Approved: 

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager

From: Travis Kelly, Well Construction Program Coordinator

Subject: Re-Review of Water Right Application G-18746

Date: February 4, 2021

The attached application was forwarded to the Well Construction and Compliance Section by the Groundwater Section. Joe Kemper reviewed the application. Please see Joe's Groundwater Review and the Well Reports.

Applicant's Well #1 (JACK 14419): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

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

Applicant's Well #2 (original Well Report JACK 58188/alteration Well Report JACK 64695): Based on a review of the Well Reports, Applicant's Well #2 seems to protect the groundwater resource.

The construction of Applicant's Well #2 may not satisfy hydraulic connection issues.

Applicant's Well #3 (JACK 33910): Based on a review of the Well Report and photos of the well head provided by Joe Kemper, Applicant's Well #3 seems to protect the groundwater resource.

The construction of Applicant's Well #3 may not satisfy hydraulic connection issues.

Groundwater Application Review Summary Form

Application # G- _18745_

GW Reviewer _Joe Kemper_ Date Review Completed: _3/4/2021_

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 **_March 4, 2021_**

TO: **Application** G-**_18745_**

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 3/4/2021
FROM: Groundwater Section Joe Kemper
Reviewer's Name
SUBJECT: Application G- **18745** Supersedes review of 6/7/2019
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: **White Family Vineyards LLC** County: **Josephine**

A1. Applicant(s) seek(s) 0.174 cfs from 3 well(s) in the Rogue Basin, Applegate subbasin

A2. Proposed use Irrigation (15.1 acres) Seasonality: April 1st to November 1st

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 14419	1	Bedrock	0.116	37S/4W-S31 SE-SW	1085' N, 1615' E fr SW cor, S 31
2	JACK 58188	2	Bedrock	0.058	37S/4W-S31 SW-SW	270' N, 1280' E fr SW cor, S 31
3	JACK 33910	3	Bedrock	0.078	37S/4W-S31 SE-SW	680' S, 540' W fr NE DLC39

* 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	1306	60	9	3/20/19	250	0-20	0-85	Na	60-85	60	na	air
2	1258	130	-1.75	3/20/19	360	0-18	0-98	0-360	340-360	22	na	air
3	1313	105	17.45	3/21/18	200	0-95	0-100	Na	Na	60	60	air

Use data from application for proposed wells.

A4. **Comments:**

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: 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 (7-yr SWL); 7J; 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:** Water level data from wells adjacent to the applicant's proposed POA indicate that aquifer levels are relatively stable; fluctuations track with climatic and seasonal precipitation trends. There are several groundwater rights within 1 mile of the applicant's proposed POA, posing the risk of well-to-well interference so water-level reporting and standard interference conditions in B1(d) should be applied. At this time, the Department is unaware of well-to-well interference complaints in the immediate vicinity. Considering stable water level measurements, the low requested rates, and lack of known interference issues, it is unlikely that the proposed use/rate would result in injury to other permitted water rights with the appropriate permit conditions applied.

Special condition (see comments in section C3b): The maximum well-specific rates, in combination with Certificates 89333 & 89334 water rights resulting from Application G-18476, shall not exceed the following:

- Maximum rate for Well 1 (JACK 14419) = 0.116 cfs
- Maximum rate for Well 2 (JACK 58818 = 0.08 cfs
- Maximum rate for Well 3 (JACK 39910) = 0.18 cfs

Any future changes to these rights (e.g. an APOA in a transfer), must be accompanied by a commensurate reduction in this well-specific maximum permitted rate.

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 Grayback Pluton**	☒	☐
2	**Fractured Bedrock of Grayback Pluton**	☒	☐
3	**Fractured Bedrock of Grayback Pluton**	☒	☐

Basis for aquifer confinement evaluation: The applicant's POAs access fractured bedrock of the Grayback Pluton overlain by fine-grained fluvial terrace sediments. Water level data indicates that water rises well above water bearing zones in wells and, in the case of JACK 58188 and JACK 14419, can raise above ground level (flowing artesian). This indicates that the fractured bedrock aquifer system is confined by the overlying fluvial terrace.

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**	**Slagle Creek**	**1297**	**1253**	**2150**	☒	☐	☐	☐	☒
2	**1**	**Slagle Creek**	**1260**	**1247**	**1660**	☒	☐	☐	☐	☒
3	**1**	**Slagle Creek**	**1295**	**1253**	**1525**	☒	☐	☐	☐	☒
1	**2**	**Applegate River**	**1297**	**1550**	**4240**	☒	☐	☐	☐	☒
2	**2**	**Applegate River**	**1260**	**1550**	**3470**	☒	☐	☐	☐	☒
3	**2**	**Applegate River**	**1295**	**1550**	**4550**	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: Observed water level elevations are higher than or coincident with stream elevations, indicating that groundwater is flowing towards and discharging to surface water.

