

Groundwater Application Review Summary Form

Application # G- 18975

GW Reviewer Jen Woody Date Review Completed: 6/25/2020

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 25, 2020

TO: Application G- 18975

FROM: GW: Jen Woody
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries
 NO

YES Use the Scenic Waterway Condition (Condition 7J)
 NO

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 _____ 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

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 6/25/2020
 FROM: Groundwater Section Jen Woody Reviewer's Name
 SUBJECT: Application G- 18975 Supersedes review of n/a Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAD 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: Leon and Terri Eichler County: Yamhill

A1. Applicant(s) seek(s) 1.47 cfs from 2 well(s) in the Willamette Basin,
South Yamhill River subbasin

A2. Proposed use Irrigation of 117.5 acres Seasonality: March 1-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	Alluvial	1.47	5S/4W-18 SE ¼ SW ¼	1250' N, 2100' E fr SW cor S18
2	proposed	2	Alluvial	1.47	5S/4W-19 NE ¼ NW ¼	500'S, 1770'E fr NW cor S 19
3						
4						
5						

* 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	160		20*		100	0-20						
2	145		20*		100	0-20						

Use data from application for proposed wells.

A4. **Comments:** *The wells are proposed. Water level elevation estimated from nearby well logs YAMH 7033, YAMH 7035, alluvial wells with construction similar to that proposed for this project.

A5. **Provisions of the** Willamette 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 well will produce from a confined aquifer so the pertinent rules (OAR 690-502-0240) do not apply.

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.

Name of administrative area: n/a

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) 7N, 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 alluvial 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 proposed wells will access an alluvial aquifer composed of sand and gravel beds that occur at depths of 50-90 feet, located on the terrace between Salt Creek and the South Yamhill River. Aquifer thickness ranges from 10-40 feet. The aquifer is overlain by a confining layer, the Willamette Silt, which is saturated to within 5-10 feet of land surface. The alluvial aquifer is underlain by older bedrock which has low permeability and porosity.

There are 19 well logs in sections 18 and 19, T5S/R4W, including both domestic and irrigation wells. Reported well yields range from 0-200 gpm, with a median yield of 30 gpm (see Figure 5). While larger well casing diameter may increase potential well yield, it is unlikely that the total requested rate of 1.47 cfs (658 gpm) can be produced from the 2 proposed wells. The limited thickness of the aquifer will likely prevent obtaining the requested rates. **These factors indicate that the groundwater for the proposed use will not likely be available within the capacity of the resource at the requested rates. This finding can be mitigated by reducing the maximum proposed rate to 0.004 cfs, which is less than 1% of the adjacent instream water right (0.4 cfs) on Salt Creek.**

There is an irrigation POA located 500 feet west-northwest from proposed well 2 and an additional 3 certificated POAs located approximately 3000 feet away. Given the proximity, proposed rate, confined and moderate yielding characteristics of the aquifer, drawdown effects from the proposed POAs are expected to interfere with nearby senior water rights. **These factors indicate that the groundwater for the proposed use will not likely be available in the amounts requested without injury to prior groundwater rights. This finding can be mitigated by reducing the maximum proposed rate to 0.004 cfs.**

There are few nearby wells with time series groundwater level data available (see Figure 3). **The limited capacity of the aquifer and the proposed rate indicate that water-level and water-use measurement conditions (item B1di above) should be included if a permit is issued by the Department.**

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	alluvial	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	alluvial	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Approximately 40 feet of Willamette Silt overlies the target aquifer and act as a confining unit.

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	Salt Creek	130-140	120-140	2500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Salt Creek	130-140	120-140	3600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	South Yamhill River	130-140	110-120	6800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	South Yamhill River	130-140	110-120	6500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Published water table maps show that groundwater flows toward and discharges into the listed streams (Conlon, 2005).

Water Availability Basin the well(s) are located within: Watershed ID #: 73562: Salt Creek<S Yamhill River-at mouth; Watershed ID # 162: S Yamhill R> Yamhill R-AB Cozine CR will also be affected.

