

Groundwater Application Review Summary Form

Application # G- 19475

GW Reviewer Stacey Garrison Date Review Completed: 5/16/2025

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 16 2025

TO: Application G- 19475

FROM: GW: Stacey Garrison
(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 5/16/2025
 FROM: Groundwater Section Stacey Garrison
 Reviewer's Name
 SUBJECT: Application G- 19475 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: Spurlin Farm, Inc. County: Linn

A1. Applicant(s) seek(s) 3.06 cfs from 3 well(s) in the Willamette Basin,
Santiam-Calapooia subbasin

A2. Proposed use Irrigation Seasonality: March 1-October 31

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	PROP 626	3	Sandstone	1.16	13S/3W-24 SW-SW	95' N, 295' E fr SW cor S 24
2	PROP 627	4	Sandstone	0.95	13S/3W-23 SE-NW	2480' S, 2010' E fr NW cor S 23
3	PROP 628	5	Sandstone	0.95	13S/3W-14 SW-SE	575' N, 2560' W fr SE cor S 14

* 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	245	0 to 18						
2	207	0 to 18						
3	235	0 to 18						

Use data from application for proposed wells.

A4. **Comments:** POAs and POU are two miles northwest of Brownsville, OR. Applicant proposes to irrigate 245.3 ac from 3 POAs: POA 1 at a rate of 1.16 cfs (520.6 gpm) and maximum annual volume of 232.5 AF; POAs 2 and 3 at 0.95 cfs (426.38 gpm) and a maximum annual volume of 190.5 and 190.25 AF, respectively. The total proposed maximum rate is 3.06 cfs (1,373.5 gpm) and the total proposed maximum volume is 613.25 AF.

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 POAs are anticipated to develop the confined bedrock aquifer, therefore the relevant Willamette Basin Rules (OAR 609-520-0110) do not apply per OAR 690-502-0240.

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) 7RLN, Large Water Use;
 - 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 volcanic and volcanoclastic bedrock 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 on Quaternary-Late Tertiary Sedimentary (QLTS) alluvial deposits underlain by Middle-Early Tertiary Volcanic and Volcanoclastic (METV) rocks, including lavas, tuffs, and sandstones with mafic intrusions (McClaghry et al., 2010). The METV-aged rocks are related to the Western Cascades volcanism, with the Fisher Formation extending to at least the elevation of sea level, a depth of 300 to 500 ft (Ferns and McClaghry, 2009). The POAs are in a narrow alluvial valley. The valley is confined by andesitic and basaltic andesite lavas with mafic intrusions: Washburn Butte to the northeast and the Powell Hills to the southwest. In the valley areas with overlying QLTS deposits, the top of the METV bedrock is approximately 60 to 90 ft bls (LINN 61557, LINN 956) and at least 300 ft thick (Ferns and McClaghry, 2009). Water-bearing zones (WBZs) are described in well logs as sandstone, shale, basalt, and conglomerate with thicknesses from 1 to 103 ft.
A review of statistics for nearby well records was completed and compared with the proposed rates of 1.16 cfs (520.6 gpm) for POA 1 and 0.95 cfs (426 gpm) for POAs 2 and 3 for this application (see Well Statistics). **The proposed rates are not likely within the capacity of the groundwater resource**; the median reported well yield for surrounding sections is 13.5 gpm and the maximum is 200 gpm. The proposed rate for POA 1 of application is 3857% of the median and 260% of the maximum; the proposed rate for POAs 2 and 3 is 3158% of the median and 213% of the maximum. The maximum yield of 200 gpm from LINN 11640 was obtained with an air test, which is not as accurate as a pumping test. In addition, the well record for LINN 11640 indicates it has an open interval from 49 to 510 ft bls.
Department SWL data for the bedrock aquifer is limited in this area to five wells within three miles and this limited data indicate water level trends are steady (see Water Level Measurements in Nearby Wells). LINN 11846 has not had any data reported in the last 46 years, LINN 1993 has not had data reported in 19 years, and LINN 11999 last reported six years ago. The two remaining wells (LINN 956, LINN 61557) have four consecutive years of data including the current year. There are 29 domestic wells and two groundwater POAs within a mile of the proposed POAs in this application. Those POAs are LINN

956 and LINN 61557 (wells with recent water level data above) and are on the same water right. Based on the limited water level data, it appears that the groundwater resource is not over-appropriated.

