

Groundwater Application Review Summary Form

Application # G- 19466

GW Reviewer Stacey Garrison Date Review Completed: 4/15/2025

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 15 2025

TO: Application G- 19466

FROM: GW: Stacey Garrison
(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 [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 5/15/2025
 FROM: Groundwater Section Stacey Garrison
 Reviewer's Name
 SUBJECT: Application G- 19466 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: Luke Fortier County: Linn

A1. Applicant(s) seek(s) 0.19 cfs from 2 well(s) in the Willamette Basin,
Santiam-Calapooia subbasin

A2. Proposed use Irrigation, Storage Seasonality: March 1-October 31, November 1-February 28

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

POA 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	LINN 63786	2	Bedrock ^a	0.19	12S/2W-17 SE-SW	1100' N, 1605' E fr SW cor S 17
2	PROP 614	4	Bedrock ^a	0.19	12S/2W-17 NE-SW	1600' N, 1995' E fr SW cor S 17

* Alluvium, CRB, Bedrock

POA Well	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Drawdown (ft)	Test Type
1	285	0 to 40, 80 to 99	+1 to 99	0 to 285	205 to 285	100		Air
2	285	0 to 40, 80 to 99	+1 to 285		205 to 285			

Use data from application for proposed wells.

A4. **Comments:** POAs/POU are 1.9 miles west of Lebanon, Oregon. Applicant proposes to irrigate 61.84 ac from March 1 through October 31 at a maximum rate of 0.19 cfs (85 gpm) and a maximum annual volume of 92.3 acre-feet^b, and storage from November 1 through February 28 at a maximum rate of 0.19 cfs (85 gpm) and a maximum annual volume of 45.5 acre-feet.

^a Applicant proposes to develop the sand and gravel aquifer. The constructed well, POA 1/LINN 63786, utilizes an aquifer in the Tertiary Marine Volcanic and Sedimentary (TMVS) Eugene Formation. The proposed well, POA 2/PROP 614, is anticipated to also develop the TMVS Eugene Formation based on the location and proposed construction.

^b The proposed maximum annual volume for irrigation, 92.3 acre-feet, over the proposed POU are, 61.84 ac, is an annual duty of approximately 0.67 acre-feet per acre per year, which is substantially lower than the standard allowed for the Willamette Basin of 2.5 acre-feet per acre per year.

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 proposed POA is more than ¼ mile from the nearest surface water source, per OAR 690-502-0240 the relevant Willamette Basin Rules (OAR 609-520-0110) do not apply.

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) 7 RLN, 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 TMVS 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 POAs/POU are located on a slope between Peterson Butte and Oak Creek. Peterson Butte is southwest of the POAs and is an exposed intrusive pluton that overlies and intrudes the Eugene formation, a Tertiary Marine Volcanic and Sedimentary, TMVS, aquifer; there are multiple bands of Quaternary landslide and debris fan deposits mantling the slopes of Peterson Butte and a ring of colluvial deposits at the base (McClaughry et al., 2010; Yeats et al., 1996). The Eugene formation interfingers with the Fisher formation, a Middle-to-Early Tertiary Volcanic and Volcaniclastic, METV, unit (Ferns and McLaughry, 2008). The Eugene formation is estimated to be at least 600 ft thick here (Allison and Felts, 1956). Oak Creek and other streams within a mile of the POAs are intermittent and have not incised into the underlying TMVS bedrock. Streams are flanked by Holocene alluvium and Pleistocene alluvial deposits up to 108 ft thick near streams and thin out towards Peterson Butte (see Cross Section; Gannett and Caldwell, 1998; Conlon et al., 2005). The constructed POA 1 (LINN 63786) is cased and sealed to utilize the TMVS Eugene formation and based on proposed construction of POA 2 (PROP 614) it will also utilize the TMVS Eugene formation. Primary porosity is typically compromised in these aquifers resulting in well yields of 5 gpm and less, although fractured zones can demonstrate higher yields (Freeze and Cherry, 1979; Conlon et al., 2005). A review of statistics for nearby well records for wells greater than 100 ft depth was completed and compared with the proposed rate of 0.19 cfs (85 gpm) for this application (see Well Statistics). The median reported well yield was 25 gpm and the maximum reported well yield is 100 gpm. The proposed rate for this application is 340% of the median and 85% of the maximum reported yield. Lithology and aquifer identification are not available for all wells in the Department's database, and wells included in the query may be utilizing alluvial sediments and not be representative of the Eugene formation. It is likely that the proposed rate can be produced from the target aquifer. Department SWL data is limited in this area (1 to 2 miles from POAs) to two wells that utilize the TMVS aquifer targeted by the POAs, but neither of these wells has had any data collected for at least 46 years (LINN 8050, LINN 10033). There are two groundwater POAs that utilize the TMVS aquifer on one groundwater right within one mile of the POAs; this is for irrigation of ten acres with a maximum duty of 25 AF/year and a maximum rate of 0.125 cfs (56 gpm). There are five TMVS

