Groundwater Transfer Review Summary Form

Transfer/PA # T- _14665 (RA)_

GW Reviewer _Travis Brown_ Date Review Completed: _8/15/2025_

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-14665 Applicant Name: Fedosiy Ivanov

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

Reviewer(s): Travis Brown Date of Review: 8/15/2025

Date Returned to WRSD: 8/15/2025

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 _____

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1. Basic description of the changes proposed in this transfer: Applicant proposes to change the POU and POA for the entirety of Certificate 43411. Certificate 43411 authorizes Irrigation of 8.2 acres at a maximum rate of 0.1 cfs from 1 POA (From-POA, MARI 1707). The proposed To-POA is existing well MARI 68707, ~1.8 miles north of the authorized From-POA (MARI 1707).

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
   ☒ Yes ☐ No Comments: Both the authorized and proposed POA wells develop the alluvial aquifer system (Gannett and Caldwell, 1998).

3. a) Is the existing authorized POA subject to a water level decline condition?
   ☐ Yes ☒ No Comments: Certificate 43411 does not include a water level decline condition.

   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

4. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
   ☐ Yes ☒ No Comments: The From-POA (MARI 1707) only produces groundwater from the alluvial aquifer system.

   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

5. 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 proposed To-POA (MARI 68707) would be ~530 ft south of neighboring well MARI 71663, authorized POA on Permit G-18660, while the From-POA (MARI 1707) is ~10,000 ft south of MARI 71663. The closer proximity of the To-POA to MARI 71663 would increase interference with MARI 71663.

   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: Potential interference with MARI 71663 due to the proposed change was analyzed using the Theis (1935) solution for drawdown in a confined aquifer (see attached Well Interference Analysis). Results of the analysis indicate that the proposed change is unlikely to injure MARI 71663 or similar neighboring groundwater rights.

6. 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 To-POA is ~1,870 ft northwest of Mill Creek, whereas the From-POA is ~5,060 ft east of Mill Creek. The From-POA is also approximately equidistant between Mill Creek and the Pudding River, whereas the proposed To-POA is on the opposite side of Mill Creek as the From-POA. Due to its location, the proposed To-POA would be anticipated to deplete Mill Creek more than the authorized From-POA; thus, the proposed change would likely result in an increase in interference with Mill Creek.

   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: Mill Creek ☒ Minimal ☐ Significant

   Provide context for minimal/significant impact: The potential interference with Mill Creek was analyzed using the Hunt (2003) stream depletion model (see attached Surface Water Interference Analysis). Results of the analysis indicate that any increase in seasonal interference with Mill Creek due to the proposed change would likely be very small (<0.2% of the rate of pumping). Seasonal peak depletion due to pumping the To-POA would increase over time, eventually reestablishing a pseudo-equilibrium similar to the conditions before the transfer, with most of the depletive effect impacting larger, more incised rivers (the Willamette and Molalla Rivers) at the aquifer boundaries (Herrera et al., 2014).

7. 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

8. What conditions or other changes in the application are necessary to address any potential issues identified above: None

9. Any additional comments: _____

References:

Pumping test reports: MARI 809, 814, 884, 905, 1519, 2011, 17630, 55251, 58399, 58546, 59508

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.

Herrera, N. B., Burns, E. R., Conlon, T. D., 2014, Simulation of groundwater flow and the interaction of groundwater and surface water in the Willamette Basin and Central Willamette Subbasin, Oregon, Scientific Investigations Report 2014-5136: U. S. Geological Survey, Reston, VA.

