

Groundwater Application Review Summary Form

Application # G- 18919

GW Reviewer Karl Wozniak Date Review Completed: 04/03/2020

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

April 3, 2020

TO: Application G- 18919

FROM: GW: Karl Wozniak
(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 _____ 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 April 3, 2020
 FROM: Groundwater Section Karl Wozniak
 Reviewer's Name
 SUBJECT: Application G- 18919 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: Pete Swan County: Polk

A1. Applicant(s) seek(s) 0.12 cfs from 1 well(s) in the Willamette Basin,
 _____ subbasin

A2. Proposed use Irrigation & Stock Watering Seasonality: Irr: March 1 – October 31; Lvstk: 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	Proposed	Well 1	Alluvium	0.12	09S/04W-11 NE-SW	1505' N, 1890' E fr SW cor S 11
2						
3						
4						
5						

* 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	170				36	18	0-36		20-34			

Use data from application for proposed wells.

A4. **Comments:** The applicant requests 0.09 cfs (40.5 gpm) for primary irrigation of 6.9 acres at a maximum annual volume of 17.25 acre feet and 0.03 cfs (13.5 gpm) for year-round livestock use. Table A3 reflects the proposed rates and the proposed well construction.

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 well is greater than 1/4-mile from all surface water sources so the pertinent rules (OAR 690-502-240) 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) 7e, 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 alluvial aquifer system 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:** Not enough information is available to determine if the aquifer is over appropriated as prescribed in OAR 690-310-130.

The proposed well location is within the Holocene floodplain of the Willamette River which is underlain by about 50 feet of unconsolidated sediments which in turn, are floored by low-permeability bedrock. Local wells produce from the floodplain aquifer which has a saturated thickness that ranges from 30-45 feet. The water table fluctuates 10-15 feet during the year, largely in response to changes in the state of the Willamette River. Water levels in a nearby recorder well (POLK 53369) indicate that seasonal low groundwater levels occur in late August and early September, coincident with lowest flows in the Willamette River.

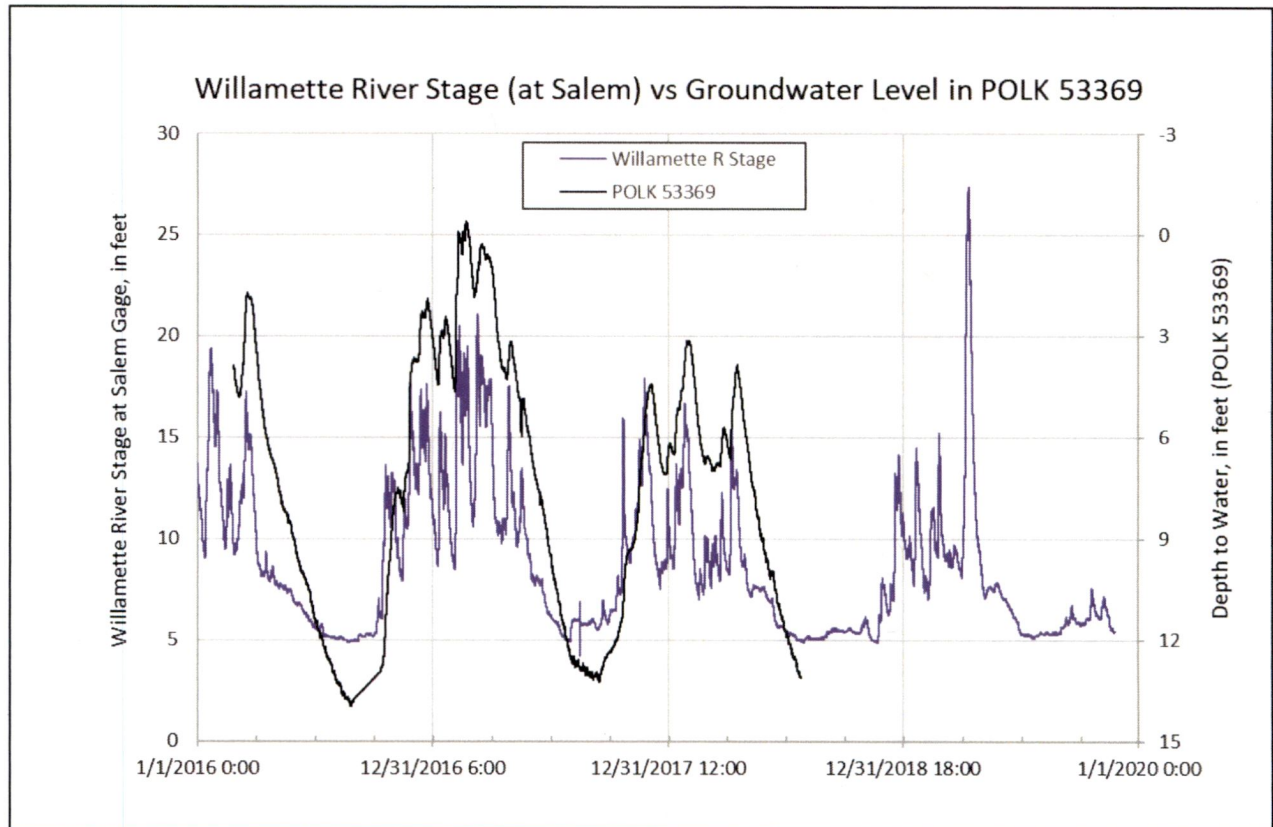
The applicant requests a maximum rate of 0.12 cfs (54 gpm) from 1 proposed well with a proposed diameter of 12 inches. Nearby irrigation wells have yields from the floodplain aquifer that range from 20-1065 gpm. The median yield is 150 gpm but most large-diameter wells are capable of producing greater than 250 gpm. Therefore, it is highly likely that the proposed well will be able to realize a yield of 54 gpm.