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	<input type="checkbox"/>	<input type="checkbox"/>	IS73562	0.4	<input checked="" type="checkbox"/>	9.76	<input checked="" type="checkbox"/>	<<25%	<input checked="" type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	IS73562	0.4	<input checked="" type="checkbox"/>	9.76	<input checked="" type="checkbox"/>	<<25%	<input checked="" type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	MF162A	15	<input type="checkbox"/>	40.3	<input type="checkbox"/>	<<25%	<input type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	MF162A	15	<input type="checkbox"/>	40.3	<input type="checkbox"/>	<<25%	<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"/>
		<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: PSI is triggered because the proposed rate is greater than 1% of the instream right on Salt Creek. The rate would need to be lowered to 0.004 cfs to overcome PSI at the proposed wells. Alternatively the proposed wells would need to be moved outside of one mile from Salt Creek.

As shown in Figure 4, stream depletion at 30 days of pumping is much less than 25% of the pumping rate.

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	
		%	%	%	%	%	%	%	%	%	%	%	%	
Distributed Wells														
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
		%	%	%	%	%	%	%	%	%	%	%	%	
		%	%	%	%	%	%	%	%	%	%	%	%	
		%	%	%	%	%	%	%	%	%	%	%	%	
		%	%	%	%	%	%	%	%	%	%	%	%	
		%	%	%	%	%	%	%	%	%	%	%	%	
(A) = Total Interf.														
(B) = 80 % Nat. Q														
(C) = 1 % Nat. Q														

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.**

Figure 1. Water Availability Tables

Water Availability Analysis
Detailed Reports

SALT CR > S YAMHILL R - AT MOUTH
 WILLAMETTE BASIN

Water Availability as of 6/22/2020

Watershed ID #: 73562 ([Map](#))

Exceedance Level: 80%

Date: 6/22/2020

Time: 12:07 PM

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	154.00	17.60	137.00	0.00	0.40	136.00
FEB	168.00	15.30	153.00	0.00	0.40	152.00
MAR	143.00	12.80	130.00	0.00	0.40	129.00
APR	75.10	5.25	69.80	0.00	0.40	69.40
MAY	43.90	6.91	37.00	0.00	0.40	36.60
JUN	27.30	14.40	12.90	0.00	0.40	12.50
JUL	18.30	17.80	0.53	0.00	0.40	0.13
AUG	12.90	14.20	-1.29	0.00	0.40	-1.69
SEP	9.76	7.14	2.62	0.00	0.40	2.22
OCT	10.00	1.18	8.84	0.00	0.40	8.44
NOV	22.40	4.30	18.10	0.00	0.40	17.70
DEC	107.00	16.20	90.80	0.00	0.40	90.40
ANN	92,900.00	8,040.00	85,000.00	0.00	290.00	84,700.0

Water Availability Analysis Detailed Reports

S YAMHILL R > YAMHILL R - AB COZINE CR WILLAMETTE BASIN

Water Availability as of 6/23/2020

Watershed ID #: 162 ([Map](#))

Exceedance Level: 80%

Date: 6/23/2020

Time: 1:23 PM

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	1,290.00	30.50	1,260.00	0.00	15.00	1,240.00
FEB	1,470.00	28.60	1,440.00	0.00	15.00	1,430.00
MAR	1,260.00	20.50	1,240.00	0.00	15.00	1,220.00
APR	764.00	15.30	749.00	0.00	15.00	734.00
MAY	378.00	24.90	353.00	0.00	15.00	338.00
JUN	171.00	44.40	127.00	0.00	15.00	112.00
JUL	79.00	66.90	12.10	0.00	15.00	-2.88
AUG	47.70	56.00	-8.27	0.00	15.00	-23.30
SEP	40.30	34.40	5.87	0.00	15.00	-9.13
OCT	53.80	9.60	44.20	0.00	15.00	29.20
NOV	363.00	15.40	348.00	0.00	15.00	333.00
DEC	1,220.00	28.60	1,190.00	0.00	15.00	1,180.00
ANN	847,000.00	22,700.00	825,000.00	0.00	10,900.00	814,000.00