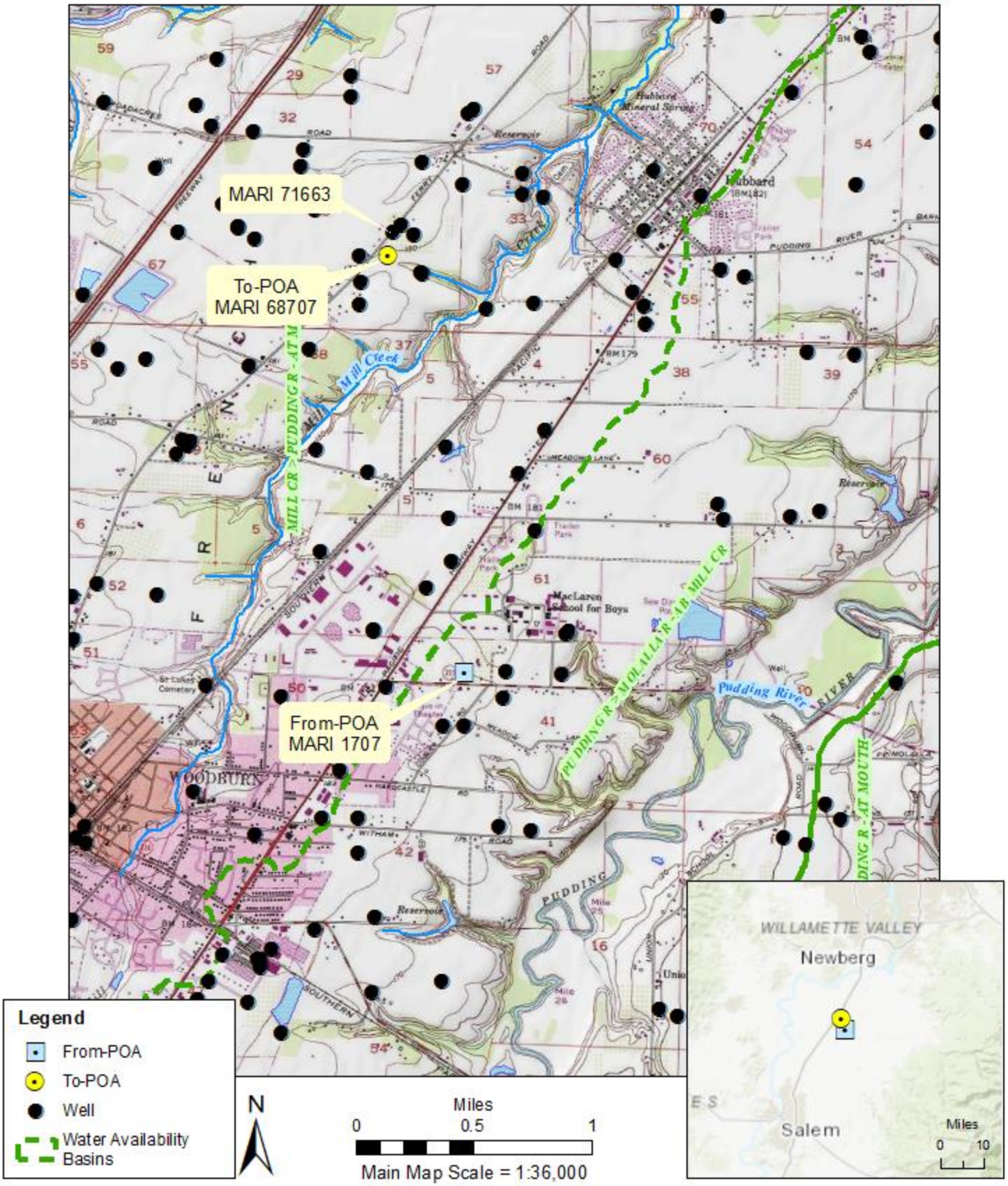
Hunt, B., 2003, Unsteady stream depletion when pumping from semiconfined aquifer: Journal of Hydrologic Engineering, January/February, Vol 8, p. 12-19.

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.

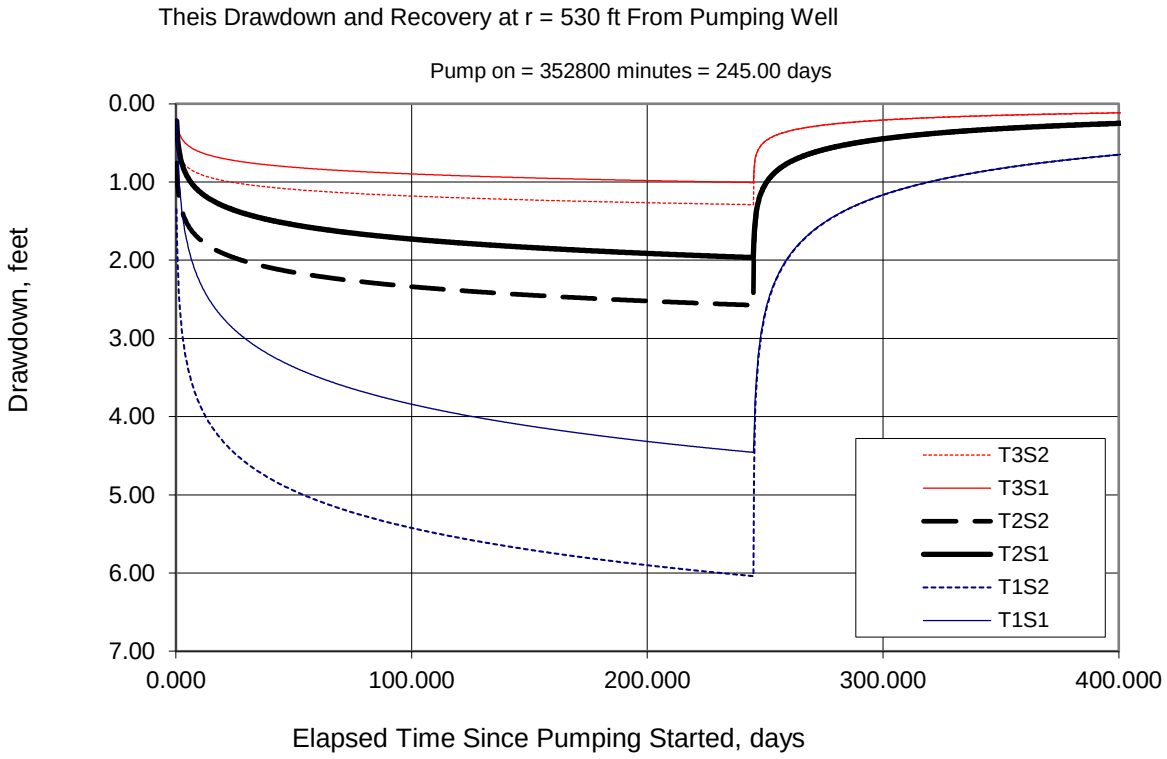
Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage, American Geophysical Union Transactions, vol. 16, p. 519-524.

