Groundwater Transfer Review Summary Form

Transfer/PA # T- _14608_

GW Reviewer _Dennis Orlowski_ Date Review Completed: _August 8, 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).

Note: currently-available information indicates that proposed APOA CLAC 4718 likely obtains groundwater from an additional deeper source that is not present in the several authorized POA; modification of CLAC 4718 could potentially resolve this discrepancy.

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.

OREGON WATER RESOURCES DEPARTMENT

Oregon Water Resources Department
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Ground Water Review Form:

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

Application: T-14608 Applicant Name: T&K Sester Family, LLC

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

Reviewer(s): Dennis Orlowski Date of Review: August 8, 2025

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

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. (**see discussion in Section 2 related to proposed APOA CLAC 4718**).

☐ Other ____.

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1. Basic description of the changes proposed in this transfer: This transfer application relates to **certificate 98016** which authorizes the primary irrigation of 47.0 acres in Clackamas County, using groundwater pumped from the following four authorized POA, with a maximum rate of 0.37 cfs in any combination from all wells:

   - CLAC 55502/55576 (“Well 1”)
   - CLAC 72510 (“Well 2”)
   - CLAC 74849 (“Well 3”)
   - CLAC 74936 (“Well 4”)

   This transfer proposes to (1) add an APOA, existing well CLAC 4718 and (2) adjust a portion of the existing POU.

   Note: the four authorized POA are located within the Damascus Groundwater Limited Area (GWLA) in which groundwater from the basalt aquifer and the Troutdale Aquifer is classified for exempt uses only; the proposed APOA CLAC 4718 is outside of the GWLA. However, application G-1799 (for permit G-1645/certificate 98016) was received in 1960, which greatly preceded the October 4, 1991 establishment of the GWLA, thus granting exception to the GWLA use limitations for this water right.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☐ Yes ☒ No Comments: The four currently-authorized POA obtain groundwater from the Troutdale Gravel Aquifer (TGA) ("Shallow Troutdale Aquifer"), and possibly water-bearing layers in underlying Confining Unit 1 (CU1) (Swanson and others, 1993; Conlon and others, 2005; Gannett and Caldwell, 1998). The total depths of these four wells range from 140 to 195 feet, with corresponding bottom elevations ranging from 445 to 396 ft msl (after CLAC 55502 was backfilled/cemented from its original total depth of 600 feet to 140 feet in 2000, as documented with partial abandonment log CLAC 55576).

The related 2020 groundwater review for T-13348, which added CLAC 74849 and CLAC 74936 as authorized POA to this same certificate 98016, (1) made reference to the Springwater Formation and (2) limited the total depth of another proposed APOA ("Well 5") to 200 feet below land surface (ft bls). These aspects of the T-13348 review are relevant to this current T-14608 review.

First, the Springwater Formation is a dated *geologic* reference no longer commonly used by OWRD for locations within the Portland Basin. OWRD instead refers to and regulates on the basis of *hydrogeologic* units as defined in USGS WRI 90-4196 (Swanson and others, 1993). Using the USGS nomenclature, the Springwater Formation is included as part of the TGA.

Regarding the second point, the groundwater review for T-13348 concluded that the proposed construction of APOA Well 5 (not-yet-drilled) was much deeper than the authorized POA, and would thus have likely obtained groundwater from a source other than *"…the upper portions of the Springwater*." Consequently, the final order for T-13348 limited proposed APOA Well 5 to "*…an open interval extending no deeper than 200' below land surface*."

For this application, proposed APOA CLAC 4718 is 380 feet deep (approximate bottom elevation 200 ft msl), which is *approximately 200 to 250 feet deeper than the four authorized POA*. In addition, the CLAC 4718 log shows only a perforated interval from 70-80 ft bls in a 6-inch casing and a total well depth, but provides no other well construction details such as sealed interval or seal material, total depth of casing, static water level, etc. In addition to the perforated interval from 70-80 ft bls, it is also likely that CLAC 4718 is open to the formation at the bottom of the casing, which based on limited available information is assumed to be at its total reported depth of 380 feet.

According to USGS hydrostratigraphic delineations provided for nearby wells CLAC 4683, CLAC 4679, and CLAC 4700 (Swanson and others, 1993), it appears that the authorized POA obtain groundwater from the TGA and perhaps water-bearing portions of CU1 (see attached "West-East Cross-Section 1"; it is often difficult to distinguish between water-bearing units in major confining units and vertically adjacent aquifers, particularly when limited to using only cutting descriptions provided on drilling logs).