Water Availability Basin the well(s) are located within: APPLEGATE R > 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?
1	**1**	☐	☐	**NA**	**NA**	☐	**45.80**	☐	**<5%**	☐
2	**1**	☐	☐	**NA**	**NA**	☐	**45.80**	☐	**<5%**	☐
3	**1**	☐	☐	**NA**	**NA**	☐	**45.80**	☐	**<5%**	☐
1	**2**	☐	☐	**MF249A**	**120**	☐	**45.80**	☐	**<5%**	☐
2	**2**	☐	☐	**MF249A**	**120**	☐	**45.80**	☐	**<5%**	☐
3	**2**	☐	☐	**MF249A**	**120**	☐	**45.80**	☐	**<5%**	☐

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?
	1		☐	**NA**	**NA**	☐	**45.8**	☐	**na**	☐
	2		☐	**MF249A**	**120**	☐	**45.8**	☐	**na**	☐

Comments: Streamflow depletion is estimated using an analytical stream depletion model (Hunt, 2003) using bulk aquifer parameters representative of the local geology. Model parameters and results for the closest well-stream combination are shown in Figure 4.

The wells on this application serve as POAs on current valid water rights (Certificates 89333 and 89334). In addition to this application, application G-18746 was submitted sequentially by the adjacent landowner with the same three wells as proposed POAs. Application materials indicate that the three wells supply a common irrigation system and more acreage than is claimed on this application. The first review considered all current and proposed rates (G-18745 *and* G-18746) for each well for the purposes of the Division 9 review, which resulted in a finding of PSI.

According to the applicant, the distributed pumping rates in Certificates 89333 and 89334 reflect the maximum production rate of each respective well (see table below). While the cumulative maximum rate from these water rights is 0.628, the maximum cumulative pumping rate for these wells is 0.376 cfs. The rate of 0.376 cfs is used for the purposes of the Division 9 analysis in this review. If G-18745 and G-18746 are approved, resulting permits should contain a special condition that defines this well specific production rate as the maximum permitted rate for each well *in combination with Certificates 89333 & 89334*. Any future changes to these rights (e.g. an APOA in a transfer), should be accompanied by a commensurate reduction in this well-specific maximum permitted rate. Future applications to appropriate additional water from JACK 14419, JACK 58188, and JACK 33910 may undergo a Division 9 review using the "stacking" method employed in the 6/7/2019 reviews, which would likely result in finding of PSI.

Summary of Permitted Rates by Well

Water Right	**JACK 14419**	**JACK 58188**	**JACK 33910**	**WR Max Rate**	
Cert 89333 Rate (cfs)	N/A	N/A	0.18	0.18	
Cert 89334 Rate (cfs)	0.116	0.08	N/A	0.196	
App-18475 Rate (cfs)	0.116	0.058	0.078	0.174	
App-18476 Rate (cfs)	0.078	0.058	0.078	0.078	
Max. Well Rate (cfs)	**0.116**	**0.08**	**0.18**		**0.376**
				0.628	

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													

Distributed Wells

Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													

	%	%	%	%	%	%	%	%	%	%	%	%
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 as per OAR 690-009.

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 wells access an aquifer that has been determined to be hydraulically connected to Slagle Creek and the Applegate River. There is not a preponderance of evidence that the proposed use would have the Potential for Substantial Interference (PSI) as per OAR 690-009.

References Used:

Hunt, B. 2003. Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer. Journal of Hydrologic Engineering. Vol 8(1), pp 12-19

OWRD Groundwater Site Information System Database – Accessed 6/7/2019.

Ramp, L. and Peterson, N. 2004. Geologic Map of Josephine County, Oregon. Oregon Dept. of Geol. and Mineral Industries, OFR O-04-13.

Wiley, T. J. 2006. Preliminary Geologic Map of the Sexton Mountain, Murphy, Applegate, and Mount Isabelle 7.5' Quadrangles, Jackson and Josephine Counties, Oregon. Oregon Dept. of Geology and Mineral Industries. OFR O-06-11