wells in the Department's database within approximately one mile of the POAs, including POA 1 (LINN 63786) and the two POAs on an existing water right above (LINN 8059 and LINN 8060). The water level and water use monitoring and reporting conditions should be included as described above to ensure the groundwater reservoir does not become over-appropriated. **Given that the groundwater resource developed is predominantly supplied by storage, existing development of the groundwater supply has occurred, and that there is insufficient water level data to assess the impacts of existing development, it cannot be determined whether the groundwater resource is over-appropriated.**

The nearest groundwater user to POA 1 is LINN 8059 (an exempt domestic well) located 1,018 ft southeast of the POA at an elevation of ~398 ft amsl. It is likely the proposed use would cause some degree of well-to-well interference with LINN 8059. To assess the degree of drawdown, a Theis drawdown analysis was conducted for the proposed use (**see attached Theis Drawdown Analysis**). Results indicate that the proposed use is not likely to cause well-to-well interference with LINN 8059 that exceeds the threshold under the standard condition for TMVS aquifers in the Willamette Basin.

The nearest groundwater user to POA 2 is LINN 61923 (an exempt domestic well) located 1,473 ft northeast of the POA at an elevation of 327 ft. is likely the proposed use would cause some degree of well-to-well interference with LINN 61923. To assess the degree of drawdown, a Theis drawdown analysis was conducted for the proposed use (**see attached Theis Drawdown Analysis**). Results indicate that the proposed use is not likely to cause well-to-well interference with LINN 61923 that exceeds the threshold under the standard condition for TMVS aquifers in the Willamette Basin.

Because **it cannot be determined if the groundwater resource is over appropriated; if a permit is issued for this application, the conditions in B1(d)(i) and B2(c) are recommended to protect senior users and the groundwater resource.**

NOTE: This evaluation considers a conservative scenario for the nearest authorized POA not owned by the applicant. Other authorized POAs in the area may also experience an increase in interference as a result of this application, although to a lesser extent than the scenario evaluated here.

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	TMVS bedrock (Eugene formation)	☒	☐
2	TMVS bedrock (Eugene formation)	☒	☐

Basis for aquifer confinement evaluation: The constructed POA, POA 1 (LINN 63786) reports a static water level (SWL) above the top of the water-bearing zone (WBZ), indicating confined conditions. The other four TMVS wells within a mile of the POAs^a also reported SWL above the WBZ.

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 ^a	SW Elev ft msl ^b	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Oak Creek	303-354	312-330	3,150	☒	☐	☐	☐	☒
2	1	Oak Creek	303-354	308-330	1,700	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: POA 1 (LINN 63786) is sealed continuously to 40 ft bls [389 to 349 ft amsl] and POA 2 (PROP 614) is proposed to be continuously sealed to 40 ft bls [337 to 297 ft amsl]. SWLs in surrounding wells utilizing the TMVS aquifer vary from 303 to 354 ft amsl^a. The local streambed of SW 1 (Oak Creek) is 308 to 330 ft amsl, indicating the local groundwater is likely discharging to surface water, consistent with Woodward et al (1998) findings that groundwater discharges to surface water. Hydraulic connection to nearby streams is likely but anticipated to be inefficient due to the low vertical permeability of the overlying fine-grained sediments and intermittent fracturing that facilitates hydraulic connectivity.

