Groundwater Application Review Summary Form

Application # G- _19067_

GW Reviewer _Joe Kemper_ Date Review Completed: _6/13/2023_

Summary of GW Availability and Injury Review:

☐ Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

☒ There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

☐ The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO **_June 13, 2023_**

TO: **Application** G-**_19067_**

FROM: **GW: _Joe Kemper_**
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☒ **YES**
☐ **NO**

The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

☒ **YES**
☐ **NO**

Use the Scenic Waterway Condition (Condition 7J)

☒ Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below

☐ Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is *unable to make a Preponderance of Evidence finding.*

Exercise of this permit is calculated to reduce monthly flows in Rogue Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.083	**0.083**	**0.083**	**0.083**	**0.083**	**0.083**	**0.083**	**0.083**	**0.083**	**0.083**	**0.083**	**0.083**

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 6/13/2023
FROM: Groundwater Section Joe Kemper
Reviewer's Name
SUBJECT: Application G- **19067** Supersedes review of 8/6/2021
Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation**.

A. GENERAL INFORMATION: Applicant's Name: **Eric Valencia** County: **Jackson**

A1. Applicant(s) seek(s) 0.053 cfs from 1 well(s) in the Rogue Basin, Middle Rogue subbasin

A2. Proposed use Irrigation (4.25 acres) Seasonality: April 1 through October 31

A3. Well and aquifer data **(attach and number logs for existing wells; mark proposed wells as such under logid)**:

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	JACK 62687	1	Bedrock	0.053	36S/1W-28 NE-SW	649' S, 2035' E fr W 1/4 cor S 28
2						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	1348	75	8	8/16/2016	205	0-19	+1-19	5-205	165-205	22	-	Air

Use data from application for proposed wells.

A4. **Comments:**

A5. ☒ **Provisions of the** OAR 690-515 Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water ☐ **are**, *or* ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
Comments: The Rogue Basin contains no such provisions.

A6. ☐ **Well(s) #** _____ , _____ , _____ , _____ , _____ , tap(s) an aquifer limited by an administrative restriction.
Name of administrative area:
Comments:

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

a. ☐ **is** over appropriated, ☒ **is not** over appropriated, *or* ☐ **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;

b. ☐ **will not** *or* ☐ **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;

c. ☐ **will not** *or* ☐ **will** likely to be available within the capacity of the groundwater resource; or

d. ☒ **will, if properly conditioned**, avoid injury to existing groundwater rights or to the groundwater resource:

i. ☒ The permit should contain condition #(s) **7C (7-yr SWL); 7J (Scenic); Medium Water-use Reporting**;

ii. ☐ The permit should be conditioned as indicated in item 2 below.

iii. ☐ The permit should contain special condition(s) as indicated in item 3 below;

B2. a. ☐ **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;

b. ☐ **Condition** to allow groundwater production from no shallower than _____ ft. below land surface;

c. ☐ **Condition** to allow groundwater production only from the _____ groundwater reservoir between approximately _____ ft. and _____ ft. below land surface;

d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Groundwater availability remarks:** The applicant's well accesses an aquifer hosted in secondary fractures and joints of the Payne Cliffs Formation. Wells in the vicinity have low-moderate yields (median yield = 22 gpm) and are shallow (>50 % are less than 100-feet deep). Several OWRD observation wells located in the lowlands northeast of Medford show seasonal water level fluctuations of 10-20 feet but there is little year-to-year change. While there are no observation wells immediately adjacent to the applicant's well, its assumed that similar hydrologic conditions exist. As such, there is not a preponderance of evidence that the target aquifer is over-appropriated.

There are several adjacent tax lots that are likely supplied by exempt use water use wells and JACK 6382 under certificate 57119, which will likely be impacted by the requested use. Considering the relatively low requested rate/volume and the distance between the applicant's well and the adjacent developed properties, resulting well-to-well interference is not likely to prevent adjacent well owners from accessing their customary amount of water.

