Groundwater Transfer Review Summary Form

Transfer/PA # T- _14308_

GW Reviewer _Stacey Garrison/Travis Brown_ Date Review Completed: _5/8/2024_

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 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-14308 Applicant Name: Kit Johnston

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

Reviewer(s): Stacey Garrison/Travis Brown Date of Review: 5/8/2024

Date Returned to WRSD: 5/8/2024

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 _____

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1. Basic description of the changes proposed in this transfer: Applicant proposes to change from the authorized POA (**YAMH 5465/54677**) to two wells: Well 1 (**YAMH 3872/53177**) and Well 2 (**PROP 452**) for 32.8 ac of POU on **Claim GR-1696**, which authorizes irrigation of 41 acres at a maximum rate of 0.22 cfs (98.743 gpm). Applying a prorate for the POU less than the full authorized acreage results in a reduced rate of 0.176 cfs (79 gpm) for proposed to-POAs Well 1 (**YAMH 3872/53177**) and Well 2 (**PROP 452**). T-14293 on **Certificate 80155** adds Well 2 (**PROP 452**) as a proposed APOA with Well 1 (**YAMH 3872/53177**) as the authorized POA; **Certificate 80155** authorizes irrigation of 15.0 acres at a maximum rate of 0.19 cfs (85.272 gpm). The maximum combined rate and duty based on this transfer and T-14293/**Certificate 80155** will be used for this review on proposed to-POAs Well 1 (**YAMH 3872/53177**) and Well 2 (**PROP 452**); for both wells, this is 0.366 cfs (164.272 gpm) and a maximum annual duty of 119.5 AF for irrigation of 47.8 ac.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments: The authorized POA (**YAMH 5465/54677**) and Well 1 (**YAMH 3872/53177**) produce from the alluvial aquifer system; Well 2 (**PROP 452**) will likely produce from the alluvial system, based on proposed construction from the applicant (Gannett and Caldwell, 1998).

3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
☐ Yes ☒ No 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: Well 2 (**PROP 452**) is closer to neighboring Tax Lot 1001 which is presumed to be served by an exempt domestic well ("Tax Lot 1001 Well"). The closer proximity of this domestic well will increase interference.

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: Well 2 (**PROP 452**) is ~430 ft northwest of the presumed location of the Tax Lot 1001 Well as identified in aerial imagery. The Theis (1935) solution was used to assess interference from the proposed APOA at the presumed location of the Tax Lot 1001 Well (see attached Theis Interference Analysis). Results indicate that the proposed change is unlikely to injure the Tax Lot 1001 Well.

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: Well 2 (**PROP 452**) is closer to West Fork Palmer Creek than the authorized POA (**YAMH 5465/54677**). The closer proximity to the creek will increase interference.

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: West Fork Palmer Creek ☒ Minimal ☐ Significant

Provide context for minimal/significant impact: Although somewhat closer to West Fork Palmer Creek, the percentage increase in interference from Well 2 (**PROP 452)** should be minimal due to the ~100 ft thick layer of fine-grained sediment (Gannett and Caldwell, 1998) underlying the creek which will diffuse depletion from groundwater pumping over a broad area and span of time.

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-14308 and Claim GR-1645, T-14293 and Certificate 80155

