Public Health Division

Center for Health Protection, Drinking Water Services

Tina Kotek, Governor

May 29, 2025

Emilio Pereira
emilio@willamettehazelnuts.com
Willamette Hazelnut
14975 NE Tangen Rd
Newberg, OR 97132

Letter sent via email only.

Re: 2 Wells, 11,000-gal Tank, UV, cartridge filtration & residual maint. (PR#90-2024)
Willamette Hazelnut, Inc. (PWS ID# 95718)
Final Approval

Dear Mr. Pereira,

Thank you for your submittals to the Oregon Health Authority's Drinking Water Services (DWS) of plan review information for the water system (described below) for Willamette Hazelnut, Inc. which is licensed and regulated by the Oregon Dept. of Agriculture. On August 19, 2024 our office received a plan review fee of $825 to accompany well logs and photos previously submitted in various emails. Conditional Approval was issued on April 17, 2024. Based on subsequent submittals, discussion via Teams meeting on February 21, 2025, and distribuiton system testing in February, March, April, and May of this year showing an absence of coliform bacteria and a free chlorine residual with the most recent sampling completed on May 23, 2025, **the project is granted Final Approval and the facilities are approved for potable use.**

The project includes a review of:

- Pre-existing facilities consiting of:
  - Two wells (Exempt Use – no water right needed. The 1970 Davis well was found to not be subject to our construction standards as it has been in use in it's current capacity prior to 1985.
  - Two pressure tanks, and
  - One 11,000-gallon steel ground-level tank with new modifications to the inlet/outlet configuration (not subject to our construction standards as this tank has been in use in it's current capacity since the mid 1970's)

- New treatment consisting of sodium hypochlorite injection for residual maintenance only (not for primary 4-log viral disinfection), cartridge filtration, and UV (not rated for viral inactivation) which was added to address persistent total coliform bacteria in distribution system sampling completed in the fall of 2023 and spring of 2024.

- A new system Capacity Assessment was also completed in conjuction with this plan review and no deficiencies were found and no further action is needed on your part. The system was prevously operating since the mid 1970's in it's current capacity, but was activated as a new transient non-community water system on September 6, 2023 as shown on our website at: https://yourwater.oregon.gov/inventory.php?pwsno=95718.
- Under OAR 333-061-0060(1)(b), submittals must be prepared by a Professional Engineer registered in Oregon, unless exempted by DWS. An exemption was granted for this submittal. **Note that by utilizing this exemption, the water system takes full responsibility for the design of the project.**
- Based upon the submitted information, well #1 (SRC-AA) was determined by our geologist, Tom Pattee, to be adequately constructed into a confined aquifer.
- The construction of well #2 (SRC-AB) called the "Davis Well" was determined by Tom Pattee, to pull water from a confined aquifer, but was inadequatley constructed in that the "puddled clay" annular seal does not meet current Oregon Water Resources Dept. requirements. Because of this finding, monthly source assessment coliform monitoring should continue for 12 consecutive months (already started in February of 2025) if the Davis well remains connected. This is also due to the proximity of a pond within 240-ft of the well and historical land use as a former dairy farm (roughly 15-years ago). Further review of existing treatment may be needed should this source have confirmed E. coli results.

Wells showing 100-ft radius around each well:

- Sampling will now consist of:
  - For SRC-AA – Tank Well #1 (the well near the tank):
    - Annual raw water coliform (prior to treatment) sampling from Well #1 beginning in 2026. Please mark these samples "source assessement" for "SRC-AA Tank Well #1" on the lab reporting form.
  - For SRC-AB - Davis Well #2:
    - Monthly raw water coliform (prior to treatment) sampling for the Davis well is to be done monthly between 2/1/25 – 1/31/26. Please mark these samples "source assessement" for "SRC-AB Davis Well #2" on the lab reporting form.
    - Annual raw water coliform (prior to treatment) sampling from the Davis well beginning in 2027 (subject to change based on the results of the monthly sampling). Also mark these samples "source assessement" for for "SRC-AB Davis Well #2" on the lab reporting form.
  - For Entry Point A (EP-A):
    - Annual nitrate sampling beginning in 2025 reflective of the fully treated water after the tank and all treatment just prior to the finished water going to the rest of the distribution system. Be sure to indicate the sampling is of treated water for "EP-A".
  - Distribution System (DIST-A):
    - Quarterly coliform sampling beginning in 2025 reflective of water in the distribution system (be sure to measure and record the free chlorine residual on the lab reporting form at the time these samples are collected). Also indicate that the sample is of chlorinated water and where in the system the sample was taken from (e.g., "bathroom sink").

Information contained on subsequent pages of this letter includes maps and photos of the water system along with:

- ✓ A general system description including information regarding water rights,
- ✓ Source information including:
  - An evaluation from our geologist on the previously constructed wells #1 (SRC-AA) and #2 (SRC-AB – Davis Well),
  - Well and pressure tank descriptions and/or photos
  - water quality test results,
- ✓ 11,000-gallon storage tank information, and
- ✓ A description of the treatment system

If you have any questions, please feel free to email me at evan.e.hofeld@oha.oregon.gov or call me at 971-200-0288.

Sincerely,

Evan Hofeld, PE
Regional Engineer
Drinking Water Services

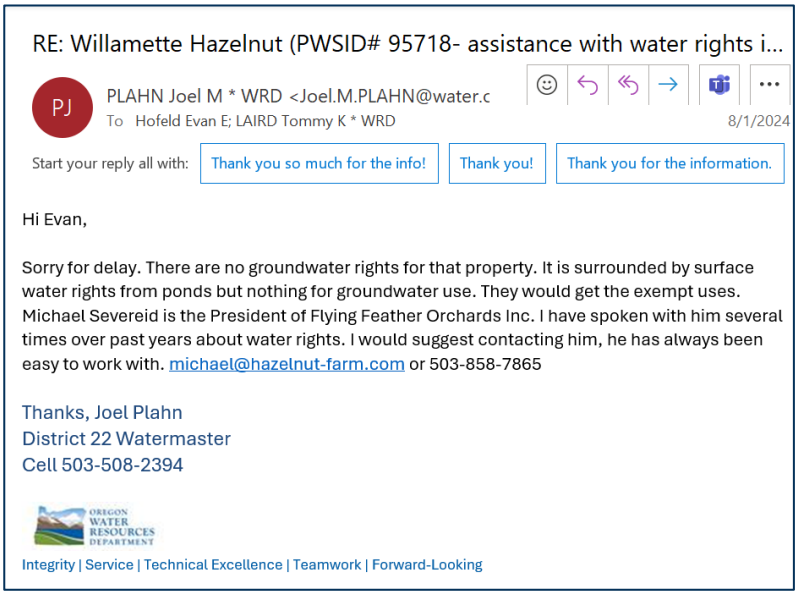
CC: Michael Severeid, Willamette Hazelnut, Inc. - michael@whazelnut.com
Mitchell Olston, Orchard and Vineyard Supply (OVS) - Mitchell.Alston@ovs.com
Sarah Schwab, Oregon Dept of Agriculture (ODA) – Drinkingwater@oda.oregon.gov
Brian Hawkins, Oregon Dept. of Agriculture - Brian.HAWKINS@oda.oregon.gov
Melissa Wong, Yamhill County Public Health - wongm@yamhillcounty.gov
Tommy Laird, Oregon Water Resources Dept.– Tommy.k.laird@water.oregon.gov
Joel Plahn, Oregon Water Resources Dept. - Joel.M.PLAHN@water.oregon.gov

Description of facilites reviewed under Plan Review #90-2024

General water system description:

The system is considered a transient non-community system and is licensed by the Oregon Dept of Agriculture.

