

Groundwater Application Review Summary Form

Application # G- 19250

GW Reviewer Joe Kemper Date Review Completed: 4/4/2022

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

April 4, 2022

TO: **Application G- 19250**

FROM: **GW: Joe Kemper**
 (Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic
 NO 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 April 4, 2022
 FROM: Groundwater Section Joe Kemper
Reviewer's Name
 SUBJECT: Application G- 19250 Supersedes review of NA
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: Rob Wallace, Del Rio Vineyards County: Jackson

A1. Applicant(s) seek(s) 1.85 cfs from 1 well(s) in the Rogue Basin,
Middle Rogue subbasin

A2. Proposed use Supplemental Irrig. (147.9 ac) Seasonality: April 1 to 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	Proposed	1	Bedrock	1.85	36S/2W-11 SW-NE	1703' N, 1335' W fr NE cor DLC 42
2						
3						
4						

* 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	1212	NA	NA	NA	500	0-200	0-200, 200-500	NA	NA	NA	NA	NA

Use data from application for proposed wells.

A4. **Comments:** Proposed use would be supplemental to use under Certificate 92936. Well construction details are proposed. The application indicates "basalt" as the target aquifer.

A5. **Provisions of the** Rogue 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 rules contain 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, 7J, large 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 Payne Cliffs Formation 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:** Based on the proposed location/construction and best available geologic mapping, the applicant’s well would be cased and sealed through 5-30 feet of Quaternary-aged sediment and then access a fractured-rock aquifer hosted in secondary porosity of the Payne Cliffs Formation (Wiley et al 2011). There are no OWRD observation wells constructed in the target aquifer within several miles, so over-appropriation cannot be determined. Well reports filed in adjacent TRS 36S/2W sections 10, 11, and 12 show that 1) water levels are predominately shallow (median reported SWL = 15 ft bls), 2) well yields typically decrease beyond depths of ~200 feet bls), and 3) well yields are predominately low (median yield = 8 gpm, 13% with yield > 20 gpm). The requested rate of 1.85 cfs or 830 gpm is much greater than any well accessing the target aquifer. Because of the yield-decrease with depth and the relatively low permeability and storativity, constructing a deep, larger-diameter well is not expected to substantially increase well yield beyond what has been observed.

Adjacent tax lots to the west are likely supplied by exempt-use domestic wells, which may experience well-to-well interference from the proposed use. Theis (1935) distance drawdown modeling indicates that the proposed use would cause 75 to 700 feet of seasonal drawdown in the closest wells (tax lots 400 and 600). These results indicate that 1) the requested rate/volume exceeds the capacity of the aquifer and 2) that a well field of many lower yield wells adding to the requested rate/volume would very likely injure adjacent water users. Because these exempt-use wells produce water from a fractured rock aquifer, they are not required to fully penetrate the aquifer to satisfy the conditions of Substantial or Undue Interference (SUI). As such, the proposed use would likely injure adjacent groundwater users. Because of the magnitude of expected well-to-well interference and the high requested rate, the proposed use is found to be not within the capacity of the resource.

Note: If the application is later amended and approved, the above conditions should be applied to the permit.

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	Fracture Rock of Payne Cliffs Formation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

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?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Rogue River	1180-1200	1180	6225	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Snider Creek	1180-1200	1180	8680	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Groundwater elevations in the target aquifer are coincident with adjacent surface water sources without an extensive confining unit, indicating that groundwater can flow between the aquifer and the surface water.

Water Availability Basin the well(s) are located within: ROGUE R > PACIFIC OCEAN - AB CURRY G AT GAGE 14359000; impacts also considered for SNIDER CR > ROGUE R - AT MOUTH

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?
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

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?
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: There are no hydraulically connected naturally occurring surface water sources within 1 mile of the applicant’s well. There are multiple adjacent surface water bodies that have been diverted to within 1 mile (e.g. Modoc Lakes and Table Rock canal), but these are no longer considered waters of the state because their course has been altered.

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
1	1	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
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: Stream depletion of the Rogue River and Snider Creek are not quantified here primarily because the hydrogeologic setting does not sufficiently meet the assumptions of regularly used analytical stream depletion models. Additionally, groundwater pumpage would primarily impact the Rogue River, but the pertinent adopted minimum streamflow is much greater than the requested rate i.e. 100% stream depletion would not result in a finding of PSI. Groundwater pumpage would likely have some impact on Snider Creek, but the complex hydrogeology and presence of multiple streams make it difficult to reliably estimate

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 targets an aquifer that is found to be hydraulically connected to the Rogue River, but there is not a preponderance of evidence that the proposed use has the Potential for Substantial Interference (PSI) as per OAR 690-009.

References Used:

Hunt, B. 1999. Unsteady stream depletion from ground water pumping. Ground Water 37, no. 1: 98–102.

OWRD Groundwater Site Information System Database – Accessed 3/31/2022.

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.