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	**Fractured Bedrock of Payne Cliffs Formation**	☐	☒
		☐	☐

Basis for aquifer confinement evaluation: In fractured-bedrock aquifer systems, water is stored and transmitted primarily by discrete but connected fracture sets. These fractures generally extend to near the surface, so water within these fractures is likely under atmospheric pressure (unconfined) despite an overall low storage coefficient for the aquifer system as a whole and static water levels often reported above water-bearing zones on driller's logs.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Whetstone Creek**	**1340**	**1342**	**950**	☐	☐	☒	☒	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: As per OAR 690-009, a well accessing an unconfined aquifer located within ¼ mile of a surface water source is automatically assumed to be hydraulically connected to that surface water source. Additionally, groundwater levels are coincident with surface water elevations within ¼ mile of the applicant's well indicating that groundwater is in hydraulic connection with surface water.

Water Availability Basin the well is located within: ROGUE R > PACIFIC OCEAN - AB CURRY G AT GAGE 14359000

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	**1**	☒	☐	**MF270A**	**1200**	☐	**1130**	☐	**>25**	☒
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Impacts to Whetstone Creek are estimated using the Hunt (1999) stream depletion mode using parameters representative of bulk aquifer properties.

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: Streams beyond 1 mile were not evaluated for PSI.

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

C5. ☐ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:

i. ☐ The permit should contain condition #(s)_____;

ii. ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** The applicant's well accesses an unconfined aquifer and is located within ¼ mile of Whetstone Creek. As per OAR 690-009, the applicant's well is automatically assumed to be hydraulically connected to Whetstone Creek and to have the Potential for Substantial Interference (PSI) with Whetstone Creek. Analytical modeling indicates that stream depletion would be greater than 25% after 30 days of use, which also results in a finding of PSI as per OAR 690-009.

References Used:

Hunt, B. 1999. Unsteady Stream Depletion from Ground Water Pumping. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

OWRD Groundwater Information System Database – Accessed 8/6/2021.

Wiley, T.J., McClaughry, J.D., and D'Allura, J., 2011, Geologic database and generalized geologic map of Bear Creek Valley, Jackson County, Oregon: Oregon Department of Geology and Mineral Industries, Open-File Report O-2011-11, scale 1:24,000

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

a. ☐ review of the well log;

b. ☐ field inspection by _____;

c. ☐ report of CWRE _____;

d. ☐ other: (specify) _____

_____

D3. **THE WELL construction deficiency or other comment is described as follows:** _____