The system is primarily a seasonal hazelnut processing facility that has been in operation since the 1970's. There are also 3 houses with about 8 total residents using the well water.


RE: Willamette Hazelnut (PWSID# 95718- assistance with water rights i...

PJ PLAHN Joel M * WRD <Joel.M.PLAHN@water.c
To Hofeld Evan E; LAIRD Tommy K * WRD 8/1/2024

Start your reply all with: Thank you so much for the info! | Thank you! | Thank you for the information.

Hi Evan,

Sorry for delay. There are no groundwater rights for that property. It is surrounded by surface water rights from ponds but nothing for groundwater use. They would get the exempt uses. Michael Severeid is the President of Flying Feather Orchards Inc. I have spoken with him several times over past years about water rights. I would suggest contacting him, he has always been easy to work with. michael@hazelnut-farm.com or 503-858-7865

Thanks, Joel Plahn
District 22 Watermaster
Cell 503-508-2394

OREGON WATER RESOURCES DEPARTMENT
Integrity | Service | Technical Excellence | Teamwork | Forward-Looking

The water system consists of

- Two drilled wells in service (Well 1 drilled in 1988 and later altered in 2014 and Well 2 drilled in 1970).
- A third well has been used in the past, but is currently disconnected (located more than 100-ft from the other two wells), but not abandoned – no well log and is not a part of PR 90-2024.
- an 11,000-gallon above ground steel storage tank, which has been in place since the 1970's, and
- 2 pressure tanks (ca. ~2023).
- Sodium hypochlorite for residual disinfection, cartridge filtration and UV disinfection (NSF-55).

Water System Contacts:

Michael Severeid
Chief Executive Officer
michael@whazelnut.com
503-858-7865 (m) | 888-769-8874 (f)

Emilio Pereira
Quality Manager
emilio@whazelnut.com
(503) 713-9740 (P)

Mitch Alston – Sales/Project Manager
Orchard & Vineyard Supply
Mitchell.Alston@ovs.com
D: +1 971-901-2111
624 E 3rd St Lafayette, OR 97127

Based on the anticipated use of less than 5,000 gallons per day for commercial use, the planned use meets the Exempt Use criteria, and no water right would be needed for the well at this time as indicated by Joel Plahn, Water Master with the Oregon Water Resources Dept. in an email dated 8/1/2024.

This project was assigned plan review #90-2024 and is veiwable online at: https://yourwater.oregon.gov/planreview.php?pwsno=95718. As a new transient non-community water system, this system was assigned Public Water System (PWS) ID# 95718 as viewable online at: https://yourwater.oregon.gov/inventory.php?pwsno=95718.
All new systems must undergo a Capacity Assessment, which was completed concurrently with this plan review process with no deficiencies found.

SRC-AA – 1988 Well #1 – L112369 (YAMH56744) - Altered in 2014
Original Well Log is YAMH4121

YAMH56744 is a well log for an alteration to L112369 (originally YAMH4121) to clean, redevelop, install a 4" diameter Sch 40 PVC threaded liner from 16-ft to 376-ft, conduct a 3-hr pump test at 25 gpm, measured TDS at 202 ppm, and measured the static water level at 270-ft below land surface which was completed 1/29/14. There is a 2nd well (SRC-AB Well #2 "Davis Well" – YAMH4128) in use, which is more than 500-ft away. There is also a 3rd well located approximately 188-ft to the south of L112369 that has been disconnected (no well log).

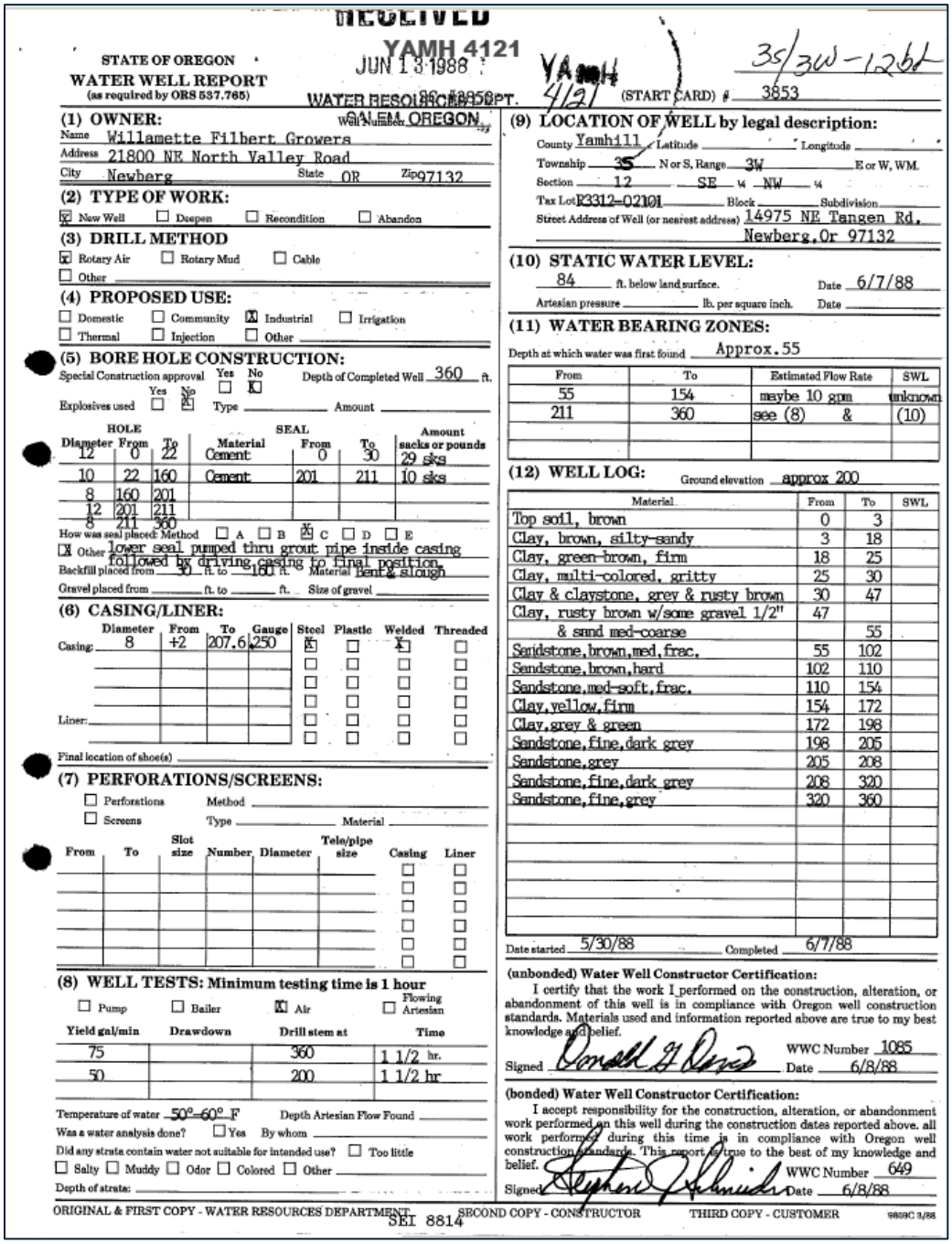
Approximate 100- and 500-ft radii around well:

SRC-AA Well #1 –
L112369 YAMH56744
original log YAMH4121

Well #1 – L112369 (YAMH56744) is shown below (photo from 8/31/23 water system survey by ODA)

SRC-AA – 1988 Well #1 – Original Well Log YAMH4121

- YAMH4121 (Willamette Filbert Growers) is 360-ft deep and was drilled in 1988 (static water level was 84-ft below ground in 1988)



