Groundwater Transfer Review Summary Form

Transfer/PA # T- 14416

GW Reviewer Stacey Garrison/Travis Brown Date Review Completed: 10/31/2024

Summary of Same Source Review:

☐ The proposed change in point of appropriation is not within the same aquifer as per OAR 690-380-2110(2).

Summary of Water Level Decline Condition Review:

☐ Water levels at the original point(s) of appropriation have exceeded the allowed decline threshold defined by conditions in the originating water right.

Summary of Injury Review:

☐ The proposed transfer will result in another, existing water right not receiving previously available water to which it is legally entitled or result in significant interference with a surface water source as per 690-380-0100(3).

Summary of GW-SW Transfer Similarity Review:

☐ The proposed SW-GW transfer doesn't meet the definition of "similarly" as per OAR 690-380-2130.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations.

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Ground Water Review Form:

☐ **Water Right Transfer**
☐ **Permit Amendment**
☒ **GR Modification**
☐ **Other**

Application: T-14416 Applicant Name: Westwood Farms, Inc. ATTN John Coleman

Proposed Changes: ☐ POA ☒ APOA ☐ SW→GW ☐ RA
☐ USE ☐ POU ☐ OTHER

Reviewer(s): Stacey Garrison/Travis Brown Date of Review: 10/31/2024

Date Returned to WRSD: 11/12/2024

The information provided in the application is insufficient to evaluate whether the proposed transfer may be approved because:

☐ The water well reports provided with the application do not correspond to the water rights affected by the transfer.

☐ The application does not include water well reports or a description of the well construction details sufficient to establish the ground water body developed or proposed to be developed.

☐ Other _____

- -

Basic description of the changes proposed in this transfer: Applicant propose to add an APOA, POA 2(**MARI 4811**), to 14.25 ac of **Claim GR-951**. **Claim GR-951** authorizes POA 1 (**MARI 4799**) to irrigate 70 ac at 1.8715 cfs (840 gpm) and a maximum annual duty of 175 AF/year. The proportional rate of withdrawal for the proposed APOA (**MARI 4811**) would be 0.38 cfs (171 gpm) and a maximum annual duty of 35.625 based on the acreage to be irrigated by the proposed APOA. The APOA (**MARI 4811**) is also authorized to irrigate 60 ac at 0.75 cfs (337) and maximum annual duty of 150 AF under **Certificate 40099**. The APOA (MARI 4811) will be assessed at the combined maximum rate of 1.131 cfs (507.6 gpm).

1. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments: The authorized POA (**MARI 4799**) develops the unconfined Holocene floodplain deposits (O'Connor et al., 2001) with a maximum depth of 63 ft bls [59 ft amsl] and static water level, SWL, of 20 ft bls [102 ft amsl]. The proposed APOA (**MARI 4811**) develops the same source, with a maximum depth of 60 ft [60 ft amsl] and SWL of 20 ft [100 ft amsl].

2. a) Is the existing authorized POA subject to a water level decline condition?
☐ Yes ☒ No Comments: _____

b) If yes, for each POA identify the reference level, most recent spring-high water level, and whether an applicable permit decline condition has been exceeded: N/A

3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?

   ☐ Yes ☒ No Comments: Only the alluvial aquifer system is developed.

   b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.): N/A

4. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?

   ☐ Yes ☒ No Comments: The authorized POA (**MARI 4799**) is closer to the nearest groundwater user than the proposed APOA (**MARI 4811**); it is anticipated that the proposed transfer will result in a decrease in interference with other groundwater users.

   b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled?

   ☐ Yes ☐ No If yes, explain: N/A

5. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another surface water source**?

   ☒ Yes ☐ No Comments: The proposed APOA (**MARI 4811**) is closer to Mission Lake and the Willamette River than the authorized POA (**MARI 4799**).

   b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any **surface water sources** resulting from the proposed change?