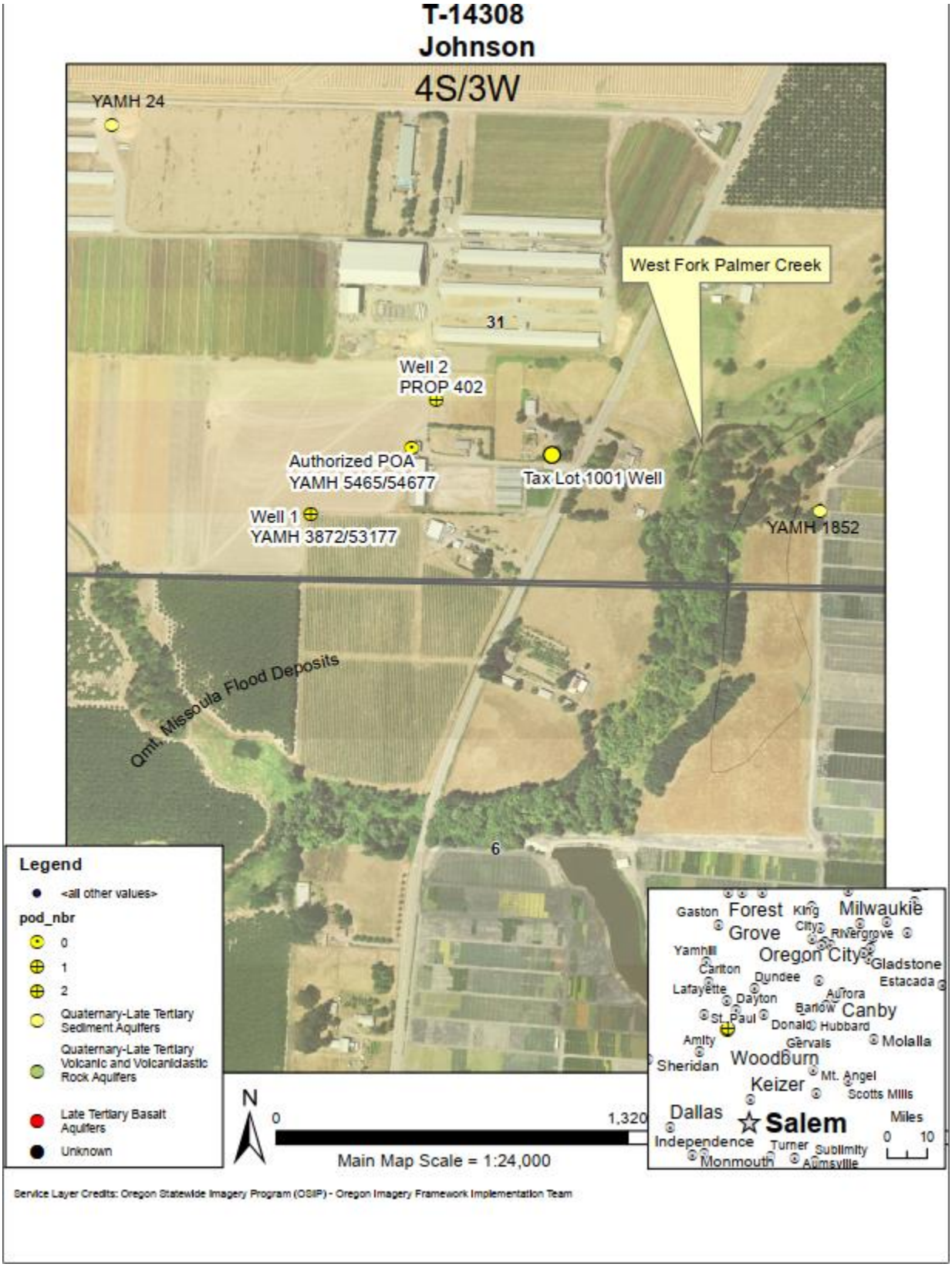
Pumping Test Reports: YAMH 65, 65, 125, 712, 712, 5370, 5447, 5475, 5954, 6395, 6397, 6409, 6426, 6439, 6439, 6820

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.