_____

_____

_____

_____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

Water Availability Analysis
Detailed Reports

ROGUE R > PACIFIC OCEAN - AB CURRY G AT GAGE 14359000
ROGUE BASIN

Water Availability as of 8/6/2021

Watershed ID #: 270 (Map) Exceedance Level: 80%
Date: 8/6/2021 Time: 12:48 PM

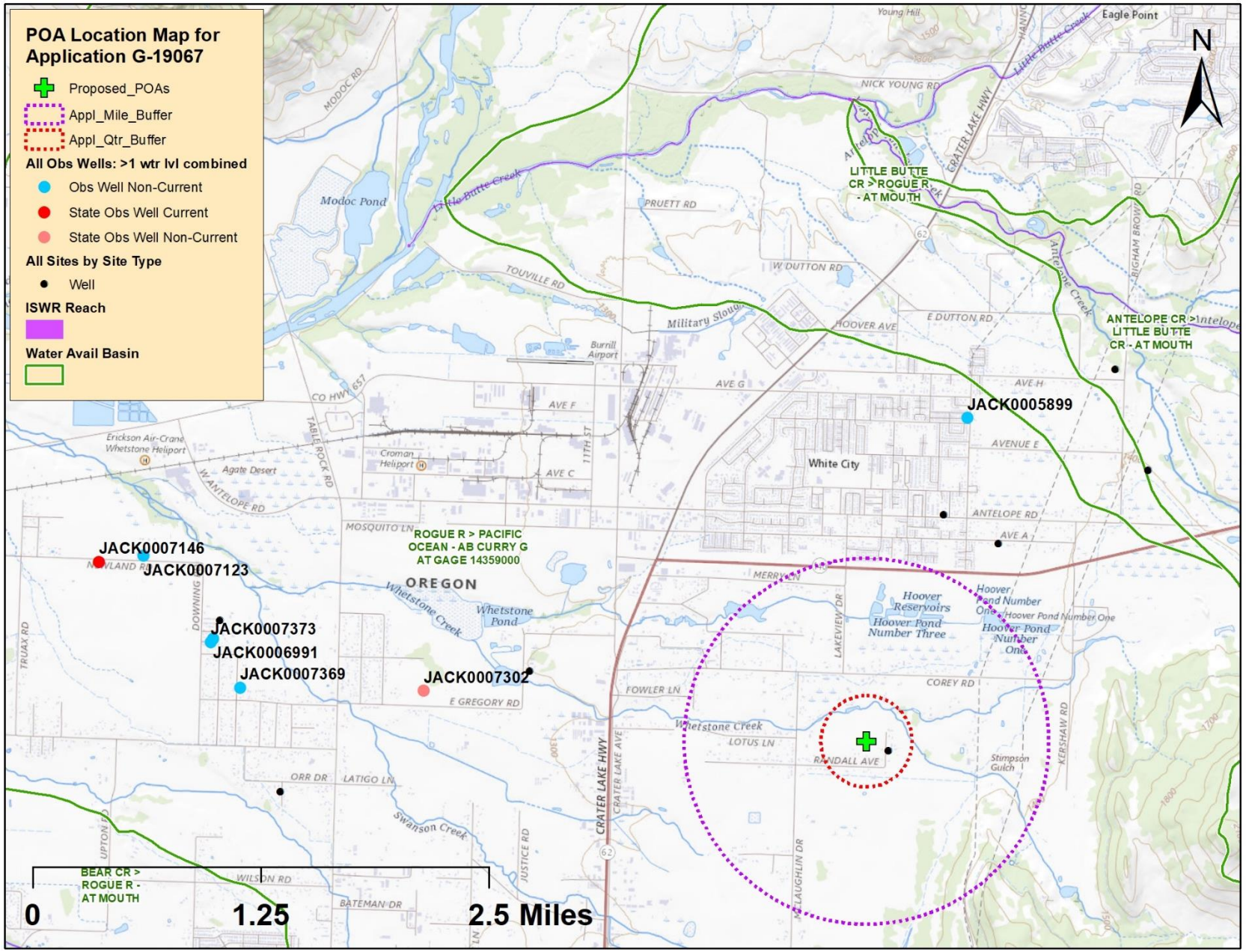
Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations
Water Rights | Watershed Characteristics

