

Groundwater Application Review Summary Form

Application # G- 19356

GW Reviewer Phillip I. Marcy Date Review Completed: 05/04/2023

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

May 4, 2023

TO: Application G- 19356

FROM: GW: Phillip I. Marcy
(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 [Enter] 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 05/04/2023
 FROM: Groundwater Section Phillip I. Marcy
 Reviewer's Name
 SUBJECT: Application G- 19356 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: Terry Daugherty County: Union

A1. Applicant(s) seek(s) 0.167 cfs from 1 well(s) in the Grande Ronde Basin,
 _____ subbasin

A2. Proposed use Irrigation (10 acres) Seasonality: March 1st – October 31st (245 days)

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	Basalt	0.167	2S/ <u>37E</u> -30 SW-NW	120°N, 830°E fr W ¼ cor S 30
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	3071	NA	NA	NA								

Use data from application for proposed wells.

A4. **Comments:** WRIS indicates proposed POA well is in 2S/36E, but application map shows it correctly located in 2S/37E. The applicant proposes to develop groundwater from basalt for primary irrigation of 10 acres.

A5. ☒ **Provisions of the** Grande Ronde 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) 7N;
 - 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 is little applicable data in the vicinity of the proposed groundwater development, save for the applicant's domestic well (UNIO 52985). If interference does occur with any nearby well as a result of the proposed water use, it is anticipated to be with this well, located about 250' east of the proposed POA location. The construction details for the proposed POA are not given, however is it implied that construction will be partially based upon UNIO 52985.

If a permit is issued, annual water level measurements under Condition 7N are recommended to monitor the sustainability of the target aquifer when assessing proposed future developments.

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	Interflow zones within Grande Ronde Basalt	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The applicant's domestic well (UNIO 52985) reports a static water level well above (~60') the water-bearing zone accessed by the well. This is common for CRBG aquifers, where vertical migration of groundwater is minimal due to the presence of relatively impermeable dense flow interiors between water-bearing flow margins. The proposed POA well is expected to produce from water-bearing zones accessed by UNIO 52985.

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	Pelican Creek	~3069	3042-3160	716	☐	☒	☐	☐	☒
1	2	Five Points Creek	~3069	3000-3132	330	☐	☒	☐	☐	☒
1	3	Unnamed Trib. to Pelican Ck.	~3069	3125-3385	2965	☐	☒	☐	☐	☒
1	4	Unnamed Trib. to Five Points Ck.	~3069	3062-3536	520	☐	☒	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: Based upon the wide range of surface water elevations within one mile, the fact that anticipated groundwater elevation within the POA well may or may not have significance. Local geologic mapping (Barrash and others, 1980) indicates that the structural dip on local fault blocks is down to the SW, with the position of the proposed POA within a down dropped graben block bounded by NNW striking faults on either side. Considering this, the position of the proposed POA (and UNIO 52985) places the target water-bearing zones within an isolated block that is vertically offset from its counterparts to the SW and NE. Therefore, the zones within this graben are likely not exposed locally, unless incised by drainages further downslope to the SE. It is anticipated that the lack of displacement along nearby fault zones since the Pleistocene (Barrash and others, 1980) has resulted in these faults behaving as barriers to groundwater movement as opposed to conduits for flow.

Water Availability Basin the well(s) are located within: Five Points Cr. > Grande Ronde R – At Mouth (#70873)

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

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

Comments: This section does not apply because the proposed POA well is not anticipated to be hydraulically connected to local surface waters.

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: This section does not apply because the proposed POA well is not anticipated to be hydraulically connected to local surface waters.

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:
- ☐ The permit should contain condition #(s) _____;
 - ☒ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** In order to maintain hydraulic isolation from nearby surface waters the following special conditions shall apply:

- The POA well shall be open to a single aquifer in the Grande Ronde Basalt Formation in the Columbia River Basalt Group at equivalent depth, or deeper than, the water-bearing zone accessed by nearby UNIO 52985. and shall meet applicable well construction standards (OAR 690-200 and OAR 690-210). In addition, the open interval shall be no greater than 50 feet. However, a larger open interval may be approved by the Department if the applicant can demonstrate to the satisfaction of the Department that each well is only open to a single aquifer.
- Whenever possible, drill cuttings shall be collected at 10-foot intervals and at changes in formation in the well and a split of each sampled interval shall be provided to the Department.