   Stream: Mission Lake ☒ Minimal ☐ Significant

   Stream: Willamette River ☒ Minimal ☐ Significant

   Provide context for minimal/significant impact: The expected increase in depletions to Mission Lake was assessed using the Hunt (1999) analytical model for stream depletion due to pumping in an unconfined aquifer (see attached Stream Depletion Analyses). Results indicate that stream depletions to Mission Lake and the Willamette River due to pumping could likely increase by 8 percent and 6 percent, respectively, of the average rate of withdrawal after 245 days of continuous pumping (i.e. the end of the irrigation season) as a result of the proposed change. Assuming that proposed APOA **(MARI 4811)** were to pump the prorated duty under **GR-951** (35.625 AF) over the full 245-day irrigation season, the average increase in the rate of withdrawal would be ~0.073 cfs; therefore, the proposed change could result in an additional ~0.01 cfs of depletions to Mission Lake and 0% to the Willamette River by the end of the irrigation season. For comparison, Watershed ID# 182 WILLAMETTE R > COLUMBIA R – AB MOLALLA R, which encompasses Mission Lake and this section of the Willamette River, is estimated to have ~680 cfs of Net Water Available in August (the month with the lowest expected flow annually) at the 80 percent Exceedance Level (see attached Water Availability Analysis). Therefore, the change in degree of interference with Mission Lake and the Willamette River resulting from the proposed change is expected to be minimal.

6. For SW-GW transfers, will the proposed change in point of diversion affect the surface water source similarly (as per OAR 690-380-2130) to the authorized point of diversion specified in the water use subject to transfer?

   ☐ Yes ☐ No Comments: N/A

7. What conditions or other changes in the application are necessary to address any potential issues identified above: _____
8. Any additional comments:_____

References

Transfer File: T-14116

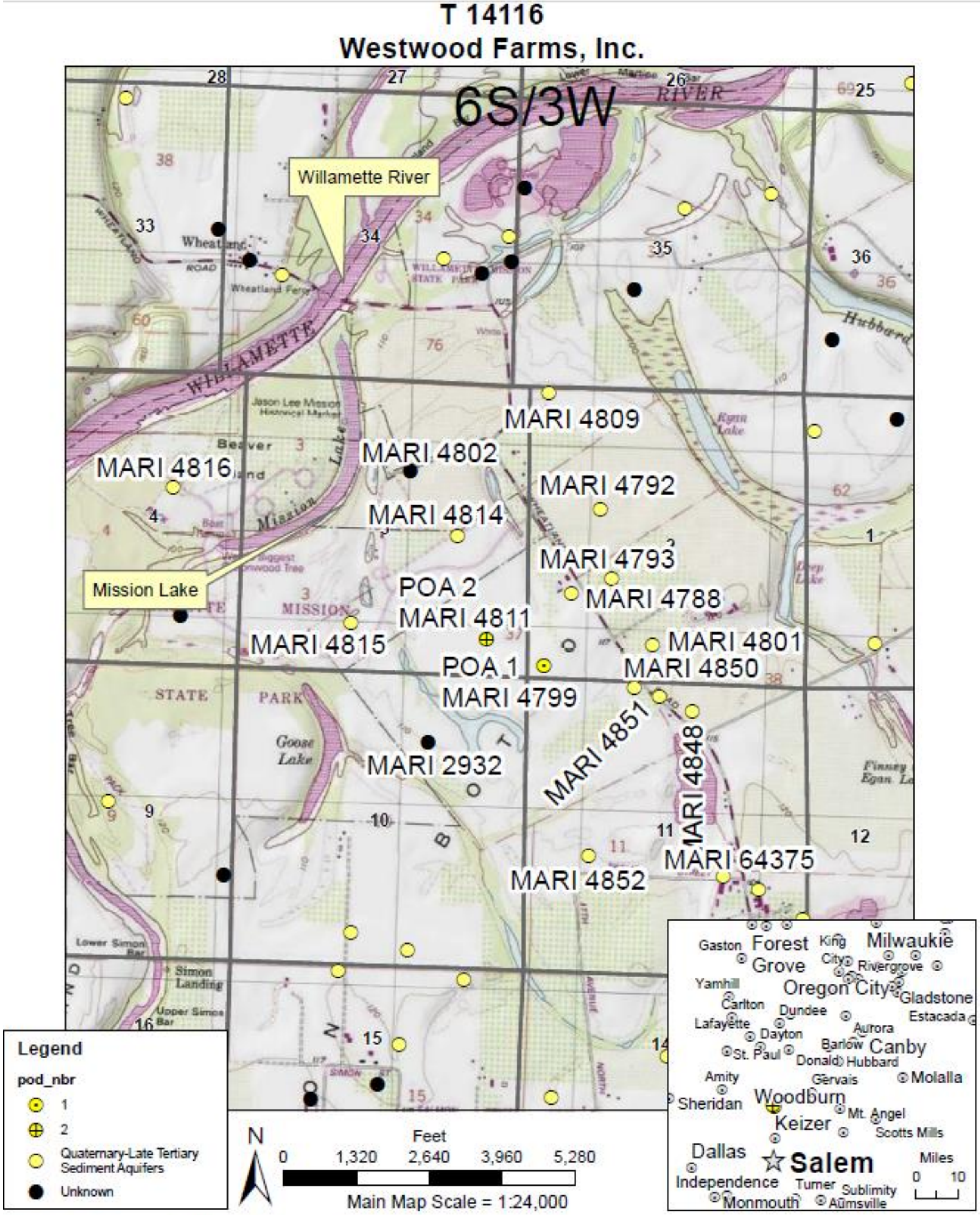
Pumping Test Reports: MARI 5336, POLK 100, POLK 1116, POLK 1127

