

# Groundwater Application Review Summary Form

Application # G- 18585

GW Reviewer M. Thoma Date Review Completed: 02-04-19

## 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.

SI 2/5/19

*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).*

OK  
KJ

# MEMO

**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Joel Jeffery, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-18585  
**Date:** February 8, 2019

Thoma

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Mike Toma reviewed the application. Please see Mike's Groundwater Review and the Well Log.

Applicant's Well #1 (JACK 18130): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Well #1 may not satisfy hydraulic connection issues.

**Stream-Depletion Estimates**

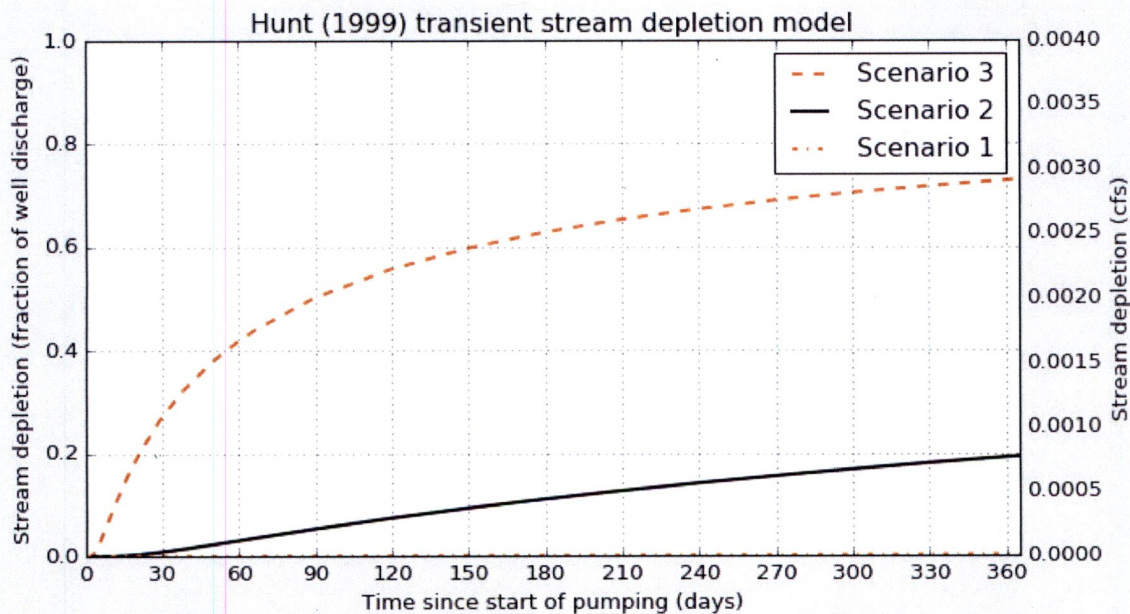
PyHunt stream depletion analysis tool

Application type: G  
 Application number: 18585  
 Well number: 1  
 Stream Number: 1  
 Pumping rate (cfs): 0.004  
 Pumping duration (days): 365

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	5410	5410	5410	ft
Aquifer transmissivity	T	100	200	500	ft <sup>2</sup> /day
Aquifer storativity	S	0.005	0.001	0.0005	-
Aquitard vertical hydraulic conductivity	Kva	0.001	0.01	0.05	ft/day
Not used		20.0	20.0	20.0	
Aquitard thickness below stream	babs	8	5	2	ft
Not used		0.3	0.3	0.3	
Stream width	ws	10	10	10	ft

Stream depletion for Scenario 2:

Days	10	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	0	1	3	5	7	9	11	13	14	16	17	18	19
Depletion (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



STATE OF OREGON  
**WATER WELL REPORT**  
 (as required by ORS 537.765)

RECEIVED

JACK  
 18/90

39S/2W-70a

NOV 24 1986

WATER RESOURCES DEPT  
 SALEM, OREGON

(1) OWNER: Owner's Well Number \_\_\_\_\_  
 Name James E Davenport  
 Address 563 Suisse Dr.  
 City San Jose State Calif. Zip 95123