A Theis drawdown analysis on the total drawdown within the pumping well was completed for the proposed maximum rates and compared to the maximum depth of the proposed well. Results indicate that the proposed rates of 1.16 cfs for POA 1 and 0.95 cfs for POAs 2 and 3 are likely completely dewater the POAs in less than 30 minutes, 40 minutes, and 2 hours, respectively. Therefore, the proposed use is not in the capacity of the resource.

Based on this analysis of the available data and under the assumptions previously identified, groundwater for the proposed use is NOT likely not within the capacity of the resource; 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.

^a Wells within one mile of the POAs and using the METV aquifer: LINN 11898, LINN 11913, LINN 11880, LINN 11886, LINN 11899, LINN 11910, LINN 50471, LINN 2001, LINN 1993, LINN 956, LINN 61557, LINN 52482, LINN 64475, LINN 64380, LINN 64594, LINN 64678, LINN 51856, LINN 11892/11893, LINN 11897, LINN 11923, LINN 50599, LINN 51121, LINN 52527, LINN 51888, LINN 52411, LINN 11916, LINN 11911, LINN 11901, LINN 11908, LINN 11909, LINN 11912.

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	Bedrock	☒	☐
2	Bedrock	☒	☐
3	Bedrock	☒	☐

Basis for aquifer confinement evaluation: There are 31 Department-located wells within one mile^a of the proposed POAs that develop the bedrock groundwater resource. These all report static water level above the top of the water-bearing zone, indicating confined conditions.

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	Cochran Creek	161-383	270-303	5,505	☒	☐	☐	☐	☒
2	1	Cochran Creek	161-383	270-286	5,875	☒	☐	☐	☐	☒
3	1	Cochran Creek	161-383	278-303	3,830	☒	☐	☐	☐	☒
1	2	Calapooia River	161-383	294-303	4,700	☒	☐	☐	☐	☒
2	2	Calapooia River	161-383	263-270	6,780	☒	☐	☐	☐	☒
3	2	Calapooia River	161-383	260-270	7,400	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: The POAs are proposed to be sealed continuously to at least 18 ft bls [285 to 303, 277 to 295, and 270 to 288 ft amsl for POAs 1, 2, and 3 respectively]. SWLs in bedrock wells within one mile vary from 161 to 383 ft amsl^a, but wells closest to the POAs are 296 to 298 ft amsl. The WBZs of bedrock wells within one mile vary from -261 to 379 ft amsl^a. The local streambed elevation for SW 1 (Cochran Creek) and SW 2 (Calapooia River) are concurrent with or below the range of both SWLs and WBZs, indicating local groundwater discharges to surface water. The potential open interval for the POAs are: 58 to 285 ft amsl for POA 1, 88 to 277 ft amsl for POA 2, and 53 to 270 ft amsl for POA 3. Hydraulic connection to streams is likely but anticipated to be inefficient due to the intermittent fracturing in the bedrock.

^a Wells within one mile of the POAs and using the METV aquifer: LINN 11898, LINN 11913, LINN 11880, LINN 11886, LINN 11899, LINN 11910, LINN 50471, LINN 2001, LINN 1993, LINN 956, LINN 61557, LINN 52482, LINN 64475, LINN 64380, LINN 64594, LINN 64678, LINN 51856, LINN 11892/11893, LINN 11897, LINN 11923, LINN 50599, LINN 51121, LINN 52527, LINN 51888, LINN 52411, LINN 11916, LINN 11911, LINN 11901, LINN 11908, LINN 11909, LINN 11912.

^b Surface water elevations were estimated from land surface elevations along stream reaches (Watershed Sciences, 2009; USGS, 2013).

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?
3	1	☐	☐			☐	22.7	☒	*	☒
1	2	☐	☐			☐	22.7	☒	*	☒

Comments: The proposed maximum rates of 1.16 cfs (520.6 gpm) for POA 1 and 0.95 cfs (426 gpm) for POA 3 are greater than 1 percent (0.227 cfs) of the 80 percent Natural Flow (22.7 cfs) for SW 1 (Cochran Creek) and SW 2 (Calapooia River). The applicant may revise the proposed maximum rates to less than or equal to 0.227 cfs (101 gpm) to avoid triggering PSI on this basis without the need for a new groundwater review.
*There is no appropriate model to estimate stream depletion from pumping in fractured rock that is incised by streams. 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?		Potential for Subst. Interfer. Assumed?
	1		☐			☐	22.7	☒		☒
	2		☐			☐	22.7	☒		☒

Comments: The proposed combined pumping rate 3.06 cfs (1,373.4 gpm) is greater than 1 percent (0.227 cfs) of the 80 percent Natural Flow (22.7 cfs) for SW 1 (Cochran Creek) and SW 2 (Calapooia River), so PSI is assumed per OAR 690-009-0040(4)(d). The applicant may revise the proposed combined pumping rate to less than or equal to 0.227 cfs (101 gpm) to avoid triggering PSI on this basis without the need for a new groundwater review.

