

Groundwater Application Review Summary Form

Application # G- 18924

GW Reviewer Phil Marcy Date Review Completed: 04/01/2020

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).

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 04/01/2020
 FROM: Groundwater Section Phillip I. Marcy
 SUBJECT: Application G- 18924 Supersedes review of _____
 Reviewer's Name
 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: Nathan Johnson County: Benton

A1. Applicant(s) seek(s) 0.038 cfs from 2 well(s) in the Willamette Basin,
 _____ subbasin

A2. Proposed use Nursery, Irrigation (13.25 acres)
 Seasonality: Nursery: year-round, Irrigation: Mar. 1st-Oct. 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	BENT 5247	Barn	Alluvium	0.038	12S/5W-7 SE-SE	72' N, 145' W fr NE cor S 18
2	BENT 1510	Main	Alluvium	0.038	12S/5W-18 NE-NE	171' S, 124' W fr NE cor S 18
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												

Use data from application for proposed wells.

A4. **Comments:** Metes and bounds locations appear to be significantly off on application map, placing wells on land clearly not owned by the applicant. GPS locations provided on the map locate the wells on the correct tax lots (125170000601 and 125170000600), with the "Barn well" next to the barn. These corrected locations will be used throughout this review to evaluate impacts to nearby wells and local streams. In addition, the PODs as listed in WRIS, are in reverse order than the wells on the application. The table above reflects the order wells are listed as PODs in WRIS.

A5. **Provisions of the** Willamette (690-502-0240) 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: Wells are not within one quarter mile of a surface water source.

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: _____
 Comments: _____

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	Quaternary Gravels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Sandstone of the Spencer Formation	<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"/>

Basis for aquifer confinement evaluation: POA 1 (BENT 5247) is open to gravels occurring between 40-49' below land surface, which are likely a portion of Holocene alluvial sequence, consisting of river gravels, interfingering with terrace deposits, flood plain silts, and blanketed by fine-grained material from the Missoula Floods. This overlying sequence of fines is punctured in many places nearby, and incised by local streams which reside at similar elevations to water level elevations within the well. The attached cross-section displays incision of Marys River at similar elevations of the water-bearing zones within BENT 5247. POA 2 (BENT 1510) is constructed to produce from sandstones of the Spencer Formation (McClaughry and others, 2003). Many nearby wells producing from this unit report relatively thin water-bearing zones within massive gray sandstone greater than 100' in thickness, suggesting groundwater movement is primarily fracture-controlled. Despite the close proximity of these two wells, the measured water levels at the time of drilling are 36' different in elevation.

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	Marys River	254	229-252	2700	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Marys River	218	229-252	2550	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Based upon well construction and available water levels, POA 1 (BENT 5247) is hydraulically connected to local surface water within 1 mile, with the incision of Marys River likely rendering it in direct connection with the productive zones in the well. POA 2 (BENT 1510) is limited to production from fractures within massive sandstones of the Spencer Formation, and water levels here are significantly different from nearby surface waters within 1 mile. Any hydraulic connection between this well and surface waters appears to be diffuse and inefficient, and may also occur outside of 1 mile of the proposed POA.

Water Availability Basin the well(s) are located within: MARYS R > WILLAMETTE R – AT MOUTH

C3a. 690-09-040 (4): Evaluation of stream impacts for each well that has been determined or assumed to be hydraulically connected and less than 1 mile from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and 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"/>	MF121A	5.00	<input type="checkbox"/>	19.6	<input type="checkbox"/>	<25%	<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"/>

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"/>
	<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"/>

Comments: Impacts to Marys River as a result of pumping at BENT 5247 are expected to be less than 25% after 30 days, due to distance from the river and the presence of fine-grained sediments on the streambed which delay response to changing hydraulic gradient due to nearby groundwater pumping.

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
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.

