

Groundwater Transfer Review Summary Form

Transfer/PA # T- 14278

GW Reviewer Dennis Orłowski Date Review Completed: March 21, 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.

Note: the originating water right for this application, certificate 60741, does not contain provisions related to either the setting of a reference level or decline conditions. However, two of the proposed APOA on this application (MULT 3476 and MULT 67819) are also authorized POA for multiple other groundwater rights; as of the date of this review, both of those wells have exceeded their respective 15-ft decline thresholds established in those other groundwater rights. This issue is discussed further in item 9 of this review.

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-14278

Applicant Name: T and K Sester Family, LLC

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

Reviewer(s): Dennis Orlowski

Date of Review: March 21, 2025

Date Reviewed by GW Mgr. and Returned to WRSD: March 21, 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 _____

1. Basic description of the changes proposed in this transfer: This transfer application relates to **certificate 60741**, which authorizes primary irrigation of 79.4 acres using groundwater from a single authorized POA, MULT 2519 (“Moller Well 1”) (maximum pumping rate 0.4 cfs).
(NOTE: this application was originally submitted to OWRD in July 2023, but modifications to the application were later provided to OWRD in February 2024; also, it was confirmed by the applicant’s agent that MULT 140397 was installed as “Moller Well 2” after the original application was submitted).

This application proposes to add three APOA to certificate 60741:

- **MULT 140397 (“Moller Well 2”)**
- **MULT 3476 (“Sester Farms Well 1”)**
- **MULT 67819 (“Sester Farms Well 3”)**

MULT 3476 (“Well 1”) is also an authorized POA for three additional groundwater rights:

- Certificate 84946: nursery use 80.0 acres, maximum rate 0.67 cfs, year-round
- Permit G-15196: nursery use 300.35 acres, maximum rate 0.67 cfs, year-round
- Permit G-16568: primary irrigation 54.6 acres, maximum rate 0.68 cfs, 3/1 to 10/31

MULT 67819 (“Well 3”) is also an authorized POA for two additional groundwater rights:

- Permit G-15196: nursery use 300.35 acres, maximum rate 0.67 cfs, year-round
- Permit G-16568: primary irrigation 54.6 acres, maximum rate 0.68 cfs, 3/1 to 10/31

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
 Yes No Comments: The authorized POA and proposed APOA wells range in total depth from 433 to 620 feet, and all obtain groundwater primarily from confined water-bearing sand and gravel deposits.

Head differences in area wells, including proposed APOA wells MULT 3476 and MULT 67819, suggests that some of these wells *might* be completed in discretely-different alluvial aquifers (see attached hydrograph). In much of the Portland Basin the USGS has identified several alluvial aquifer systems: the uppermost "Troutdale Gravel Aquifer" (TGA), the intermediate "Troutdale Sandstone Aquifer" (TSA), and the deepest "Sand and Gravel Aquifer" (SGA). These aquifers are *in some areas* clearly separated by Confining Units 1 and 2, particularly in more central portions of the Portland Basin nearer to the Columbia River (CU 1 and 2 can also contain coarser water-bearing deposits sufficient for certain uses) (Swanson and others, 1993; McFarland and Morgan, 1996).

However, due to several factors specific to this application area, it is not certain if the deeper alluvial deposits correspond to either a single alluvial system or multiple discrete aquifers. First, the existence of any potential contacts between aquifers and confining units is not clear from the stratigraphic information presented on well logs associated with this application (e.g., MULT 140397, MULT 67819, MULT 3476). Second, the ability to distinguish between discrete alluvial aquifers in this area using head data is complicated because of the highly-variable open intervals of the wells from which that data are obtained (also, for this review applicable static water levels were not available for both MULT 2519 (authorized POA) and MULT 140397 (newer proposed APOA), further complicating this analysis). Finally, the potential presence of local faults might isolate/compartamentalize the aquifer; though not formally mapped, a distinct northwest-southeast trending surface lineation between MULT 67819 and CLAC 57578 (and MULT 3476) – marked by the orientation of North Fork Beaver Creek in this area - could represent a fault zone that might account for the relatively-large head differences seen in this group of wells.