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: NA-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:
- 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:** PSI is triggered based on the proposed pumping rate for POAs 1 and 3 and for the combined pumping rate. **The applicant may revise the proposed maximum individual rates and the total combined rate to less than or equal to 0.227 cfs (101 gpm) to avoid triggering PSI on this basis without the need for a new groundwater review.**

References Used: _____

Application File: G-19475

Pumping Test Files: LANE 63460, LANE 63461, LANE 20037

Well Reports: : LINN 11898, LINN 11913, LINN 11880, LINN 11886, LINN 11899, LINN 11910, LINN 50471, LINN 2001, LINN 1993, LINN 956, LINN 61557, LINN 52482, LINN 64475, LINN 64380, LINN 64594, LINN 64678, LINN 51856, LINN 11892/11893, LINN 11897, LINN 11923, LINN 50599, LINN 51121, LINN 52527, LINN 51888, LINN 52411, LINN 11916, LINN 11911, LINN 11901, LINN 11908, LINN 11909, LINN 11912, LINN 51962, LINN 11848, LINN 55867, LINN 59116, LINN 11721

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.

Ferns, M.L. and McClaughry, J.D. 2009. Preliminary Geologic Map of the Brownsville 7.5' Quadrangle, Linn County, Oregon. Department of Geology and Mineral Industries.

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

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.

McClaughry, J. D., T. J. Wiley, M. L. Ferns, and I. P. Madin. 2010. Digital Geologic Map of the Southern Willamette Valley, Benton, Lane, Linn, Marion, and Polk Counties, Oregon. Oregon Dept. of Geology and Mineral Industries. Open File Report O-10-13.

O'Connor, J.E., Sarna-Wojcick, A., Wozniak, K.C., Polette, D.J., Fleck, R.J., 2001, Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon; U.S. Geological Survey, Professional Paper 1620, 51 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 690-200

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**



Oregon Water Resources Department
Water Availability Analysis

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Detailed Reports

CALAPOOIA R > WILLAMETTE R - AB MOUTH
WILLAMETTE BASIN

Water Availability as of 4/30/2025

Watershed ID #: 76 (Map)
Date: 4/30/2025

Exceedance Level: 80%
Time: 11:22 AM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