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 3/31/2022

Watershed ID #: 270 ([Map](#))
 Date: 3/31/2022

Exceedance Level: 80% ▾
 Time: 12:21 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	663.00	0.00	1,200.00	-537.00
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	47.30
ANN	1,900,000.00	529,000.00	1,370,000.00	0.00	869,000.00	532,000.00

Water Availability Analysis Detailed Reports

SNIDER CR > ROGUE R - AT MOUTH
ROGUE BASIN

Water Availability as of 4/1/2022

Watershed ID #: 71626 ([Map](#))

Exceedance Level:

Date: 4/1/2022

Time: 8:08 AM

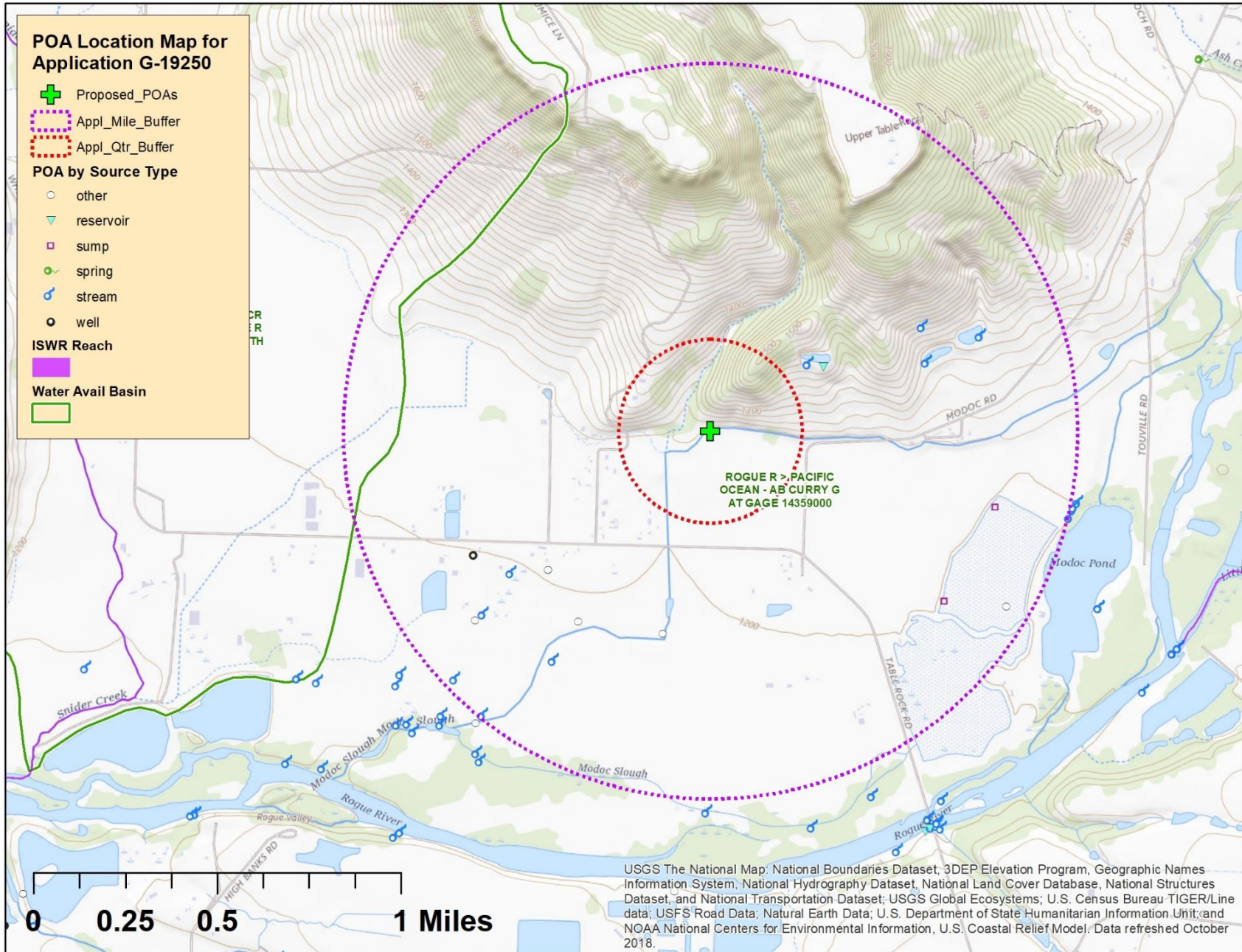
Water Availability Calculation	Consumptive Uses and Storages	Instream Flow Requirements	Reservations
Water Rights	Watershed Characteristics		