^a Groundwater elevation calculated from static water level reported in well logs and/or latest static water level reported for wells within approximately one mile of the POAs and utilizing the TMVS and well head elevations estimated based on LIDAR measurements at existing well locations (Watershed Sciences, 2009): LINN 63786, LINN 61923, LINN 8050, LINN 8059, LINN 8060.

Water Availability Basin the well(s) are located within: CALAPOOIA R>WILLAMETTE R-AB 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	☐	☐			☐	22.7	☐	*	☐
2	1	☐	☐			☐	22.7	☐	*	☐

Comments: *There is no appropriate model to estimate stream depletion from pumping in fractured rock. Therefore, the percentage of interference at 30 days is not calculated.

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: N/A, Q is not distributed.

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: N/A, streams within one mile evaluated above.

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:** _____

References Used:

Application File: G-19466

Pumping Test Files: MARI 9319/9305, MARI 18044, LANE 63542

Well Reports: LINN 63786, LINN 61923, LINN 8050, LINN 8059, LINN 8060, MARI 9319/9305, MARI 18044, LANE 63542

Allison, I.S. and Felts, W.M. 1956. Reconnaissance Geologic Map of the Lebanon Quadrangle. Department of Geology and Mineral Industries, QM-5.

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, *Ground-water hydrology of the Willamette Basin, Oregon*, Scientific Investigations Report 2005-5168: U. S. Geological Survey, Reston, VA.

Domenico, P.A. and Schwartz, F.W. 1990. Physical and Chemical Hydrogeology, John Wiley and Sons, New York, 824 p.

Ferns, M.L. and McClaughry, J.D. 2008. Preliminary Geologic Map of the Lebanon and Onehorse Slough 7.5' Quadrangles, Linn County, Oregon. Department of Geology and Mineral Industries, Open File Report O-08-11.

Freeze, R.A. and J.A. Cherry, 1979. Groundwater, Prentice Hall, Englewood Cliffs, New Jersey, 604 p.

Heath, R.C., 1983. Basic ground-water hydrology, U.S. Geological Survey Water-Supply Paper 2220, 86 p.

Gannett, M.W. and Caldwell, R., 1998, *Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington*, Professional Paper 1424-A, 32 p: U. S. Geological Survey, Reston, VA.

Gonthier, J.B., 1983, Ground-water resources of the Dallas-Monmouth area, Polk, Benton, and Marion Counties, Oregon: Oregon Water Resources Department Ground Water Report 28, 50 p.

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground-water storage: American Geophysical Union transactions, v. 16, p. 519-524.

United States Geological Survey, 2013, National Elevation Dataset (NED) [DEM geospatial data]. 1/9th arc-second, updated 2013.

Watershed Sciences, 2009, LIDAR remote sensing data collection, Department of Geology and Mineral Industries, Willamette Valley Phase I, Oregon: Portland, OR, December 21.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

D. WELL CONSTRUCTION, OAR 690-200D1. **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**

Oregon Water Resources Department
Water Availability Analysis

[Main](#) [Help](#)
[Return](#) [Contact Us](#)

Water Availability Analysis
 Detailed Reports

CALAPOOIA R > WILLAMETTE R - AB MOUTH
 WILLAMETTE BASIN
 Water Availability as of 3/4/2025