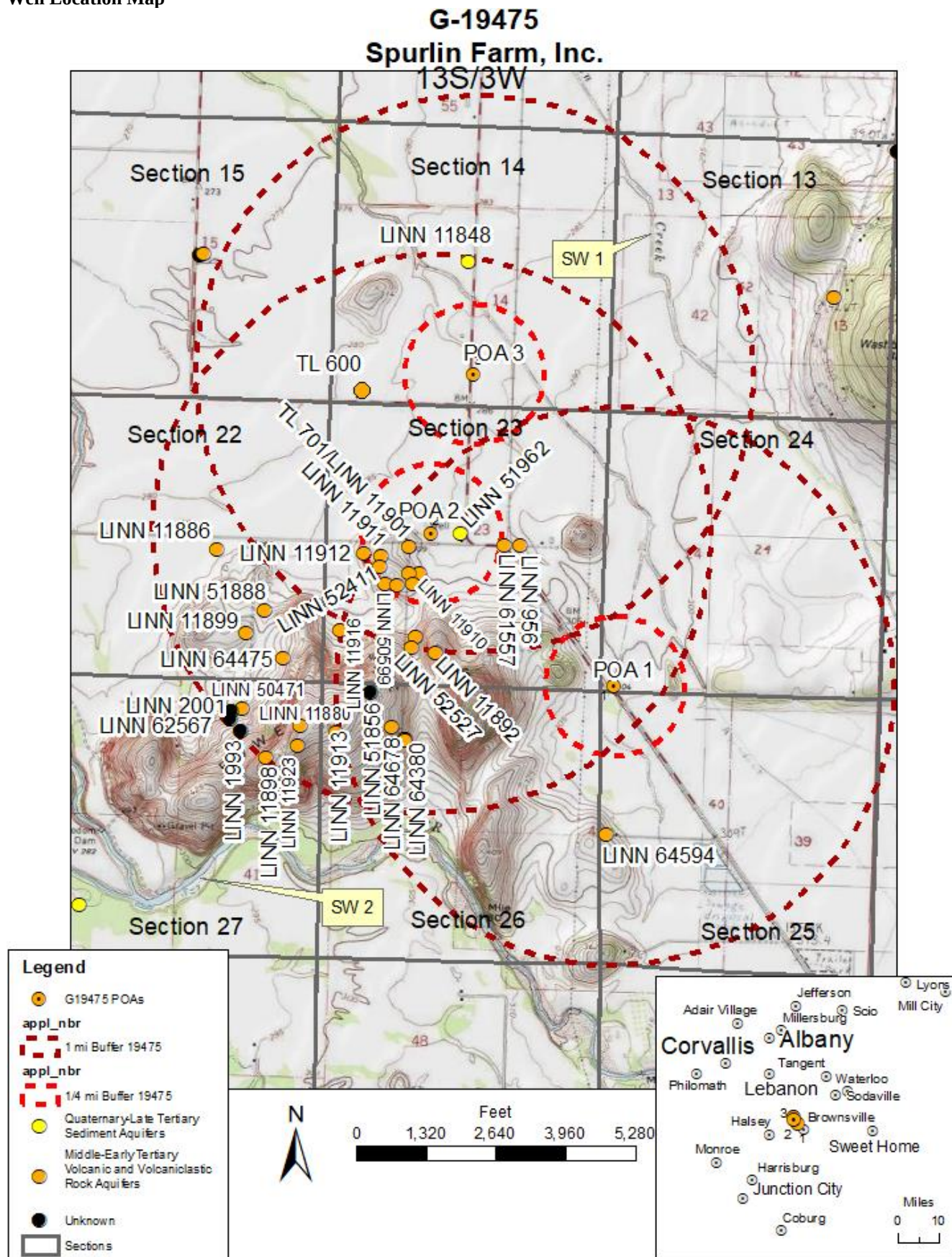
Watershed Characteristics

Water Availability Calculation

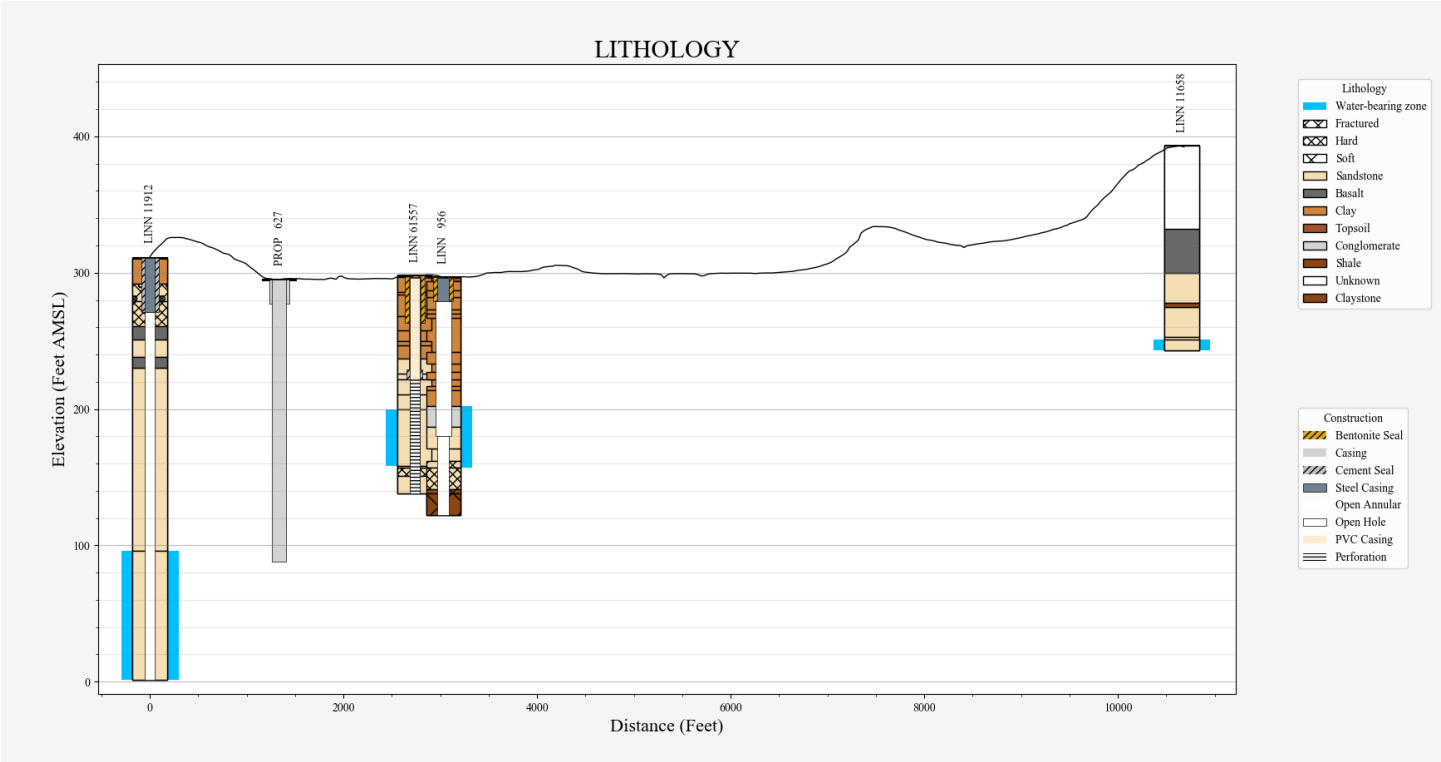
Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Not 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

