumping at the proposed rate. At the maximum rate (0.1336 cfs), the duty (11.25 af/yr) will be exhausted within 43 days of continuous pumping.

Reported yields from regional wells range from less than 1 to ~ 580 gpm, with a median of 30 gpm (see attached Well Statistics). The requested rate of 0.1336 cfs (~60 gpm) therefore represents ~10 percent of the maximum yield reported for water wells in this area, however it is approximately double the median reported yield. Therefore, it is possible the applicant will be able to achieve the requested pumping rate with the proposed POA, however there is also a possibility that the proposed wells will not yield the desired rate.

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	Sandstone Bedrock Aquifer (Quaternary-Late Tertiary Sed 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: Nearby well logs and MARI 70030 indicate that static water levels are typically higher than the elevation of respective water-bearing zones. The surficial weathered terrace gravels (QTgs in McClaughry et al. 2010) regionally acts as a groundwater confining unit.

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	North Santiam River	240 - 290	240 - 260	3500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Santiam River	240 - 290	200 - 210	8100	<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"/>

Basis for aquifer hydraulic connection evaluation: Groundwater levels in the POA and nearby wells are similar to the elevations of North Santiam River and Santiam River.

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

SW 1: N SANTIAM R > SANTIAM R - AT MOUTH (WID #141)

SW 2: Santiam River > Willamette River – AB Morgan Creek (WID #168)

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 type="checkbox"/>	<input type="checkbox"/>	MF141A	430	<input type="checkbox"/>	627	<input type="checkbox"/>	<25%	<input type="checkbox"/>
1	1	<input type="checkbox"/>	<input type="checkbox"/>	IS89697 A	775	<input type="checkbox"/>	627	<input type="checkbox"/>	<25%	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	MF168A	330	<input type="checkbox"/>	926	<input type="checkbox"/>	<25%	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	IS89696 B	1000	<input type="checkbox"/>	926	<input type="checkbox"/>	<25%	<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: The requested rate is much lower than the instream water rights or the natural flow. Due to the complexity and uncertainty of the local geology, a stream depletion model was not used. However, the low pumping rate should not cause substantial interference.

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:
- ☐ The permit should contain condition #(s) _____;
 - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** _____

References Used: G-19439 application files, OWRD GWIS database, Well log database

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.

Preliminary geologic map of the Albany quadrangle, Linn, Marion and Benton Counties, Oregon, by Thomas J. Wiley, 2006, 13 p., 1 pl., 1:24,000.

O'Connor, J.E., Sarna-Wojcick, A., Wozniak, 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.

Woodward, D. G., M. W. Gannett, and J. J. Vaccaro. 1998. *Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington*. USGS Professional Paper 1424-B.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