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.

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage, American Geophysical Union Transactions, vol. 16, p. 519-524.

Map



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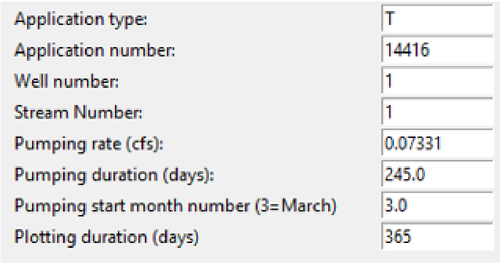
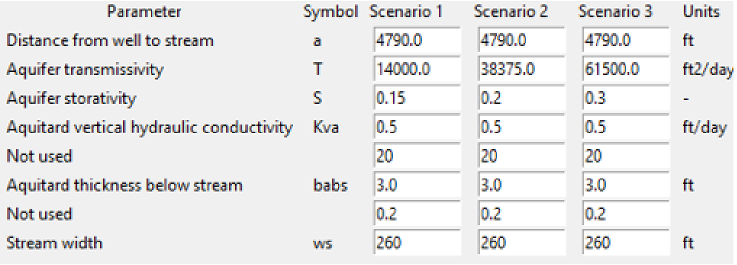
Stream Depletion Analysis

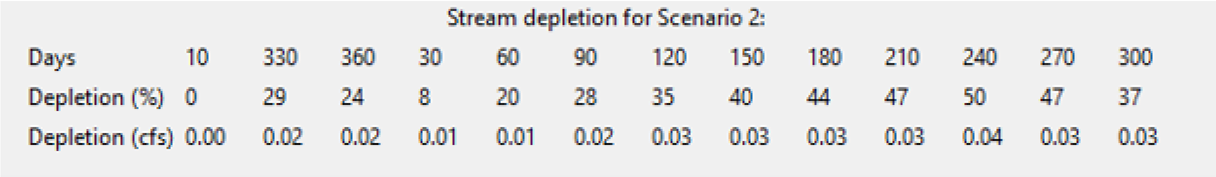
Authorized POA/POA 1 (MARI 4799)-Mission Lake



Application type:	T
Application number:	14416
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.07331
Pumping duration (days):	245.0
Pumping start month number (3=March)	3.0
Plotting duration (days)	365