(2) TYPE OF WORK:  
 New Well     Deepen     Recondition     Abandon

(3) DRILL METHOD:  
 Rotary Air     Rotary Mud     Cable     Other

(4) PROPOSED USE:  
 Domestic     Community     Industrial     Irrigation  
 Thermal     Injection     Other

(5) BORE HOLE CONSTRUCTION:  
 Depth of Completed Well 300' ft.  
 Special Standards date of approval \_\_\_\_\_

HOLE		SEAL		Amount		
meter	From	To	Material	From	To	sacks or pounds
10	0	23	bent	0	23	450lb
6	23	300				

How was seal placed? Method     A     B     C     D     E  
 Other dry pour  
 Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.    Material \_\_\_\_\_  
 Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.    Size of gravel \_\_\_\_\_

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 6"	0	60	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

il location of shoe(s) \_\_\_\_\_

(7) PERFORATIONS/SCREENS:

Perforations    Method \_\_\_\_\_  
 Screens    Type \_\_\_\_\_ Material \_\_\_\_\_

om	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<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"/>

(8) WELL TESTS: Minimum testing time is 1 hour

Pump     Bailor     Air     Flowing Artesian

Yield gal/min	Pumping level	Drill stem at	Time
<u>2</u>		<u>300"</u>	<u>1x4x hr.</u> 1 hr

Temperature of water 54    Depth Artesian Flow Found \_\_\_\_\_  
 Was a water analysis done?     Yes    By whom \_\_\_\_\_  
 Did any strata contain water not suitable for intended use?     Too little  
 Salty     Muddy     Odor     Colored     Other \_\_\_\_\_  
 Depth of strata: \_\_\_\_\_

(9) LOCATION OF WELL by legal description:  
 County Jackson Latitude \_\_\_\_\_ " Longitude \_\_\_\_\_"  
 Township 39S    N or S, Range 2W    E or W, WM.  
 Section 7    NE ¼    SW ¼  
 Tax Lot 1601    Lot \_\_\_\_\_    Block \_\_\_\_\_    Subdivision \_\_\_\_\_  
 Street Address of Well (or nearest address) 9400 Sterling CR.  
Jacksonville Oregon 97530

(10) STATIC WATER LEVEL:  
30 ft. below land surface.    Date 10-23-86  
 Artesian pressure \_\_\_\_\_ lb. per square inch.    Date \_\_\_\_\_

(11) WELL LOG: Ground elevation \_\_\_\_\_

Material	From	To	WB?	SWL
clay br.	0	15		
claystone br.	15	38		
claystone gray	38	52		
basalt gray	52	300		

Date started 10-23-86 Completed 10-24-86

(unbonded) Water Well Constructor Certification:  
 I constructed this well in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.  
 Signed \_\_\_\_\_ Date 11-10-86

(bonded) Water Well Constructor Certification:  
 I accept responsibility for construction of this well and its compliance with all Oregon water well standards. This report is true to the best of my knowledge and belief.  
 Signed L. J. Milkowski Date 11-10-86  
 Company Gribble Well Drilling Co. Job No. \_\_\_\_\_

**WATER RESOURCES DEPARTMENT**

**MEMO**

02-04, 2019

**TO:** Application G- 18585

**FROM:** GW: M. Thoma  
(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 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 02/04/2019  
 FROM: Groundwater Section Michael J Thoma  
 Reviewer's Name  
 SUBJECT: Application G- 18585 Supersedes review of \_\_\_\_\_  
 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: Jonathan A. Shulkin County: Jackson

A1. Applicant(s) seek(s) 0.004 cfs from 1 well(s) in the Rogue Basin,  
Little Applegate subbasin

A2. Proposed use Irrigation (1 acre) Seasonality: Year Round

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 18130	1	Bedrock	0.004	39S/2W-7 NWNE	2120'N, 1160'E fr center S 7

\* 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	2,345	65	30	10/23/1986	300	23	0-60	-	-	2	-	A

Use data from application for proposed wells.