Watershed ID #: 76 ([Map](#))
Exceedance Level: 80% v

Date: 3/4/2025
Time: 4:04 PM

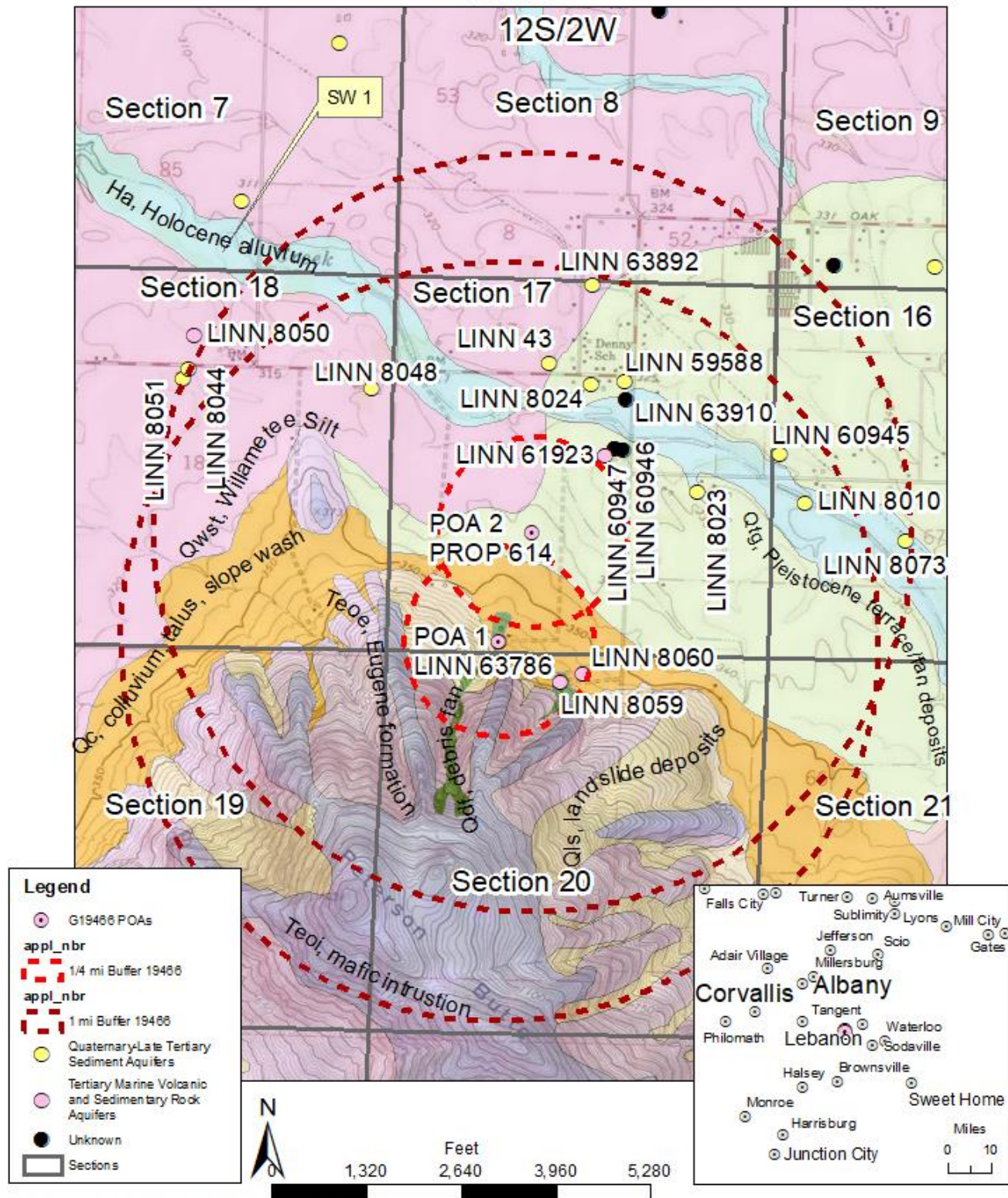
Water Availability Calculation
Water Rights
Consumptive Uses and Storages
Instream Flow Requirements
Watershed Characteristics
Reservations

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	592.00	4.75	587.00	0.00	140.00	447.00
FEB	650.00	4.68	645.00	0.00	140.00	505.00
MAR	575.00	3.50	571.00	0.00	140.00	431.00
APR	423.00	3.18	420.00	0.00	140.00	280.00
MAY	234.00	19.60	214.00	0.00	140.00	74.40
JUN	111.00	15.30	95.70	0.00	90.00	5.67
JUL	49.00	23.80	25.20	0.00	50.00	-24.80
AUG	26.00	17.20	8.77	0.00	30.00	-21.20
SEP	22.70	8.89	13.80	0.00	39.30	-25.50
OCT	29.60	2.02	27.60	0.00	59.90	-32.30
NOV	133.00	2.53	130.00	0.00	140.00	-9.53
DEC	499.00	4.70	494.00	0.00	140.00	354.00
ANN	404,000.00	6,690.00	397,000.00	0.00	75,200.00	324,000.00