References Used: _____

Barrash, W., Bond, G., Kauffman, J.D., and Venkatakrishnan, R., 1980, Geology of the La Grande Area, Oregon: DOGAMI Special Paper No. 6,

Development Potential of Ground Water in the Grande Ronde Valley, Union County, Oregon, Ham, 1966

GWIS database, local well logs, Application G-19356

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

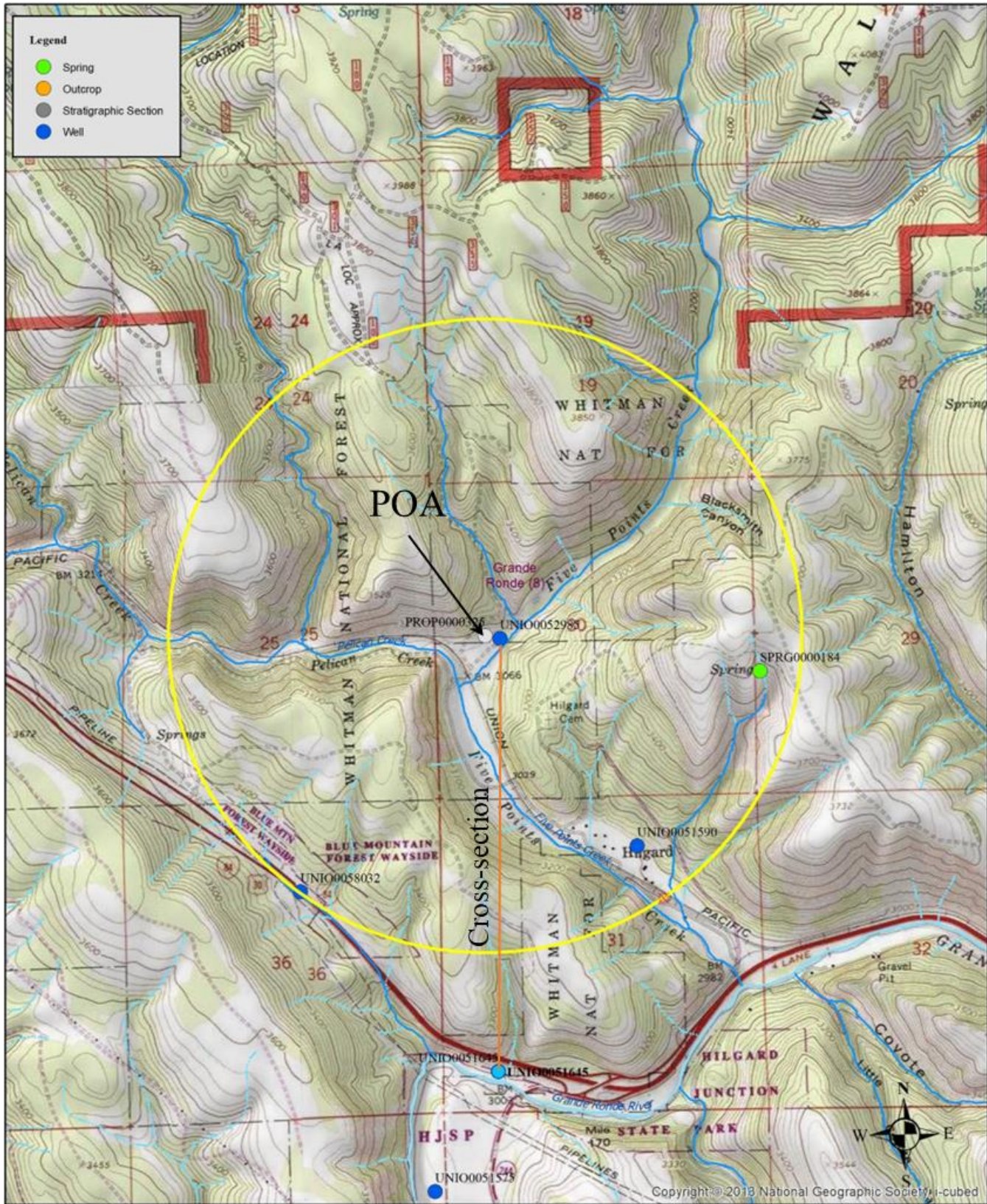
D2. **THE WELL does not appear to meet current well construction standards based upon:**