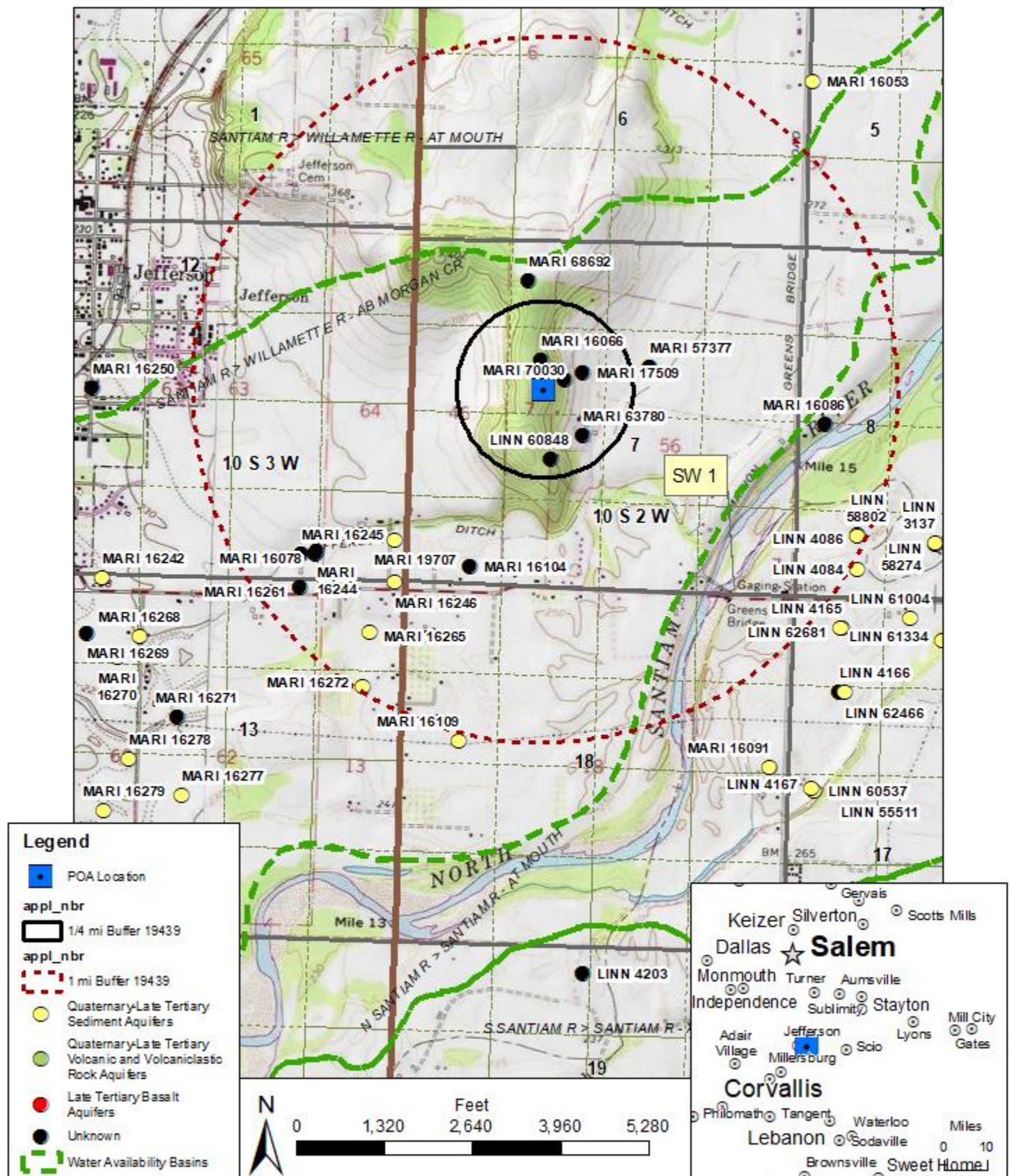
- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

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

G19439 Cornucopia Orchards



Water Availability Tables

Water Availability Analysis
Detailed ReportsN SANTIAM R > SANTIAM R - AT MOUTH
WILLAMETTE BASIN

Water Availability as of 11/12/2024

Watershed ID #: 141 ([Map](#))

Date: 11/12/2024

Exceedance Level: 80% ▾

Time: 2:55 PM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

Watershed Characteristics

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second

Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	2,330.00	482.00	1,850.00	0.00	1,200.00	648.00
FEB	2,670.00	1,490.00	1,180.00	0.00	1,200.00	-21.30
MAR	2,540.00	1,320.00	1,220.00	0.00	1,200.00	20.10
APR	2,500.00	1,480.00	1,020.00	0.00	1,200.00	-183.00
MAY	2,590.00	804.00	1,790.00	0.00	1,200.00	586.00
JUN	1,500.00	434.00	1,070.00	0.00	800.00	266.00
JUL	858.00	331.00	527.00	0.00	800.00	-273.00
AUG	661.00	317.00	344.00	0.00	775.00	-431.00
SEP	627.00	295.00	332.00	0.00	778.00	-446.00
OCT	694.00	266.00	428.00	0.00	922.00	-494.00
NOV	1,380.00	269.00	1,110.00	0.00	1,200.00	-88.50
DEC	2,540.00	269.00	2,270.00	0.00	1,200.00	1,070.00
ANN	1,960,000.00	464,000.00	1,500,000.00	0.00	753,000.00	801,000.00

Water Availability Analysis
Detailed ReportsSANTIAM R > WILLAMETTE R - AB MORGAN CR
WILLAMETTE BASIN

Water Availability as of 11/7/2024

Watershed ID #: 168 ([Map](#))