Figure 2. Well Location Map

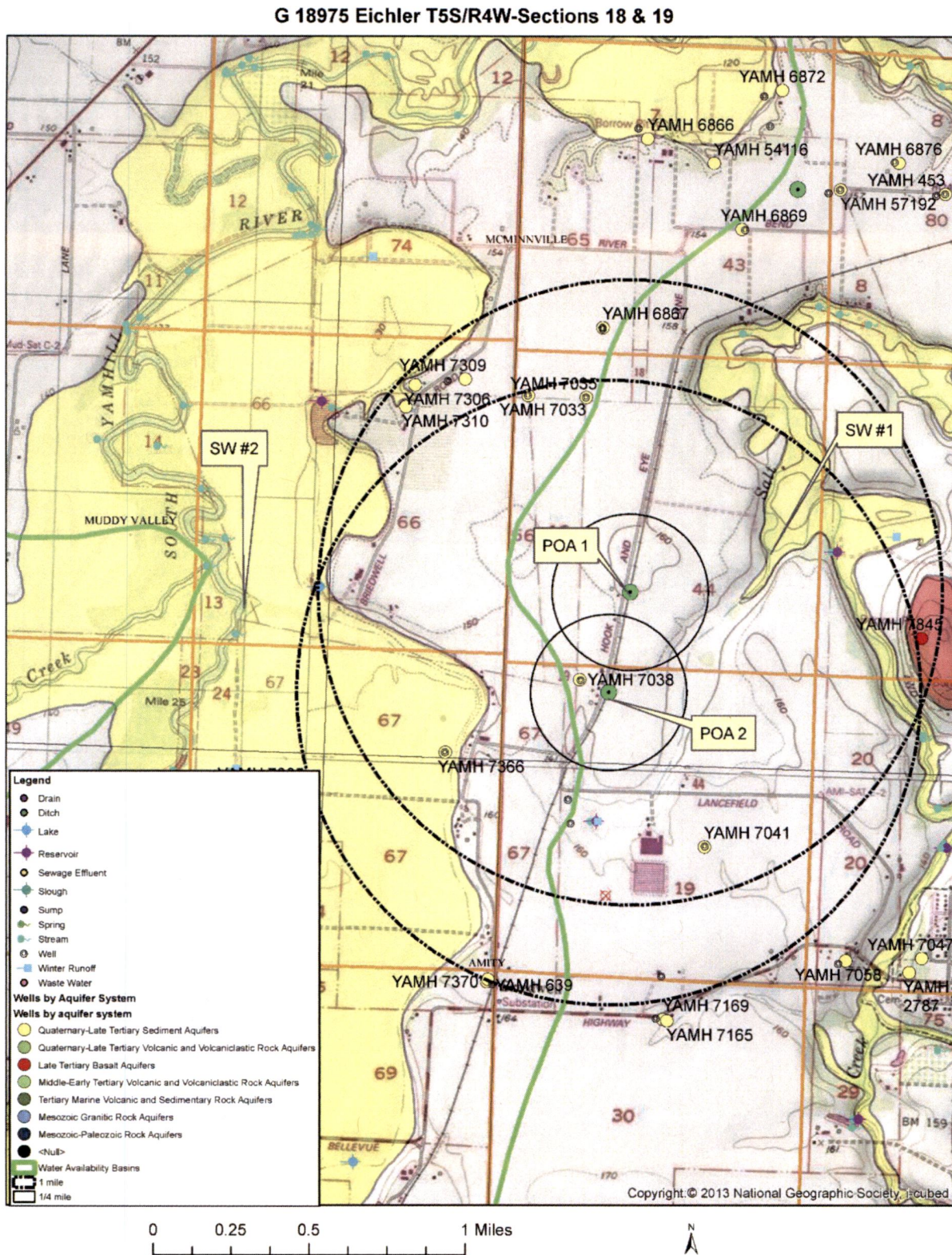


Figure 3. Water-Level Trends in Nearby Wells

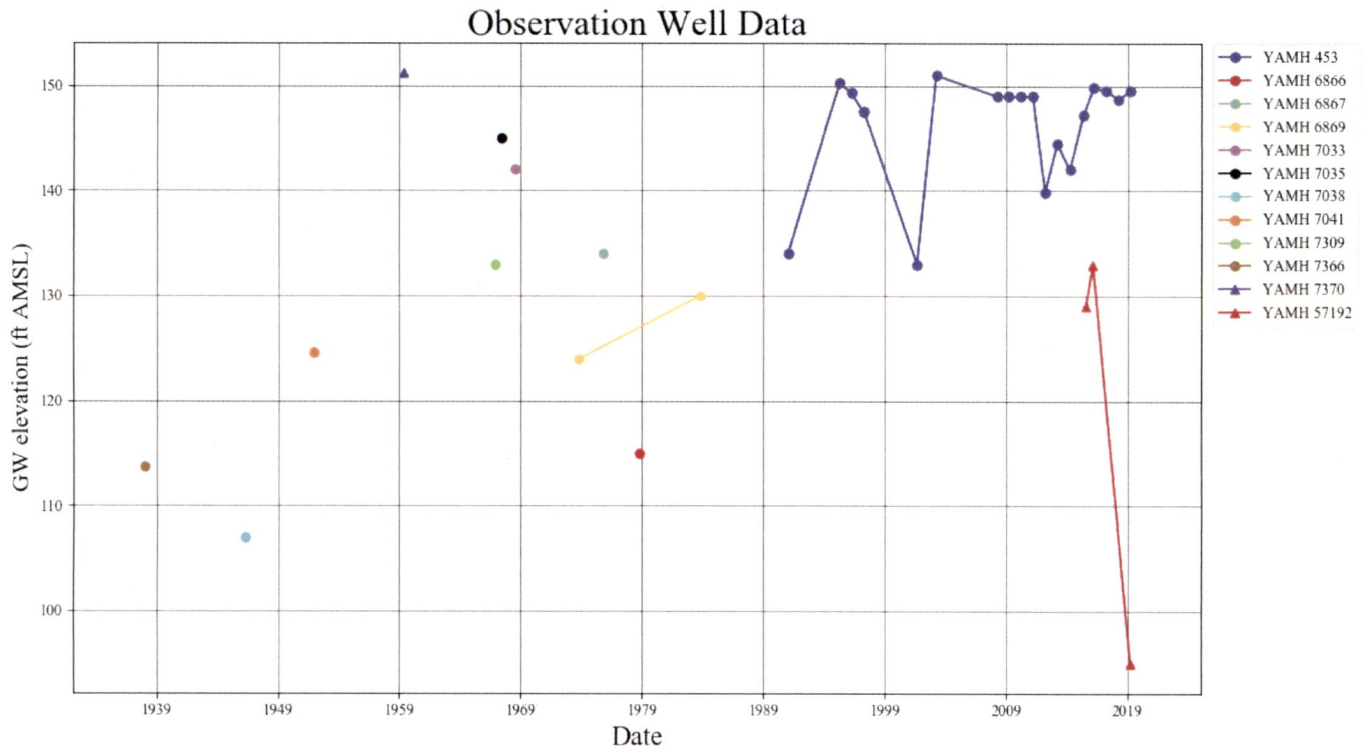


Figure 4. Stream Depletion

Application type:	G
Application number:	18975
Well number:	1
Stream Number:	1
Pumping rate (cfs):	1.47
Pumping duration (days):	244.0
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	2500	2500	2500	ft
Aquifer transmissivity	T	3000	6000	12000	ft ² /day
Aquifer storativity	S	0.0001	0.0001	0.0001	-
Aquitard vertical hydraulic conductivity	Kva	0.001	0.005	0.01	ft/day
Aquitard saturated thickness	ba	50	50	50	ft
Aquitard thickness below stream	babs	10	10	10	ft
Aquitard specific yield	Sya	0.1	0.1	0.1	-
Stream width	ws	40	40	40	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	1	0	0	1	1	1	1	1	1	1	1	0	0
Depletion (cfs)	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.00	0.00