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) _____

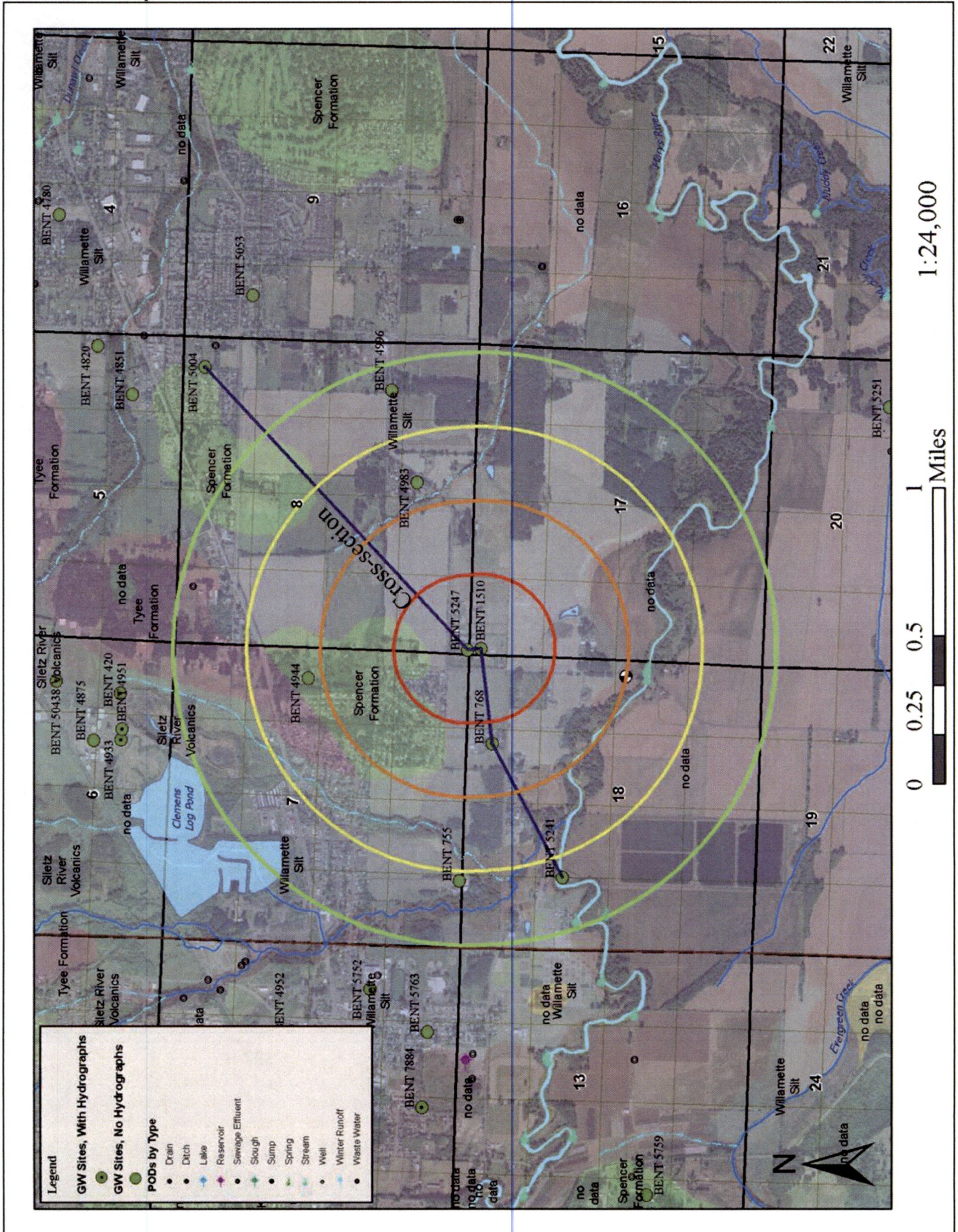
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION						
Watershed ID #: 70748		MARYS R > WILLAMETTE R - AT MOUTH			Exceedance Level: 80	
Time: 3:23 PM		Basin: WILLAMETTE			Date: 03/31/2020	
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	579.00	10.90	568.00	0.00	135.00	433.00
FEB	661.00	10.50	651.00	0.00	135.00	516.00
MAR	567.00	9.87	557.00	0.00	135.00	422.00
APR	350.00	8.65	341.00	0.00	135.00	206.00
MAY	188.00	14.50	174.00	0.00	135.00	38.50
JUN	90.60	24.20	66.40	0.00	70.00	-3.59
JUL	40.00	34.10	5.86	0.00	20.00	-14.10
AUG	24.10	29.00	-4.94	0.00	15.00	-19.90
SEP	19.60	19.10	0.51	0.00	15.00	-14.50
OCT	23.60	6.96	16.60	0.00	38.70	-22.10
NOV	71.00	7.54	63.50	0.00	135.00	-71.50
DEC	424.00	10.50	414.00	0.00	135.00	279.00
ANN	358,000	11,300	347,000	0	66,400	282,000