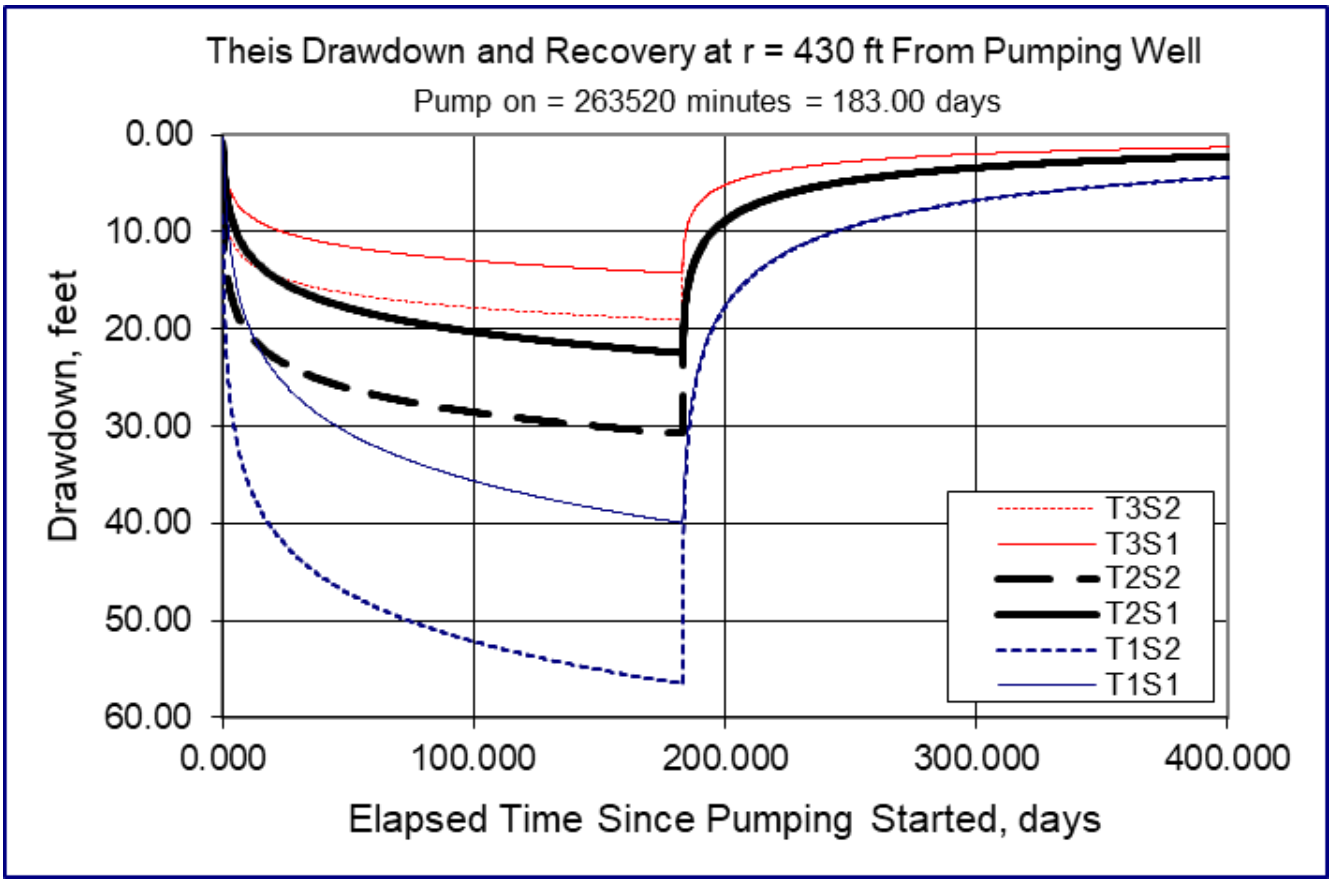
Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington, Professional Paper 1424-A, 32 p: U. S. Geological Survey, Reston, VA.

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.

Well Location Map



Theis (1935) Interference Analysis – Well 2 Interference with Tax Lot 1001 Well



Total pumping time, t = 245 days [full season of irrigation right]

Radial distance, r = 430 ft [approximate distance from proposed Well 2 to presumed location of Tax Lot 1001 Well]

Pumping rate, Q=0.366 cfs [maximum combined rate, this transfer and T-14293/Certificate 80155]

Transmissivity: T1=350 ft^2/day; T2=700 ft^2/day; T3=1200 ft^2/day [Pumping Test Reports]

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