Date: 11/7/2024

Exceedance Level: 80% ▾

Time: 1:38 PM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

Watershed Characteristics

Water Availability Calculation

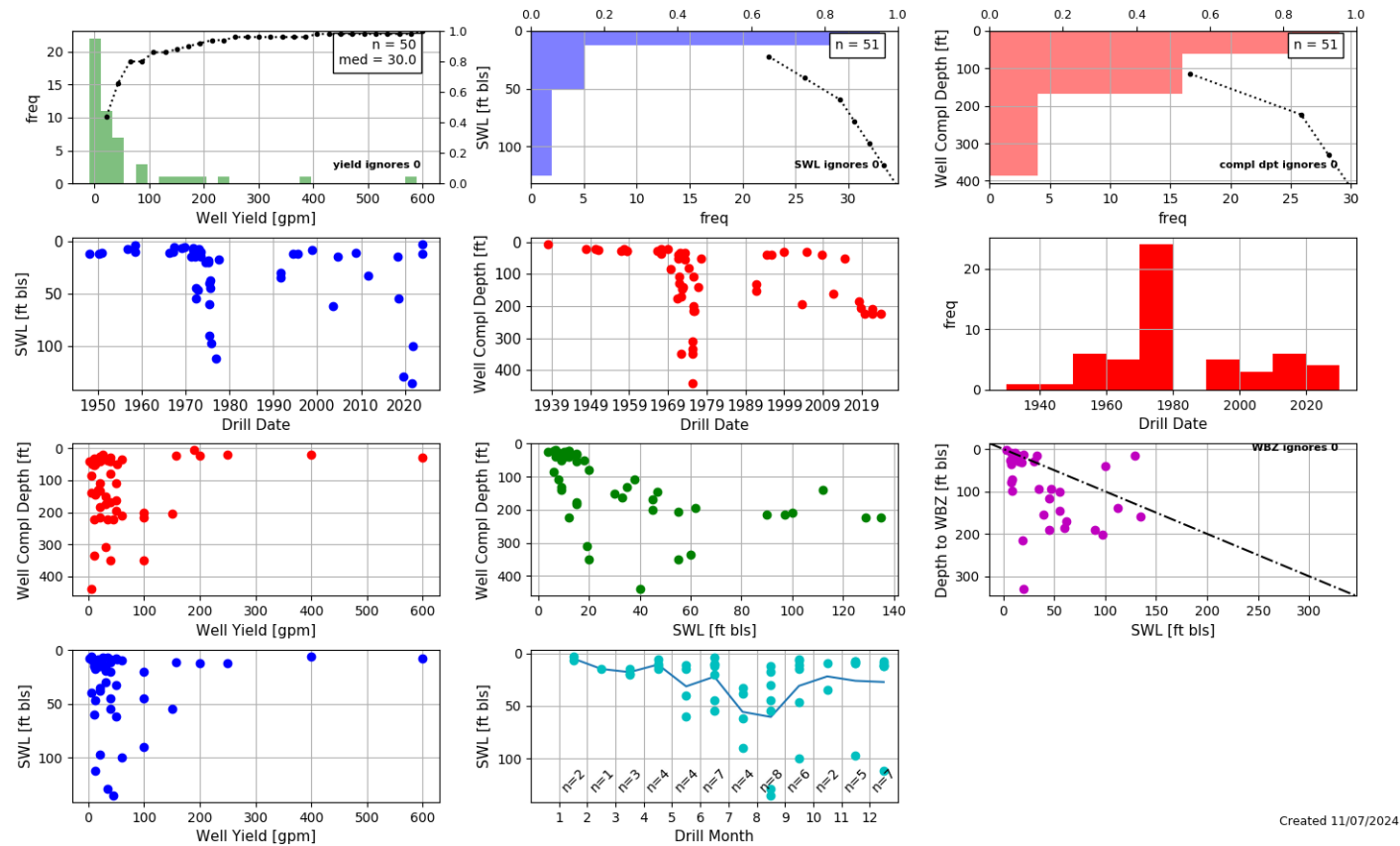
Monthly Streamflow in Cubic Feet per Second