Well Location Map

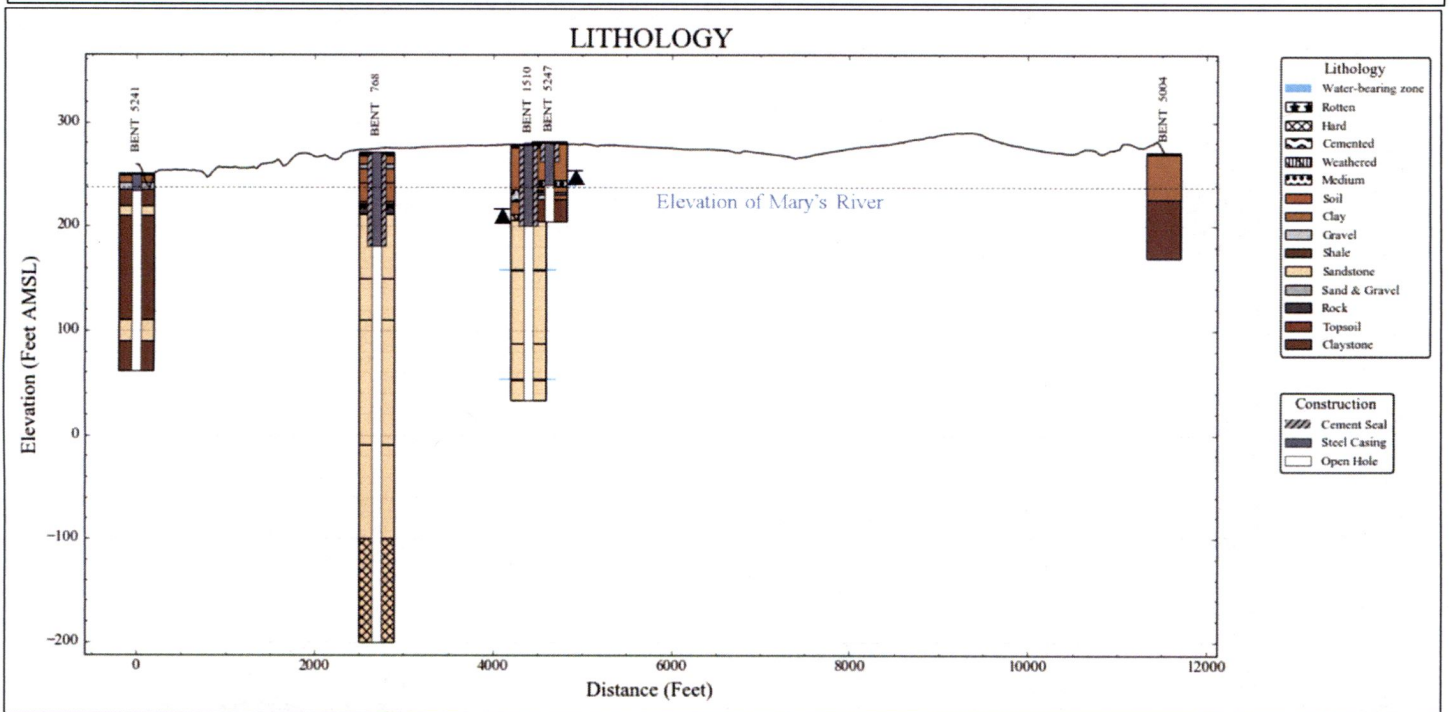
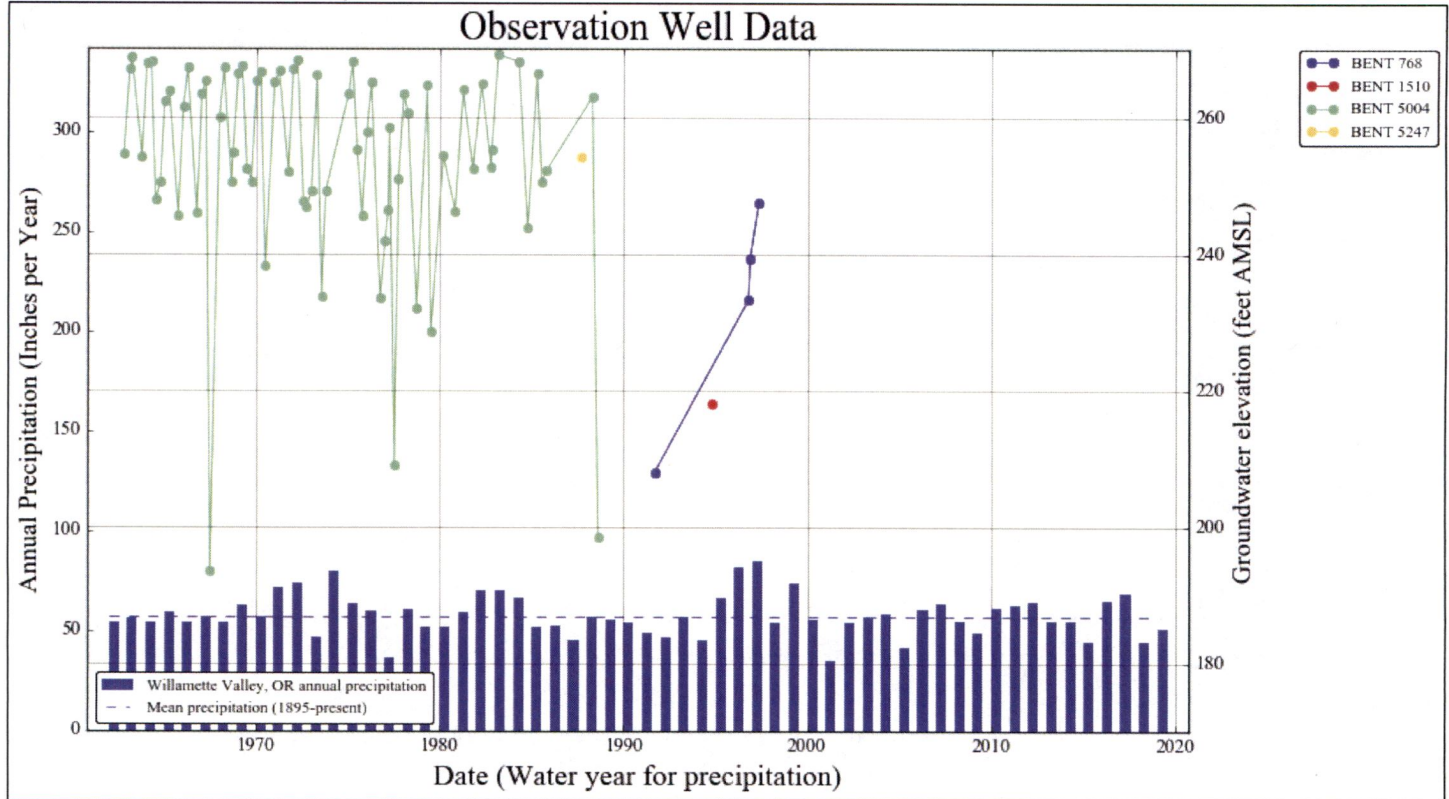