The adjacent lands in the floodplain are largely utilized for irrigation. Irrigation well density is moderately low in the area. Five permitted wells are within ¼ mile of the proposed well, the closest being POLK 3822, at a distance of about 810 feet. Domestic well density is quite low in the area. The locations of most domestic wells are not precisely known but tax lot and imagery indicate that the closest domestic well is probably about 600 feet to the south on tax lot 500. Analytical modeling (see This interference plot below) with conservative hydraulic parameters (K = 250 ft/day, S = 0.1, and b = 30 feet) indicates a maximum hydraulic interference of about 0.5 feet at a distance of 600 feet after 240 days of continuous pumping at 0.12 cfs (54 gpm). Interference will be less at greater distances. The median pumping drawdown in nearby wells (sections 11 and 14) is 5 feet. Nearby recorder well POLK 53369 indicates that even in the month of August, the local saturated thickness of the

aquifer is at least 32 feet. These facts indicate that the proposed well is unlikely to cause substantial interference with the nearby domestic or irrigation wells. Therefore, groundwater for the proposed use will likely be available in the amounts requested without injury to prior water rights.

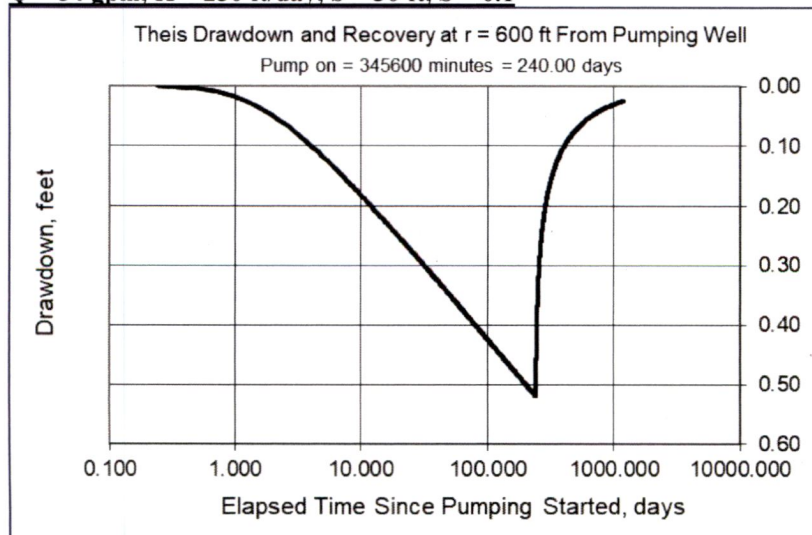
The proposed use is unlikely to cause long-term declines in groundwater levels because of the low proposed rates and the fact that groundwater levels in the floodplain aquifer are sustained by seasonal recharge from the Willamette River. Therefore, groundwater for the proposed use will likely to be available within the capacity of the groundwater resource.

