

# Groundwater Transfer Review Summary Form

Transfer/PA # T- 13361

GW Reviewer Karl Wozniak Date Review Completed: 04/02/2020

## Summary of Enlargement (Same Source) Review:

☐ The proposed transfer fails to keep the original place of use from receiving water from the same source.

## 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.

## Summary of 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-13361

Applicant Name: Osprey Corner, LLC

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

Reviewer(s): Karl Wozniak

Date of Review: 04/02/2020

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 4/10/20

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 application modifies GR-1260 which claims the use of one POA (MARI 16286) at a maximum rate of 0.4456 cfs (200 gpm) for primary irrigation of 19.0 acres. The application proposes changes to the place of use (not evaluated in this review) and to add two new POAs:
- North Well (MARI 16285; also listed as the sole POA on GR-2193) and
  - South Well (MARI 65448).
- This application is related to T-13360 and T-13362 which all propose adding the same APOAs to adjacent GR claims.
- The application notes that GR-2193 appears to have referenced the well and POU locations by incorrectly assuming that the NE corner of Section 14 was at the NW corner of Weddle Road and that the north-south portion of Weddle Road was the section line between sections 13 and 14. We agree that this is true based on a review of information in file GR-2193 and the associated registration statement. The well locations on the enclosed map reflects the best known locations of the authorized POA and the proposed POA.
2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?  
☒ Yes ☐ No Comments: All of the wells produce from the Holocene floodplain aquifer of the Santiam River.
3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?  
☐ Yes ☒ No \_\_\_\_\_

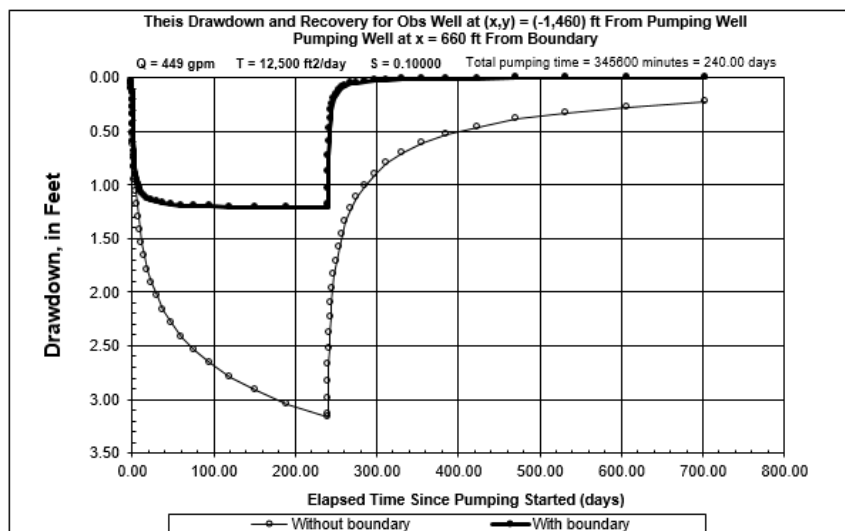
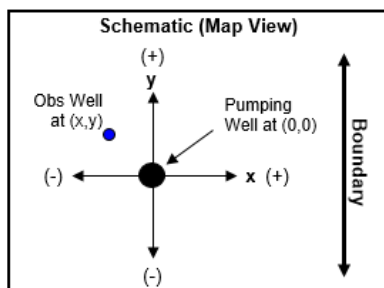
b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.): \_\_\_\_\_