Annual Volume at 50% Exceedance in Acre-Feet

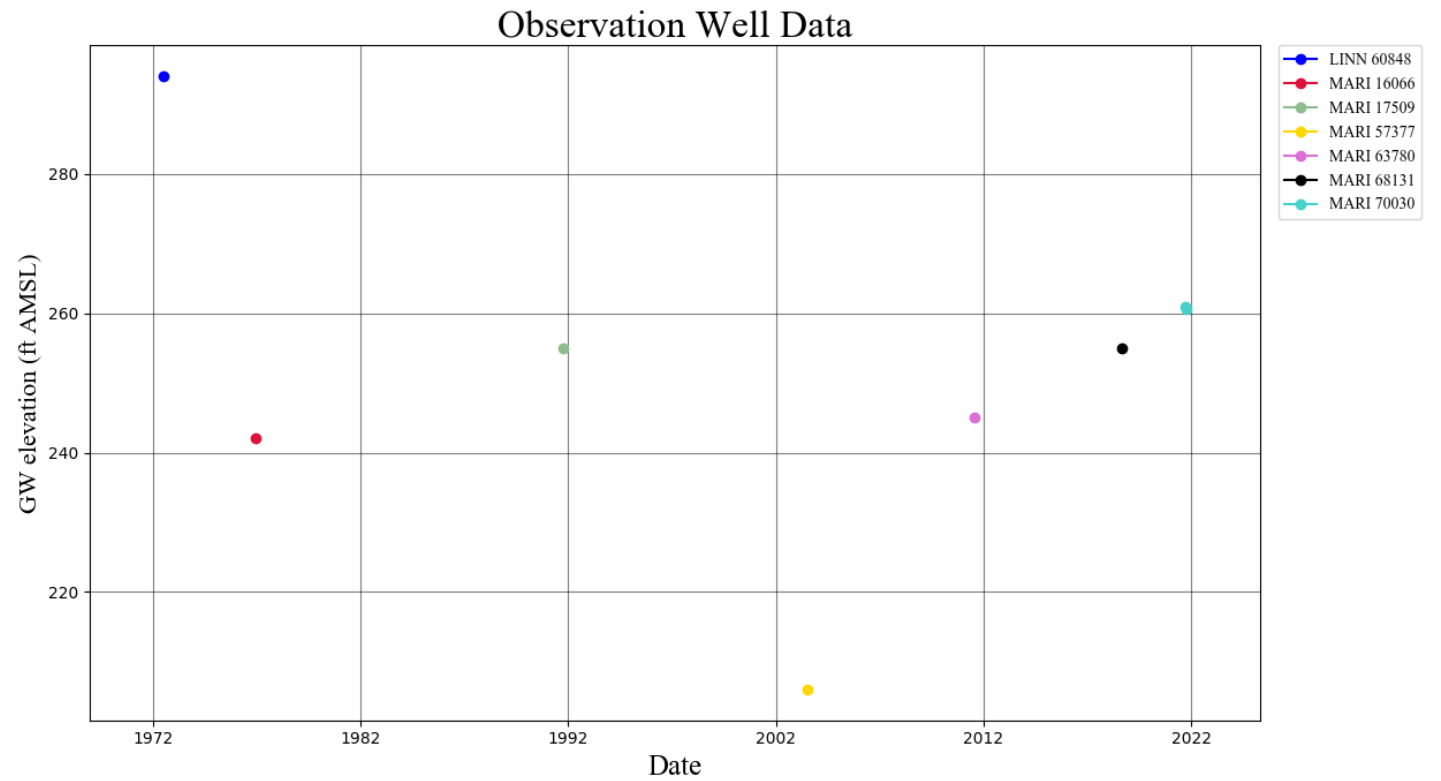
Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	5,750.00	1,050.00	4,700.00	0.00	1,500.00	3,200.00
FEB	6,470.00	3,320.00	3,150.00	0.00	1,500.00	1,650.00
MAR	5,780.00	2,890.00	2,890.00	0.00	1,500.00	1,390.00
APR	5,310.00	2,880.00	2,430.00	0.00	1,500.00	928.00
MAY	5,040.00	1,620.00	3,420.00	0.00	1,500.00	1,920.00
JUN	2,910.00	1,080.00	1,830.00	0.00	1,000.00	830.00
JUL	1,380.00	997.00	383.00	0.00	1,000.00	-617.00
AUG	1,030.00	940.00	90.00	0.00	1,000.00	-910.00
SEP	928.00	837.00	91.00	0.00	1,100.00	-1,009.00
OCT	1,020.00	706.00	314.00	0.00	1,500.00	-1,186.00
NOV	2,800.00	721.00	2,079.00	0.00	1,500.00	579.00
DEC	5,850.00	713.00	5,137.00	0.00	1,500.00	3,637.00
ANN	4,320,000.00	1,080,000.00	3,240,000.00	0.00	975,000.00	2,265,000.00