Notwithstanding the above considerations, inherent uncertainties in the data suggest that it would be prudent to include water-level and water-use reporting conditions if the Department issues a permit.



This Interference at 600 feet

Q = 54 gpm, K = 250 ft/day, b = 30 ft, S = 0.1



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	Alluvial aquifer system	<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"/>

Basis for aquifer confinement evaluation: Although some local well logs report static water levels that are slightly higher than the first water-bearing zone, general knowledge indicates that groundwater is essentially unconfined in the Holocene floodplain deposits of the Willamette River. Aquifer tests conducted by the Department indicate specific yields of around 0.2.

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	Duck Slough	165	167	4875	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Willamette River	165	154	5600	<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"/>
						<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"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Porous media are continuous between the subject well and the listed streams. Published water table maps indicate that groundwater flows toward and discharges to the Willamette River. Also, plots of groundwater levels versus stream stage indicate an efficient connection between the aquifer and the Willamette River. Although the well is adjacent to Duck Slough, the slough is shown as an intermittent stream on USGS 7.5-minute topographic maps and is not likely to be hydraulically connected to the aquifer in the summer months but is likely connected in November through February when groundwater levels are 10-15 feet higher and approach land surface. Since the proposed livestock use is year round, pumping impacts to Duck Slough were evaluated in table C3a for those months of the year (November thru February) that Duck Slough is likely to be hydraulically connected to the floodplain aquifer.

Water Availability Basin the well(s) are located within: WILLAMETTE R> COLUMBIA R- AB MILL CR AT GAGE 14191000

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	<input type="checkbox"/>	<input type="checkbox"/>	MF183	1300	<input type="checkbox"/>	3620	<input type="checkbox"/>	<1%* See comments.	<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: *Stream depletion was estimated using the Hunt 1999 model since the aquifer is unconfined and because Duck Slough is expected to have some fine-grained sediment (a clogging layer) in its streambed. Using conservative parameters, stream depletion is estimated to be less than 1% of the production rate of the well after 30 days of continuous pumping. Impacts to Duck Slough will only be likely during the months of November through February when the water table is near land surface and the stream is flowing.

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													
(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: Impacts to the Willamette River were not evaluated because the proposed maximum monthly rate is less than 1% of the 80%-exceedance flows in all months of the year.

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: _____

References Used:

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: U.S. Geological Survey Scientific Investigations Report 2005-5168.

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

Hunt, B., 1999, Unsteady stream depletion from ground water pumping: Ground Water, v. 37, no. 1, p. 98-102.

O'Connor, J.E., Sarna-Wojcicki, A., Wozniak, K.C., Polette, D.J., and Fleck, R.J., 2001: U.S. Geological Survey Professional Paper 1620.

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage: Trans. Amer. Geophys. Union, vol. 16, pp. 519-524.

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, 82p.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: NA 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

