Public Health Division

Center for Health Protection, Drinking Water Services



Tina Kotek, Governor

December 24, 2024

Ed Butts, PE <u>epbpe58@outlook.com</u> 4B Engineering & Consulting, LLC Via email

Re: Wells #1A and #1B (<u>PR#76-2021</u>) City of Monmouth (<u>PWS ID#00537</u>) Conditional Approval for Marion County Well #1A Only

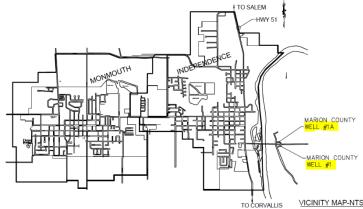
Dear Mr. Butts:

On December 4, 2024 Brooke Shattuck submitted additional information to the Oregon Health Authority's Drinking Water Services (DWS) for developing Well #1A (MARI 70798, L143506) to replace Well #1 (MARI13286), which is to be abandoned. Well #1A is to be designated as SRC-AE as a new active, permanent, groundwater under the direct influence of surface water (GU) source drilled in Marion County (MC) as shown below:

SRC-AE MC Well #1A – MARI70798 Active Permanent GU Source

* The designation as groundwater under the influence of surface water is addressed in the project description on page 10 of this letter.

As noted in the Site Plan Approval letter dated February 10, 2022, our office received the original submittal on May 10, 2021 containing a site plan for 2 wells (Wells 1A and 1B), land use compatibility statement, proposed drilling specifications, and well logs for nearby wells. A plan review fee of \$3,300 was received on



May 19, 2021. The project proposed drilling two wells to a depth of approximately 48' deep

near the City's existing Well #1, however, the December 4, 2024 submittal only included information pertaining to Well #1A and the abandonment of the existing Well #1.

Specifically, the December 4, 2024 submittal included:

- Water quality, MPA, and other test results for Well #1A, and
- Plans and specifications for the connection to and remodel of the existing pump station.

MC Well #1A was drilled to replace the existing MC Well #1 (SRC-AA), but due to the detection of nitrate at 10.6 mg/l, Well #1A will be blended with other wells at the 4th Street site to reduce nitrate levels, similar to the other wells with elevated nitrates.

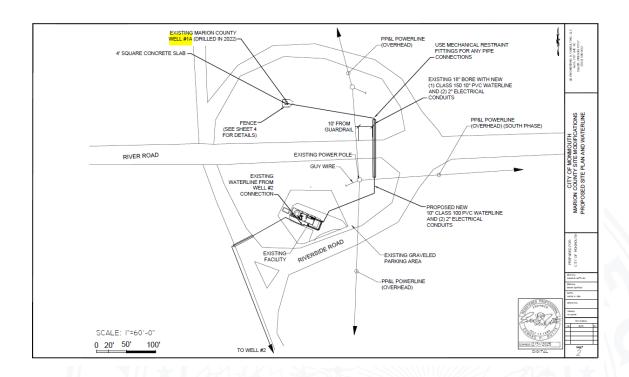
			Sources		
	Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
	EP-A	EP FOR WELLS	A		GU
To be replaced \rightarrow	SRC-AA	MC WELL #1 - MARI13286	A	Permanent	GU
	SRC-AB	4TH ST WELL #4 - POLK2966	A	Permanent	GW
	SRC-AC	4TH ST WELL #5 - POLK2967	A	Permanent	GW
	SRC-AD	MC WELL #2 - L68858	A	Permanent	GW
New >	SRC-AE	MC Well #1A - MARI70798	A	Permanent	GU

The project generally consists of work to integrate Well #1A into the existing supply and treatment system. The well is to be fitted with a pitless adapter, level transmitter, pressure gauge, "mag" style flowmeter (a second flowmeter is also to be installed for Well #2) and the pump is to be a Goulds model 9TLC-1 stage submersible pump or approved equal, equipped with a 40 HP motor and VFD designed for continuous operation at 3,450 RPM with a primary operating condition of 1,200 GPM @ 100' TDH.

Piping largely consists of:

- Buried pipe between Well #1A and the wellhouse consisting of 500' (+/-) total length of 10" AWWA C-900 PVC pipe consisting of the following two segments:
 - 400' (+/-) length of 10"Class 100 (DR25) PVC
 - \circ 100' (+/-) of 10" Class 150 (DR 18) used through the bored cased section.
- 6" and 8" PVC pipe between the Mechanical Room and Well #2 connection and blowoff, respectively, shall be AWWA C-900, Class 100 (DR 25) rated, dimensioned gasketed pipe.

Perimeter chain link fencing and gate surrounding Well #1A is also to be installed.



Following activation of the new Well #1A pump, work will commence on decommissioning and abandoning MC Well #1. The well slated for abandonment is:

- Marion County Production Well #1 with a 12" dia. casing
- Well ID: Mari 13286
- Year Drilled: 1978
- Location: T8S R4W Sec 28—Latitude: 44.84520000—Longitude: -123.17545190

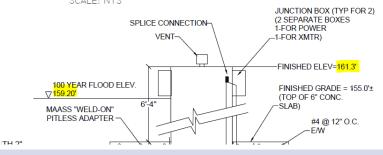
The plans are approved subject to meeting the following conditions:

- The elevation of the top of the well casing for Well #1A is verified to ensure the top of the casing extends at least 2-ft (24-inches) above the 100-year flood stage. OAR 333-061-0050(2)(F) available online at: <u>https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/ PLANREVIEW/Documents/OAR-333-061-0050.pdf</u> (see pdf page 2), requires wells to be protected from flooding as follows:
 - (F) Wells shall not be located at sites which are prone to flooding. In cases where the site is subject to flooding, the area around the well shall be mounded, and the top of the well casing shall be extended at least two feet above the anticipated 100-year (1 percent) flood level;

The 2021 NOTICE OF DECISION FLOODPLAIN DEVELOPMENT PERMIT CASE NO. 21-001 indicated the top of the well casing was 1.8' (21.6") above the 100-year flood stage. Per this development permit, Well #1A is located on property within Marion County public right-of-way located on River Road S. where River Road intersects with Riverside Road South in the 7000 block of River Road South, Salem (adjacent to T8S, R4W, Section 27, tax lot 900). The subject property is located with the identified floodplain of the Willamette River. A floodplain permit was issued to the City of Monmouth in 1996 for a well on the opposite side (land to the south) of River Road S.

