

Groundwater Transfer Review Summary Form

Transfer/PA # T- 13869

GW Reviewer Joe Kemper Date Review Completed: 5/24/2023

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-13869

Applicant Name: Highland Subdivision Water District

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

Reviewer(s): Joe Kemper

Date of Review: 5/24/2023

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 8/3/23

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: Certificate 91467 authorizes 0.4456 cfs (200 gpm) of Domestic Expanded use from one POA (CROO 546). This transfer proposes two APOAs (CROO 199 and CROO 2365) and to change the character of use to quasi-municipal.
2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
 - Yes No Comments: CROO 546 (current valid POA) is drilled to 450 feet and produces groundwater from unconsolidated sediment, likely Quaternary-aged alluvium deposited by the Crooked River. CROO 546 is located 350-feet from the Crooked River; the only reported water level in the well is coincident with the elevation of the river. Both APOAs are located ~1.5 miles east of CROO 546 in the Juniper Canyon area. CROO 199 is drilled to 250 feet and produces groundwater from tuffaceous sedimentary rocks at depth (Tmos of McClaughry and Ferns, 2007). CROO 2365 is drilled to 290 feet and also accesses groundwater hosted within Tmos. Groundwater levels in both APOAs are several hundred feet higher than the valid POA (see hydrograph below). Considering the different geologic material and water level elevations, the proposed APOAs would produce from a different source than the current POA.
3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
 - Yes No CROO 546 (current valid POA) appears to produce only from alluvium.
 - 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.): NA

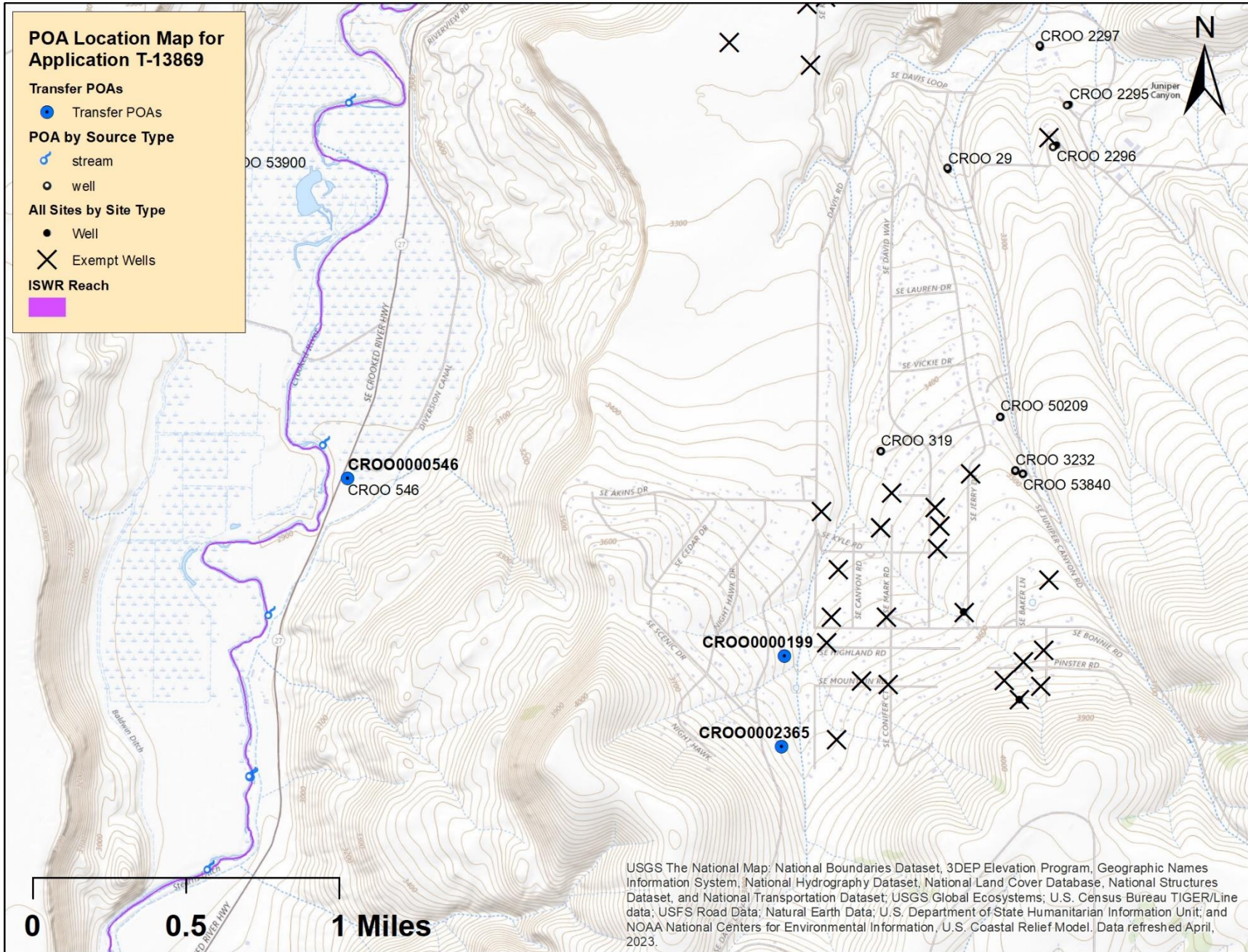
4. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?
 Yes No Comments: APOA CROO 199 is approximately 800 feet from exempt well CROO 54512 and APOA CROO 2365 is approximately 950 feet from exempt well CROO 54207. Moving production to these wells would likely result in some well-to-well interference with
- 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: Maximum well-to-well interference was estimated with a Theis distance drawdown model using the sum of maximum yields for both APOAs with year round use. Considering that the target aquifer for these wells has a saturated thickness of at least 300 feet (based on the well log for 54512), well-to-well interference that results from the proposed transfer would not likely result in injury to existing senior groundwater rights.
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: CROO 546 pumpage likely produces predominately from streamflow capture or induced infiltration from the adjacent Crooked River. The groundwater system targeted by the APOAs does not appear to be a significant source of discharge to adjacent streams. By moving production from CROO 546 to the APOAs, stream depletion would likely be reduced.
- 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: NA
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: NA
7. What conditions or other changes in the application are necessary to address any potential issues identified above: _____
8. Any additional comments: _____