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

APPLEGATE R > ROGUE R - AT MOUTH
ROGUE BASIN

Water Availability as of 6/4/2019

Watershed ID #: 249 (Map) Exceedance Level: 80%

Date: 6/4/2019 Time: 9:52 AM

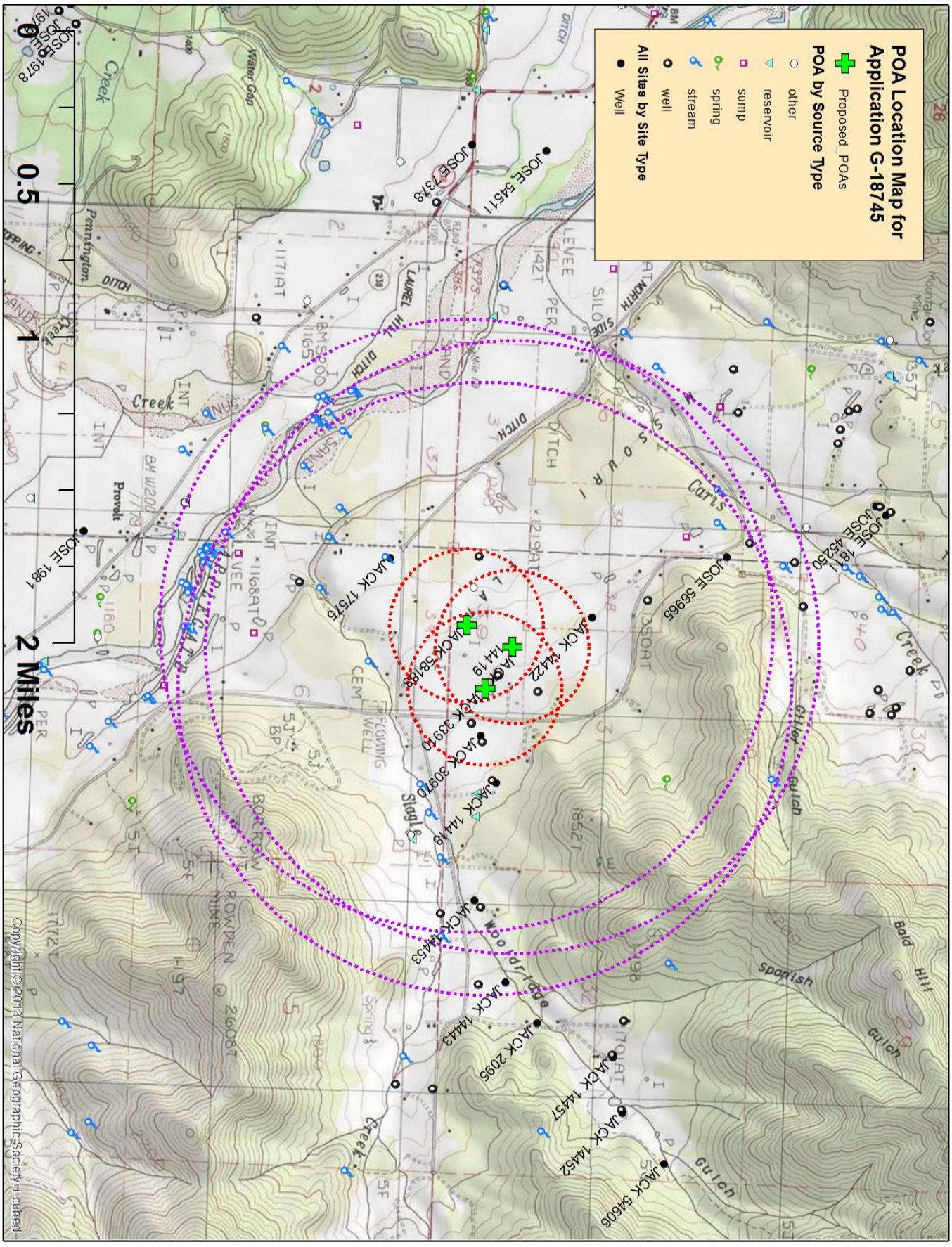
Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations | Water Rights | Watershed Characteristics

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	373.00	5.55	367.00	0.00	300.00	67.40
FEB	674.00	439.00	235.00	0.00	300.00	-64.80
MAR	792.00	438.00	354.00	0.00	340.00	14.00
APR	662.00	460.00	202.00	0.00	340.00	-138.00
MAY	591.00	42.20	549.00	0.00	360.00	189.00
JUN	222.00	57.40	165.00	0.00	360.00	-195.00
JUL	91.80	76.00	15.80	0.00	120.00	-104.00
AUG	59.00	63.20	-4.16	0.00	120.00	-124.00
SEP	45.80	42.30	3.49	0.00	120.00	-117.00
OCT	56.00	15.60	40.40	0.00	360.00	-320.00
NOV	146.00	3.70	142.00	0.00	360.00	-218.00
DEC	244.00	4.61	239.00	0.00	300.00	-60.60
ANN	421,000.00	97,800.00	323,000.00	0.00	204,000.00	160,000.00