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

WILLAMETTE R > COLUMBIA R - AB MILL CR AT GAGE 14191000

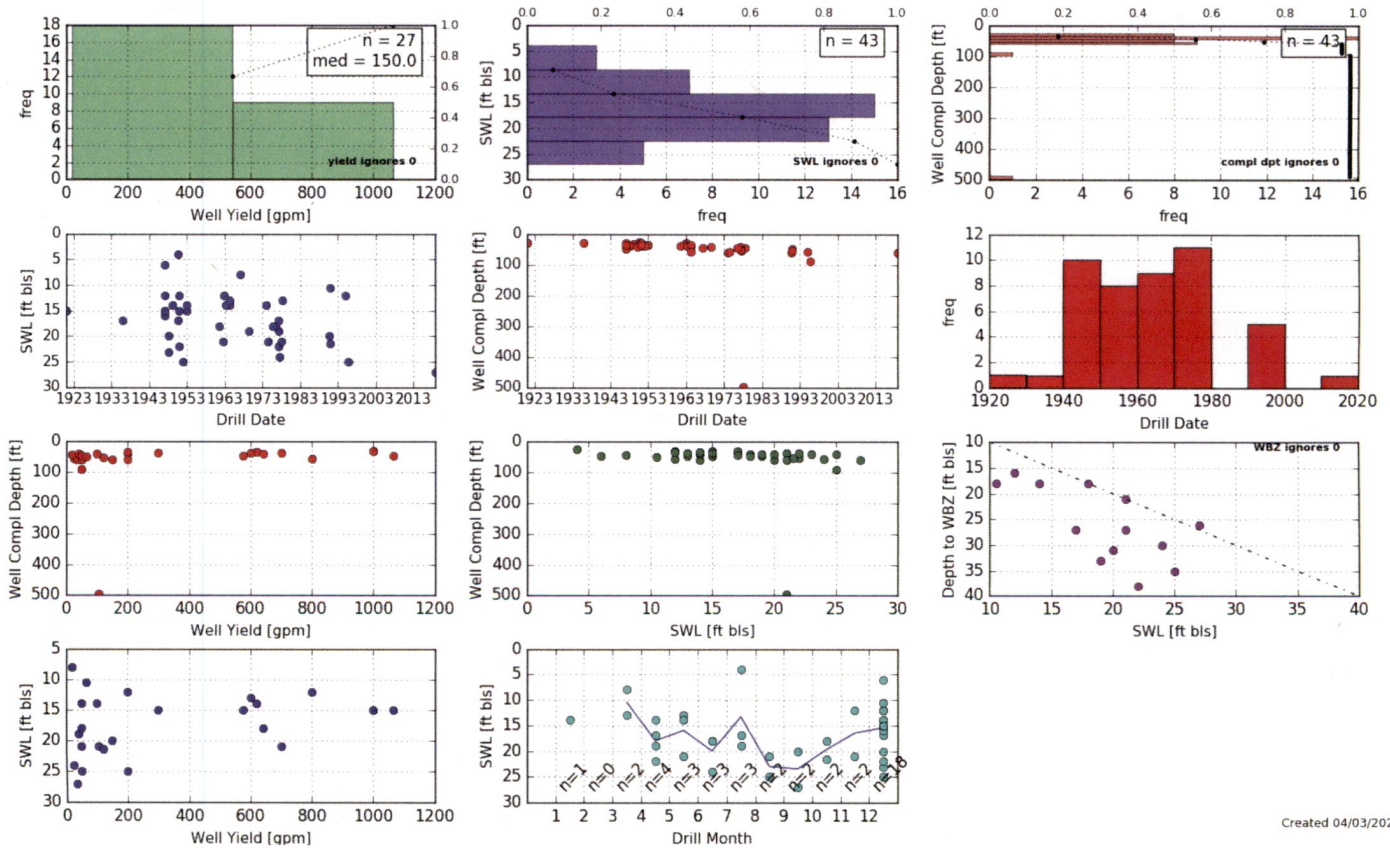
Watershed ID #: 183
Time: 1:13 PM

Basin: WILLAMETTE

Exceedance Level: 80
Date: 04/03/2020

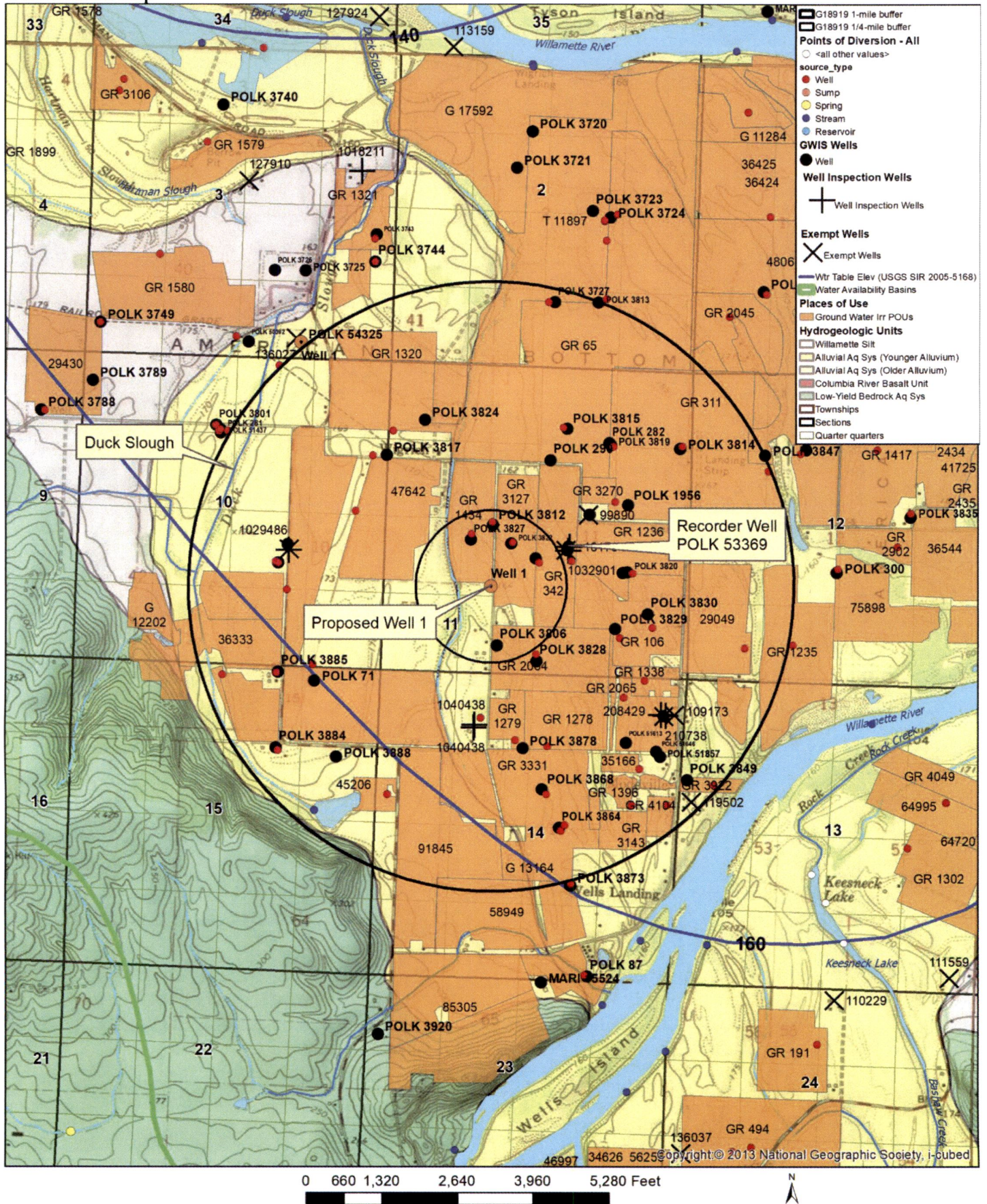
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	18,400.00	2,250.00	16,200.00	0.00	1,300.00	14,900.00
FEB	20,100.00	7,430.00	12,700.00	0.00	1,300.00	11,400.00
MAR	19,600.00	7,220.00	12,400.00	0.00	1,300.00	11,100.00
APR	18,000.00	6,870.00	11,100.00	0.00	1,300.00	9,830.00
MAY	15,500.00	4,180.00	11,300.00	0.00	1,300.00	10,000.00
JUN	8,310.00	1,690.00	6,620.00	0.00	1,300.00	5,320.00
JUL	4,710.00	1,450.00	3,260.00	0.00	1,300.00	1,960.00
AUG	3,620.00	1,330.00	2,290.00	0.00	1,300.00	991.00
SEP	3,680.00	1,150.00	2,530.00	0.00	1,300.00	1,230.00
OCT	4,650.00	748.00	3,900.00	0.00	1,300.00	2,600.00
NOV	9,400.00	857.00	8,540.00	0.00	1,300.00	7,240.00
DEC	16,700.00	918.00	15,800.00	0.00	1,300.00	14,500.00
ANN	13,500,000	2,160,000	11,300,000	0	942,000	10,400,000