RECEIVED
YAMH 4121
JUN 13 1988
WATER RESOURCES DEPT.
SALEM, OREGON

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

YAMH 4/21 (START CARD) # 3853

35/3W-12bd

(1) OWNER:
Name Willamette Filbert Growers
Address 21800 NE North Valley Road
City Newberg State OR Zip 97132

(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 360 ft.
Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12	0	22	Cement	0	30	29 sks
10	22	160	Cement	201	211	10 sks
8	160	201				
12	201	211				
8	211	360				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☒ Other lower seal pumped thru grout pipe inside casing followed by driving casing to final position.
Backfill placed from 30 ft. to 160 ft. Material Bent & slough
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8	+2	207.6	250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
75		360	1 1/2 hr.
50		200	1 1/2 hr

Temperature of water 50°-60° F 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 Yamhill Latitude Longitude
Township 3S N or S, Range 3W E or W, WM.
Section 12 SE ¼ NW ¼
Tax Lot R3312-02101 Block Subdivision
Street Address of Well (or nearest address) 14975 NE Tangen Rd, Newberg, Or 97132

(10) STATIC WATER LEVEL:
84 ft. below land surface. Date 6/7/88
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found Approx. 55

From	To	Estimated Flow Rate	SWL
55	154	maybe 10 gpm	unknown
211	360	see (8) &	(10)

(12) WELL LOG: Ground elevation approx 200

Material	From	To	SWL
Top soil, brown	0	3	
Clay, brown, silty-sandy	3	18	
Clay, green-brown, firm	18	25	
Clay, multi-colored, gritty	25	30	
Clay & claystone, grey & rusty brown	30	47	
Clay, rusty brown w/some gravel 1/2" & sand med-coarse	47	55	
Sandstone, brown, med, frac.	55	102	
Sandstone, brown, hard	102	110	
Sandstone, med-soft, frac.	110	154	
Clay, yellow, firm	154	172	
Clay, grey & green	172	198	
Sandstone, fine, dark grey	198	205	
Sandstone, grey	205	208	
Sandstone, fine, dark grey	208	320	
Sandstone, fine, grey	320	360	

Date started 5/30/88 Completed 6/7/88

(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 Donald H Davis WWC Number 1085
Date 6/8/88

(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 Stephen Johnson WWC Number 649
Date 6/8/88

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER
SEI 8814 9809C 3/88

RECEIVED
APR 13 1988
WATER RESOURCES DEPT.
SALEM, OREGON

YAMH 4121

№ 3853

"START CARD"
NOTICE OF BEGINNING OF WELL CONSTRUCTION
(as required by ORS 537.762)

This form must be completed, signed by both the owner (or authorized agent) and constructor, and the original delivered to the Water Resources Department prior to commencement of construction, alteration or abandonment of each well.

Owner's Name and Mailing Address: Willamette Filbert Growers
21800 NE N. Valley Road
Newberg, OR 97132

Proposed Commencement Date 4/14/88

Proposed Well Depth 180, Diameter 8,
and Use:
☐ Domestic ☐ Community ☒ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

Proposed Well Location: County Yamhill

Township 3S (N or S) Range 3W (E or W) Section 12

At least 2 of these must be provided:
1. SE 1/4 of NW 1/4 of above section
2. street address of well location 14975 NE Tangen Rd Newberg, Or 97132
3. tax lot number of well location ~~R 3976A~~ R3312-02101
4. attach approved map with location identified.
(see reverse of this form for approved maps)

We hereby certify that we have read the back of this form, and that to the best of our knowledge the information provided herein is accurate and the well is being properly located from septic tanks and septic drain fields.

Willamette Filbert Growers
x BC Mitchell III
Owner's Signature

Manager
Title

4-8-88
Date

x Stephen J. Schneider
Bonded Water Well Constructor

License No. 649

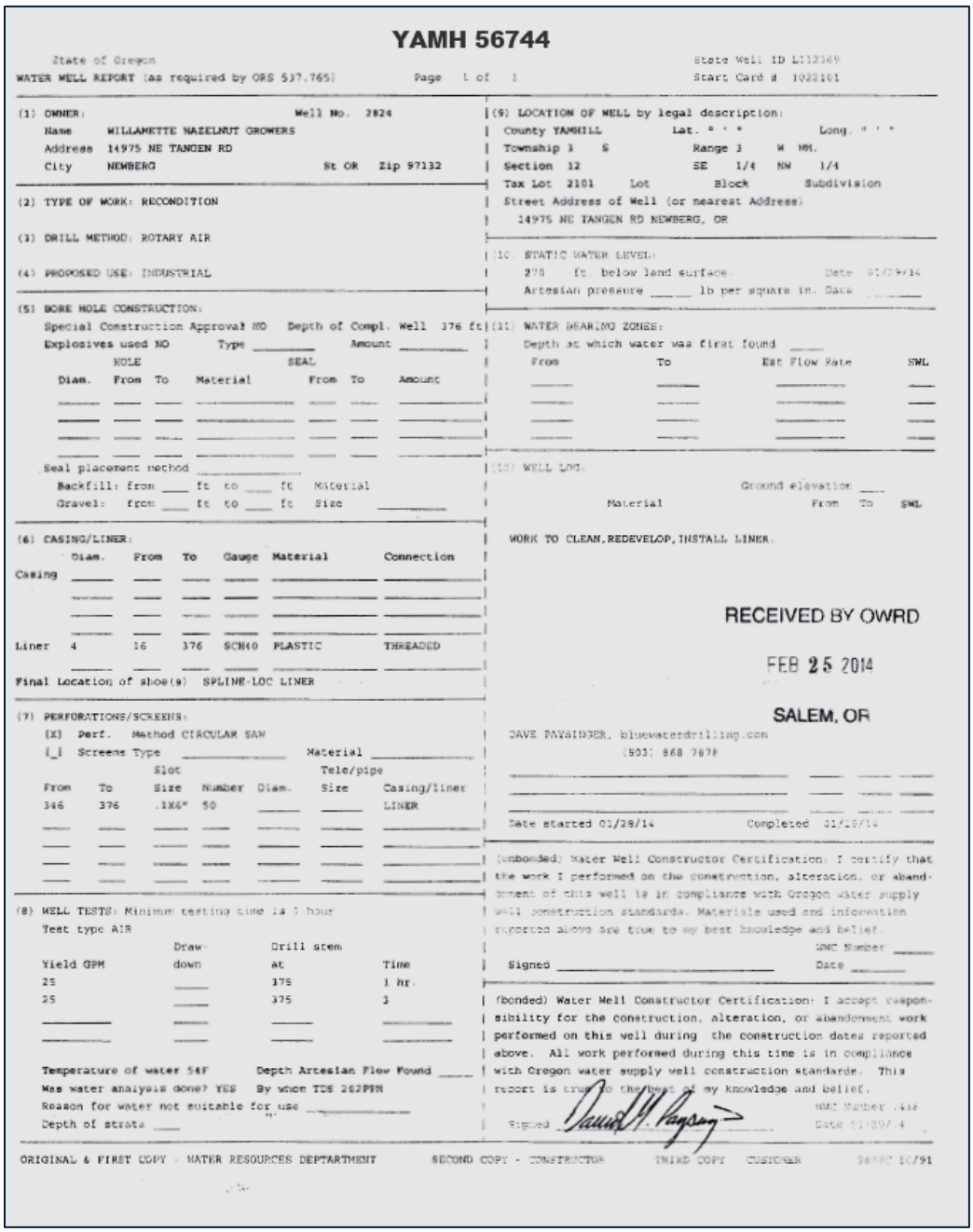
Company Schneider Drilling Co.

Note: This is not a Water Right application. The owner is responsible for obtaining a Water Right through the Water Resources Department if required.