1:24,000

1 Miles

0 0.25 0.5

Water-Level Trends in Nearby Wells



Cross-section illustrates the correspondence of water-bearing gravels and head elevation of POA well 1 (BENT 5247) with the nearby Marys River. POA well 2 (BENT 1510) produces from discrete portions of the Spencer Formation sandstone, with resulting head elevations much lower. Cross-section well locations displayed on attached map.

Approved: 

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Travis Kelly, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18924
Date: April 8, 2020

The attached application was forwarded to the Well Construction and Compliance Section by the Ground Water Section. Phil Marcy reviewed the application. Please see Phil's Groundwater Review and the Well Reports.

Applicant's "Barn" Well (BENT 5247): Based on a review of the Well Report, Applicant's "Barn" Well seems to protect the groundwater resource.

The construction of Applicant's "Barn" Well may not satisfy hydraulic connection issues.

Applicant's "Main" Well (BENT 1510): Based on a review of the Well Report, Applicant's "Main" Well seems to protect the groundwater resource

The construction of Applicant's "Main" Well may not satisfy hydraulic connection issues.

STATE OF OREGON
WATER WELL REPORT
 (as required by ORS 537.765)

RECEIVED

Bent
 3247

125/5W-19d

OCT - 2 1987

(1) **OWNER:** Well Number: _____
 Name HARRY MACCORMACK
 Address 6910 PHILOMATH DR
 City PHILOMATH State OR. Zip _____

(2) **TYPE OF WORK:**
 New Well Deepen Recondition Abandon

(3) **DRILL METHOD**
 Rotary Air Rotary Mud Cable
 Other _____

(4) **PROPOSED USE:**
 Domestic Community Industrial Irrigation
 Thermal Injection Other _____

(5) **BORE HOLE CONSTRUCTION:**
 Special Construction approval Yes No Depth of Completed Well 75 ft.
 Explosives used Yes No Type _____ Amount _____

HOLE			SEAL			Amount sacks or pounds
meter	From	To	Material	From	To	
18	0	18	CEMENT	0	18	6 SACKS
6	18	75				

How was seal placed: Method A B C D E
 Other TREMIE
 Backfill placed from _____ ft. to _____ ft. Material _____
 Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) **CASING/LINER:**