Irrigation Well Statistics – Sections 11 & 14, 9S/4W



Created 04/03/2020

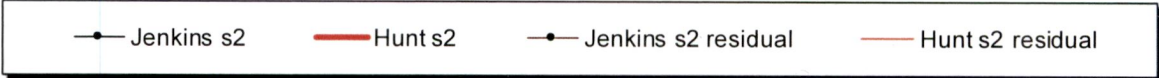
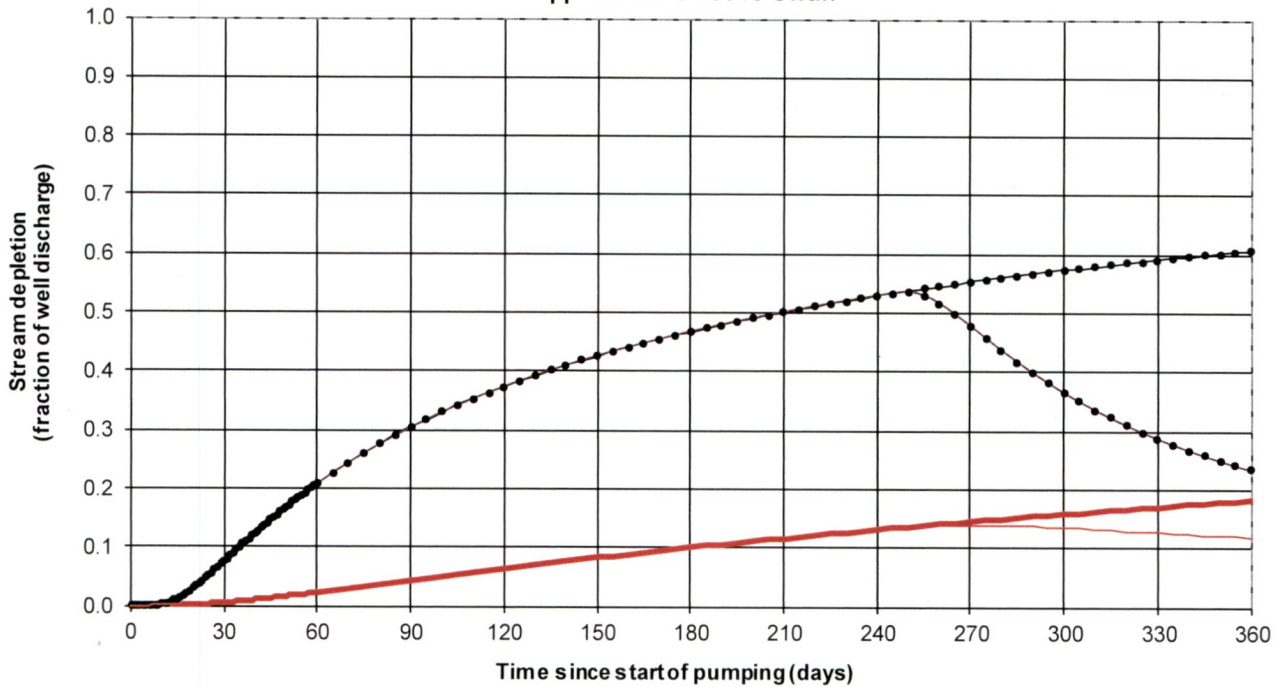
Well Location Map



Stream Depletion Estimates

Transient Stream Depletion (Jenkins, 1970; Hunt, 1999)

Application G-18919 Swah



Output for Hunt Stream Depletion, Scenerio 2 (s2): Time pump on = 240 days

Days	30	60	90	120	150	180	210	240	270	300	330	360
Qw, cfs	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030
Jenk SD s2 %	7.51	20.81	30.41	37.34	42.60	46.74	50.11	52.91	47.79	36.54	28.74	23.39
Jen SD s2 cfs	0.002	0.006	0.009	0.011	0.013	0.014	0.015	0.016	0.014	0.011	0.009	0.007
Hunt SD s2 %	0.51	2.31	4.37	6.36	8.23	9.97	11.58	13.08	13.96	13.48	12.66	11.83
Hunt SD s2 cfs	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004

Parameters:		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate	Qw	0.03	0.03	0.03	cfs
Distance to stream	a	4875	4875	4875	ft
Aquifer hydraulic conductivity	K	250	250	250	ft/day
Aquifer thickness	b	50	50	50	ft
Aquifer transmissivity	T	12500	12500	12500	ft*ft/day
Aquifer storage coefficient	S	0.1	0.1	0.1	
Stream width	ws	5	5	5	ft
Streambed hydraulic conductivity	Ks	1	1	1	ft/day
Streambed thickness	bs	3	3	3	ft
Streambed conductance	sbc	1.666666667	1.666666667	1.666666667	ft/day
Stream depletion factor (Jenkins)	sdf	190.125	190.125	190.125	days
Streambed factor (Hunt)	sbf	0.65	0.65	0.65	