Well Location Map

T-14665



Well Interference Analysis (Theis, 1935)



Radial distance, r = 530 ft [approximate distance from To-POA (MARI 68707) to MARI 71663]

Pumping time, t_{pump} = 245 days [irrigation season]

Pumping rate, Q = 0.1 cfs [max rate under Certificate 43411]

Transmissivity: T1 = 1,000 ft^2/day; T2 = 2,600 ft^2/day; T3 = 5,600 ft^2/day [pumping test reports]

Storativity: S1 = 0.003; S2 = 0.0003 [Conlon et al., 2005]

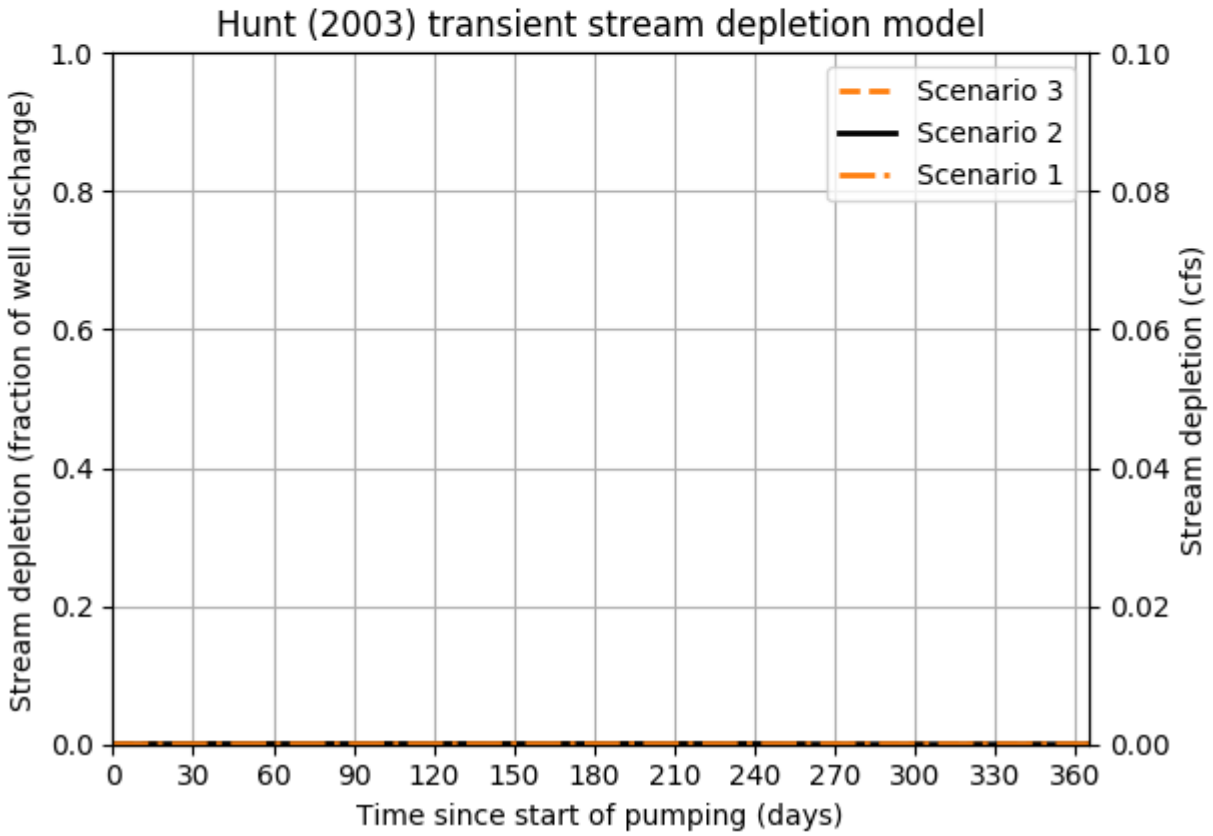
Surface Water Interference Analysis (Hunt, 2003)