References

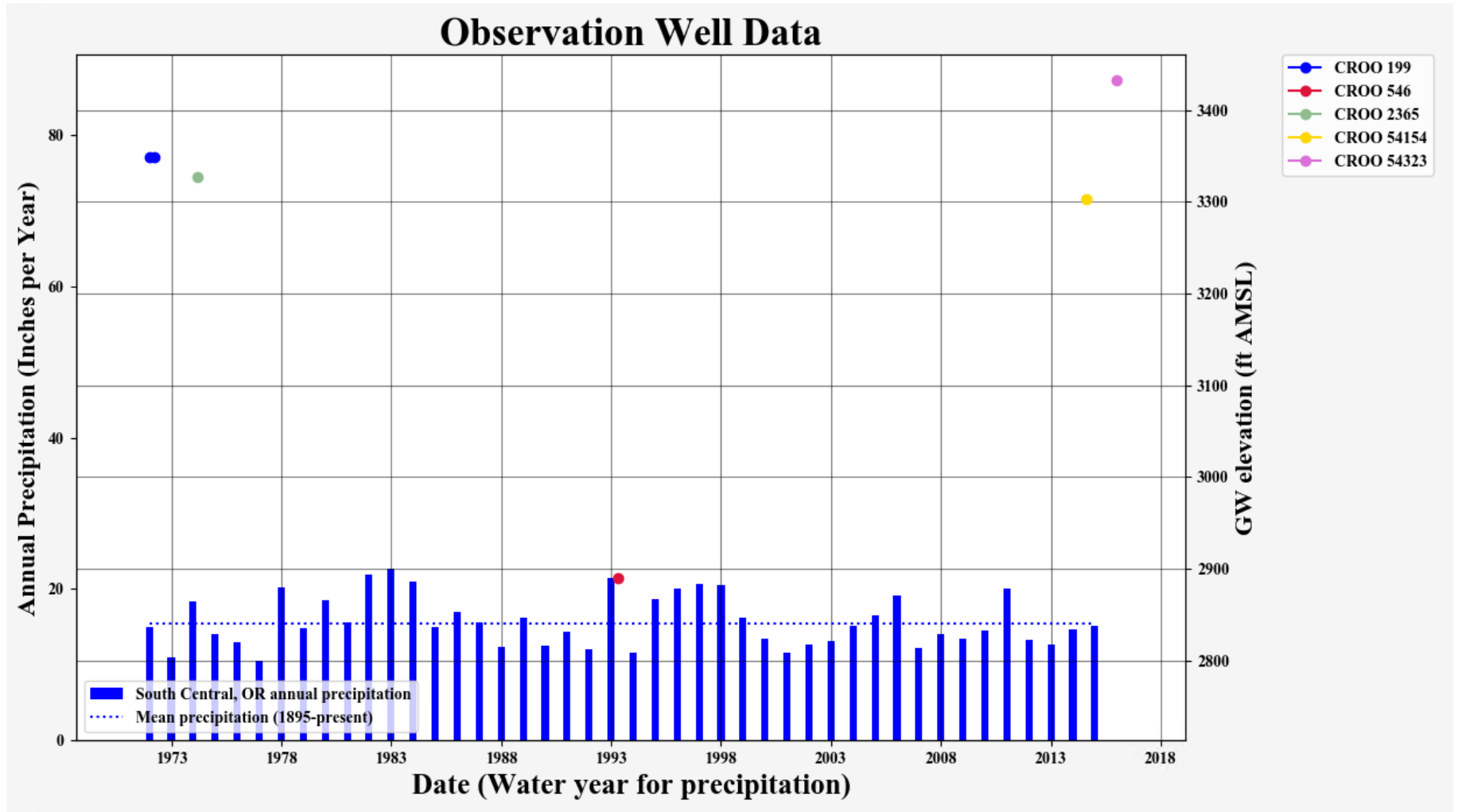
McClaughry, J.D., and Ferns, M.L., 2007, Preliminary geologic map of the Stearns Butte 7.5' quadrangle, Crook County, Oregon: Oregon Department of Geology and Mineral Industries, Open-File Report O-07-12, scale 1:24,000

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, Am. Geophys. Union Trans., vol. 16, pp. 519-524.