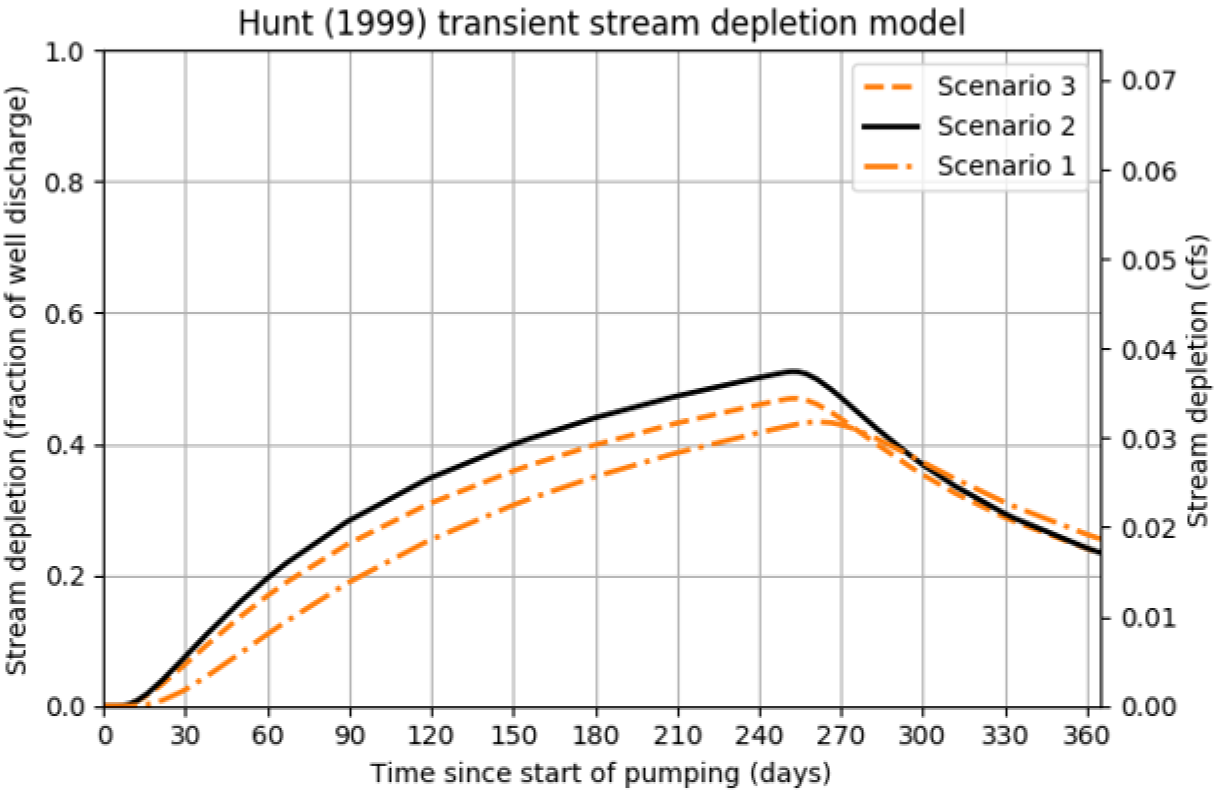


Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	4790.0	4790.0	4790.0	ft
Aquifer transmissivity	T	14000.0	38375.0	61500.0	ft2/day
Aquifer storativity	S	0.15	0.2	0.3	-
Aquitard vertical hydraulic conductivity	Kva	0.5	0.5	0.5	ft/day
Not used		20	20	20	
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	260	260	260	ft

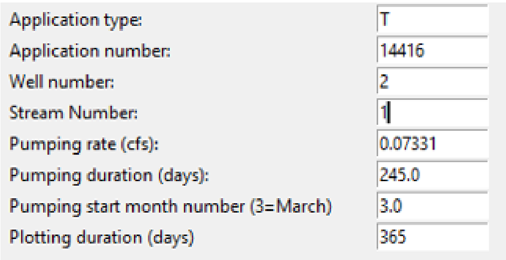


Stream depletion for Scenario 2:

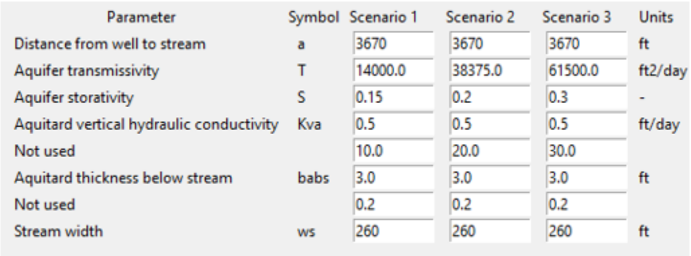
Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	0	29	24	8	20	28	35	40	44	47	50	47	37
Depletion (cfs)	0.00	0.02	0.02	0.01	0.01	0.02	0.03	0.03	0.03	0.03	0.04	0.03	0.03



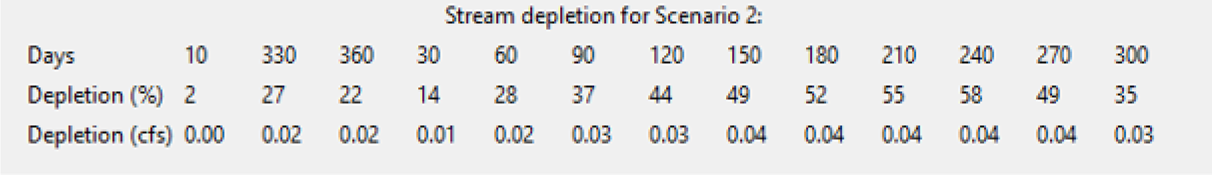
APOA/POA 2 (MARI 4811)-Mission Lake



Application type:	T
Application number:	14416
Well number:	2
Stream Number:	1
Pumping rate (cfs):	0.07331
Pumping duration (days):	245.0
Pumping start month number (3=March)	3.0
Plotting duration (days)	365