Flood Insurance Rate Map # 41047C0650G indicates that the floodplain elevation is approximately 159.3 feet above mean sea level (MSL) and is in Zone AE. Based on information provided for the permit application, the top of the well casing was noted to be at elevation 161.0', which is "1.8' above the 100-year floodplain level" (I believe this is an error).

The submitted plans show the wellhead terminating 25.2" inches above the 100year flood level (159.2-ft above MSL) at an elevation of 161.3-ft as shown below:



2. Because nitrate results in Well #1A exceeded 10 mg/l, a **nitrate sample at the entry point (EP-A) will be needed to demonstrate the effectiveness of the blending/treatment**.

Until we receive verification that the conditions above have been met and final approval has been issued, Well #1A is not approved for use. Upon completion of the project, please submit a set of as-built drawings and complete the Project Final Approval Request Form on our website at:

https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PLANRE VIEW/Documents/project-update-form.pdf

By completing this form, you are verifying in writing that construction was completed according to the submitted plans. **Copies of the appropriate water rights documentation regarding Well #1A are also requested to be submitted.** Documentation demonstrating how the above conditions were met should reference Plan Review #76-2021 and can be emailed to me at <u>evan.e.hofeld@oha.oregon.gov</u>.

In addition to the above requirements, I have the following comment:

- Note that increased lead and copper sampling will be required once final approval is issued. The water system will be required to conduct two 6-month rounds at the original number of sample sites (40), with the new well #1A in use.
- Quarterly nitrate sampling will be needed from the entry point (EP-A) for at least 1 year to assess how well the treatment/blending reduce nitrate levels long-term.

If you have any questions, please feel free to call me at (971) 200-0288.

Sincerely,

Emple

Evan Hofeld, PE Regional Engineer Oregon Health Authority - Drinking Water Services

ec: Russ Cooper, Public Works Director, City of Monmouth, <u>rcooper@ci.monmouth.or.us</u> Brooke Shattuck, 4B Engineering, <u>brooke.4b@outlook.com</u> Tom Pattee, RG, OHA/DWS, <u>Tom.PATTEE@oha.oregon.gov</u> Tommy Laird, OWRD, <u>Tommy.K.LAIRD@water.oregon.gov</u> Joel Plahn, OWRD, <u>Joel.M.PLAHN@water.oregon.gov</u>

Encl. System Description

Project Description

Well Description & Location:

Marion County (MC) Well #1A (SRC-AE) was drilled to replace the existing MC Well #1 (SRC-AA), but due to the detection of nitrate at 10.6 mg/l, MC Well #1A will be blended at the 4th Street site to reduce nitrate levels.

County Well ID: MARI 70798 Well Tag: L143506

Start Card: 1059570

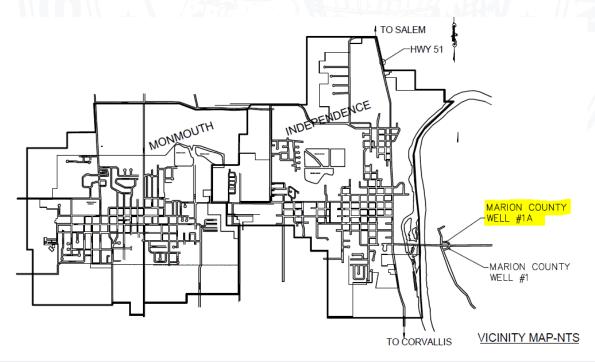
Date Well Completed: 3/14/2023

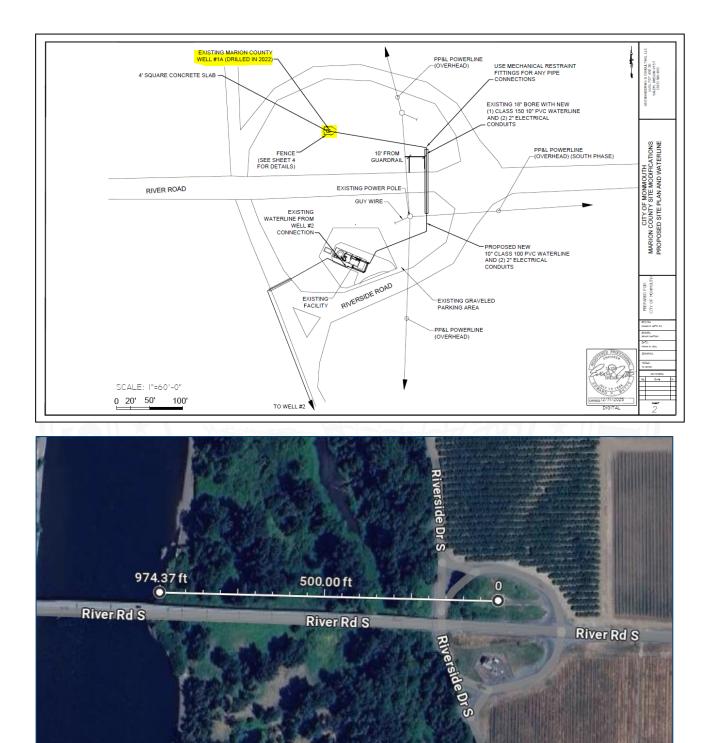
WRD Well Mapping Site:

https://apps.wrd.state.or.us/apps/gw/well_log/wl_details.aspx?wl_id=601434

Well log:

https://apps.wrd.state.or.us/apps/misc/vault/vault.aspx?wl_county_code=MARI&wl_nbr =70798





Page 8 of 17 City of Monmouth (00537) - PR 76-2021 Well 1A - Conditional Approval December 24, 2024