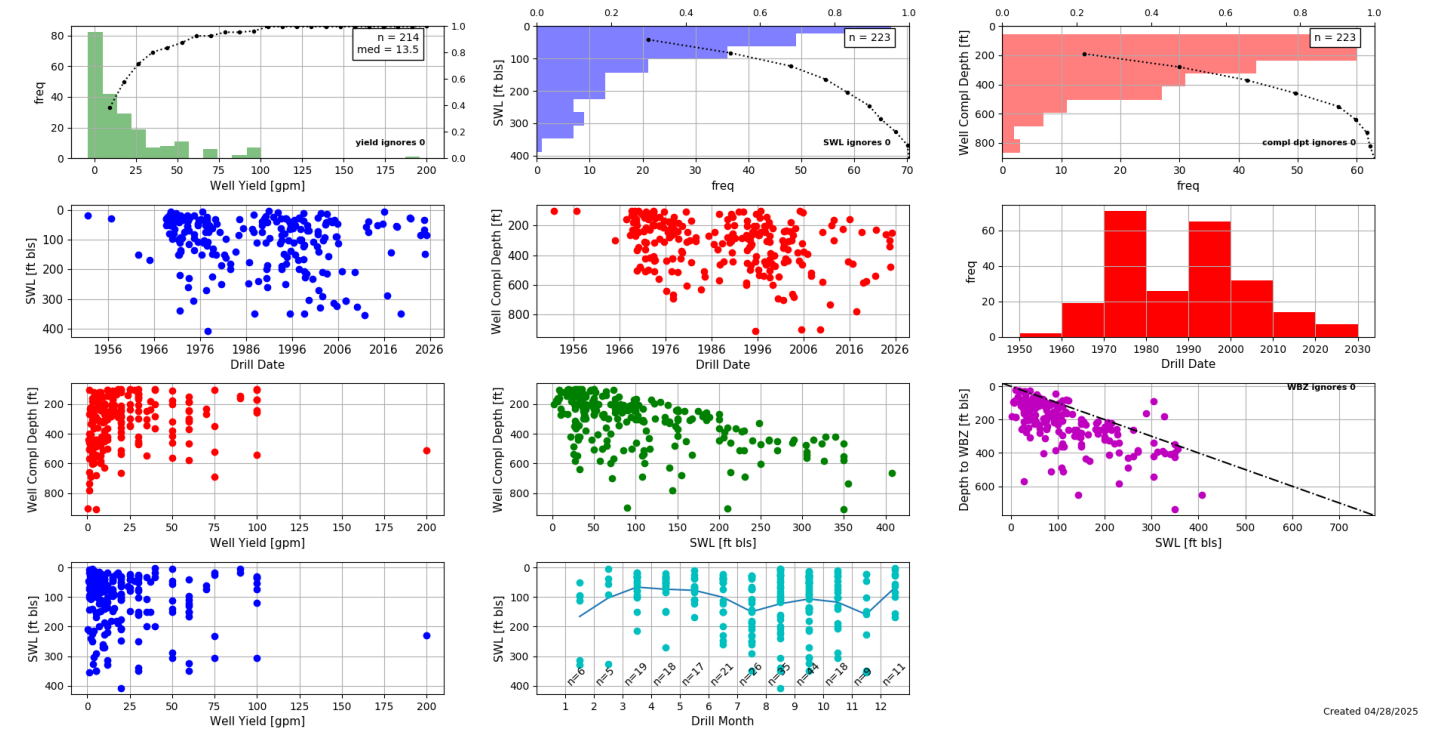
Well Location Map



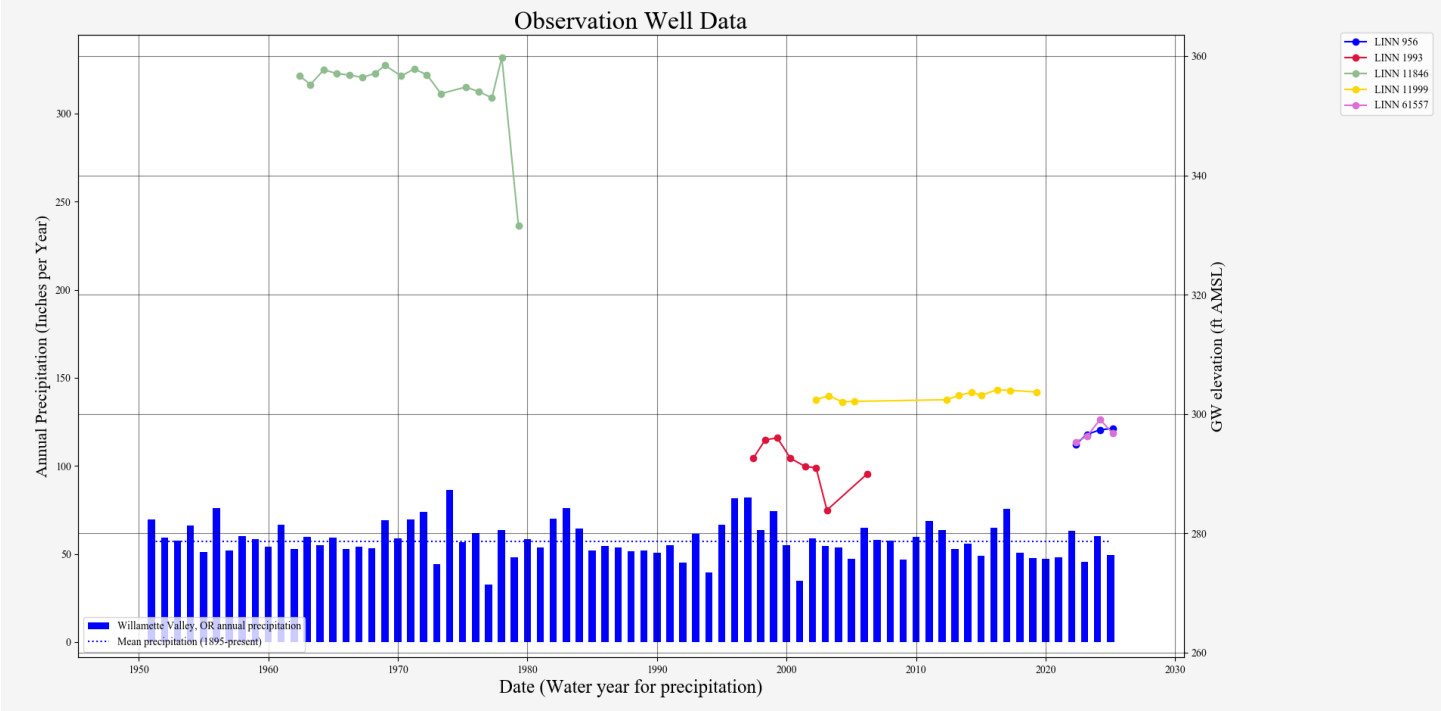
Cross-Section



Well Statistics

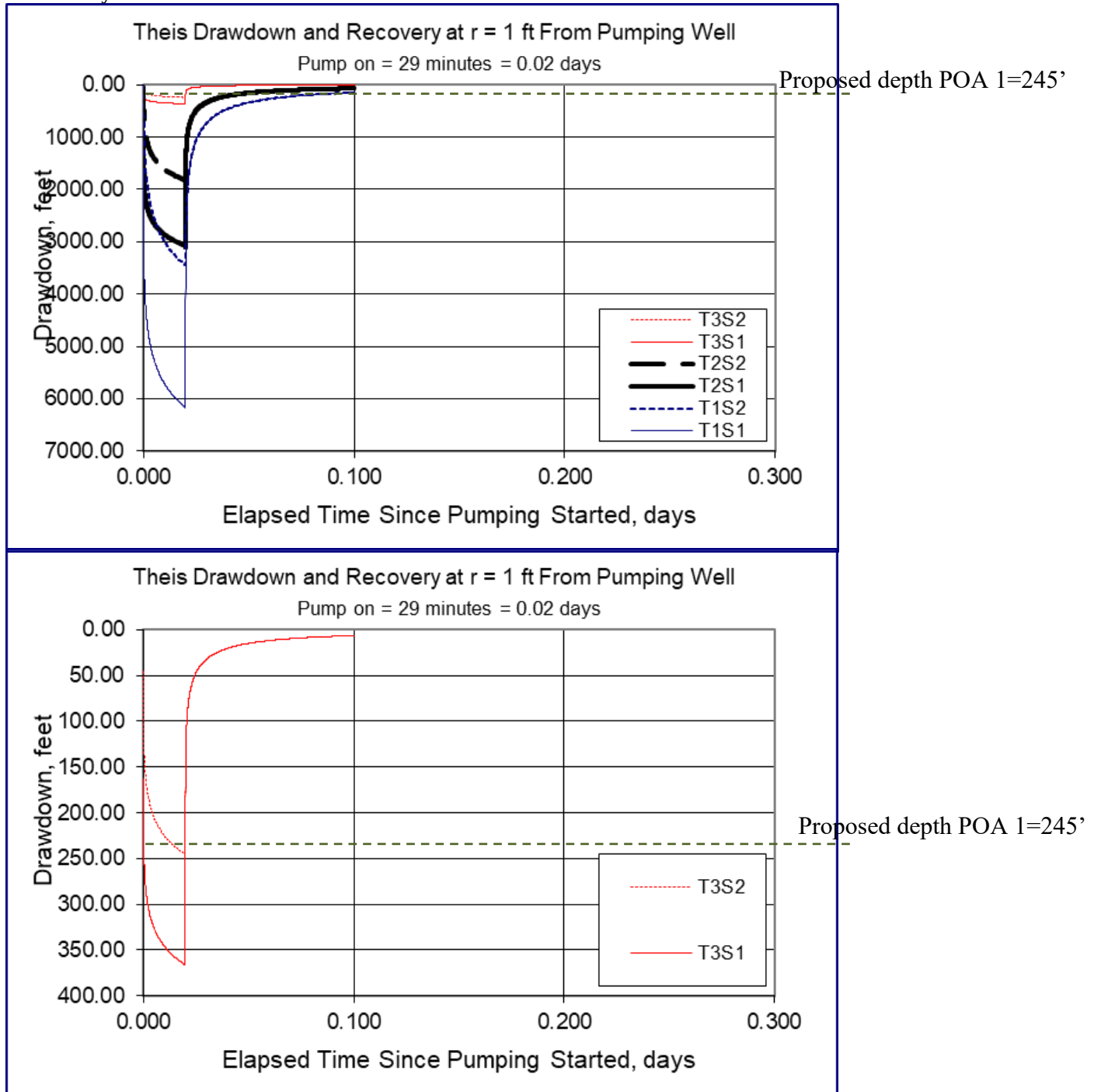


Water-Level Measurements in Nearby Wells



Water Use Reporting for Nearby Water Right



Theis Analysis-POA 1

Radial distance from pumping well (r)=1 ft, pumping well

Pumping Rate (Q)= 0.95

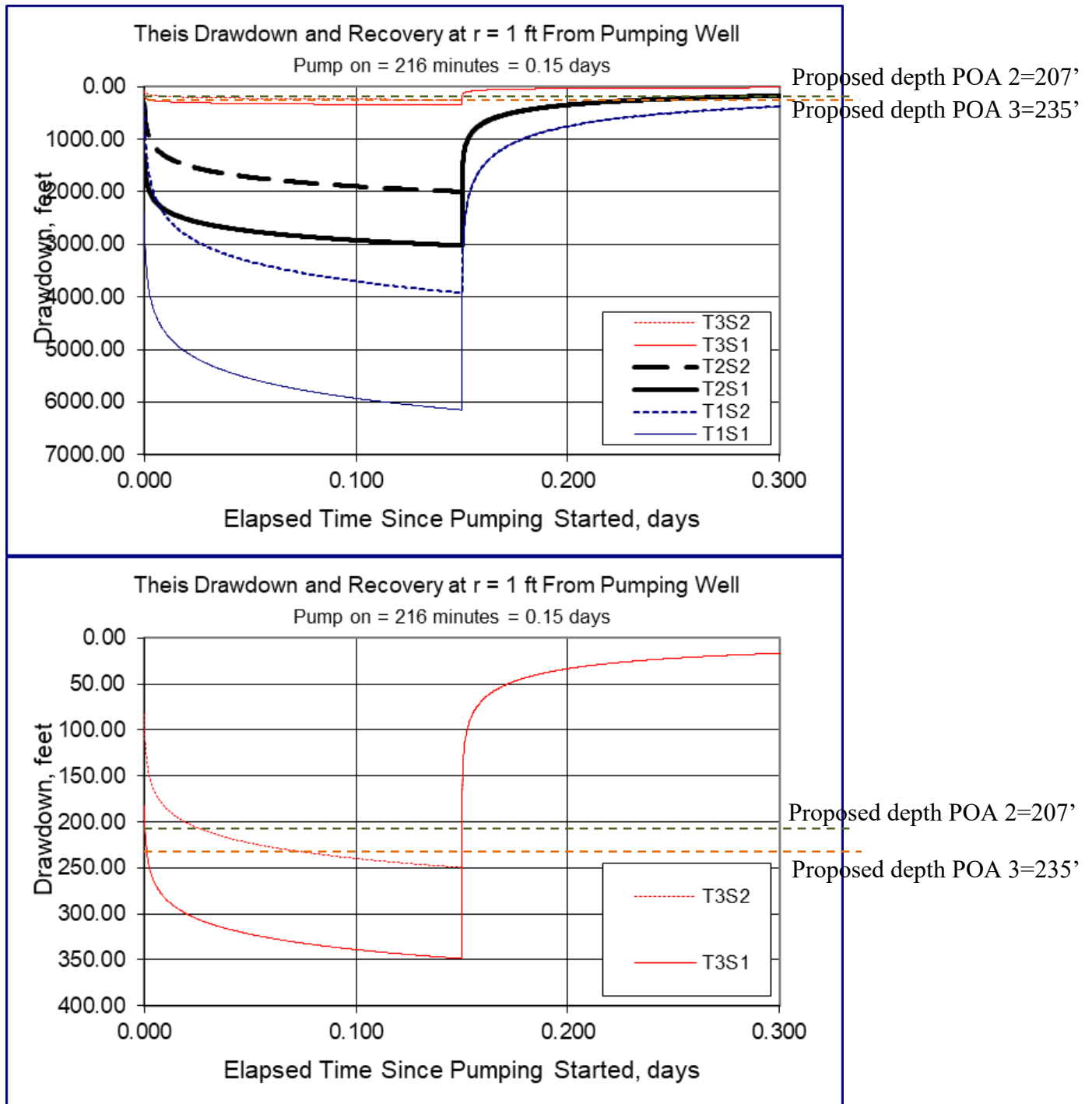