Despite these complications, it is assumed that the proposed APOA develop the same alluvial aquifer source as the existing authorized POA, and that this source is generally considered to be the same as the "Deep Troutdale" aquifer designation used for the nearby Sandy-Boring Groundwater Limited Area (it is notable that despite the fact that proposed APOAs MULT 67819 and MULT 3476 exhibit relatively-large head differences, both wells have been previously authorized on other water rights *for which a distinction between aquifers was not made* (permits G-15196 and G-16568); in those cases it was concluded that both wells obtain groundwater from the "Deep Troutdale" aquifer).

3. a) Is the existing authorized POA subject to a water level decline condition?
 Yes No Comments: Certificate 60741 does not contain provisions related to either the setting of a reference level or decline conditions.
- 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: _____
- 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 nearest known groundwater right potentially affected by the proposed use is CLAC 57578, which is an authorized POA for permit G-15211 (Surface Nursery, nursery use on 104.0 acres). Relative to authorized POA MULT 2519, proposed APOA MULT 67819 is approximately 1700 feet nearer to CLAC 57578; consequently, the proposed use is likely to result in an increase in interference in CLAC 57578.

- 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: To evaluate the potential additional interference with CLAC 57578, a Theis (1935) drawdown analysis was completed. Aquifer parameters used for the analysis were derived from regional data and studies (Pumping Test Reports for MULT 2533, MULT 3476; McFarland and Morgan, 1996; Swanson et al., 1993).

To provide a conservative analysis, it was assumed that authorized POA MULT 2519 would be pumped non-stop at the maximum authorized rate under certificate 60741 (0.40 cfs, ~180 gpm) up to the associated duty, which would effectively be limited by the 240-day irrigation period. Pumping at proposed APOA MULT 67819 was also simulated at 0.40 cfs (while MULT 67819 is also authorized for an additional combined rate of 1.35 cfs, the pumping test rate stated on its well log is only ~0.36 cfs with 110 feet of drawdown; with recent static water levels in MULT 67819 on the order of ~350-385 ft bls, it appears that even less than 110 feet of drawdown is available in this well, which supports using the lower 0.40 cfs rate for this analysis).

Results of the Theis comparative analysis indicate that additional interference with CLAC 57578 could range from about 5 to 15 feet based on these conservative pumping scenarios. Using the 2024 static water level measurement reported for CLAC 57578 of approximately 245 ft bls, there is approximately 250 feet of available drawdown in CLAC 57578. This amount should allow both the current authorized use of CLAC 57578 (i.e., at its current drawdown or pumping water level) plus the range of additional interference drawdown predicted for this proposed use; thus, it is not likely that the proposed use will result in CLAC 57578 or another similar groundwater right from receiving the water to which it is legally entitled.

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: Groundwater levels in the Deep Troutdale aquifer at and near the authorized POA and proposed APOAs are more than 150 ft below the estimated surface water elevations for several stream reaches within approximately 3,000 feet of the POAs; therefore, these POAs are not likely hydraulically connected to those streams, and thus there will not be an increase in interference with those streams.

- 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: _____ Minimal Significant

Stream: _____ Minimal Significant

Provide context for minimal/significant impact: N/A

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: **NOTE**: two of the proposed APOA on this application (MULT 3476 and MULT 67819) are also authorized POA for multiple other groundwater rights. As part of a technical review for **application T-13852** (permit G-15758), reference levels were set for both MULT 3476 (199.00 ft bls) and MULT 67819 (317.00 ft bls); these levels are intended to apply to *all* water rights for which those two wells are the authorized POA. However, for this application T-14278, certificate 60741 does not contain a provision for setting a reference level, nor are decline conditions stipulated. **Therefore, it is uncertain if the reference levels previously established for proposed APOA MULT 3476 and MULT 67819 can be considered applicable for their use under certificate 60741.**

References

Water rights documents: application T-14278; certificate 60741; groundwater technical reviews for applications T-13852, T-14260, G-18865.

McFarland, W.D., and Morgan, D.S., 1996, Description of the Ground-Water Flow System in the Portland Basin, Oregon and Washington, Water Supply Paper 2470-A, 58 p: U. S. Geological Survey, Reston, VA.