MARI 70	798 WELL LD. LABEL#U 143506		
STATE OF OREGON WATER SUPPLY WELL REPORT (as required by ORS 537.765 & OAR 690-205-0210)	START CARD # 1059570 ORIGINAL LOG #		
(1) LAND OWNER Owner Well 1.D. 6429 First Name Last Name	(9) LOCATION OF WELL (legal description)		
Company City of Monmouth	County MARION Twp 8 S N/S Range 4 W E/W WM		
City Mommouth State OR Zip 97361 (2) TYPE OF WORK New Well Despening Conversion	Tax Mup Number Lot		
Alteration (complete 2a & 10) Abandonment(complete 5a)	Long ° ' ° cr -123.176 DMS or DD		
Casing:	C Street address of well Marion County read right of way		
Material From To Anat sacks/lbs Sent:			
(3) DRILL METHOD Rotary Air Rotary Mud Cable Auger Cable Mud	(10) STATIC WATER LEVEL Date SWL(psi) + SWL(R)		
Reverse Rotary Other	Existing Well / Pre-Alteration Completed Well 03-14-2023 21.6		
(4) PROPOSED USE Domestic Infigation Community Industrial/Commercial Livestock Dowatering	Flowing Artesian? Dry Hole? WATER BEARING ZONES Depth water was first found 21.6		
(5) BORE HOLE CONSTRUCTION Special Signal (Attach copy)	SWL Date From To Est Flow SWL(psi) + SWL(R) 03-14-2023 21.6 51 1,500 21.6		
Depth of Completed Well 56 ft.			
BORE HOLE SEAL sacks' Dia From To Amt fas 16 0 56 Cement 6 27 42 S			
Calculated 13.7 Bencome 27 30 3 S			ast and i
Calculated 2.3	(11) WELL LOG Ground Elevation	MODEL MB PITLES	S UNIT
How was seeil pleaded. Method A B SC D B Deter pound dry Backful placed from ft. to ft. Material	Gravel fill 0 2 Brown clay 2 12		
Filter pack from 32 ft. to 56 ft. Material round rock Size 3/8"	Brown clay w/some pravels 12 15 Gravel w/clay 15 18		
Explosives ased: Yes Type Amount (5a) ABANDONMENT USING UNHYDRATED BENTONITE	Dirty gravel 18 21 Gravel dirty 21 24		Made In the USA
Proposed Amount Pounds Actual Amount Pounds	Dirty gravel 24 30 Clean gravel & sand 30 33	The Model M	3 pitless units are
(6) CASING/LINER Casing Liner Dia + From To Gauge Sil Piste Wid Thrd O C 12 X 6 32 250 O X 1	Cemented gruvel 33 42 Dirty gravel 42 50		apters with flexible
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Large gravel & clay 50 51 Blue clay 51 56		ts for quick delivery
8-8	RECEIVED	and ease of inst	tallation.
Shoe inside Outside Other Location of shoe(s) Temp casing X Yes Dia 16 From 0 To 56	Jones Drilling Co., Inc.		
(7) PERFORATIONS/SCREENS	Lebanon, OR 97355 MAK 2.3 2025		A REAL
Perforations Method	Date Started 12-19-2022 CSAt 1840 499523AL 3-14-23	Designed for and servicing	
creen Liner Dia From To width length slots pipe size Screen 12 32 47 15	(unbonded) Water Well Constructor Certification 1 certify that the work 1 performed on the construction, deepening, alteration, or	Rugged con:	struction with
	abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to	304 stainless and spool se	
	the best of my knowledge and belief. License Number 1411 Date 03-17-2023		and NSF approved
(8) WELL TESTS: Minimum testing time is 1 hour Pump O Bailer O Air O Flowing Artesian	signed ICPD March	coating for p	
Yield gal/min Drawdown Drill stem/Pump.depth Daration.(ht) 1,284 2 42 9.8	(bonded) Water Well Constructor Certification	Available as unit or in "kit	a complete bury t" form.
	I accept responsibility for the construction, deepening, alteration, or abandomment 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		
Tempersture 62 "F Lab analysis Yes By- Water guality concerns? Yes (describe below) TDS amount 76 ppm	construction standards. This report is true to the best of my knowledge and belief. License Number 1684 Date 03-17-2023	MAASS	
Water geality concerns? Ves (describe below) TDS amount 76 ppm From To Description Amount Units	Signed		WEST™
	Contact Info (or or of the start in the start is the start in the start in the start is the sta		Specification #100-E
ORIGINAL - WATER RESOURCES THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPART	DEPARTMENT MENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version: 0.95	NSF 61/372	
12" X .250" WALL STEEL	MAASS WELD-ON PITLESS ADAPTER	AIRLINE EXTENDED TO OUTSIDE OF	2 TTC
6-0" – WELL CASING	ADD AN ADDITIONAL FLANGE ON PITLESS ADAPTER FOR EASIER	PITLESS WITH SUPPORT BRACKET AND GAUGE/SNIFTER VALVE ASSY.	ONEXLTING ANE SE JON 973/7 0-8/2
6'-0" GROUND SURFACE	INSTALLATION/REMOVAL OF	TERMINATED UPPER ENDS OF	N5 8 00 1 755 AV 0 100000
			ADMON
	8" FLG. OUTLET PORT 8" GATE VALVE WITH 2"	4' X 4' X 6" THICK CONCRETE SLAB	9
	OPERATING NUT AND VALVE BOX	AROUND WELL WITH #4 @ 12" O.C. E/W	
- 16" Ø BENTONITE SEAL			SNC
27' BGS	8" X 10" MJ CONC INCREASER		CATIO
30' BGS		MAASS MODEL NB WELDED	CITY OF MOMMOUTH MARION COUNTY SITE MODIFICATIONS WELL #1A AS-BUILT
32' BGS / 12" 0.15 SLOT		WELDED PITLESS UNIT TO 12" WELL CASING	NIMC AS-BL
SCREEN			P SIT * Y SIT #1A.)
12" X .250" WALL STEEL			
47' BGS WELL CASING	10° FLG. COUPLING ADAPTER	26' OF 6" BLACK T&C STEEL SCHEDULE 40	N NO
		PIPE	AARIC
\rangle	DRILL (1) 2 VENT BACKFILLED ANNULUS AREA IN TUBE WITH BENTONITE GROUT	30'± OF #4/4 WITH GROUND SUBMERSIBLE CABLE	
56' BGS	1" PVC PIPE FOR XMTR 1" CLASS 200 PVC WITH CAP ON BOTTOM	1" PVC PIPE WITH CAP ON LOWER END FOR WELL PROBE ACCESS	
MARION COUNTY WELL #1A AS-BUILT TO DUMP COLUMN	1" CLASS 200 PVC WITH CAP ON BOTTOM		

@ 10' MAX. SPACING -6" RISER TECHNO CHECK VALVE (INSTALLED 5' ABOVE PUMP) H 12" WELL-CASING PREPARE CITY OF M Ц 2-<u>1</u>*Ø HOLES @ 180° SPACING @ 6° O.C. FOR LOWER 20' OF PIPE PUMP SHROUD---(EXTENDED 2' BELOW MOTOR) -GOULDS MODEL 9TLC, 1 STAGE WITH 40 HP MOTOR WELLHEAD SECTION SCALE: N.T.S. 1" SLIP GLUED No. Okta 1 ID/M/2004 101 Y 17 1989 TYPICAL DOWNHOLE SENSOR PIPE DETAIL SCALE: N.T.S.