POLK 53369 Well Log

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

POLK 53369
10/6/2012

WELL I.D. LABEL# L 107756 107746
START CARD # 1017947
ORIGINAL LOG #

(1) LAND OWNER
Owner Well I.D.
First Name
Last Name
Company LUCKIAMUTE DOMESTIC WATER COOPERATIVE
Address 8585 SUVER ROAD
City MONMOUTH State OR Zip 97361

(2) TYPE OF WORK
[X] New Well [] Deepening [] Conversion
[] Alteration (complete 2a & 10) [] Abandonment (complete 5a)

(2a) PRE-ALTERATION
Dia + From To Gauge Stl Plstc Wld Thrd
Casing:
Material From To Amt sacks/lbs
Seal:

(3) DRILL METHOD
[X] Rotary Air [] Rotary Mud [] Cable [] Auger [] Cable Mud
[] Reverse Rotary [] Other

(4) PROPOSED USE
[] Domestic [] Irrigation [X] Community
[] Industrial/ Commercial [] Livestock [] Dewatering
[] Thermal [] Injection [X] Other TEST WELL

(5) BORE HOLE CONSTRUCTION
Special Standard [] (Attach copy)
Depth of Completed Well 58.00 ft.
BORE HOLE
Dia From To Material SEAL From To Amt sacks/lbs

Table with columns: Dia, From, To, Material, SEAL, From, To, Amt, sacks/lbs. Row 1: 10, 0, 18, Bentonite, 0, 18, 11, S. Row 2: 6, 18, 58.

How was seal placed: Method [] A [] B [] C [] D [] E
[X] Other BENTONITE DRY
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Actual Amount

(6) CASING/LINER
Casing Liner Dia + From To Gauge Stl Plstc Wld Thrd
Shoe [X] Inside [] Outside [] Other Location of shoe(s) 58
Temp casing [] Yes Dia From To

Table with columns: Casing, Liner, Dia, +, From, To, Gauge, Stl, Plstc, Wld, Thrd. Row 1: 6, 2, 58, .250, 84.

(7) PERFORATIONS/SCREENS
Perforations Method Mills Knife
Screens Type Material
Perf/ Casing/Screen Dia From To Scm/slot Slot # of Tele/ Screen width length slots pipe size

Table with columns: Perf, Casing, Screen, Dia, From, To, Scm/slot, Slot width, length, # of slots, Tele/pipe size. Row 1: 6, 27, 47, .375, 2, 84.

(8) WELL TESTS: Minimum testing time is 1 hour
[] Pump [X] Bailer [] Air [] Flowing Artesian
Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)

Table with columns: Yield gal/min, Drawdown, Drill stem/Pump depth, Duration (hr). Row 1: 25, 0, 2.

Temperature 54 °F Lab analysis [] Yes By
Water quality concerns? [] Yes (describe below) TDS amount
From To Description Amount Units

Table with columns: From, To, Description, Amount, Units.

(9) LOCATION OF WELL (legal description)
County POLK Twp 9.00 S N/S Range 4.00 W E/W WM
Sec 11 NW 1/4 of the SE 1/4 Tax Lot 600
Tax Map Number Lot
Lat " or " or " DMS or DD
Long " or " or " DMS or DD
[] Street address of well [] Nearest address
5340 WIGRICH ROAD INDEPENDENCE, OR

(10) STATIC WATER LEVEL
Date SWL(psi) + SWL(ft)
Existing Well / Pre-Alteration
Completed Well 10/5/2012 11.5
Flowing Artesian? [] Dry Hole? []

Table with columns: SWL Date, From, To, Est Flow, SWL(psi), + SWL(ft). Row 1: 10/5/2012, 17, 47, 50, 11.5.

(11) WELL LOG
Ground Elevation
Material From To
Top soil 0 2
Brown sand 2 8
Brown clay 8 16
Gravel w/clay binder 16 22
Gravel w/brown sand 22 26
Gravel w/light gray clay 26 28
Gravel brown very dirty 28 47
Blue clay firm 47 58
RECEIVED BY OWRD
DEC 05 2012
SALEM, OR

Date Started 10/2/2012 Complete 10/5/2012

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number 1903 Date 10/6/2012
Signed RYAN PILLSBURY (E-filed)

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1273 Date 10/6/2012
Signed FLOYD G SIPPEL (E-filed)
Contact Info (optional)