It is notable that the backfilling/cementing of authorized POA CLAC 55502 ("Well 1") from its original total depth of 600 feet to 140 feet effectively limited its exposure to only the TGA; prior to that alteration (documented by CLAC 55576), CLAC 55502 intersected not only the TGA, but also the underlying Troutdale Sandstone Aquifer (TSA) and water-bearing layers of Confining Unit 2 (CU2).

Based on currently-available information, it is assumed that proposed APOA CLAC 4718 obtains groundwater not only from the TGA but also from the deeper TSA and possibly also water-bearing layers within CU2.

To ensure that proposed APOA CLAC 4718 obtains groundwater only from the same authorized source (TGA) (and to maintain consistency with previous OWRD findings for related application T-13348), CLAC 4718 would have to be backfilled/sealed from its total reported depth of 380 ft up to approximately 175 ft bls (elevation ~405 ft msl) (see attached cross-section). According to the CLAC 4718 well log the 175-ft depth is the approximate mid-point of a thick clay layer that likely corresponds to CU1, separating the TGA from the underlying TSA.

3. a) Is the existing authorized POA subject to a water level decline condition?
☐ Yes ☒ No Comments: Neither certificate 98016 nor its preceding permit G-1645 contain water level 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: There are few other wells near to proposed APOA CLAC 4718 with confirmed locations. The likely nearest well on record is CLAC 4734, which the log locates to only the same quarter-quarter section. However, CLAC 4734 is only 90 feet deep, thus does not fully penetrate the local alluvial aquifer (TGA) and therefore would not be subject to a potential injury finding.

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

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: Relative to the location for authorized POA CLAC 72510, proposed APOA CLAC 4718 is approximately 950 feet nearer to Noyer Creek. While existing applicable groundwater level data is sparse, the range of historic levels (see attached hydrograph that includes CLAC 4699 and CLAC 4700) and hydrostratigraphic correlation with nearby stream bed elevations suggests hydraulic connection between the TGA and Noyer Creek in this area (see attached "West-East Cross-Section 2"). Consequently, it is likely that the proposed pumping of CLAC 4718 will result in an increase in interference with Noyer 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: Noyer Creek ☒ Minimal ☐ Significant

Stream: _____ ☐ Minimal ☐ Significant

Provide context for minimal/significant impact: Quantitative estimates of relative stream depletion were made using the Hunt 2003 stream depletion model (Hunt, 2003; Barlow and Leake, 2012). Hydraulic parameters used for the analysis were obtained from regional data and studies (pumping test reports; Conlon and others, 2005, McFarland and Morgan, 1996) or are within a typical range of values reported for this general type of hydrogeologic regime (Freeze and Cherry, 1979). Results indicate that only a minimal long-term impact to Noyer Creek is expected due to the proposed use.

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: **To ensure that proposed APOA CLAC 4718 obtains groundwater only from the same authorized source (TGA) (and to maintain consistency with previous OWRD findings for related application T-13348), CLAC 4718 would have to be backfilled/sealed from its total reported depth of 380 ft up to approximately 175 ft bls (elevation ~405 ft msl).**

9. Any additional comments: None.

References Used:

Application Files: T-14608, T-13348, G-19207

Barlow, P., and Leake, J., 2012, Streamflow depletion by wells – understanding and managing the effects of groundwater pumping on streamflow: U.S. Geological Survey, Circular 1376, 84 p.

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: U.S. Geological Survey Scientific Investigations Report 2005–5168, 83 p.

Freeze, R.A. and Cherry, J.A., 1979, Groundwater, Prentice Hall, Englewood Cliffs, New Jersey, 604 p.