A4. **Comments:** Additional static water level reported on application: 28' BLSL on 8/29/2017.

A5.  **Provisions of the** Rogue (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: \_\_\_\_\_

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:** There are limited water level data in the aquifer and vicinity of the applicant’s proposed POA so Capacity of the Resource cannot be determined. The nearest permitted groundwater POA is within 1 mile of the applicant’s proposed POA but it is unlikely that the applicant’s use would result in injury to this permitted water right given the low rate of appropriation and generally low transmissivity of the aquifer in the area. However, standard interference conditions should be applied.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**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 Applegate Group	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** In fractured-bedrock aquifer systems the primary movement of water is through discrete but connected fracture sets. These fractures generally extend to near the surface and 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	Sterling Creek	2280	1880-2020	5410	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** Groundwater elevations are above surface water elevations implying that groundwater is flowing towards and discharging to surface water

**Water Availability Basin the well is located within:** LITTLE APPLGATE R > APPLGATE R – AT MOUTH (# 70982)

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 source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and 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"/>

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"/>

**Comments:** No surface water sources were evaluated within 1 mile



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	1 %	3 %	5 %	7 %	9 %	11 %	13 %	14 %	16 %	17 %	18 %	19 %
Well Q as CFS		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Interference CFS		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
(A) = Total Interf.		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
(B) = 80 % Nat. Q		18.70	33.10	44.30	56.30	63.40	25.50	1.87	3.56	0.11	1.29	15.90	17.90
(C) = 1 % Nat. Q		0.19	0.33	0.44	0.56	0.63	0.26	0.02	0.04	0.001	0.01	0.16	0.18
(D) = (A) > (C)													
(E) = (A / B) x 100		< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %

(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 was estimated using the Hunt (1999) stream-depletion model and parameter values in the range expected for the fractured bedrock aquifer system of the Applegate Basin. Estimated impacts using median values are less than 25% so the maximum interference to surface water is less than 1% of the 80% Natural Flows.

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 proposed POA would be producing from an aquifer that has been found to be hydraulically connected to surface water – specifically Sterling Creek – at a distance of just over 1 mile. However, stream-depletion estimates are less than 1% of the 80% Natural Flows for the WAB so there is no assumption of PSI 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

Oregon Department of Geology and Mineral Industries, *Geologic Map of Oregon*. <http://www.oregongeology.org/geologicmap/>

OWRD Well Log Database – Accessed 02/04/2019

Smith, J. G., N. J. Page, M. G. Johnson, B. C. Moring, F. Gray. 1982. *Preliminary Geologic Map of the Medford 1 by 2 Degree Quadrangle, Oregon and California*. USGS Open-file Report 82-955

**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							
LITTLE APPLGATE R > APPLGATE R - AT MOUTH ROGUE BASIN							
Water Availability as of 1/29/2019							
Watershed ID #: 70982 ( <a href="#">Map</a> )		Exceedance Level: 80% ▾					
Date: 1/29/2019		Time: 8:53 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	18.70	1.28	17.40	0.00	45.90	-28.50	
FEB	33.10	1.82	31.30	0.00	85.00	-53.70	
MAR	44.30	1.32	43.00	0.00	76.20	-33.20	
APR	56.30	10.30	46.00	0.00	75.90	-29.90	
MAY	63.40	15.80	47.60	0.00	73.20	-25.70	
JUN	25.50	21.90	3.61	0.00	50.00	-46.40	
JUL	1.87	29.00	-27.10	0.00	14.60	-41.70	
AUG	3.56	24.10	-20.50	0.00	2.01	-22.50	
SEP	0.11	16.10	-16.00	0.00	1.51	-17.50	
OCT	1.29	5.91	-4.62	0.00	11.50	-16.10	
NOV	15.90	1.25	14.60	0.00	25.40	-10.70	
DEC	17.90	1.26	16.60	0.00	29.40	-12.80	
ANN	31,700.00	7,890.00	26,900.00	0.00	29,400.00	880.00	

Well Location Map