Well Location Map



Water-Level Measurements in Nearby Wells

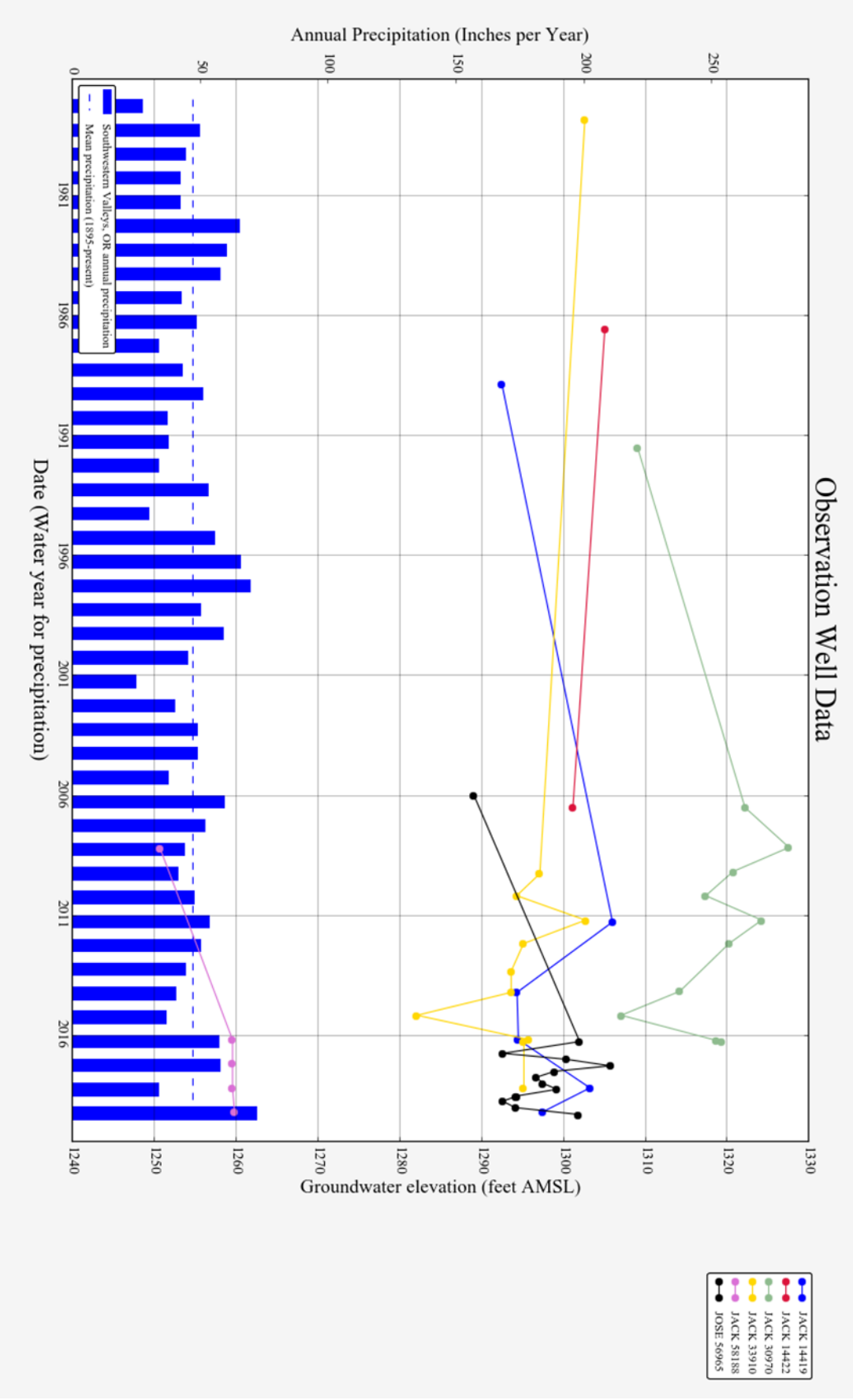


Figure 4. Stream Depletion Model Results (Hunt, 2003)

Application type:	G
Application number:	18745
Well number:	3
Stream Number:	1
Pumping rate (cfs):	0.354
Pumping duration (days):	214
Pumping start month number (3=March)	4

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1525	1525	1525	ft
Aquifer transmissivity	T	500	1000	1500	ft2/day
Aquifer storativity	S	0.1	0.01	0.001	-
Aquitard vertical hydraulic conductivity	Kva	0.01	0.05	0.1	ft/day
Aquitard saturated thickness	ba	10.0	20.0	30.0	ft
Aquitard thickness below stream	babs	4.0	3.0	2.0	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	20	20	20	ft

Stream depletion for Scenario 2:

Days	10	300	330	360	30	60	90	120	150	180	210	240	270
Depletion (%)	1	4	4	4	1	2	2	3	3	4	5	4	4
Depletion (cfs)	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01