Aquifer Transmissivity (T_1)= 89.76 gpd/ft (12 ft²/day), (T_2)= 195.2 gpd/ft (26.1 ft²/day), (T_3)= 2,020 gpd/ft (270 ft²/day)

Storativity (s_1) = 0.00005, (s_2) = 0.003 [Conlon et al 2005, Table 1 values for BCU]

Total pumping time=29 minutes=0.5 hours=0.02 days

Upper graphs shows all scenarios: T1S1, T1S2, T2S1, T2S2, T3S1, T3S2

Lower graphs shows only T3S1 and T3S2

Theis Analysis-POAs 2 and 3

Radial distance from pumping well (r)=1 ft, pumping well

Pumping Rate (Q)= 0.95

Aquifer Transmissivity (T_1)= 89.76 gpd/ft (12 ft²/day), (T_2)= 195.2 gpd/ft (26.1 ft²/day), (T_3)= 2,020 gpd/ft (270 ft²/day)

Storativity (s_1) = 0.00005, (s_2) = 0.003 [Conlon et al 2005, Table 1 values for BCU]

Total pumping time=216 minutes=3.6 hours=0.15 days

Upper graphs shows all scenarios: T1S1, T1S2, T2S1, T2S2, T3S1, T3S2

Lower graphs shows only T3S1 and T3S2