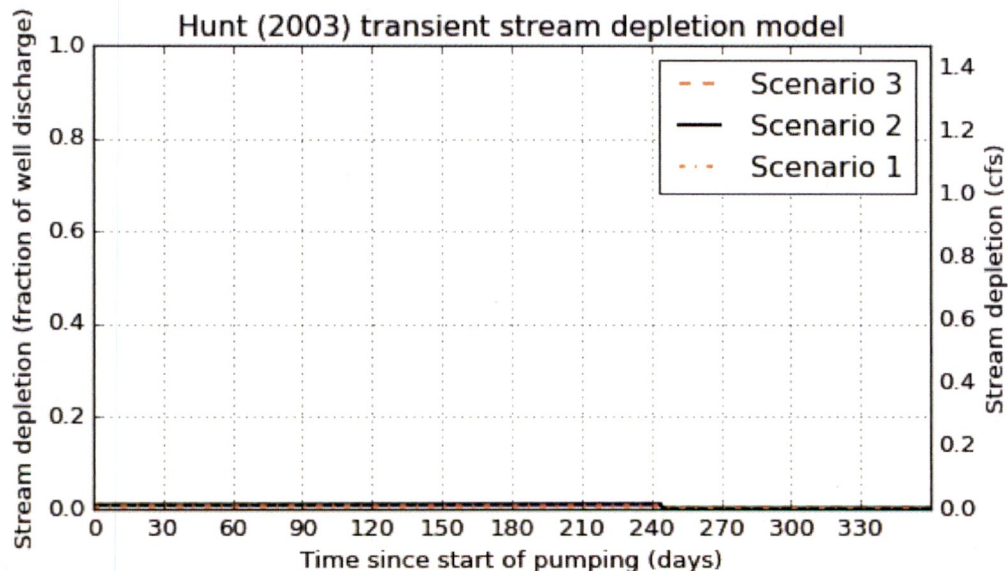
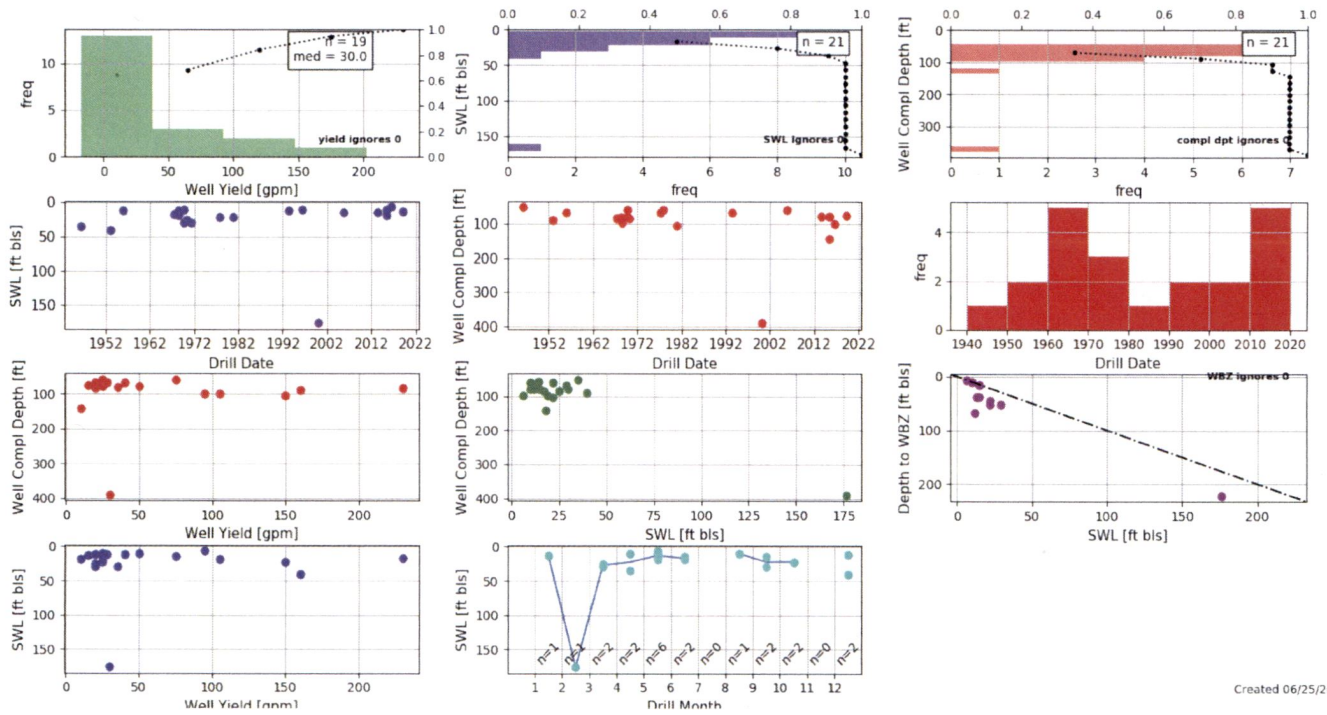


Figure 5 Well Log Statistics for T5S/R4W-Sections 18 & 19



Created 06/25/2020