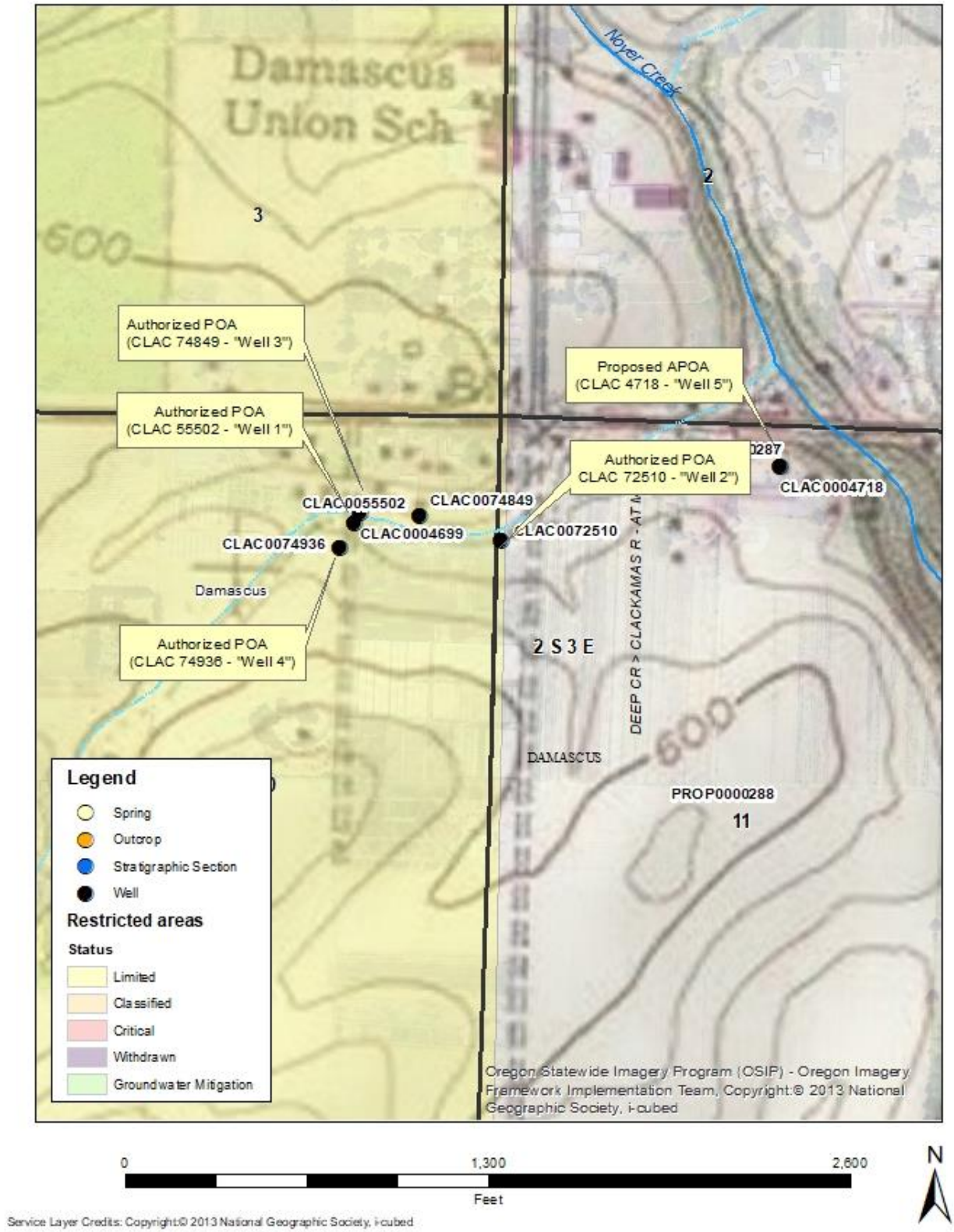
Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington, Professional Paper 1424-A, 32 p: U. S. Geological Survey, Reston, VA.

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

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.