From-POA (MARI 1707) Interference with Mill Creek

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	5060.0	5060.0	5060.0	ft
Aquifer transmissivity	T	5600.0	1000.0	2600.0	ft2/day
Aquifer storativity	S	0.003	0.0009	0.0003	-
Aquitard vertical hydraulic conductivity	Kva	0.001	0.005	0.01	ft/day
Aquitard saturated thickness	ba	85.0	85.0	85.0	ft
Aquitard thickness below stream	babs	65.0	65.0	65.0	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	15.0	15.0	15.0	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
Depletion (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



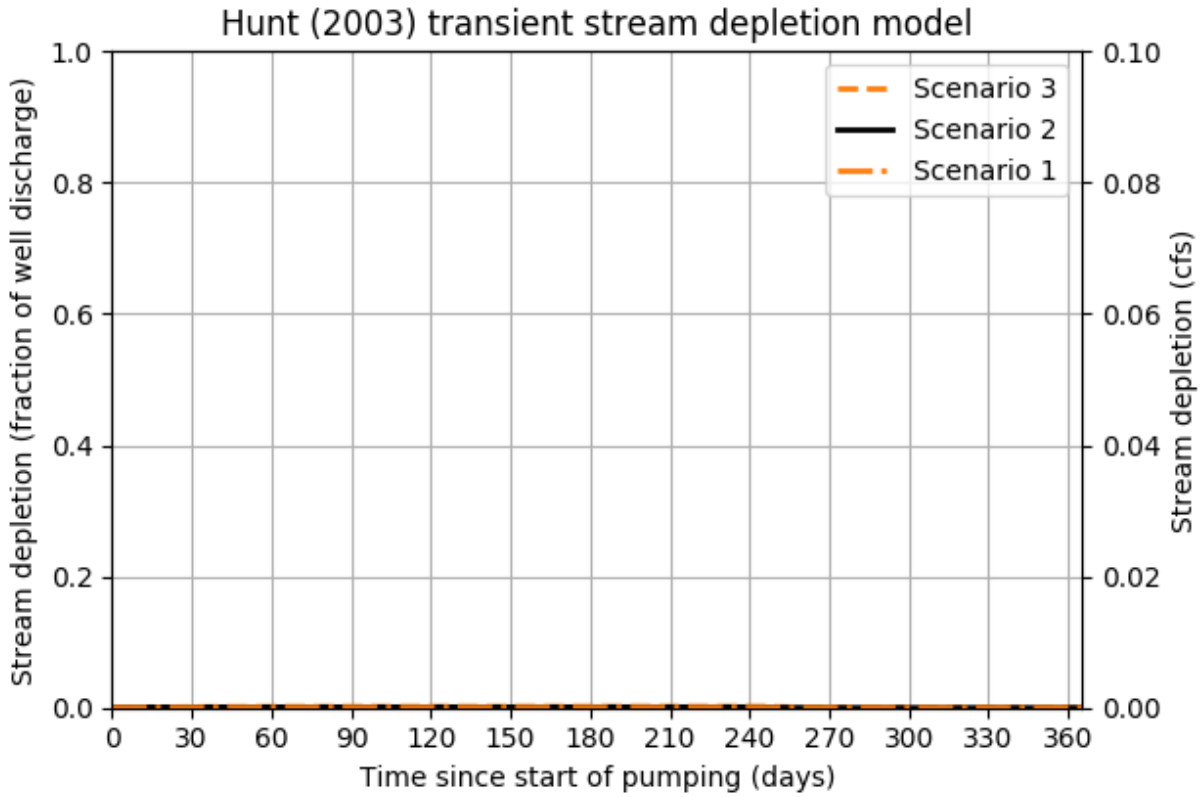
Surface Water Interference Analysis (Hunt, 2003) (continued)

To-POA (MARI 68707) Interference with Mill Creek

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1870.0	1870.0	1870.0	ft
Aquifer transmissivity	T	5600.0	2600.0	1000.0	ft2/day
Aquifer storativity	S	0.0003	0.0009	0.003	-
Aquitard vertical hydraulic conductivity	Kva	0.001	0.005	0.01	ft/day
Aquitard saturated thickness	ba	85.0	85.0	85.0	ft
Aquitard thickness below stream	babs	65.0	65.0	65.0	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	15.0	15.0	15.0	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
Depletion (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



NOTE: Parameter ranges are the same for both the From-POA and To-POA analyses. However, the parameter values associated with individual Scenarios are not the same in the From-POA and To-POA analyses because Scenario parameter values were selected to maximize the range of estimated peak depletion (i.e. the difference between the lowest and highest depletion scenarios).