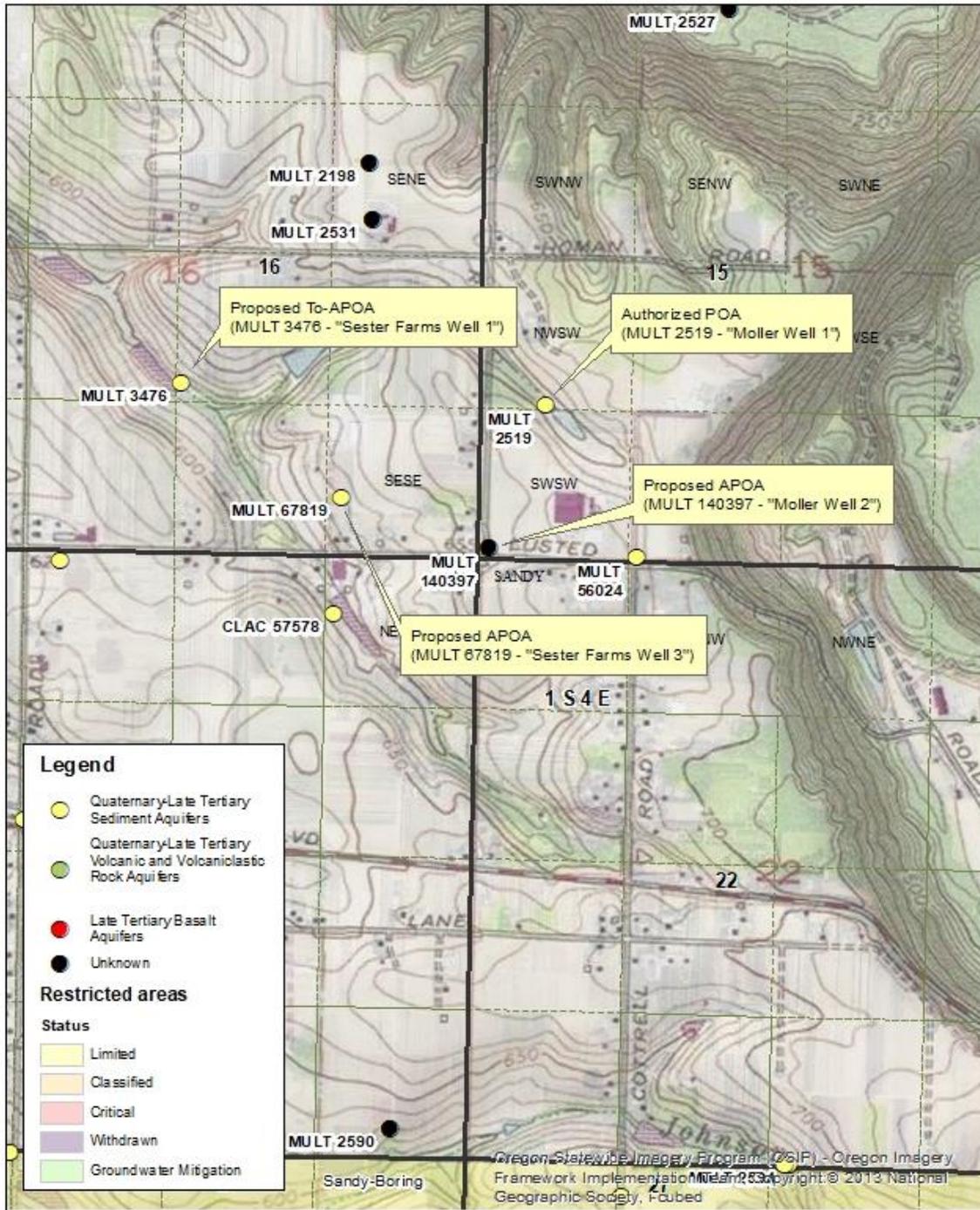
Swanson, R. D., McFarland, W. D., Gonthier, J. B., and Wilkinson, J. M., 1993, A description of hydrogeologic units in the Portland Basin, Oregon and Washington, Water-Resources Investigations Report 90-4196, 56 p.: U. S. Geological Survey, Reston, VA.

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.

United States Geological Survey, 2014, National Hydrography Dataset (NHD), 1:24,000, U. S. Department of the Interior, Reston, VA.