Form 537.762 1987

SRC-AA – 1988 Well #1 – L112369 (YAMH56744) – 2014 Alteration Log

- YAMH56744 (Willamette Hazelnut Growers) is a well log for an alteration completed in 2014 (static water level was 270-ft below ground in 2014. This well log indicates the well is 376-ft deep.



YAMH 56744

State of Oregon
WATER WELL REPORT (as required by ORS 537.765) Page 1 of 1

State Well ID L112369
Start Card # 1022101

(1) OWNER: Well No. 2824
Name WILLAMETTE HAZELNUT GROWERS
Address 14975 NE TANGEN RD
City NEWBERG St OR Zip 97132

(2) TYPE OF WORK: RECONDITION

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: INDUSTRIAL

(5) BORE HOLE CONSTRUCTION:
Special Construction Approval NO Depth of Compl. Well 376 ft.
Explosives used NO Type _____ Amount _____

HOLE Diam.	From	To	Material	SEAL From	To	Amount

Seal placement method _____
Backfill: from ___ ft to ___ ft Material
Gravel: from ___ ft to ___ ft Size _____

(6) CASING/LINER:

	Diam.	From	To	Gauge	Material	Connection
Casing						
Liner	4	16	376	SCH40	PLASTIC	THREADED

Final Location of Shoe(s) SPLINE-LOC LINER

(7) PERFORATIONS/SCREENS:
[X] Perf. Method CIRCULAR SAW
[_] Screens Type _____ Material _____

From	To	Slot Size	Number	Tele/pipe Diam.	Size	Casing/liner
346	376	.1X6"	50			LINER

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

Yield GPM	Draw-down	Drill stem at	Time
25		375	1 hr.
25		375	1

Temperature of water 56F Depth Artesian Flow Found ____
Was water analysis done? YES By whom TDS 202PPM
Reason for water not suitable for use _____
Depth of strata ____

(9) LOCATION OF WELL by legal description:
County YAMHILL Lat. ° ' " Long. ° ' "
Township 3 S Range 3 W WM.
Section 12 SE 1/4 NW 1/4
Tax Lot 2101 Lot Block Subdivision
Street Address of Well (or nearest Address)
14975 NE TANGEN RD NEWBERG, OR

(10) STATIC WATER LEVEL:
270 ft. below land surface. Date 01/29/14
Artesian pressure _____ lb per square in. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found ____

From	To	Est Flow Rate	SWL

(12) WELL LOG:
Ground elevation ___

Material	From	To	SWL
WORK TO CLEAN, REDEVELOP, INSTALL LINER.			

RECEIVED BY OWRD
FEB 25 2014
SALEM, OR

DAVE PAYSINGER, bluewaterdrilling.com
(503) 868 7878

Date started 01/28/14 Completed 01/29/14

(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 my best knowledge and belief.
WWC Number _____
Signed _____ 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.
WWC Number 1432
Signed David M. Paysinger Date 01/29/14

ORIGINAL & FIRST COPY - WATER RESOURCES DEPTARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9/91

Correspondence related to the well logs:

From: Hofeld Evan E
Sent: Friday, August 16, 2024 9:03 AM
To: Michael Severeid <michael@whazelnut.com>
Cc: Mitchell Alston <Mitchell.Alston@ovs.com>; Emilio Pereira <emilio@willamettehazelnuts.com>; HAWKINS Brian * ODA <Brian.HAWKINS@oda.oregon.gov>; LAIRD Tommy K * WRD <Tommy.K.LAIRD@water.oregon.gov>; PLAHN Joel M * WRD <Joel.M.PLAHN@water.oregon.gov>; ASHLEY Ladeena K * WRD <Ladeena.K.ASHLEY@water.oregon.gov>
Subject: RE: Willamette Hazelnut (95718) plan review 90-2024 - 2 wells

These are responses from Michael regarding to questions I had sent earlier stating he believed both YAMH4121 (Willamette Filbert Growers) and YAMH56744 (Willamette Hazelnut Growers) are for the same well. This appears to just leave the "Davis" well as an unknown log. Michael did indicate that there is an abandoned well located 100-ft from the main plant well (YAMH56744 I believe) without a well log, so I'll need some sort of well log showing it was properly abandoned or a map showing it is further than 100-ft from any wells they use.

1. Are these the only 2 wells onsite (YAMH_4121 and YAMH-56744)? Both YAM_4121 and YAMH-56744 are for the same well. The latter's report is for reconditioning. The second well is located at 15100 NE Tangen Road and is called Davis. I am not able to locate a well log for this which may be from difficulty using the well report mapping tool.
2. Is there an original well log from its original construction for the well that was altered in 2014 (YAMH56744 – L112369) shown in the attached picture? I believe this is YAM_4121. There is an abandoned well about 100' from the main plant well. I do not know the log associated with it.
3. Can you send me a picture of the other well (YAMH4121) constructed in 1988 and describe where the well is and if it is in use or has been abandoned?
4. The alteration well log indicates "well no. 2824" – do you know where that number came from? I do not.

Test Results for Well #1:

Sample Date	Sample Type	Analyte	Result	Sample ID	Sample Site	Facility	Received Date
Jun 28, 2024	TG	Total Coliform	Absent	24-36734	WELL	SRC-AA	Jun 30, 2024
Dec 22, 2023	TG	Total Coliform	Absent	23-78133	WELL	SRC-AA	Dec 25, 2023
Sep 21, 2023	TG	Total Coliform	POSITIVE	23-57767	WELL	SRC-AA	Sep 23, 2023
	TG	E. coli	Absent	23-57767	WELL	SRC-AA	
December 22, 2023	Routine	Arsenic	0.0025 mg/l	23-78129-I	EP FOR WELL	EP-A	January 8, 2024
December 22, 2023	Routine	Nitrate	1.88 mg/l	23-78129	EP FOR WELL	EP-A	January 8, 2024

Well #1 Evaluation Results Received from OHA Geologist Tom Pattee on 9-11-24:

SRC-AA – Well #1 (L112369, YAMH56744, YAMH4121):

As Built Well Construction Evaluation for Plan Review and/or Setback Waiver:

☒ Well/Spring meets current construction standards.
- ☐ WRD special construction standards, see well log or Comments.

☐ Well/Spring construction does not meet construction standards.
- ☐ Not sealed to appropriate depth. Recommended depth: _____
- ☐ Not appropriate seal materials
- ☐ Open to more than one aquifer
- ☐ Seal info missing or unknown
- ☐ Seal not constructed properly (☐ Insufficient sealant volume ☐ Insufficient annular space)

☐ Susceptible construction, but grandfathered source. Consider for reconstruction if nitrate ≥ 5mg/L or confirmed *E. coli* at source.

☐ Susceptible well construction, **not approved for use.**

Comments: This well was drilled to a depth of 360 ft. The casing and casing seal extend to a depth of 207.5 ft below ground level, through a 44 ft thick silt (clay) layer and 9.9 ft into sandstone bedrock that overlies the water-bearing zone. The well was altered in January 2014 and a narrow diameter screened liner was installed that extends from the bottom of the hole to a depth of 16 ft below ground level. The purpose of a liner is mostly to help protect the well from sloughing or caving. Water can enter the well through the uncased portion of the borehole below a depth of 207.5 ft below ground level. Sensitivity Analysis results suggest that well construction does not contribute to the overall sensitivity of this water source to nearby land use practices.