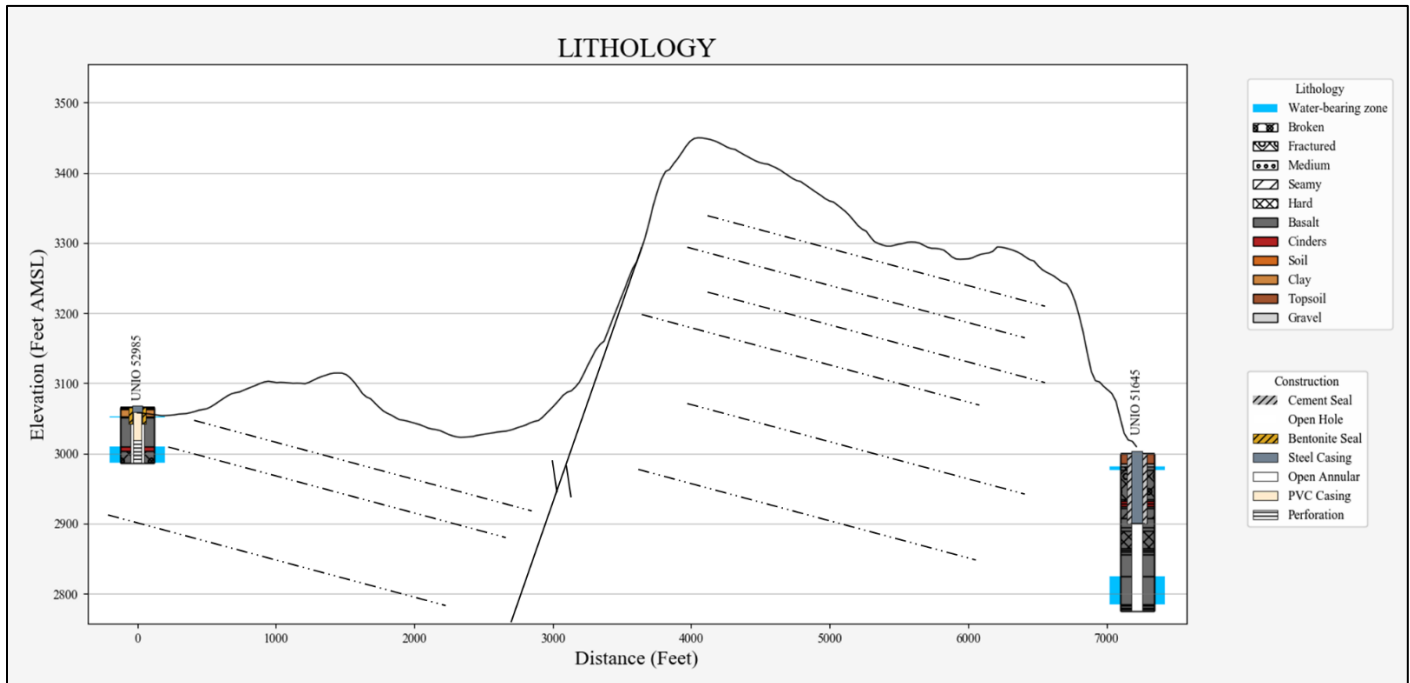
- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