Water Availability Calculation

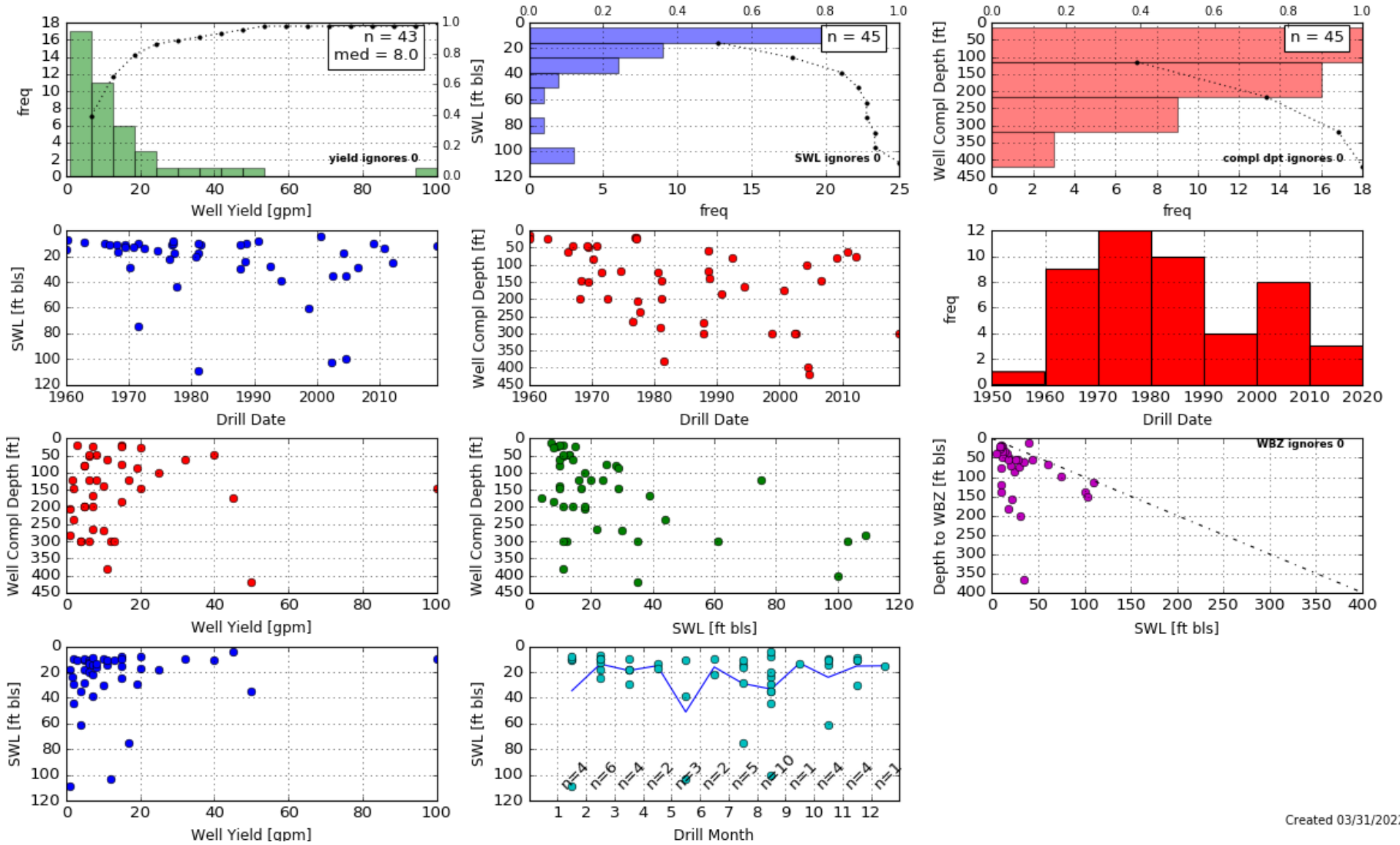
Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	8.40	1.80	6.60	0.00	26.00	-19.40
FEB	17.20	2.13	15.10	0.00	26.00	-10.90
MAR	12.40	1.39	11.00	0.00	26.00	-15.00
APR	8.61	0.51	8.10	0.00	11.80	-3.70
MAY	4.44	0.81	3.63	0.00	4.98	-1.35
JUN	2.07	1.13	0.94	0.00	4.92	-3.98
JUL	1.23	1.51	-0.28	0.00	2.58	-2.86
AUG	1.04	1.25	-0.21	0.00	1.60	-1.81
SEP	0.94	0.83	0.12	0.00	0.96	-0.84
OCT	0.90	0.27	0.63	0.00	1.00	-0.37
NOV	1.01	0.18	0.83	0.00	2.55	-1.72
DEC	4.33	0.91	3.42	0.00	14.70	-11.30
ANN	7,760.00	768.00	6,990.00	0.00	7,390.00	351.00

Well Location Map



Summary Statistics of Well Reports filed in TRS 36S/2W Sections 10, 11, 12



Created 03/31/2022

Theis Distance Drawdown Modeling

147.9 acres at 2.5 foot duty = 369.75 AF; Rate = 1.85 cfs; Time = 100.8 days to pump the requested volume at the requested rate
 Distance = 1350 feet

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		100		d	
Radial distance from pumped well:	r		1350		ft	Q conversions
Pumping rate	Q		1.85		cfs	830.28 gpm
Hydraulic conductivity	K	1	3.2	10	ft/day	1.85 cfs
Aquifer thickness	b		100		ft	111.00 cfm
Storativity	S 1		0.0005			159,840.00 cfd
	S 2		0.00005			3.67 af/d
Transmissivity Conversions	T f2pd	100	320	1000	ft ² /day	<input type="button" value="Recalculate"/>
	T ft2pm	0.06944444	0.22222222	0.69444444	ft ² /min	
	T_gpdpft	748	2393.6	7480	gpd/ft	