Well Evaluation – Unconfined Aquifer

A regional DWS geologist, Tom Pattee, reviewed the proposed well construction specifications and noted that the well was adequately constructed into an unconfined sand and gravel aquifer having a high susceptibility to nearby contaminant sources as shown below.

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 <i>E. coli</i> at source. Susceptible well construction, not approved for use.
Comments: <u>This well was drilled and cased to a depth of 56 ft</u> . The casing is sealed to a depth of 30 ft. The casing seal extends through a 16 ft thick silt (clay) and gravelly silt layer that overlies the aquifer. Water enters the well through a gravel filter pack and well screen. The well screen is present from 32 to 47 ft below ground level while the gravel filter pack outside of the screen extends from 32 to 56 ft below ground. Sensitivity
Analysis results suggest that well construction does not contribute to overall sensitivity of the water supply to local land use practices.

Nature of Aquifer Evaluation:

Aquifer Natu	ire: 🗌 C	onfined aquifer		Semi-conf	ined aquifer	\bowtie	Unconfined aqu	aifer
Comments:	This well draw	<u>s water from an <mark>u</mark></u>	inconfine	ed aquifer r	made up of gr	avel and	mixed sand and	<u>l gravel.</u>
Gravel is first e	encountered at	a depth of 18 ft a	nd the st	atic water-	level reported	l on the v	well log is 21.6 f	it below
ground level. S	Since the static	water-level is de	eper than	1 the first p	otential water	r-bearing	g material, the ad	<u>quifer is</u>
considered to b	e unconfined.	Sensitivity Analy	ysis resu	lts suggest	that the aquif	er is hig	hly sensitive to a	nearby
contaminant so	urces.							

Groundwater under the direct influence of surface water (GU) designation

Well #1A (MARI 70798, L143506) was constructed on March 14, 2023 into an unconfined aquifer within 100 feet of public roadways and 200-ft of a surface water body (pond/slough). Current construction standards only allow for wells drilled into confined aquifers to within 100-ft of a roadway - see OAR 333-061-0050(2)(a)(D), therefore, the most recent submittal included provisions to divert water from well 1A through the existing cartridge filtration and disinfection treatment.

DWS is requiring permanent filtration in lieu of providing appropriate setbacks and monthly source assessment monitoring and subsequent microscopic particulate analysis normally required to determine if the source is under the direct influence of surface water. This means that DWS will classify Well #1A as self-declared groundwater under the direct influence of surface water despite the results of a microscopic particulate analysis submitted on December 4, 2024. which concluded with the following comments and observations:

Comments and observations:

Due to the presence of significant primary bio-indicators (as noted on page 1) the relative risk factor assigned this sample was <1 which indicates a low risk of being under the direct influence of surface water at the time of sampling.

It should be noted that the numbers on the chart on page 1 represent a 100 gallon equivalent.

The relative risk of surface water influence cannot be determined on the basis of \underline{one} sample.

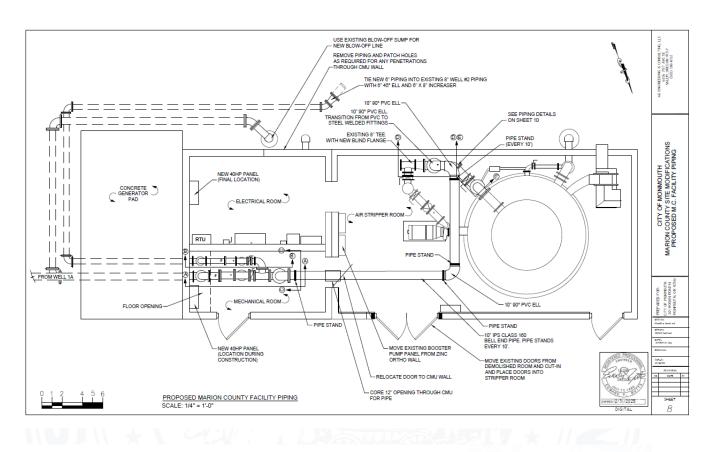
The absence of Giardia and Cryptosporidium does not ensure that the source is parasite free. Conversely a moderate or high MPA result does not necessarily signify the presence of Giardia or other related pathogens.

If you have any questions about the analytical procedure used and the data provided, please call (541) 476-0733.

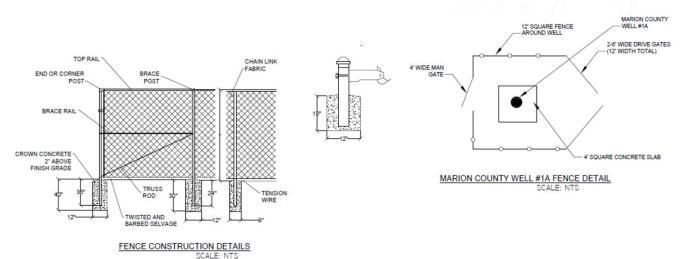
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Doree Schaafsma Grants Pass Water Laboratory, Inc.

	Comments and observations:
	Due to the presence of significant primary bio-indicators (as noted on page 1) the relative risk factor assigned this sample was 10 which indicates a moderate risk of being under the direct influence of surface water at the time of sampling.
2	It should be noted that the numbers on the chart on page 1 represent a 100 gallon equivalent.
	The relative risk of surface water influence cannot be determined on the basis of <u>one</u> sample.
	The absence of Giardia and Cryptosporidium does not ensure that the source is parasite free. Conversely a moderate or high MPA result does not necessarily signify the presence of Giardia or other related pathogens.
	If you have any questions about the analytical procedure used and the data provided, please call (541) 476-0733.
	Doree Schaafsma Grants Pass Water Laboratory, Inc.