Nature of Aquifer Evaluation:

Aquifer Nature: ☒ Confined aquifer ☐ Semi-confined aquifer ☐ Unconfined aquifer

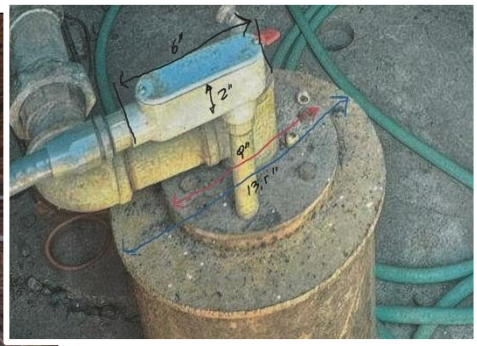
Comments: This well draws water from a confined sedimentary bedrock aquifer. The water-bearing zone is reported to occur between 211 ft to the bottom of the hole at 360 ft. The water-bearing zone is overlain by 13 ft of sandstone and 44 ft of silt (clay) that have a low permeability and act as a confining layer. Water within the aquifer is under pressure, rising 127 ft above the identified water-bearing zone to a final static water-level of 84 ft below ground. Sensitivity Analysis results suggest that the aquifer is not highly sensitive to nearby land use practices.

Reviewed by: Tom Pattee, R. G. Date: 09/11/2024

SRC-AB – 1970 Well #2 - Davis Well (YAMH4128) & Pressure Tank:

YAMH4128 is the log for a well drilled in 1970 to a depth of 150-ft (static water level was 18-ft below ground in 1970). The 119.7-gallon NSF-61 Pentair pressure tank at the Davis well was provided by Orchard and Vineyard Supply (OVS)/Cascade Water. The Davis well is ~470' east of NE Tangen Road.

Well #2 (SRC-AB) Davis Well photos received 8-28-24 – note cracked slab around well casing:



Wells showing 100-ft radius around each well:

1970 Well #2 - Davis Well Log (YAMH4128)

Owner name is “Earl Davis” Per the well log. YAMH4128 is 150-ft deep and was drilled in 1970 (static water level was 18-ft below ground in 1970).

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON within 30 days from the date of well completion.

RECEIVED NOV 23 1970 STATE ENGINEER SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

YAMH 4/28

State Well No. 3/3W-12
State Permit No.

(1) OWNER:
Name Earl Davis
Address Rt. 1 Box 423 Newberg Ore 97132

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [ ] Driven [ ]
Cable [X] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) CASING INSTALLED: Threaded [ ] Welded [X]
8" Diam. from 0 ft. to 152 ft. Gage 1250
" Diam. from Casing 2 above grd ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? [X] Yes [ ] No
Type of perforator used torch
Size of perforations 3/8 in. by 6 in.
160 perforations from 132 ft. to 152 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [X] No If yes, by whom? Driller
Yield: 30 gal./min. with 82 ft. drawdown after 96 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water ? Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Clay & Bentonite
Well sealed from land surface to 38 ft.
Diameter of well bore to bottom of seal 12" in.
Diameter of well bore below seal 12 in.
Number of sacks of cement used in well seal none sacks
Number of sacks of bentonite used in well seal 4 sacks
Brand name of bentonite Baroid
Number of pounds of bentonite per 100 gallons of water 2500 lbs./100 gals.
Was a drive shoe used? [ ] Yes [X] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [X] Yes [ ] No Size of gravel 3/4-3/4
Gravel placed from 38 ft. to 150 ft.

(10) LOCATION OF WELL:
County Yamhill Driller's well number 7016
¼ ¼ Section 12 T. 3S R. 3W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 12 ft.
Static level 18 ft. below land surface. Date 10-15-70
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 0
Depth drilled 150-6 ft. Depth of completed well 150 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Top	0	3	
Brown Clay	3	12	
Brown Gritty Clay	12	20	
Blue Gritty Clay	20	33	
Blue Clay	33	35	
Brown Clay	35	43	
Hard dry Brown Gritty Clay	43	90	
" " "	90	114	
Some water bearing gravel	114	125	
Hard rock	125	127	
Weathered Basalt w/some gravel	127	150	
and Brown Clay			
Hard rock	150	150-6"	

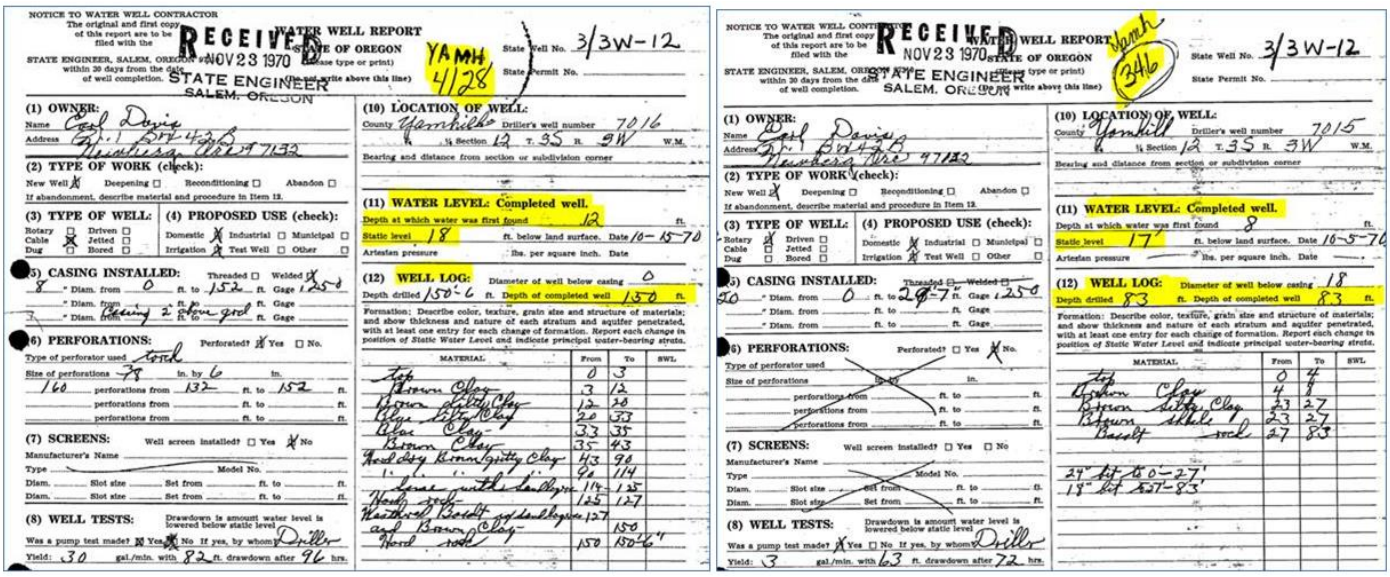
Work started 10-7 1970 Completed 10-27 1970
Date well drilling machine moved off of well 10-15 1970

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Robert J Mullen Date 11-16, 1970
(Drilling Machine Operator)
Drilling Machine Operator's License No. 581

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Mike Schneider Engineering Co. (Person, firm or corporation) (Type or print)
Address Star Route Box 97 St Paul Ore
[Signed] Mike Schneider (Water Well Contractor)
Contractor's License No. 387 Date 11-16, 1970

(USE ADDITIONAL SHEETS IF NECESSARY) SP*45656-119

There is another “Earl Davis” well (YAMH346), which per the the well log, is 83-ft deep and was drilled in 1970 (static water level was 17-ft below ground in 1970), but this well is not believed to be affiliated with the Willamette Hazelnut system.