United States Geological Survey, 2017, *Sandy quadrangle*, Oregon [map], 1:24,000, 7.5 minute topographic series, U.S. Department of the Interior, Reston, VA.

Application T-14278, T and K Sester Family LLC T1S, R4E, Sections 15 and 16

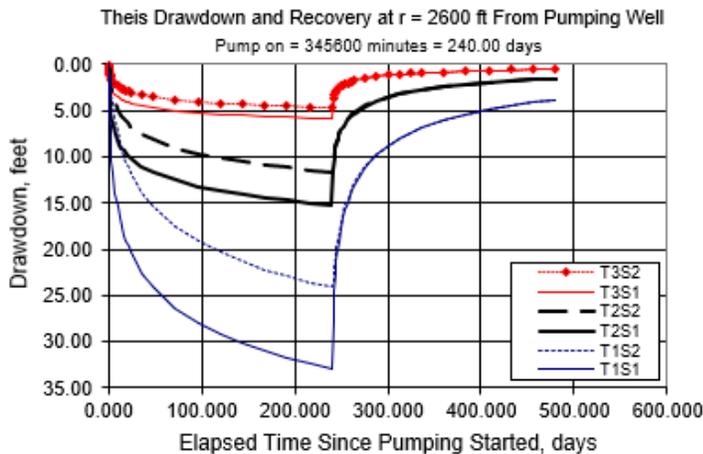


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Thisis Drawdown Analysis – Authorized POA MULT 2519 to CLAC 57578

Thisis Time-Drawdown Worksheet v.3.00
 Calculates Thisis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different 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 30, 2014

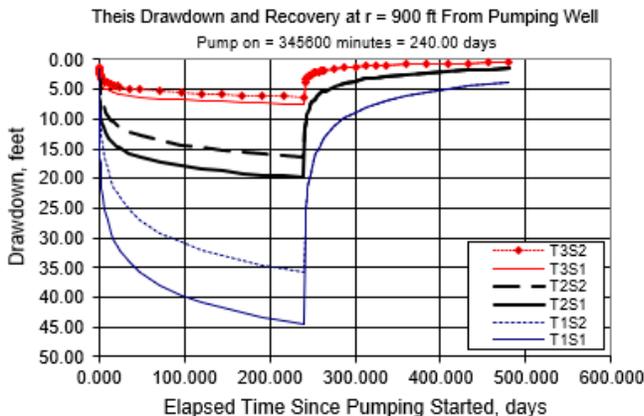
Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		240		d	
Radial distance from pumped well:	r		2600.00		ft	Q conversions
Pumping rate	Q		0.400		cfs	179.52 gpm
Hydraulic conductivity	K	10.000	25.000	75.000	ft/day	0.40 cfs
Aquifer thickness	b		50		ft	24.00 cfm
Storativity	S_1		0.00010			34,560.00 cfd
	S_2		0.00050			0.79 af/d
Transmissivity Conversions	T_ft2pd	500	1,250	3,750	ft ² /day	
	T_ft2pm	0.3472	0.8681	2.6042	ft ² /min	
	T_gpdpft	3,740	9,350	28,050	gpd/ft	
		Recalculate		Use the Recalculate button if recalculation is set to manual		



Thisis Drawdown Analysis – Proposed APOA MULT 67819 to CLAC 57578

Thisis Time-Drawdown Worksheet v.3.00
 Calculates Thisis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different 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 30, 2014

Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
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Radial distance from pumped well:	r		900.00		ft	Q conversions
Pumping rate	Q		0.400		cfs	179.52 gpm
Hydraulic conductivity	K	10.000	25.000	75.000	ft/day	0.40 cfs
Aquifer thickness	b		50		ft	24.00 cfm
Storativity	S_1		0.00010			34,560.00 cfd
	S_2		0.00050			0.79 af/d
Transmissivity Conversions	T_ft2pd	500	1,250	3,750	ft ² /day	
	T_ft2pm	0.3472	0.8681	2.6042	ft ² /min	
	T_gpdpft	3,740	9,350	28,050	gpd/ft	
		Recalculate		Use the Recalculate button if recalculation is set to manual		



Hydrograph, Area Wells