Water Availability Calculation

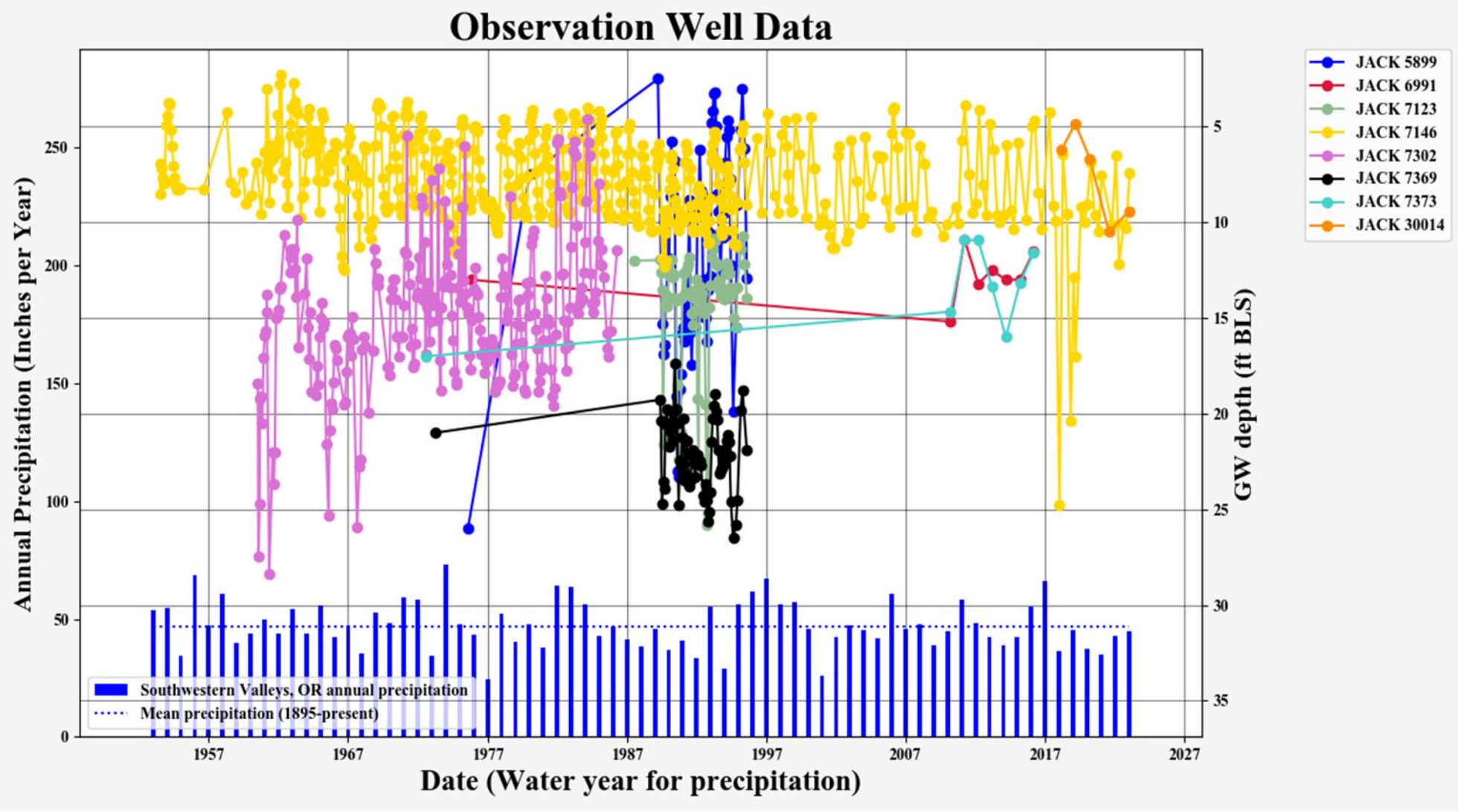
Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	2,180.00	1,130.00	1,050.00	0.00	1,200.00	-149.00
FEB	2,710.00	2,050.00	664.00	0.00	1,200.00	-536.00
MAR	2,750.00	1,820.00	932.00	0.00	1,200.00	-268.00
APR	2,810.00	1,040.00	1,770.00	0.00	1,200.00	573.00
MAY	2,750.00	368.00	2,380.00	0.00	1,200.00	1,180.00
JUN	1,760.00	344.00	1,420.00	0.00	1,200.00	216.00
JUL	1,330.00	369.00	961.00	0.00	1,200.00	-239.00
AUG	1,160.00	331.00	829.00	0.00	1,200.00	-371.00
SEP	1,130.00	276.00	854.00	0.00	1,200.00	-346.00
OCT	1,160.00	228.00	932.00	0.00	1,200.00	-268.00
NOV	1,370.00	345.00	1,020.00	0.00	1,200.00	-175.00
DEC	1,810.00	563.00	1,250.00	0.00	1,200.00	47.40
ANN	1,900,000.00	529,000.00	1,370,000.00	0.00	869,000.00	532,000.00