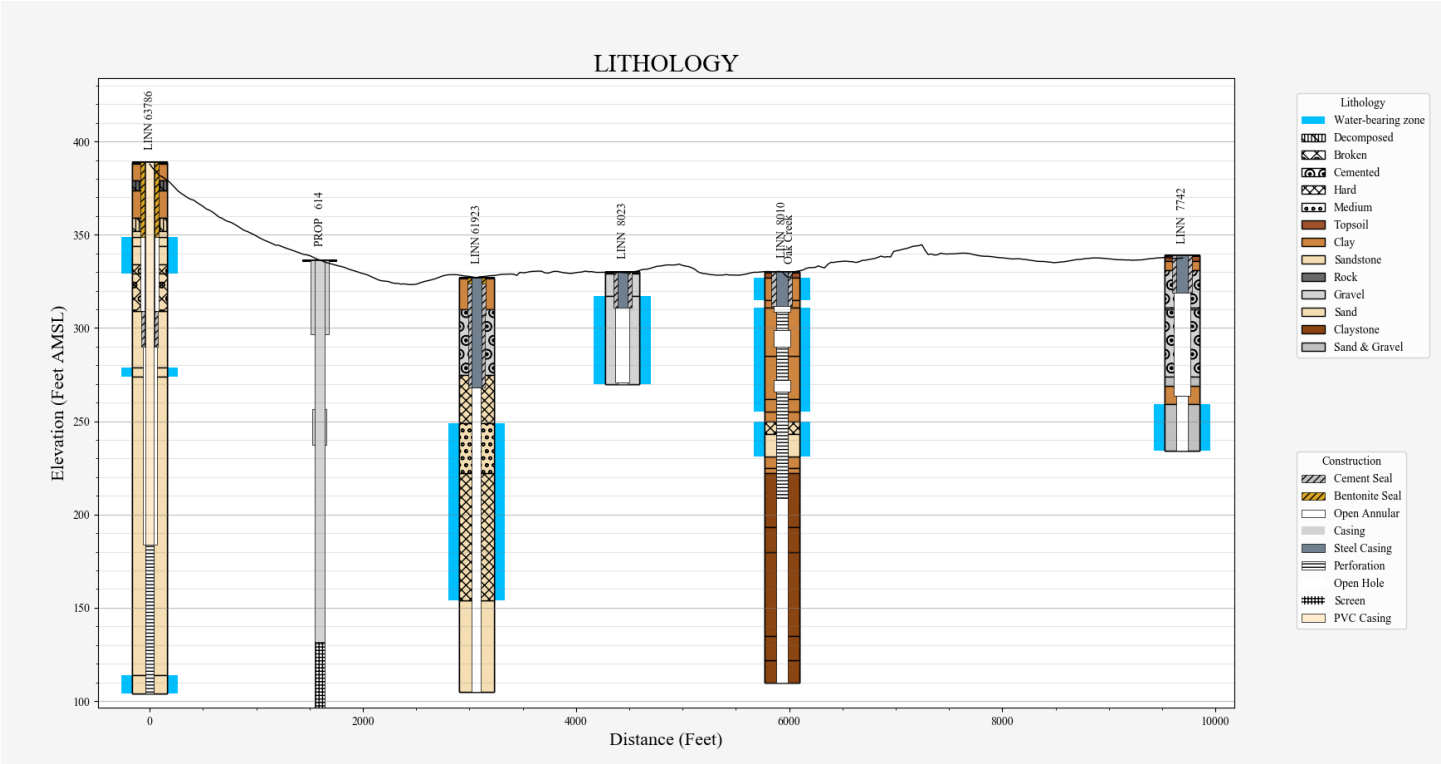
Well Location Map

G-19466 Fortier

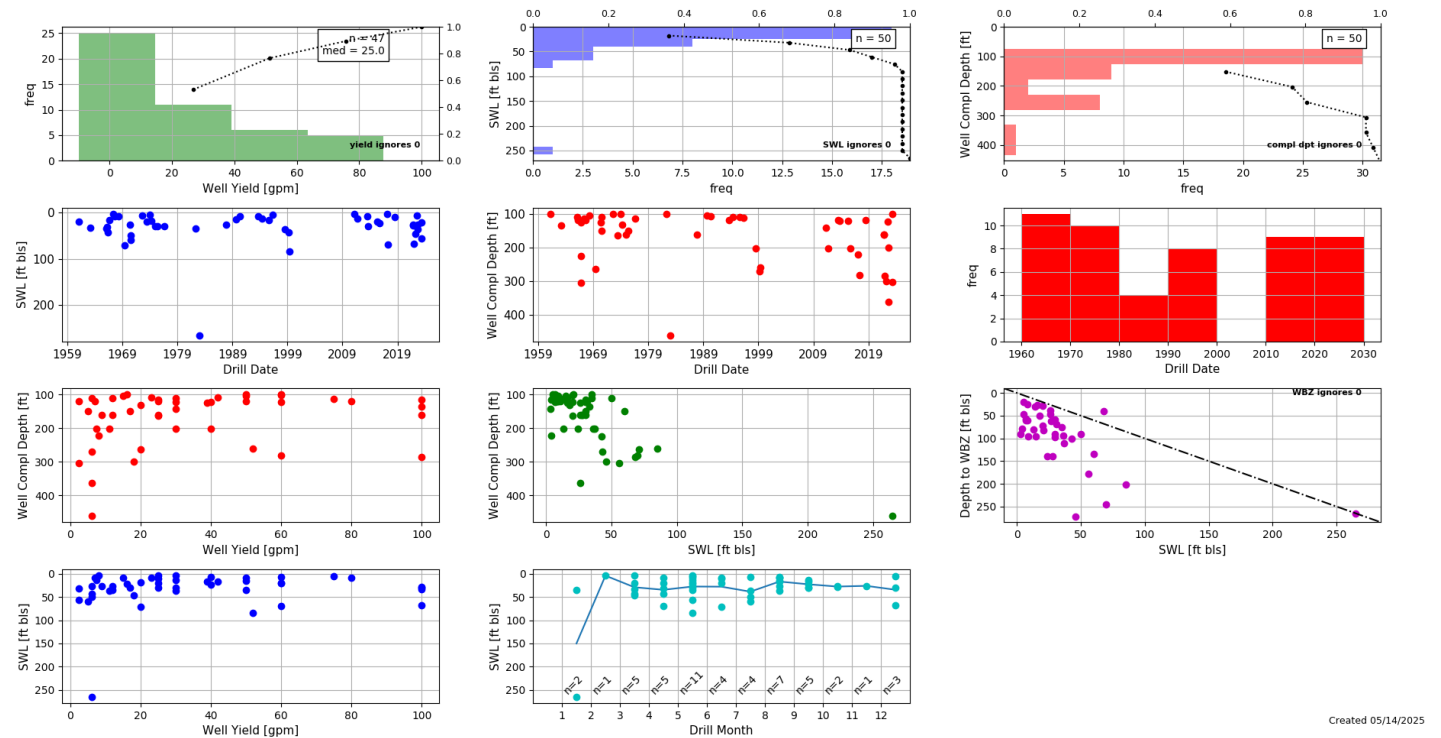


Service Layer Credits: Copyright© 2013 National Geographic Society, i-cubed

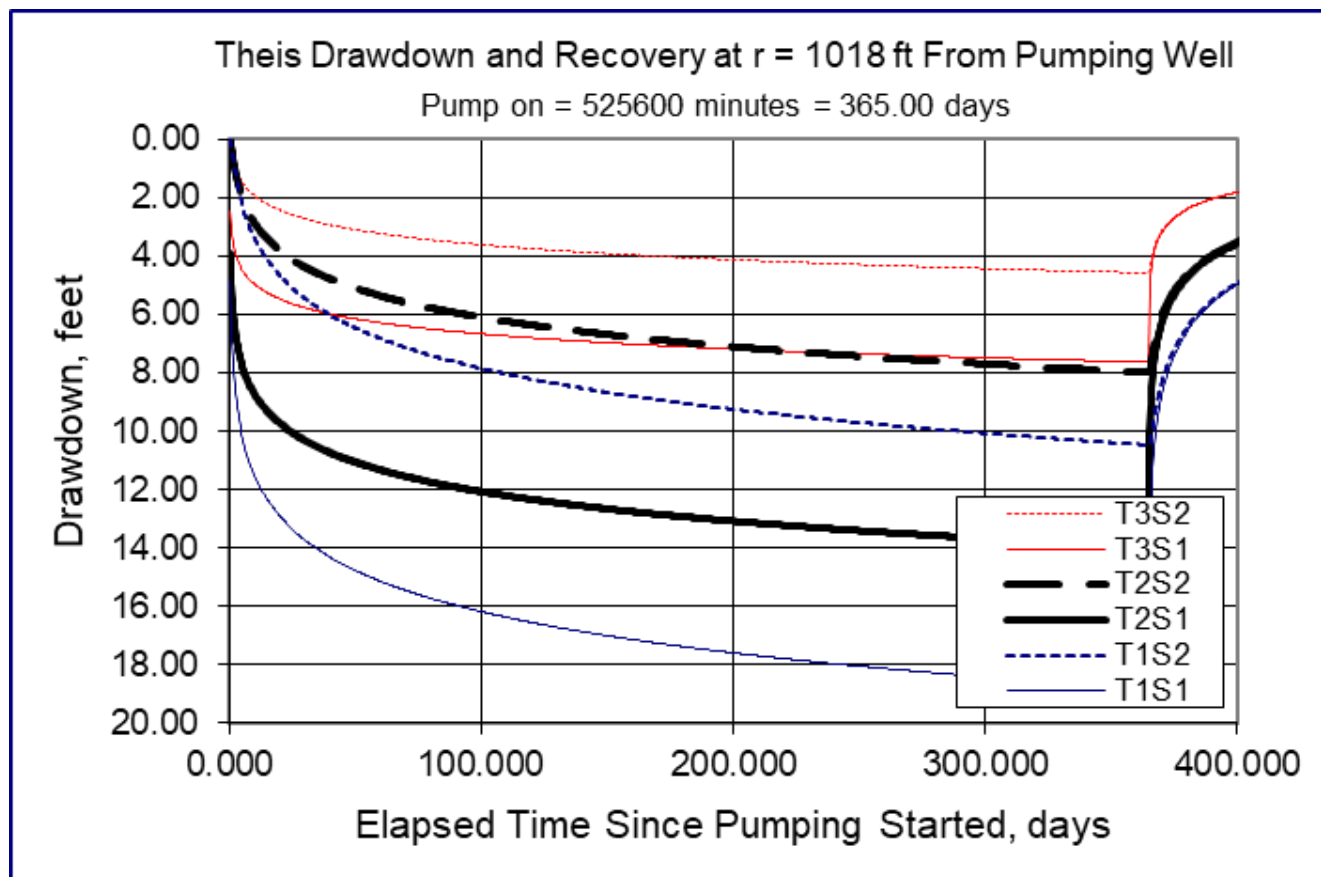
Cross-Section



Well Statistics



Created 05/14/2025

Theis Interference Analysis-POA 1/LINN 8059

Radial distance from pumping well (r)=1,018 ft [estimated radial distance to nearest user, LINN 8059]