Application T-14608, T&K Sester Family, LLC
T2S, R3E, Sections 10 and 11



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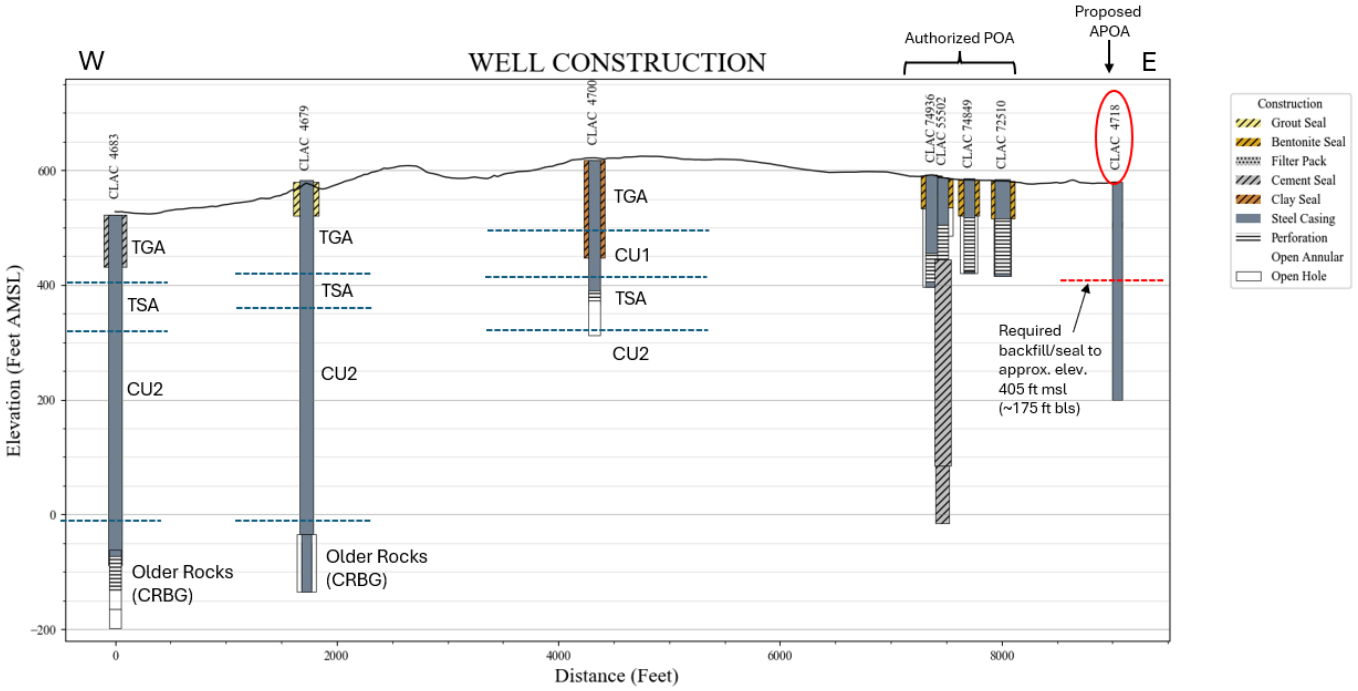
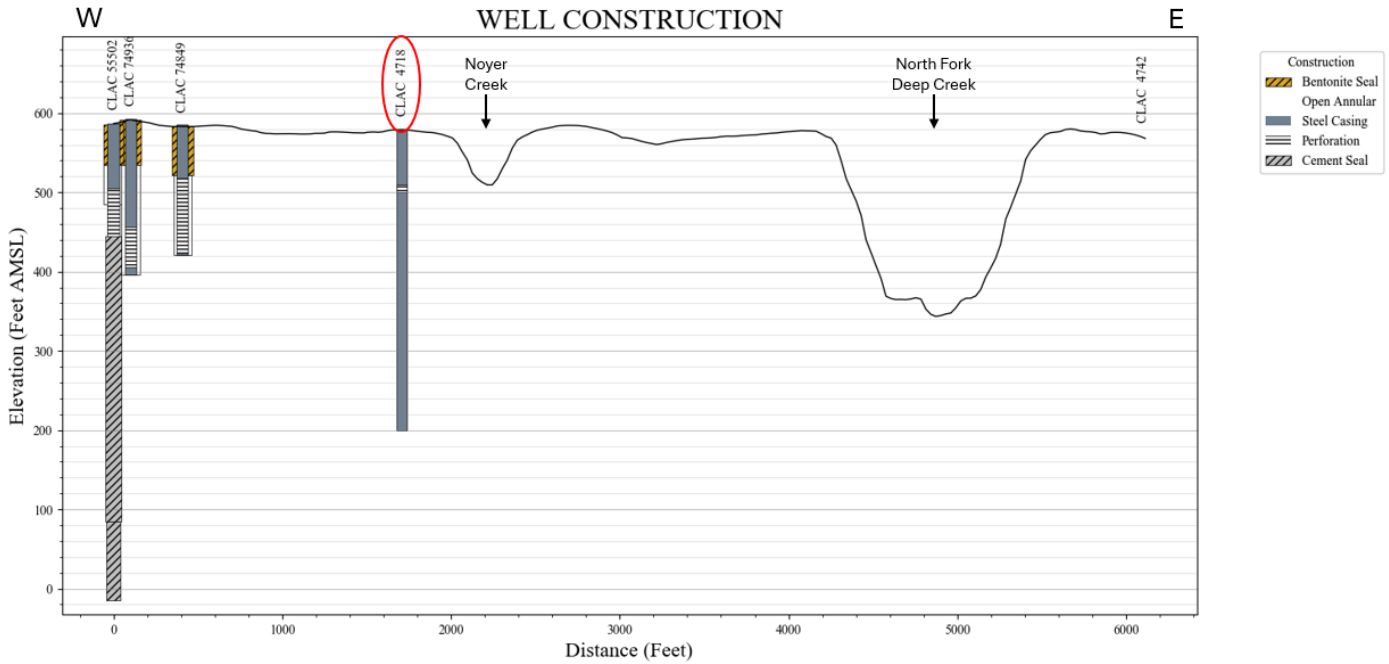
West-East Cross-Section 1



West-East Cross-Section 2



Hydrograph – Area Wells