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: <u>6</u>	<u>+1</u>	<u>40</u>	<u>250</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

location of shoe(s) _____

(7) **PERFORATIONS/SCREENS:**

Perforations Method _____
 Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

(8) **WELL TESTS: Minimum testing time is 1 hour**

Pump Bailer Air Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
<u>8</u>	<u>40</u>		<u>1 hr.</u>

Temperature of water _____ Depth Artesian Flow Found _____
 Was a water analysis done? Yes By whom _____
 Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other _____
 Depth of strata: _____

(9) **LOCATION OF WELL by legal description:**
 WATER RESOURCES DEPT. BEYTON Latitude _____ Longitude _____
 SALEM OREGON Zip 97135 N or S, Range 5W E or W, WM. _____
 Section 19 NE 1/4 SE 1/4
 Tax Lot _____ Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) SAME

(10) **STATIC WATER LEVEL:**
26 ft. below land surface. Date 8-31
 Artesian pressure _____ lb. per square inch. Date _____

(11) **WATER BEARING ZONES:**

Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL
<u>36</u>	<u>41</u>	<u>8</u>	<u>26</u>

(12) **WELL LOG:** Ground elevation _____

Material	From	To	SWL
SOIL	0	1	
CLAY (BROWN)	1	36	
GRAVEL (MED)	36	41	
CLAY (BROWN)	41	47	
GRAVEL (MED)	47	49	
CLAY (BROWN)	49	54	
CLAYSTONE (BLUE)	54	75	

Date started 8-25-78 Completed 8-31-87

(unbonded) **Water Well Constructor Certification:**
 I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
 Signed _____ WWC Number _____
 Date _____

(bonded) **Water Well Constructor Certification:**
 I accept responsibility for the construction, 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 well construction standards. This report is true to the best of my knowledge and belief.
 Signed WA Pankalla WWC Number 621
 Date 9-30-87

BENT 5247

THIS CARD MUST BE POSTMARKED BEFORE COMMENCEMENT OF CONSTRUCTION

For Harry Maccormack
(Owner)

6910 Plymouth Dr Cornell's Cr.
(Owner's Mailing Address)

On or about the 8-18-87 I will commence the construction of a well to be
(Date)

located NE 1/4 SE 1/4 SEC 19 T12S R5W
(Give 1/4, 1/4, Section, Township, and Range)

County: Benton

Well information:

Diameter of well 6 inches. Domestic Industrial Municipal
Estimated depth 50 feet. Irrigation Stock
Other _____

Date 6-16-87 WA PANKALLA Contractor's License No. 621
(Water Well Contractor—Please Print)

Authorized signature WA Pankalla

NOTICE OF BEGINNING OF WELL CONSTRUCTION

SP*45214-690

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

BENT
1510

125/5W/1766
(START CARD) # 73133

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number 1111
Name Harry McCormack
Address 6910 S.W. Plymouth Dr
City Corvallis State OR Zip 97333

(2) TYPE OF WORK
 New Well Deepening Alteration (repair/recondition) Abandonment

(3) DRILL METHOD:
 Rotary Air Rotary Mud Cable Auger
 Other

(4) PROPOSED USE:
 Domestic Community Industrial Irrigation
 Thermal Injection Livestock Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 245 ft.
Explosives used Yes No Type _____ Amount _____

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	
10"	0'	78'	Cement	0'	78'	19 Sacks
6"	78'	245'				

How was seal placed: Method A B C D E
 Other _____

Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 6"	12'	78'	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: None				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) None

(7) PERFORATIONS/SCREENS:

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
None							

(8) WELL TESTS: Minimum testing time is 1 hour

Pump Bailer Air Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
9 GPM			1 hr.

Temperature of water 55° Depth Artesian Flow Found _____
Was a water analysis done? Yes By whom _____
Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Benton Latitude _____ Longitude _____
Township 12S N or S Range 5W E or W WM. _____
Section 17 NW 1/4 NW 1/4
Tax Lot _____ Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) Same

(10) STATIC WATER LEVEL:
60' ft. below land surface. Date 10/25/94
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 120'

From	To	Estimated Flow Rate	SWL
120'	121'	2 GPM	60'
190'	191'	3 GPM	60'
224'	225'	4 GPM	60'

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
Top Soil	0	2	0
Brown Clay	2	43	0
Cemented Gravel	43	54	0
Brown Clay	54	67	0
Weathered Sandstone	67	72	0
Grey S. Stone	72	245	60'

Date started 10/24/94 Completed 10/25/94
(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, 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.
Signed KTD mts WWC Number 1411 Date _____

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, 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.
Signed Donald J. Forging WWC Number 751 Date 11/3/94