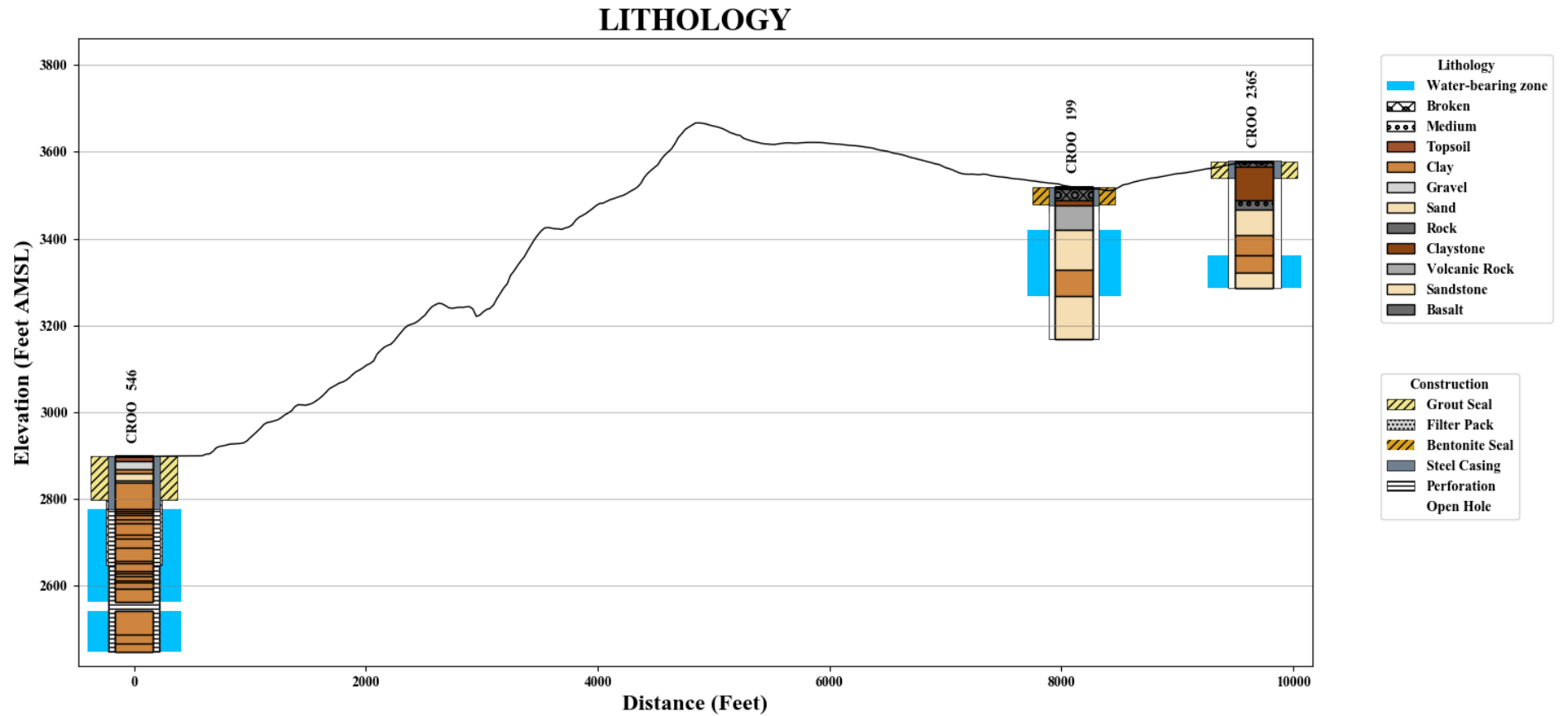
Transfer Map



Groundwater Level Data



Cross Section of Well Construction



Theis (1935) Distance Drawdown Modeling

Theis Time-Drawdown Worksheet v.5.00

Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and 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 17, 2019

Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		365		d	
Radial distance from pumped well:	r		1000		ft	Q conversions
Pumping rate	Q		70		gpm	70.00 gpm
Hydraulic conductivity	K	0.32	1	3.2	ft/day	0.16 cfs
Aquifer thickness	b		100		ft	9.36 cfm
Storativity	S_1		0.001			13,475.94 cfd
	S_2		0.0001			0.31 af/d
Transmissivity Conversions	T_ftpd	32	100	320	ft ² /day	<input type="button" value="Recalculate"/>
	T_ft2pm	0.022222	0.069444	0.222222	ft ² /min	
	T_gpdpft	239.36	748	2393.6	gpd/ft	

Use the Recalculate button if recalculation is set to manual