Test results from Well #2 (Davis Well)

Sample Date	# Samples	Sample Type	Coliform Type	Result	Sample ID	Repeat of Sample ID	Sample Site	Facility	Chlorine Residual	Received Date
May 23, 2025	1	AS	Total	Absent	25-32206		TANK WELL	SRC-AA		May 24, 2025
May 23, 2025	1	AS	Total	POSITIVE	25-32205		DAVIS WELL	SRC-AB		May 24, 2025
		AS	E. coli	Absent	25-32205		DAVIS WELL	SRC-AB		
May 23, 2025	1	RT	Total	Absent	25-32204			DIST-A	1.60	May 24, 2025
Apr 29, 2025	1	AS	Total	Absent	25-25758		TANK WELL	SRC-AA		May 01, 2025
Apr 29, 2025	1	RT	Total	Absent	25-25759			DIST-A		May 01, 2025
Apr 29, 2025	1	AS	Total	POSITIVE	25-25756		DAVIS WELL	SRC-AB		Apr 30, 2025
		AS	E. coli	Absent	25-25756		DAVIS WELL	SRC-AB		
Mar 27, 2025	1	AS	Total	Absent	25-18663		TANK WELL	SRC-AA		Mar 29, 2025
Mar 27, 2025	1	AS	Total	POSITIVE	25-18665		DAVIS WELL	SRC-AB		Mar 28, 2025
		AS	E. coli	Absent	25-18665		DAVIS WELL	SRC-AB		
Mar 25, 2025	1	RT	Total	Absent	25-17940			DIST-A		Mar 29, 2025
Feb 26, 2025	1	AS	Total	Absent	25-11649		TANK WELL	SRC-AA		Feb 28, 2025
Feb 26, 2025	1	RT	Total	Absent	25-11648			DIST-A		Feb 28, 2025
Feb 26, 2025	1	AS	Total	POSITIVE	25-11662		DAVIS WELL	SRC-AA		Feb 27, 2025
		AS	E. coli	Absent	25-11662		DAVIS WELL	SRC-AA		

Well #2 Evaluation Results Received from OHA Geologist Tom Pattee on 3-3-25:

SRC-AB – 1970 Well #2 - Davis Well (YAMH4128)

As Built Well Construction Evaluation for Plan Review and/or Setback Waiver:

☐ Well/Spring meets current construction standards.
  ☐ WRD special construction standards, see well log or Comments.
☒ Well/Spring construction does not meet construction standards.
  ☐ Not sealed to appropriate depth. Recommended depth: _____
  ☒ Not appropriate seal materials
  ☐ Open to more than one aquifer
  ☐ Seal info missing or unknown
  ☐ Seal not constructed properly (☐ Insufficient sealant volume ☐ Insufficient annular space)
☐ Susceptible construction, but grandfathered source. Consider for reconstruction if nitrate ≥ 5mg/L or confirmed *E. coli* at source.
☐ Susceptible well construction, **not approved for use**.

Comments: This well was drilled to a depth of 150.5 ft. The casing extends to the bottom of the hole while the casing seal extends to a depth of 38 ft, 35 ft into a 122 ft thick silty clay to clay layer that overlies the likely water-bearing zone. The casing material is reported to be "Clay and Bentonite" which this evaluation assumes is puddled clay and bentonite. Puddled clay (made from drill cuttings) is not a currently acceptable material for casing seal construction. Water can enter the well through the perforated casing from 132 to 152 ft below ground level. Sensitivity Analysis results suggest that well construction is highly sensitive to nearby land use practices.

Nature of Aquifer Evaluation:

Aquifer Nature: ☒ Confined aquifer ☐ Semi-confined aquifer ☐ Unconfined aquifer
Comments: This well appears to draw water from a deep confined sedimentary bedrock aquifer. The water-bearing zone is most likely to occur 127 to 150 ft below ground level. The water-bearing zone is overlain by 2 ft of rock an 122 ft of silty clay and clay that have a low permeability and act as a confining layer. Water within the aquifer is under pressure, rising 109 ft above the likely water-bearing zone to a final static water-level of 18 ft below ground level. Sensitivity Analysis results suggest that the aquifer is not highly sensitive to local land use practices.

GWUDI Review Results:

☐ New system/source **or** surface water is inside sanitary setback, initiate **monthly source assessment monitoring when source goes into production or as soon as possible.**
  ☐ Fractured bedrock, < 500 ft to surface water
  ☐ Coarse sand, gravel, and boulders, < 200 ft to surface water
  ☐ Sand and gravel, < 100 ft to surface water
  ☐ Sand, < 75 ft to surface water
☐ Pre-existing source, initiate **monthly source assessment monitoring as part of annually generated monthly assessment monitoring list.**
  ☐ Fractured bedrock, < 500 ft to surface water
  ☐ Coarse sand, gravel, and boulders, < 200 ft to surface water
  ☐ Sand and gravel, < 100 ft to surface water
  ☐ Sand, < 75 ft to surface water

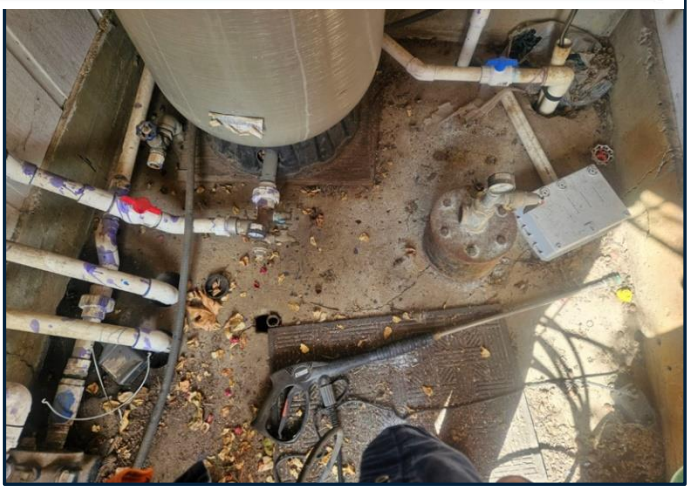
☐ Source may be sensitive to GWUDI but approved for use. Source must be included as one of repeat coliform sampling sites, consider for GWUDI if *E. coli* ever confirmed in the source.
☒ Do not need to consider for GWUDI.
Comments: A pond is within roughly 230 ft of the wellhead. Given that the likely water-bearing zone is described as "weathered basalt with sand layers", the pond is beyond the setback distance and not considered a GWUDI concern.

Reviewed by: Tom Pattee, R. G. Date: 03/03/2025

SRC-AC – Well #3 (No Well Log) – disconnected and not approved for use
The disconnected well is ~188' from SRC-AA Well #1. The structure housing the disconnected well still houses a manifold and some shutoff valves but all the water serving the system flows through the main storage tank. Although the well is not in use, the pressure tank provides pressure for a home and parts of the plant.

Wells showing 100-ft radius around each well:

Pressure tank and Disconnected 3rd well (no well log) >>



11,000-gallon steel tank:

The storage tank was acquired in the mid 1970's from Corvallis (see photos from 1976).

Photos provided by the water system:

Correspondence related to the 11,000-gallon tank:

PXL_20250218_225223737.jpg 2 MB | PXL_20250218_225214221.jpg 3 MB | Well log - main - 30 gpm.pdf 163 KB

From: Michael Severeid <michael@whazelnut.com>
Sent: Thursday, February 20, 2025 2:44 PM
To: Hofeld Evan E <EVAN.E.HOFELD@oha.oregon.gov>
Cc: Emilio Pereira <emilio@willamettehazelnuts.com>; Mitchell Alston <Mitchell.Alston@ovs.com>; HAWKINS Brian * ODA <Brian.HAWKINS@oda.oregon.gov>; SCHWAB Sarah * ODA <Sarah.SCHWAB@oda.oregon.gov>
Subject: Re: FW: Project Update for Willamette Hazelnut (95718) PR 90-2024

Hi Evan,

This week I researched the history of the tank and Davis well. Contrary to the oral history I'd received, the storage tank predated or coincided with construction of the plant in 1976. As shown in the attached photos, it is in the same place now as it was then. Its placement before and after the erection of the shop building, which was built in 1977, confirms its minimum age.