Site piping & fencing details



Information

Well #1A test results

WATERLAB CORP.

Collection Information	Lab Receipt
Date: 3/14/2023 Time: 1227 By: BS	3/14/2023 1344 SW
Lab #: 20230314-064 Location: 40 Monmouth Marion County Well 1A hose bib)

Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

WATERLAB Corp certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

							EPA	Analysis		
Analyte	Method	Acc*	Results	Qual	MRL	Units	Limit	Date Time	Tech	
Oregon Secondaries										
pН	EPA 150.1	А	6.69	н		pH units	6.5 - 8.5	3/14/2023	1357	as
Specific Conductance	SM2510B	А	312.		1.	umhos/cm		3/17/2023		as
Alkalinity, Total	SM2320 B	А	72.		10.	mg/I CaCO3	3	3/16/2023		as
Aluminum	SM3113B		0.161		0.075	mg/l		4/6/2023		bem
Calcium	SM3111B	А	8.97		1	mg/l		3/14/2023		as
Chloride	EPA300.0	А	5.75		0.3	mg/l	250	3/14/2023		bem
Color	SM2120B	Α	ND		10.	Color units		3/14/2023		as
Copper	SM3111 B	Α	ND		0.1	mg/l	1.0	3/16/2023		as
Fluoride	EPA300.0	А	ND		0.2	mg/l	4.0	3/14/2023		bem

Collection In	formation	Lab Receipt Information
Date: 3/14 Time: 1227 By: BS		3/14/2023 1344 SW
	20230314-060 40 Monmouth Marion County Well 1A hose bib	
Case Narrativ	/e	

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

							EPA	Analy	/sis
Analyte	Method	Acc*	Results	Qual	MRL	Units	Limit	Date Time	Tech
Cyanide	EPA 335.4	В	ND		0.005	mg/l	0.2	3/27/2023	1751 KER

Collection In	formation	Lab Receipt Information
Date: 3/14 Time: 122 By: BS		3/14/2023 1344 SW
Lab #: Location:	20230314-061 40 Monmouth Marion County Well 1A hose bib	

Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

WATERLAB Corp certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

							EPA	Analysis		
Analyte	Method	Acc*	c* Results	Qual	MRL	Units	Limit	Date Time	T	ech
Inorganic Chemicals										
Antimony	SM3113B	Α	ND		0.005	mg/I	0.006	3/27/2023		bem
Arsenic	SM3113B	Α	ND		0.002	mg/I	0.010	3/23/2023		bem
Barium	E200.8	в	0.0105		0.0020	mg/I	2.0	4/5/2023	1953	CSB
Beryllium	SM3113B	А	ND		0.001	mg/I	0.004	3/27/2023		bem
Cadmium	SM3113B	Α	ND		0.001	mg/I	0.005	4/4/2023		bem
Chromium	SM3113B	Α	ND		0.02	mg/I	0.05	3/28/2023		bem
Fluoride	EPA300.0	Α	ND		0.2	mg/l	4.0	3/15/2023		bem
Lead	SM3113 B	Α	ND		0.001	mg/I	0.015	3/17/2023		bem
Mercury	SM3112B	А	ND		0.001	mg/I	0.002	4/7/2023		bem
lickel	SM3113B	А	ND		0.05	mg/I	0.1	3/28/2023		bem
Nitrogen, Nitrate	EPA300.0	A	10.6		0.2	mg/I N	10.	3/14/2023	1921	as
Nitrogen, Nitrite	EPA300.0	A	ND		0.2	mg/I N	1.0	3/14/2023	1921	bem
Selenium	SM3113B	Α	ND		0.01	mg/I	0.05	4/5/2023		bem
Sodium	SM3111B	Α	8.28		1.0	mg/I	20.	3/24/2023		as
Thallium	SM3113B	А	ND		0.001	mg/I	0.002	4/5/2023		bem

Lab Receipt Information

3/14/2023

1344

SW

Collection Information

 Date:
 3/14/2023

 Time:
 1227

 By:
 BS

 Lab #:
 20230314-062

 Location:
 40 Monmouth Marion County Well 1A hose bib

Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

WATERLAB Corp certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

							EPA	Analysis		
Analyte	Method	Acc*	Results	Qual	MRL	Units	Limit	Date Time	T	ech
Synthetic Organic Contaminants										
Synthetic Organics, Regulated										
1,2-Dibromo-3-chloropropane	EPA 504.1	В	ND		0.0000	mg/liter	0.0002	3/28/2023	1124	TJW
Ethylene Dibromide	EPA 504.1	В	ND		0.0000	mg/liter	0.00005	3/28/2023	1124	TJW
Chlordane	EPA 508	В	ND		0.0002	mg/liter	0.002	3/23/2023	2148	TJW
Endrin	EPA 508	В	ND		0.0000	mg/liter	0.002	3/23/2023	2148	TJW
BHC-Gamma Lindane	EPA 508	В	ND		0.0000	mg/liter	0.0002	3/23/2023	2148	TJW
Heptachlor	EPA 508	В	ND		0.0000	mg/liter	0.0004	3/23/2023	2148	TJW
Heptachlor Epoxide	EPA 508	В	ND		0.0000	mg/liter	0.0002	3/23/2023	2148	TJW
Methoxychlor	EPA 508	В	ND		0.0000	mg/liter	0.04	3/23/2023	2148	TJW
Polychlorinated Biphenyls	EPA 508	В	ND		0.0002	mg/liter	0.0005	3/23/2023	2148	TJW
Toxaphene	EPA 508	В	ND		0.0003	mg/liter	0.003	3/23/2023	2148	TJW
2,4,5-TP Silvex	EPA 515.3	В	ND		0.005	mg/liter	0.05	3/24/2023	2213	TJW
2, 4 -D	EPA 515.3	В	ND		0.002	mg/liter	0.07	3/24/2023	2213	TJW
Dalapon	EPA 515.3	В	ND		0.005	mg/liter	0.2	3/24/2023	2213	TJW
Dinoseb	EPA 515.3	В	ND		0.001	mg/liter	0.007	3/24/2023	2213	TJW
Pentachlorophenol	EPA 515.3	В	ND		0.0005	mg/liter	0.001	3/24/2023	2213	TJW
Picloram	EPA 515.3	В	ND		0.005	mg/liter	0.5	3/24/2023	2213	TJW
Alachlor	EPA 525.2	В	ND		0.0002	mg/liter	0.002	3/27/2023	1135	TJW
Atrazine	EPA 525.2	В	ND		0.0003	mg/liter	0.003	3/27/2023	1135	TJW
Benzo(a)pyrene	EPA 525.2	В	ND		0.0001	mg/liter	0.0002	3/27/2023	1135	TJW
Bis(2-ethylhexyl)phthalate	EPA 525.2	В	ND		0.002	mg/liter	0.006	3/27/2023	1135	TJW
Bis(2-ethylhexyl)adipate	EPA 525.2	В	ND		0.004	mg/liter	0.4	3/27/2023	1135	TJW
Hexachlorobenzene	EPA 525.2	В	ND		0.0001	mg/liter	0.001	3/27/2023	1135	TJW
Hexachlorocyclopentadiene	EPA 525.2	В	ND		0.005	mg/liter	0.05	3/27/2023	1135	TJW
Simazine	EPA 525.2	В	ND		0.0004	mg/liter	0.004	3/27/2023	1135	TJW
Carbofuran	EPA 531.2	В	ND		0.004	mg/liter	0.004	3/22/2023	2140	TJW
Vydate	EPA 531.2	В	ND		0.004	mg/liter	0.1	3/22/2023	2140	TJW
Endothall	EPA 548.1	в	ND		0.01	mg/liter	0.1	3/21/2023	921	TJW
Diquat	EPA 549.2	В	ND		0.005	mg/liter	0.02	3/21/2023	140	TJW
Glyphosate	EPA 547	В	ND		0.05	mg/liter	0.7	3/20/2021	1746	TJW