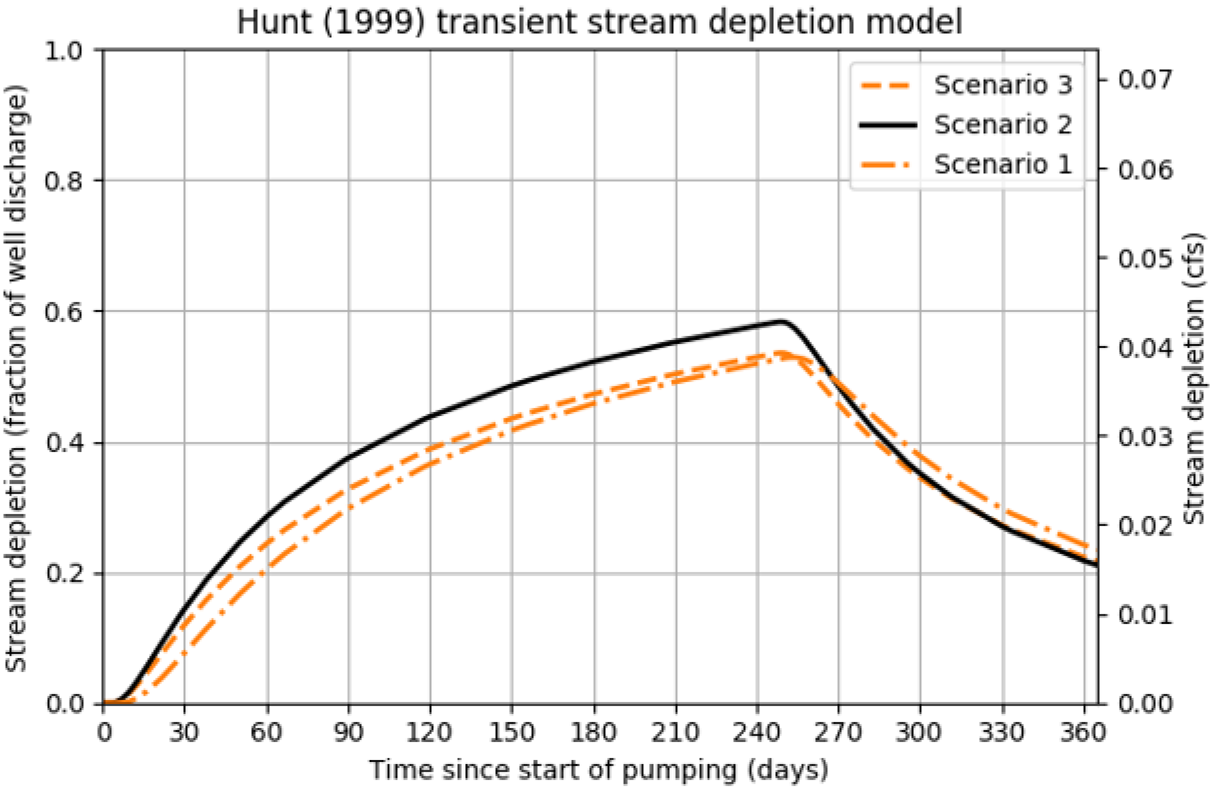


Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	3670	3670	3670	ft
Aquifer transmissivity	T	14000.0	38375.0	61500.0	ft2/day
Aquifer storativity	S	0.15	0.2	0.3	-
Aquitard vertical hydraulic conductivity	Kva	0.5	0.5	0.5	ft/day
Not used		10.0	20.0	30.0	
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	260	260	260	ft

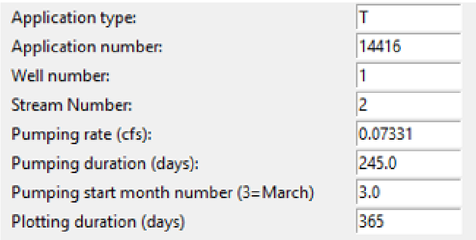


Stream depletion for Scenario 2:

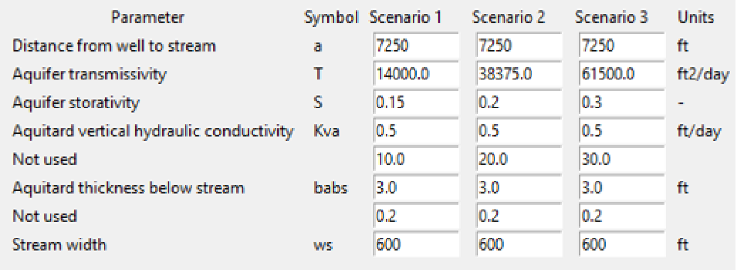
Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	2	27	22	14	28	37	44	49	52	55	58	49	35
Depletion (cfs)	0.00	0.02	0.02	0.01	0.02	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.03



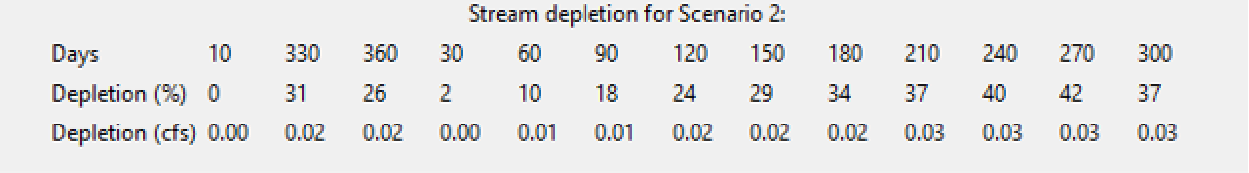
Authorized POA/POA 1 (MARI 4799)-Willamette River



Application type:	T
Application number:	14416
Well number:	1
Stream Number:	2
Pumping rate (cfs):	0.07331
Pumping duration (days):	245.0
Pumping start month number (3=March)	3.0
Plotting duration (days)	365