I also found the Davis well log. Earl Davis had two wells drilled in 1970, one 3 gpm and, the other, 30 gpm. The well we draw from yields over 3 gpm so I conclude that ours is the 30 gpm. I've attached this log for your reference. If you wish to see the other one (Yam 346), I can send it as well.

Brian is reviewing the system with Emilio now. We can review outstanding deficiencies or questions at tomorrow's meeting.

Best regards,

Michael Severeid

Changes to the tank include modifying the single inlet/outlet pipe to have separate inlet and outlets. Specifically, water from the two active wells (Well #1 and #2) combine first prior to being chlorinated (for residual maintenance only) and then pumped to the tank through a new inlet at the top of the 11,000-gallon tank.

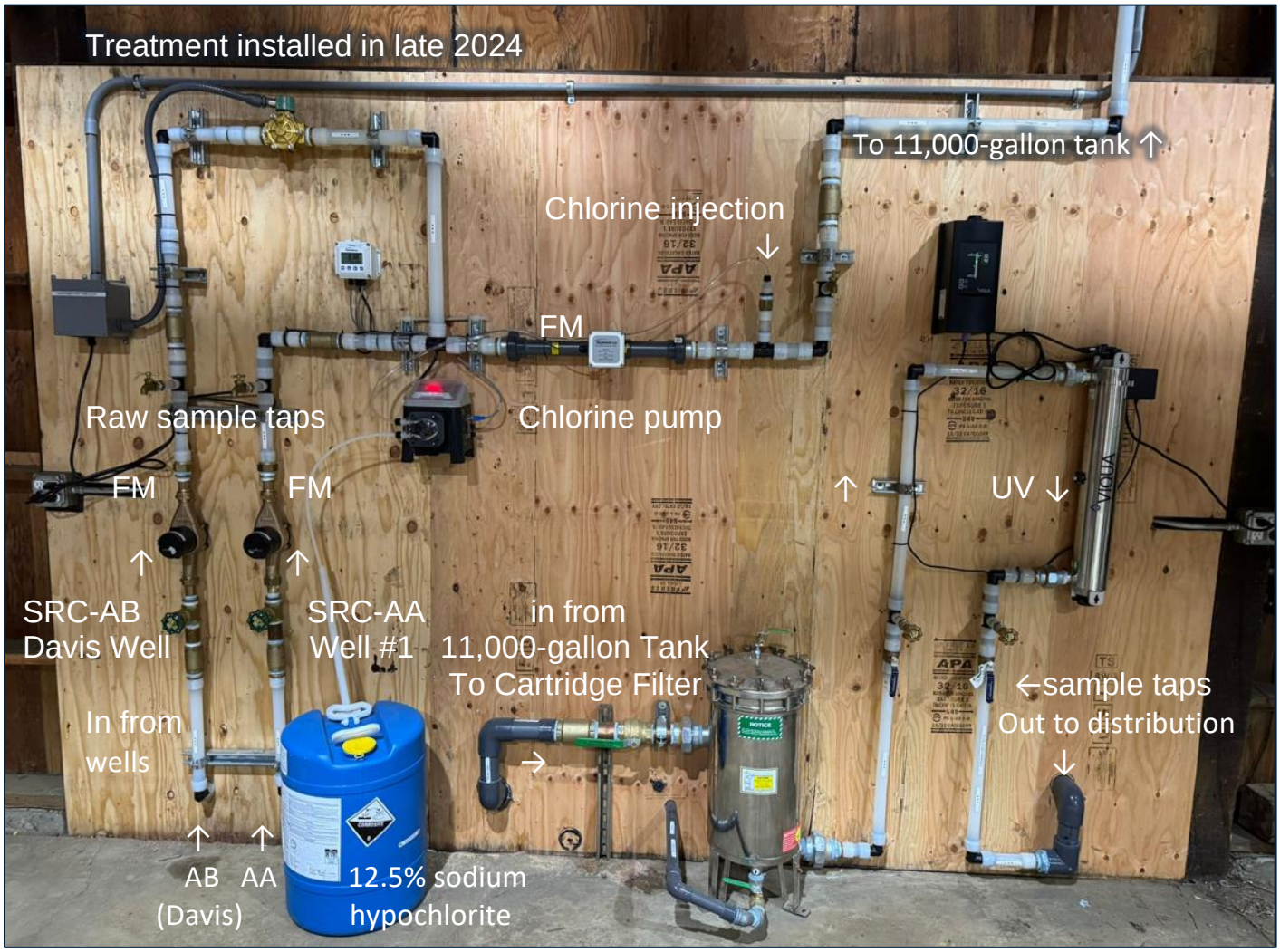
A new pipe going into both the top of the 11,000 gallon tank serves as the tank influent where chlorinated water goes into the tank →

There is a separate outlet from the bottom of the tank where water flows out of the tank and is then conveyed to a cartridge filter followed by a UV unit located inside the green building ↓

Treatment system:

Inside the building:

- Both wells feed into the building (with their own flow meters and raw water sample taps) and then combine prior to chlorine injection. A Seametrics flow meter is used to measure combined flow and connected to the chlorinator pump such that the chlorine pump automatically adjusts the dose based on the combined well flows to provide a flow proportional chlorine dose.
- After chlorination there is a treated sample tap before the chlorinated water flows into the top of the 11,000 gallon tank outside.
- Water is then piped out of the bottom of the tank back into the building where it flows goes through a cartridge filter and then UV (with valves and sample taps pre- and post UV) before going out to the rest of the system.



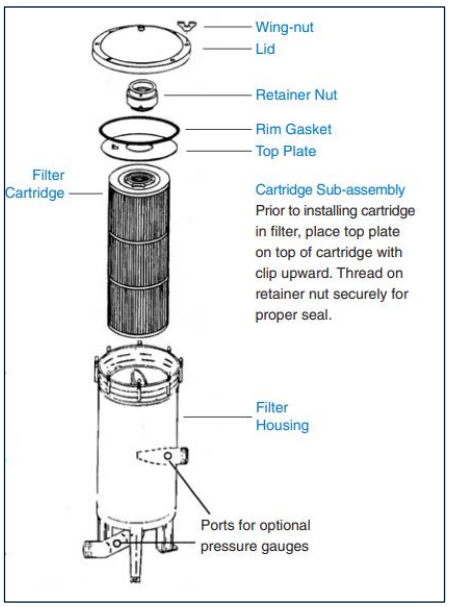
System components:

Component Name	Details	Picture
UV Water Disinfection System Controller	Viqua SYS, H+ Professional 120VAC 100-240V 50/60Hz, 2.5A Max Serial # 21072775 Part #650652	
UV Reactor Chamber	Viqua SYS, H+ Professional 120VAC 100-240V 50/60Hz, 2.5A Max Serial # 21072775 Part #650652	

Flow Rate[1]	PRO10	PRO20	PRO30	PRO50	H, H+	K, K+
Rated flow for NSF Std 55, Class A	10 gpm (38 lpm) (2.2 m^3/hr)	20 gpm (76 lpm) (4.5 m^3/hr)	30 gpm (113 lpm) (6.8 m^3/hr)	-	-	-
Rated flow dose of 30 mJ/ cm^2 @ 95% UVT	-	-	-	-	45 gpm (170 lpm) (10 m^3/hr)	80 gpm (303 lpm) (18 m^3/hr)
Rated flow dose of 40 mJ/ cm^2 @ 95% UVT	-	-	-	-	37 gpm (140 lpm) (8.4 m3/hr)	60 gpm (226 lpm) (13.6 m3/hr)
Rated flow for USEPA UVDGM 2006 protocol	-	-	-	50 gpm (189 lpm) (11.3 m3/hr)	-	-

Willamette Hazelnut (PWS #95718)
Final Approval PR #90-2024 – Two wells, 11,000-gal tank, UV, cartridge filtration & residual maintenance
May 29, 2025