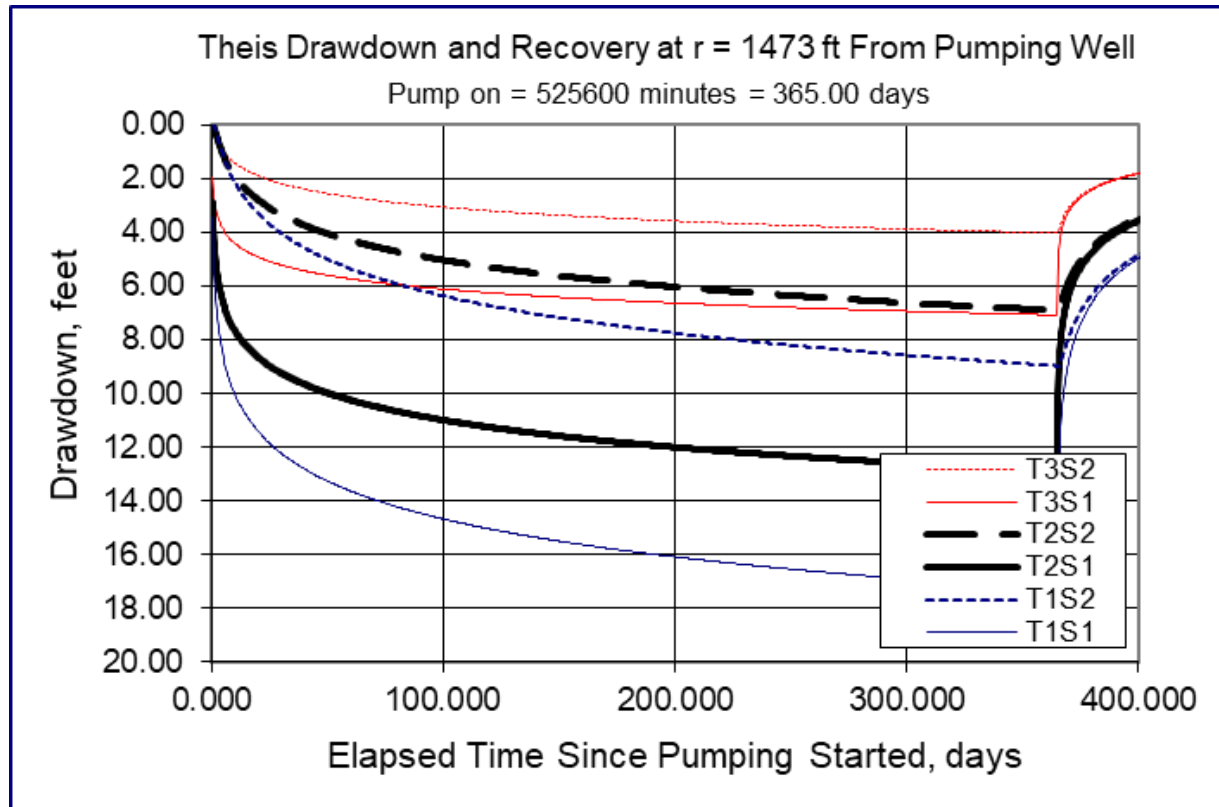
Pumping Rate (Q)= 0.19 cfs (~85.3 gpm)

Aquifer Transmissivity ($T1$)= 4,787 gpd/ft (640 ft²/day), ($T2$)=6,687 gpd/ft (894 ft²/day), ($T3$)=13,082 gpd/ft (1,749 ft²/day)

[Gonthier, 1983; Heath, 1983; Freeze and Cherry, 1979; Domenico and Schwartz, 1990; OWRD Pump Test and Well Log Database]

Storativity ($s1$) = 0.00005, ($s2$) = 0.003 [Conlon et al 2005, Table 2 values for Basement Confining Unit]

Total pumping time= 365 days, 245 days of irrigation from March 1 through October 31 and 120 days of storage from November 1 through February 28/29.

Theis Interference Analysis-POA 2/LINN 61923

Radial distance from pumping well (r)=1,473 ft [estimated radial distance to nearest user, LINN 61923]

Pumping Rate (Q)= 0.19 cfs (~85.3 gpm)

Aquifer Transmissivity (T_1)= 4,787 gpd/ft (640 ft²/day), (T_2)=6,687 gpd/ft (894 ft²/day), (T_3)=13,082 gpd/ft (1,749 ft²/day)

[Gonthier, 1983; Heath, 1983; Freeze and Cherry, 1979; Domenico and Schwartz, 1990; OWRD Pump Test and Well Log Database]

Storativity (s_1) = 0.00005, (s_2) = 0.003 [Conlon et al 2005, Table 2 values for Basement Confining Unit]

Total pumping time= 365 days, 245 days of irrigation from March 1 through October 31 and 120 days of storage from November 1 through February 28/29.