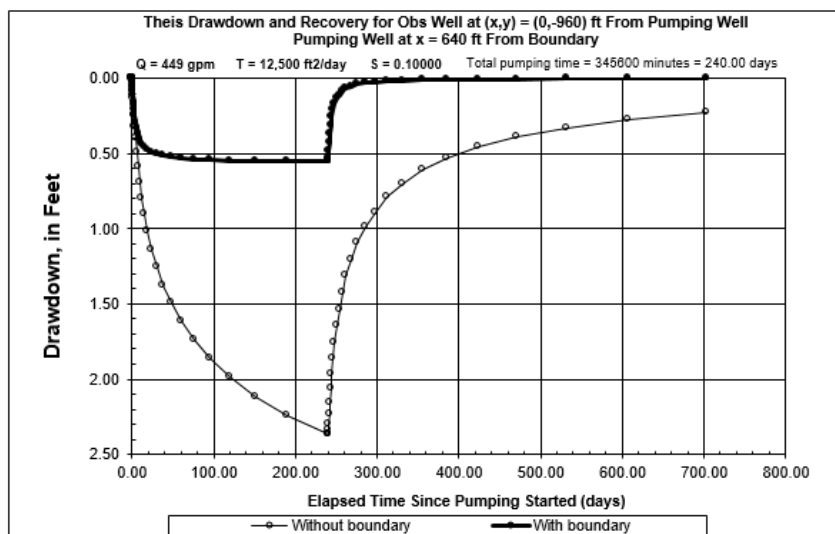
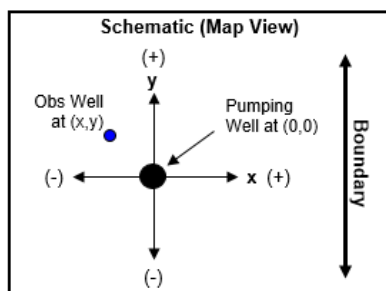
4. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?

☒ Yes ☐ No Comments: The proposed APOAs will be closer than the authorized POA to several nearby wells listed on claim GR-207 (MARI 16288, MARI 16287, and MARI 16289). This will result in more hydraulic interference at these adjacent wells (although all are also owned by Osprey Corner, LLC).

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: APOA MARI 65448 is about 460 feet from MARI 16288 (the nearest well on another water right) and about 660 feet from the river. APOA MARI 16285 is about 960 feet from MARI 16288 and about 640 feet from the river. Although the floodplain aquifer is relatively thin (saturated thickness appears to be 25-35 feet), the aquifer is unconfined and hydraulic conductivity is likely to be high (probably no less than 500 ft/day). In addition, the river is expected to approximate a fully penetrating stream which should buffer hydraulic impacts to nearby wells. Using conservative hydraulic parameters (saturated thickness = 25 feet,  $K = 500$  ft/day, and  $S = 0.1$ ), a Theis interference model (Theis (1935) with a stream boundary (Lohman, 1972) indicates a maximum interference (after 240 days of continuous pumping) of about 1.2 feet at MARI 16288 for each cfs pumped from MARI 65448. The well log for MARI 65448 indicates a maximum pumping capacity of 500 gpm (1.1141 cfs) at the time the well was drilled in 2014. This suggests that the well is unlikely to produce much more than 1 cfs as a new POA on this claim. Similarly, modeled impacts to MARI 16288 from the pumping of APOA MARI 16285 are about 0.55 feet per cfs pumped after 240 days of continuous pumping. The well log for MARI 16288 indicates a maximum pumping capacity of 300 gpm (0.6684 cfs) at the time the well was drilled in 1955. These results indicate that the combined interference from both wells is likely to be no more than 1.7 feet during the irrigation season ( $1.1141 \text{ cfs} * 1.2 \text{ ft/cfs} + 0.6684 \text{ cfs} * 0.55 \text{ ft/cfs} = 1.7 \text{ feet}$ ), which is only a small fraction of the saturated thickness of the aquifer. Wells at greater distances will see even less interference.





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 Santiam River, because of its close proximity, is expected to be the only surface water source that is impacted by any of the wells.