<table>
<tr><th>Component Name</th><th>Details</th><th>Picture</th></tr>
<tr><td>Pre-Filter Housing</td><td>Hurricane Model: HUR 90 HP
Serial No.: HIC 6597
Design Flow Rate, Water: 90 GPM Max.</td><td> 



<table>
<tr><th>Filter Model</th><th>Cartridge Product Code</th><th>Nominal Micron</th><th colspan="3">Cartridge Dimensions</th><th>Ship Wt./Ctn. (One Cartridge)</th></tr>
<tr><td>HUR 90 HP</td><td>HC/90-0.35</td><td>0.35</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-1</td><td>1</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-5</td><td>5</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-10</td><td>10</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-20</td><td>20</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-50</td><td>50</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-100</td><td>100</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-150</td><td>150</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
<tr><td></td><td>HC/90-EZ-CLEAN</td><td>NR*</td><td>19 1/2”</td><td>7 3/4”</td><td>3” FPT</td><td>7 lbs.</td></tr>
</table></td></tr>
<tr><td>Flow Meter Display</td><td>Seametrics FT 440W-139
09243192</td><td> 
</td></tr>
<tr><td>Peristaltic Chemical Injection Pump</td><td>Stenner Pump
Blue-White Model: A1V4-6T
Serial No.: 002072122-241113
Max PSI: 100 (6.89 BAR)
Max Feed: 1 35GPH / 5.14 LPH
Voltage: 115V/60HZ-0.6A</td><td> 
</td></tr>
</table>

Sodium Hypochlorite System:

Purpose:

New treatment consisting of sodium hypochlorite injection is for residual maintenance only (not for primary 4-log viral disinfection), added to address persistent total coliform bacteria in distribution system sampling completed in the Fall of 2023 and Spring of 2024.

Configuration:

The system uses a Blue-White FlexFlow® Peristaltic metering pump to deliver liquid sodium hypochlorite. The system is flow-paced based off a Seametrics flow meter.

Blue-White

Engineering and Technical Data

A1

FLEXFLO® Peristaltic Metering Pump

Features

> Tube Failure Detection (TFD+) senses tube rupture
> Heavy duty display shield protects pump controls
> SCADA Inputs include: 4-20mA (on "V" model), Remote Start/Stop
> SCADA Outputs include: 4-20mA (on "V" model), single 250V/3A Relay (TFD+/FVS), and a single solid state (Motor On)
> FDA compliant tubing

Video link:

NEMA 4X

Highlights

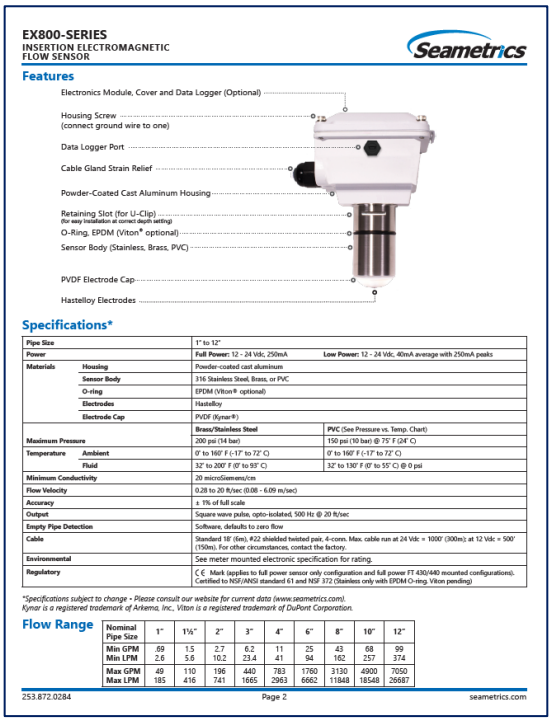
Flow range	Pressures	Turndown ratio
0.003 – 5.60 GPH 0.011 – 21.2 LPH	100 PSI (6.89 bar)	2,000 : 1

Exclusive	Motor	Warranty
Tube Failure Detection (TFD+) System	Brushless DC	2 Years

Control Methods

Control Methods	Manual Control	4-20mA Input	Remote Start/Stop	4-20mA Ouput	Alarm Output	FVS	Motor Status Output
A1F	•		•		•	•	•
A1V	•	•	•	•	•	•	•

For more help and information regarding A1, please visit www.blue-white.com or scan this QR code.



EX800-SERIES
INSERTION ELECTROMAGNETIC FLOW SENSOR

Seametrics

Features

Electronics Module, Cover and Data Logger (Optional)
Housing Screw (connect ground wire to one)
Data Logger Port
Cable Gland Strain Relief
Powder-Coated Cast Aluminum Housing
Retaining Slot (for U-Clip) (for easy installation at correct depth setting)
O-Ring, EPDM (Viton® optional)
Sensor Body (Stainless, Brass, PVC)
PVDF Electrode Cap
Hastelloy Electrodes

Specifications*

Pipe Size		1" to 12"	
Power		Full Power: 12 – 24 Vdc, 250mA	Low Power: 12 – 24 Vdc, 40mA average with 250mA peaks
Materials	Housing	Powder-coated cast aluminum	
	Sensor Body	316 Stainless Steel, Brass, or PVC	
	O-ring	EPDM (Viton® optional)	
	Electrodes	Hastelloy	
	Electrode Cap	PVDF (Kynar®)	
		Brass/Stainless Steel	PVC (See Pressure vs. Temp. Chart)
Maximum Pressure		200 psi (14 bar)	150 psi (10 bar) @ 75° F (24° C)
Temperature	Ambient	0° to 160° F (-17° to 72° C)	0° to 160° F (-17° to 72° C)
	Fluid	32° to 200° F (0° to 93° C)	32° to 130° F (0° to 55° C) @ 0 psi
Minimum Conductivity		20 microSiemens/cm	
Flow Velocity		0.28 to 20 ft/sec (0.08 - 6.09 m/sec)	
Accuracy		± 1% of full scale	
Output		Square wave pulse, opto-isolated, 500 Hz @ 20 ft/sec	
Empty Pipe Detection		Software, defaults to zero flow	
Cable		Standard 18' (6m), #22 shielded twisted pair, 4-conn. Max. cable run at 24 Vdc = 1000' (300m); at 12 Vdc = 500' (150m). For other circumstances, contact the factory.	
Environmental		See meter mounted electronic specification for rating.	
Regulatory		CE Mark (applies to full power sensor only configuration and full power FT-430/440 mounted configurations). Certified to NSF/ANSI standard 61 and NSF 372 (Stainless only with EPDM O-ring. Viton pending)	

*Specifications subject to change - Please consult our website for current data (www.seametrics.com).
Kynar is a registered trademark of Arkema, Inc., Viton is a registered trademark of DuPont Corporation.

Flow Range

Nominal Pipe Size	1"	1½"	2"	3"	4"	6"	8"	10"	12"
Min GPM	.69	1.5	2.7	6.2	11	25	43	68	99
Min LPM	2.6	5.6	10.2	23.4	41	94	162	257	374
Max GPM	49	110	196	440	783	1760	3130	4900	7050
Max LPM	185	416	741	1665	2963	6662	11848	18548	26687

253.872.0284 Page 2 seametrics.com

Estimated CT:

Q = 37 gpm	= The rated flow of UV system @ 40 mJ/cm^2
V = 1,100 gallons	= 11,000-gallon tank x 10% baffling
T = 30 minutes	= V / Q = 1,100 gallons/37 gpm
C = 0.2 mg/l	= typical free chlorine residual at the entry point to distribution
CT = 6 mg-min/l	= C x T = 0.2 mg/l x 30 minutes