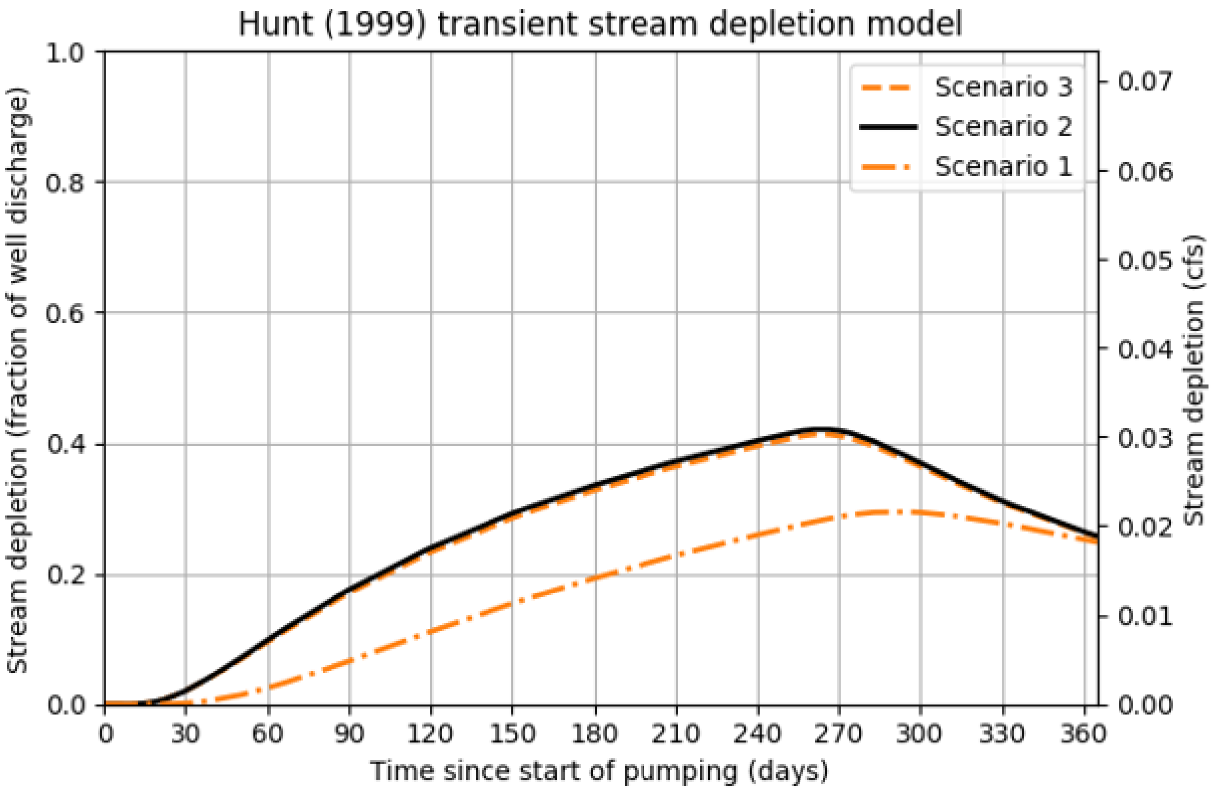


Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	7250	7250	7250	ft
Aquifer transmissivity	T	14000.0	38375.0	61500.0	ft2/day
Aquifer storativity	S	0.15	0.2	0.3	-
Aquitard vertical hydraulic conductivity	Kva	0.5	0.5	0.5	ft/day
Not used		10.0	20.0	30.0	
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	600	600	600	ft

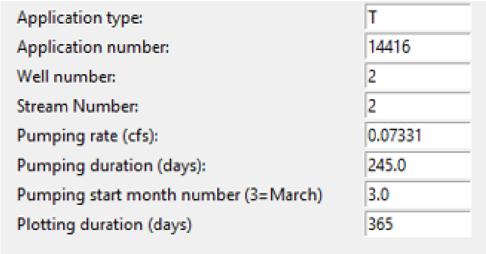


Stream depletion for Scenario 2:

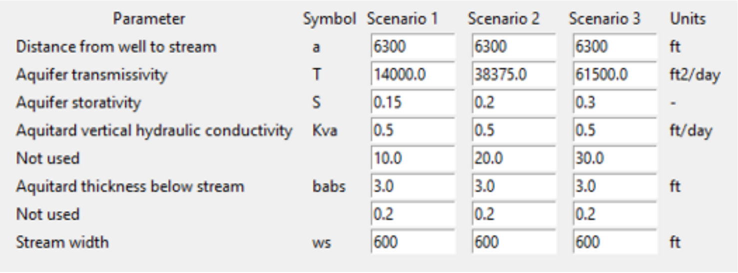
Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	0	31	26	2	10	18	24	29	34	37	40	42	37
Depletion (cfs)	0.00	0.02	0.02	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03



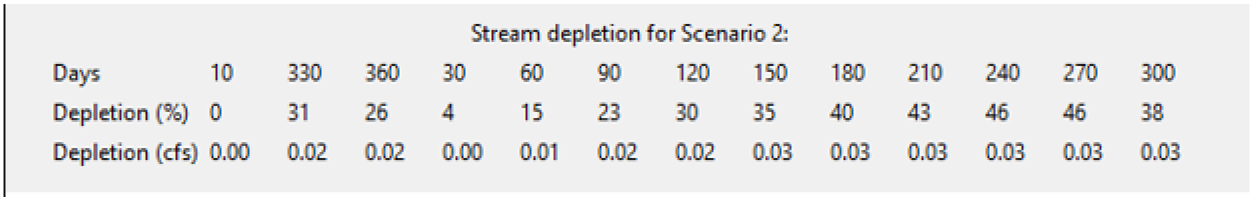
APOA/POA 2 (MARI 4811)-Willamette River



Application type:	T
Application number:	14416
Well number:	2
Stream Number:	2
Pumping rate (cfs):	0.07331
Pumping duration (days):	245.0
Pumping start month number (3=March)	3.0
Plotting duration (days)	365



Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	6300	6300	6300	ft
Aquifer transmissivity	T	14000.0	38375.0	61500.0	ft2/day
Aquifer storativity	S	0.15	0.2	0.3	-
Aquitard vertical hydraulic conductivity	Kva	0.5	0.5	0.5	ft/day
Not used		10.0	20.0	30.0	
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	600	600	600	ft



Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	0	31	26	4	15	23	30	35	40	43	46	46	38
Depletion (cfs)	0.00	0.02	0.02	0.00	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03