Collection Information	Lab Receipt Information
Date: 3/14/2023 Time: 1227 By: BS	3/14/2023 1344 SW
Lab #: 20230314-063 Location: 40 Monmouth Marion County Well 1A	hose bib

Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

							EPA	Analys	sis
Analyte	Method	Acc*	Results	Qual	MRL	Units	Limit	Date Time	Tech
Volatile Organics, Regulated									
1,1,1-Trichloroethane	E524.2	В	ND		0.0005	mg/liter	0.2	3/16/2023	TJW
1,1,2-Trichloroethane	E524.2	В	ND		0.0005	mg/liter	0.005	3/16/2023	TJW
1,1-Dichloroethylene	E524.2	В	ND		0.0005	mg/liter	0.007	3/16/2023	TJW
1,2,4-Trichlorobenzene	E524.2	В	ND		0.0005	mg/liter	0.07	3/16/2023	TJW
1,2-Dichloroethane	E524.2	В	ND		0.0005	mg/liter	0.005	3/16/2023	TJW
1,2-Dichloropropane	E524.2	В	ND		0.0005	mg/liter	0.005	3/16/2023	TJW
Benzene	E524.2	В	ND		0.0005	mg/liter	0.005	3/16/2023	TJW
Carbon Tetrachloride	E524.2	в	ND		0.0005	mg/liter	0.005	3/16/2023	TJW
cis-1,2-Dichloroethylene	E524.2	В	ND		0.0005	mg/liter	0.07	3/16/2023	TJW
Dichloromethane	E524.2	В	ND		0.0005	mg/liter	0.005	3/16/2023	TJW
Ethylbenzene	E524.2	В	ND		0.0005	mg/liter	0.7	3/16/2023	MLT
Monochlorobenzene	E524.2	В	ND		0.0005	mg/liter	0.1	3/16/2023	MLT
o-Dichlorobenzene	E524.2	В	ND		0.0005	mg/liter	0.6	3/16/2023	MLT
p-Dichlorobenzene	E524.2	в	ND		0.0005	mg/liter	0.075	3/16/2023	MLT
Styrene	E524.2	В	ND		0.0005	mg/liter	0.100	3/16/2023	MLT
Tetrachloroethylene (PCE)	E524.2	В	ND		0.0005	mg/liter	0.005	3/16/2023	NLT
Toluene	E524.2	В	ND		0.0005	mg/liter	1.0	3/16/2023	NLT
rans-1,2-Dichloroethylene	E524.2	в	ND		0.0005	mg/liter	0.1	3/16/2023	NLT
Trichloroethylene (TCE)	E524.2	в	ND		0.0005	mg/liter	0.005	3/16/2023	NLT
Vinyl Chloride	E524.2	в	ND		0.0005	mg/liter	0.002	3/16/2023	MLT
Xylenes, Total	E524.2	в	ND		0.0005	mg/liter	10.0	3/16/2023	NLT