- 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: \_\_\_\_\_

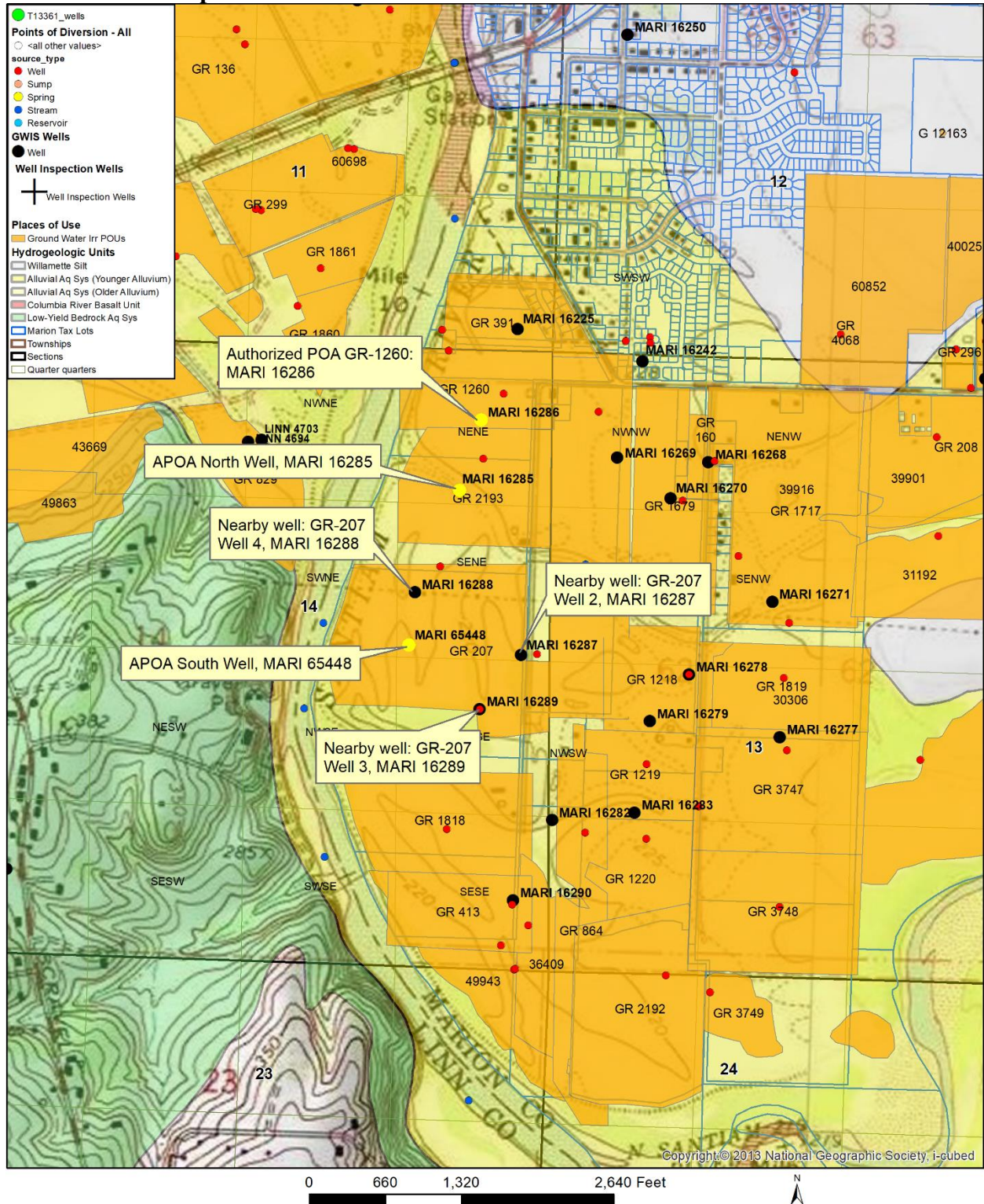
6. For SW-GW transfers, will the proposed change in point of diversion affect the surface water source similarly to the authorized point of diversion specified in the water use subject to transfer?

☐ Yes    ☐ No    Comments: \_\_\_\_\_

7. What conditions or other changes in the application are necessary to address any potential issues identified above: \_\_\_\_\_

8. Any additional comments: \_\_\_\_\_

## Well Location Map





**Selected References**

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.

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

Helm, D.C., and Leonard, A.R., 1977, Ground-water resources of the lower Santiam River basin, middle Willamette Valley, Oregon: Oregon Water Resources Department Ground-Water Report No. 25.

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O'Connor, J.E., Sarna-Wojcicki, A., Wozniak, K.C., Polette, D.J., and Fleck, R.J., 2001: U.S. Geological Survey Professional Paper 1620.

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground-water storage: American Geophysical Union transactions, v. 16, p. 519-524.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.