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**

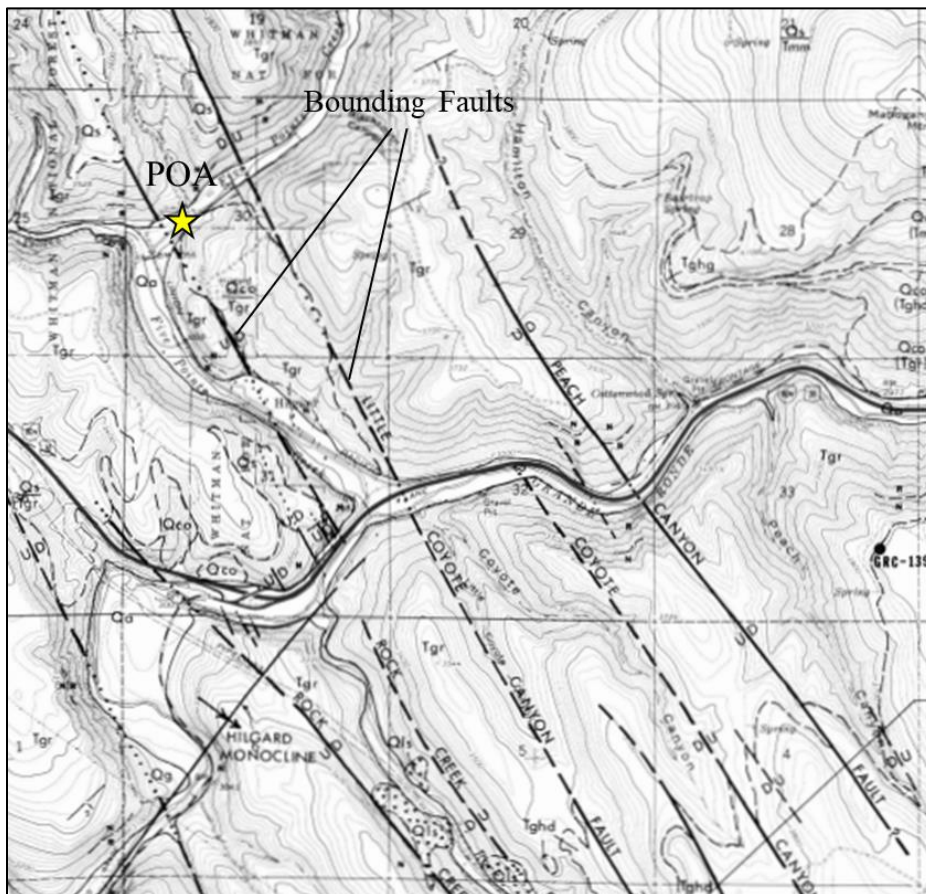
Watershed ID #: 70873		FIVE POINTS CR > GRANDE RONDE R - AT MOUTH			Exceedance Level: 80	
Time: 3:10 PM		Basin: GRANDE RONDE			Date: 05/03/2023	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs.						
Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	6.49	0.15	6.34	0.00	17.00	-10.70
FEB	33.60	0.16	33.40	0.00	17.00	16.40
MAR	83.50	0.16	83.30	0.00	30.00	53.30
APR	91.70	0.16	91.50	0.00	43.00	48.50
MAY	70.70	0.15	70.50	0.00	43.00	27.50
JUN	13.80	0.15	13.60	0.00	30.00	-16.40
JUL	2.64	0.15	2.49	0.00	6.45	-3.96
AUG	1.81	0.15	1.66	0.00	3.70	-2.04
SEP	2.05	0.15	1.90	0.00	3.97	-2.07
OCT	2.18	0.15	2.03	0.00	4.25	-2.22
NOV	2.74	0.15	2.59	0.00	8.44	-5.85
DEC	5.49	0.15	5.34	0.00	12.80	-7.46
ANN	38,500	110	38,400	0	13,200	25,600

Well Location Map



Cross-Section

A cross-section from N (left) to S (right) with prospective fault geometry and resultant bedding drawn in. In this conceptual model, the applicant's proposed POA is located on the down dipping end of the fault block. This model also treats the fault zone as a barrier to groundwater movement, rather than a conduit for flow.



Geologic mapping indicates the proposed POA is contained within a narrow, down dropped graben block of Grande Ronde Basalt. This structural framework is anticipated to provide some degree of hydraulic isolation from surrounding water-bearing zones and surface water features. Modified from Barrash and others, 1980.