Grants Pa Water La		964 SE M Street Grants Pass, OR 97526 541-476-0733 www.gpwateriab.com	
attn: Dity of Monmouth 200 Oak Terrace Dr. ebanon, OR 97355		Date: 5/9/23 Sample #: 301680	
roject Information: Well #1A			
Date/Time Collected: Date/Time Finished:		5/3/23 9:00	
Date Processed:		5/3/23 17:00 5/5/23	
Source: Sample type:		Well Raw	
Turbidity:		N/A	
Total gallons filtered: Total sediment collected:		515 10µl	
Fotal sediment collected: Sediment / 100 gallons: Gallon equivalent examined:		2µl	
esults of Microscopic Primary Bio-indicators	Examination (100 gal equivalent) Relative risk factor	
Diatoms Dther Algae	ND	0	
nsect/Larvae	ND 2	0	
Rotifers Plant Debris	ND 17	ō	
Plant Debris Giardia	17 ND	0 ND	
Cryptosporidium	ND	ND	
Secondary Bio-Indicators Plant Pollens	Number observed	Relative risk factor 0	
Vematodes	1	0	
Crustacea Cilliates/Flagellates	ND ND	0	
	Numerical Risk F		
termination of Groundwater	Under the Direct Influe	nsensus Method for the nce of Surface Water using	1
termination of Groundwater I roscopic Particulate Analysi aliquot of the sediment colle .160 specific gravity percoll/a indicator organisms from ot mined to ensure that no sig a resultant slides were exam	Jnder the Direct Influe s (MPA). cted from the filter was sucrose gradient to sep ner particulate debris. nificant bio-indicator or ined microscopically fc	nce of Surface Water using shings was passed through parate, to some extent, the The packed sediment was ganisms passed through.	
termination of Groundwater I croscopic Particulate Analysi aliquot of the sediment colle 1.60 specific gravity percoll/ -indicator organisms from of amined to ensure that no sign e resultant slides were examin icators. Slides were examin	Under the Direct Influe s (MPA). cted from the filter was sucrose gradient to se ner particulate debris. nificant bio-indicator or ined microscopically fe ed at 100 and 200x.	nce of Surface Water using shings was passed through parate, to some extent, the The packed sediment was ganisms passed through.	
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termination of Groundwater croscopic Particulate Analysis aliquot of the sediment colle 160 specific gravity percollib. Inicidator organismes from of ammined to ensure that no sign licitors. Slides were examin comments and observ to the presence of signification ative risk factor assigned this der the direct influence of sur hould be noted that the num	Under the Direct Influe s (MPA). cted from the filter was sucrose gradient to sep ner particulate debris. filicant bic-indicator or ined microscopically fe ed at 100 and 200x. vations: Int primary bic-indicator sample was 0 which i face water at the time	nce of Surface Water using shings was passed through parate, to some extent, the The packed sediment was ganisms passed through. or quantitation of bio- trs (as noted on page 1) the ndicates a low risk of being of sampling.	
is sample was processed acc termination of Groundwater croscopic Particulate Analysis aliquot of the sediment of Particulate Analysis or ganismes from oil indicator organismes from oil or esultant sides were exami- pations. Sides were exami- patients and observ- te to the presence of significa- ative risk factor assigned this or the direct influence of su hould be noted that the num lion equivalent.	nder the Direct Influe (eMPA). Led from the filter was sucrose gradient to seg reparticulate debris. Inflant bio-indicator or ded at 100 and 200x. rations: Int primary bio-indicator sample was 0 which i face water at the time bers on the chart on pur r influence cannot be	nce of Surface Water using shings was passed through parate, to some extent, the The packed sediment was ganisms passed through. or quantitation of bio- vers (as noted on page 1) the ndicates a low risk of being of sampling. age 1 represent a 100 determined on the basis of	
termination of Groundwater creacepic Particulate Analysis aliquot of the sediment colle 1.60 specific gravity percoll/2. I-indicator organisms from of amined to ensure that no sign clicators. Slides were examin clicators. Slides were examin comments and observ- be to the presence of significa- tive risk factor assigned this der the direct influence of su thould be noted that the num lon equivalent.	Under the Direct Influe (MPA). cted from the filter was ucrose gradient to see (main and the second second reading and the second second second second second second second reading and second readin	nce of Surface Water using shings was passed through parate, to some extent, the The packed sediment was gambined and the source of requantitation of bio- rrs (as noted on page 1) the ndicates a low risk of being of sampling, age 1 represent a 100 determined on the basis of t ensure that the source is suit does not necessarily	
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Ì	Grants Pass Water Lab	
Atta: Brook		

55				964 SE M Street
ab			Gra	ants Pass, OR 97526
				541-476-0733

Date: 10/19/23 Sample #: 301698

Relative Risk: Low

Attn: Brooke 4 B Engineering 3200 Oak Terrace Dr. #49 Lebanon, OR 97355 oject Information: Well 1A c/o Monmouth

Sample Information

10/3/23 08:00 10/3/23 16:30 10/5/23 Well Raw N/A 509 150µl Date/Time Collected: Date/Time Finished: Date Processed: Date Processed: Source: Sample type: Turbidity: Total gallons filtered: Total sediment collected: Sediment / 100 gallons: Gallon equivalent examine 29µİ 104 Results of Microscopic Examination (100 gal equivalent) Primary Bio-Indicators Diatoms Other Algae Insect/Larvae Rotifers Plant Debris Giardia Number observed Cryptosporidium Secondary Bio-Indicators ND <u>Number observed</u> ND ND ND 1 Relative risk factor Plant Pollens Nematodes 0 Crustacea Cilliates/Flagellates 0 Numerical Risk Factor Total: <1

10/3/23 MPA Sampling

This sample was processed according to the EPA Consensus Method for the Determination of Groundwater Under the Direct Influence of Surface Water using Microscopic Particulate Analysis (MPA).

aliquot of the sediment collected from the filter washings was passed through .160 specific gravity percoll/sucrose gradient to separate, to some extent, the indicator organisms from other particulate debrist. The packed sediment was mined to ensure that no significant bio-indicator organisms passed through. resultant slides were examined and microscopically for quantitation of bio-icators. Slides were examined at 100 and 200x.

mments and observations

a to the presence of significant primary bio-indicators (as noted on page 1) the tive risk factor assigned this sample was <1 which indicates a low risk of ng under the direct influence of surface water at the time of sampling.

nould be noted that the numbers on the chart on page 1 represent a 100 on equivalent.

relative risk of surface water influence cannot be determined on the basis of sample

e absence of Giardia and Cryptosporidium does not ensure that the source is asite free. Conversely a moderate or high MPA result does not necessarily nify the presence of Giardia or other related pathogens.

ou have any questions about the analytical procedure used and the data vided, please call (541) 476-0733.

Dale Schoolp Doree Schaafsma Grants Pass Water Laboratory, Inc.