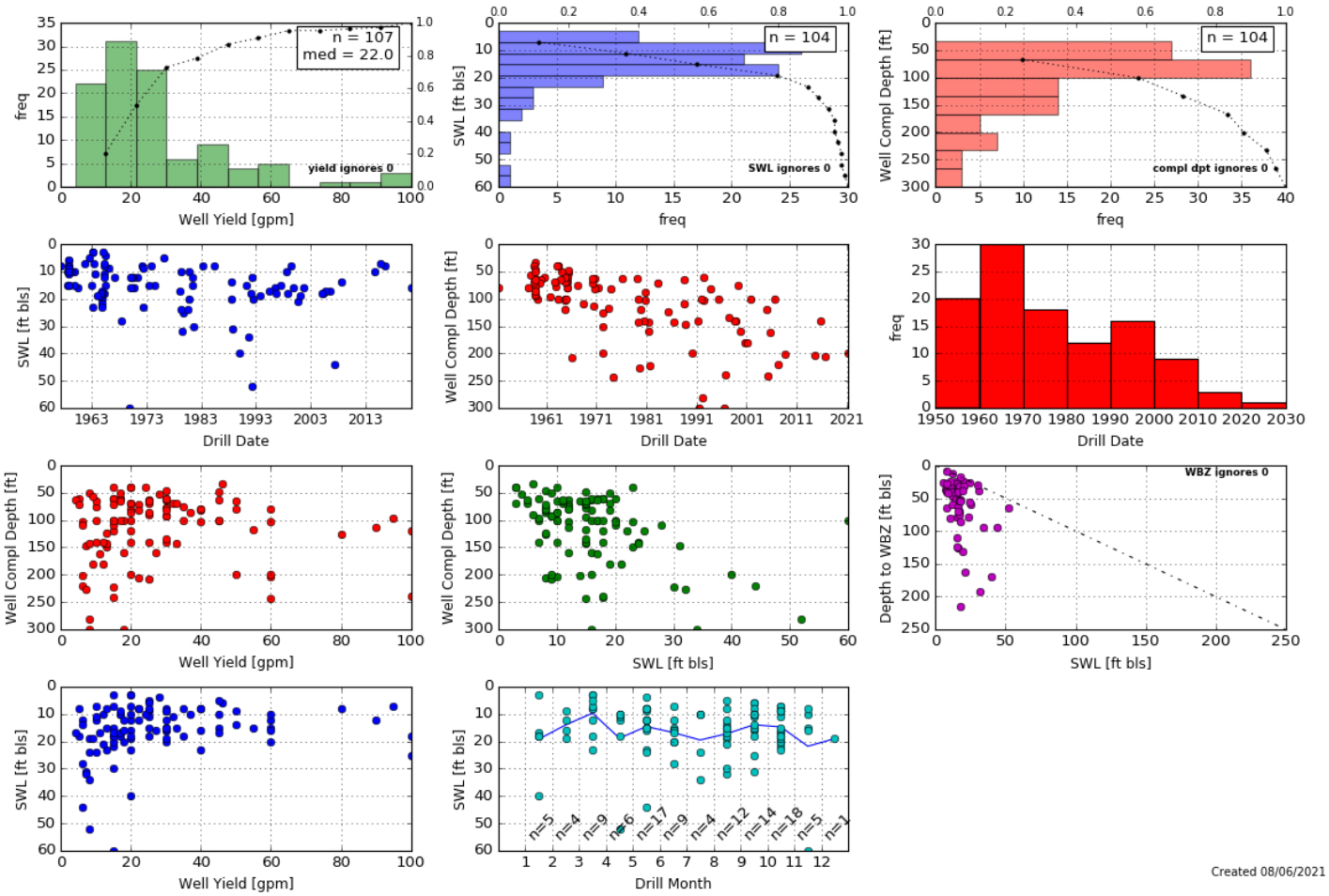
Well Location Map



Water-Level Measurements in Nearby Wells



Summary Statistics for Wells in TRS 36S/1W-28



Stream Depletion Modeling Parameters and Results

Application type:	G
Application number:	19067
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.053
Pumping duration (days):	211
Pumping start month number (3=March)	4

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	950	950	950	ft
Aquifer transmissivity	T	100	320	1000	ft2/day
Aquifer storativity	S	0.001	0.0005	0.0001	-
Aquitard vertical hydraulic conductivity	Kva	0.01	0.05	0.1	ft/day
Not used		10.0	20.0	30.0	
Aquitard thickness below stream	babs	4.0	3.0	2.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	10	10	10	ft

Stream depletion for Scenario 2:

Days	10	300	330	360	30	60	90	120	150	180	210	240	270
Depletion (%)	33	13	10	9	51	62	68	72	74	76	78	28	18
Depletion (cfs)	0.02	0.01	0.01	0.00	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.01	0.01