Download Data ([Text - Formatted](#), [Text - Tab Delimited](#), [Excel](#))

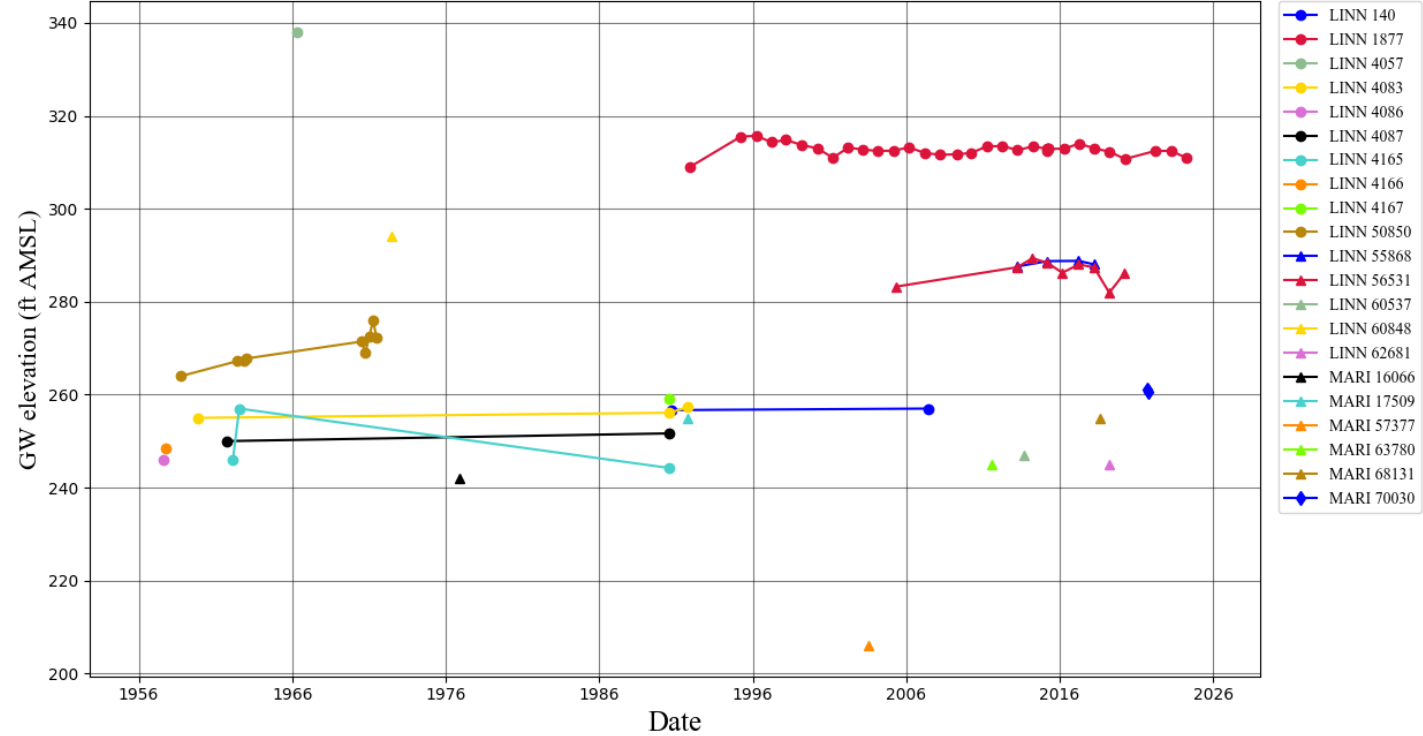
Well Statistics



Water-Level Measurements in Nearby Wells



Observation Well Data



Theis Interference Analysis

Thisis Time-Drawdown Workshe v3.00
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		43		d
Radial distance from pumped well:	r		670		ft
Pumping rate	Q		0.1336		cfs
Hydraulic conductivity	K	5	10	20	ft/day
Aquifer thickness	b		100		ft
Storativity	S	1	0.001		
	S	2	0.0005		
Transmissivity Conversions					
	T	ft ² /d	500	1000	2000
	T	R2pm	0.3472222	0.6944444	1.3888889
	T	gpd/ft	3740	7480	14960
					R2/min
					0.26
					af/d