12/12/23 MPA Sampling



964 SE M Street Grants Pass, OR 97526 541-476-0733 www.gpwaterlab.com

Date: 1/2/2024 Sample #: 301700

Project Information: MC#1A- V	Vell					
Sample Information						
cample information						
Date/Time Collected:		12/12/23 9:10am				
Date/Time Finished:		12/12/23 5:35pm				
Date Processed:	12/15/23					
Source:		Well				
Sample type:		Raw				
Turbidity:		N/A				
Total gallons filtered:		505				
Total sediment collected:	20µl					
Sediment / 100 gallons:	iment / 100 gallons: 4µl					
	100					
Gallon equivalent examined:						
	c Examination	(100 gal equivalent)				
Gallon equivalent examined: Results of Microscopi Primary Bio-indicators Diatoms						
Gallon equivalent examined: Results of Microscopi Primary Bio-indicators Diatoms Other Algae	C Examination	(100 gal equivalent) Relative risk factor				
Gallon equivalent examined: Results of Microscopi Primary Bio-indicators Diatoms Other Algae Insect/Larvae	Examination ND	(100 gal equivalent) <u>Relative risk factor</u> 0				
Gallon equivalent examined: Results of Microscopi Primary Bio-Indicators Diatoms Ditar Algae Insect/Larvae Rotifers	C Examination ND 36 ND 4	(100 gal equivalent) <u>Relative risk factor</u> 0 9				
Gallon equivalent examined: Results of Microscopi Primary Bio-Indicators Diatoms Other Algae insect/Larvae Rotifers Plant Debris	ic Examination ND 36 ND 4 6	(100 gal equivalent) <u>Relative risk factor</u> 0 9 0				
Gallon equivalent examined: Results of Microscopi Primary Bio-indicators Distorns Dither Algae nsect/Larvae Rotifers Plant Debris Siardia	C Examination ND 36 ND 4	(100 gal equivalent) <u>Relative risk factor</u> 0 9 0 1				
Gallon equivalent examined: Results of Microscopi Primary Bio-Indicators Diatoms Diter Algae nsect/Larvae Rotifers Plant Debris Siardia Siardia Signoscium	ic Examination Number observed ND 36 ND 4 6 ND ND ND	(100 gal equivalent) <u>Relative risk factor</u> 0 9 0 1 0				
Gallon equivalent examined: Results of Microscopi Primary Bio-indicators Distorns Dither Algae nsect/Larvae Rotifers Plant Debris Siardia	ic Examination ND 36 ND 4 6 ND	(100 gal equivalent) Relative risk factor 0 9 0 1 0 ND				
Gallon equivalent examined: Results of Microscopi Primary Bio-Indicators Diatoms Diter Algae nsect/Larvae Rotifers Plant Debris Siardia Siardia Signoscium	ic Examination Number observed ND 36 ND 4 6 ND ND ND	(100 gal equivalent) <u>Relative risk factor</u> 0 9 0 1 0 ND ND				
Gallon equivalent examined: Results of Microscopi primar: Bio-Indicators Diators Diators Diators Diators Status Plant Debris Siardia 2xptosporidium <u>Secondary Bio-Indicators</u> Plant Delons Plant Delons	ic Examination Number observed ND 4 6 ND ND ND Number observed	(100 gal equivalent) Relative risk factor 0 9 0 1 0 ND ND Relative risk factor				
Gallon equivalent examined: Results of Microscopi Primary Bio-Indicators Dither Algae nsceULarvae Notifers Paint Debris Siardia Sigrafia Sigrafia Sigrafia Signa Chilona Signa	ic Examination Number observed 36 ND 4 6 ND ND ND Number observed ND	(100 gal equivalent) <u>Relative risk factor</u> 0 9 0 1 0 ND <u>Relative risk factor</u> 0				

Numerical Risk Factor Total: 10 Relative Risk: Moderate

This sample was processed according to the EPA Consensus Method for the Determination of Groundwater Under the Direct Influence of Surface Water using Microscopic Particulate Analysis (MPA).

An aliquot of the sediment collected from the filter washings was passed through a 1.160 specific gravity percoll/sucrose gradient to separate, to some extent, the bio-indicator organisms from other particulate debirs. The packed sediment was examined to ensure that no significant bio-indicator organisms passed through. The resultati solides were examined microscopically for quantitation of bio-indicators. Slides were examined at 100 and 200x.

Comments and observations:

Due to the presence of significant primary bio-indicators (as noted on page 1) the relative risk factor assigned this sample was 10 which indicates a moderate risk of being under the direct influence of surface water at the time of sampling.

It should be noted that the numbers on the chart on page 1 represent a 100

The relative risk of surface water influence cannot be determined on the basis of one sample.

The absence of Giardia and Cryptosporidium does not ensure that the source is parasite free. Conversely a moderate or high MPA result does not necessarily signify the presence of Giardia or other related pathogens.

If you have any questions about the analytical procedure used and the data provided, please call (541) 476-0733.

Doree Schal
Doree Schaafsma Grants Pass Water Laboratory, Inc.

3/5/24 MPA Sampling		
Grants Pass 964 SE M Street Grants Pass 541-476-0733 Www.gywatrlab.com www.gywatrlab.com		
4B Engineering Sample #: 301706 4454 71# Ave SE Salem, OR 97317		
Project Information: City of Monmouth Sample Information		
Date/Time Collected: 3/5/24 08:00 Date/Time Finished: 3/5/24 17:00 Date Processed: 3/7/24 Source: Well #1A Sample type: Raw Turbidity: N/A Total gallons filtered: 537 Total sediment collected: 50µl Sediment / 100 gallons: 18µl Gallon equivalent examined: 100		
Results of Microscopic Examination (100 gal equivalent) Primary Bio-indicators Number observed Relative risk factor Diatoms ND 0 Other Algae ND 0 Insect/Larvae ND 0 Rotifers ND 0 Giardia ND ND Cryptosportidum ND ND Secondary Bio-Indicators Number observed Relative risk factor Plant Pollens ND 0 Crustacea ND 0 Cilliates/Flagellates ND 0 Numerical Risk Factor Total: <1		
Relative Risk: Low This sample was processed according to the EPA Consensus Method for the Determination of Groundwater Under the Direct Influence of Surface Water using Microscopic Particulate Analysis (MPA).		AT X
An aliquot of the sediment collected from the filter washings was passed through a 1.160 specific gravity percoll/sucrose gradient to separate, to some extent, the bio-indicator organisms from other particulate debris. The packed sediment was examined to ensure that no significant bio-indicator organisms passed through. The resultant slides were examined at incroscopically for quantitation of bio- indicators. Slides were examined at 100 and 200x.		験 (*) O
Comments and observations:		
Due to the presence of significant primary bic-indicators (as noted on page 1) the relative risk factor assigned this sample was <1 which indicates a low risk of being under the direct influence of surface water at the time of sampling.		
It should be noted that the numbers on the chart on page 1 represent a 100 gallon equivalent.		
The relative risk of surface water influence cannot be determined on the basis of one sample.		
The absence of Giardia and Cryptosportidium does not ensure that the source is parasite free. Conversely a moderate or high MPA result does not necessarily signify the presence of Giardia or other related pathogens.		* // //
If you have any questions about the analytical procedure used and the data provided, please call (541) 476-0733.	*	
Doree Schaafsma Grants Pass Water Laboratory, Inc.	* * + + * *	
	859	