Oregon Department of Environmental Quality



Drinking Water Assessment for the Middle Willamette

Agricultural Water Quality Management Area

August 2024

Overview

- Public water systems within the Middle Willamette Agricultural Water Quality Management Area utilize groundwater and surface water sources to serve approximately 172,350 persons regularly.
- There are 82,895 persons regularly served by public water systems that are outside the Middle Willamette Agricultural Water Quality Management Area but have a portion of their source water area located within the Middle Willamette Agricultural Water Quality Management Area.
- There are 102 public water systems within the past ten years which received one or more alerts for
 exceeding the maximum contaminant level goal for total coliform bacteria. None of the public water
 systems had maximum contaminant level violations within the past five years.
- There are 24 public water systems within the past ten years which received one or more alerts for exceeding the MCLG for *E. coli* bacteria. Six public water systems had MCL violations within the past five years.
- There are six public water systems within the past ten years which received one or more alerts for nitrate levels that exceed 5 milligrams per liter.
- There are 782 records of private domestic well sample results submitted to Oregon Health Authority's Real Estate Transaction program in the area. Of these, 43 measured nitrate concentrations ≥3 mg/L; two measured nitrate concentrations ≥7 mg/L; one measured nitrate concentrations ≥10mg/L.
- Contaminants in water supplies potentially related to agriculture are present near areas with human populations, agricultural land uses, and aquifers susceptible to contaminant infiltration.
- Department of Environmental Quality recommends Oregon Department of Agriculture work with the appropriate Soil and Water Conservation Districts to implement best management practices in and around private domestic and public drinking water wells to reduce high nitrate levels. Best management practices that reduce nitrate levels are beneficial in helping communities reduce long term costs associated with treatment, operations, maintenance, and sustainability.
- DEQ recommends public water systems utilize <u>Source Water Protection Practices</u> to prevent potential contamination and increase resiliency.
- Resources for addressing risks to drinking water supplies can be found in either the <u>Groundwater</u> Resource Guide or Surface Water Resource Guide.

Water Use

There are 79 public water systems within the Middle Willamette Agricultural Water Quality Management Area which obtain domestic drinking water from combinations of surface and groundwater sources. Drinking water is an important beneficial use under the Clean Water Act. When Clean Water Act standards are met in source water areas, a drinking water treatment plant using standard technology can generate water meeting the standards set forth in the Safe Drinking Water Act. There are 46 active community public water systems which serve approximately 270,700 people on a regular basis, in addition to visitors at recreation sites. There are 17





active non-transient, non-community workplace or school public water systems serving 4,183 persons regularly. The 89 remaining active public water systems are transient non-community systems and non-public, state-regulated systems with an estimated service population of 12,403. See **Table 1** below for a list of public water systems, their classifications, sources and activity status, and populations served.

Agricultural land uses (e.g. wheat, irrigated crops, livestock) are present near many of the public water system wells and springs in the area. The western portion of the Middle Willamette Agricultural Water Quality Management Area is mainly comprised of lands designated for either agricultural practices or urban and private rural use. The central and eastern portions of the Middle Willamette Agricultural Water Quality Management Area are mainly comprised of forestland (**Figure 2**).

Bacteria

Total coliform bacteria alerts for public water systems are generated by Oregon Health Authority when their presence is detected in sample results. There are 102 public water systems within the past ten years which received one or more alerts for exceeding the MCLG for total coliform bacteria. The MCLG for total coliforms is zero. None of the public water systems received violations for exceeding the MCL for total coliform bacteria within the past five years. A public water system will receive an MCL violation if total coliform is present in more than 5% of their routine samples taken each month. Additionally, a public water system will receive an MCL violation for total coliform bacteria if they fail to resample following a routine positive sample.

E. coli bacteria alerts for public water systems are generated by OHA when their presence is detected in sample results. There are 24 public water systems within the past ten years which received one or more alerts for detections of *E. coli* bacteria (**Figure 1**, **Table 1**). Six public water systems had violations with OHA for *E. coli* bacteria in the past five years: Applewood Mobile Home Park, COE Lookout PT-PH/Dexter, Lakeside Mobile Home Park, London Water CO-OP, Oakridge Chapel, and USFS Salmon Creek Falls CG (HP). A public water system will receive an MCL violation for *E. coli* bacteria if they collect a sample indicating total coliforms are present and the resample is also positive for either fecal coliform or *E. coli* bacteria.

The locations of public water systems with *E. coli* bacteria alerts mostly occur near areas designated for land use as agricultural, private rural, urban, and forestland. Refer to DEQ's <u>Surface Water Resource Guide</u> > Section 3.0 – Surface Water Characterization and Risks > Using Oregon Data to Identify Priorities > Bacteria Data and Susceptibility, to learn more about preventing bacterial contamination in surface water bodies from various land uses.

Nitrates

An alert for elevated nitrate concentrations is generated by OHA when nitrate sample results for public water systems exceed 5 mg/L. There are six public water systems within the past ten years which received one or more alerts for elevated nitrate concentrations. These public water systems include Bella Casa Park, Emerald Valley MH & RV Park, ODOT HD Gettings Creek Rest Area, OPRD Jasper Park, Westridge Middle School SD 76, and Buy 2 at Pleasant Hill (**Table 1**). Bella Casa Park received 10 nitrate alerts within the past 10 years. None of the public water systems had MCL violations for nitrate in the past ten years. The MCL for nitrate is 10 mg/L. Nitrate contamination is often related to animal and cropland agriculture. The locations of nitrate contamination of private domestic wells and public drinking water sources mostly occur in the western portion of the Middle Willamette Agricultural Water Quality Management Area near areas classified for agricultural, urban, or private rural use (**Figure 2**).

In addition, there are numerous private groundwater wells for domestic use within the Middle Willamette Agricultural Water Quality Management Area. The Domestic Well Testing Act database includes submitted records of real estate transaction testing data from 1989 to 2018. There are 782 records of private domestic

well samples within the Middle Willamette Agricultural Water Quality Management Area. Of these 782 records, 43 measured nitrate concentrations ≥3 mg/L; two measured nitrate concentrations ≥7 mg/L; one measured nitrate concentrations ≥10mg/L. The location of private wells with elevated nitrate concentrations are primarily located in the western portion of the Middle Willamette Agricultural Water Quality Management Area (**Figure 1.5**). For wells testing at elevated concentrations, attention to well depth, well construction, nitrate leaching potential of local soils, and proximity to nutrient sources such as septic systems, fertilizer use areas, and high concentrations of livestock should be considered when investigating the cause of nitrate contamination.

Of the soils assessed in the Middle Willamette Agricultural Water Quality Management Area, the western portion is comprised of moderately high to high leaching potential. No data is available for the eastern portion of the Middle Willamette Agricultural Water Quality Management Area (**Figure 3**). Leaching potential is assessed by the Natural Resources Conservation Service's National Cooperative Soil Survey. Nitrate leaching potential is based on the area's slope, precipitation, and land use. Nitrate from fertilizers and septic systems can readily penetrate aquifers used for drinking water when leaching potential is high. Additionally, bacteria removal through soil filtration can be less effective in sandy soils. Measures to reduce leachable nitrate in soils would reduce risk to groundwater sources of drinking water. Refer to section 5.0 - Pollutant Reduction Tools in the <u>Groundwater Resource Guide</u> to learn more about nitrate leachability and potential reduction strategies.

DEQ specifically addresses drinking water issues identified for public water systems. A query of Oregon Water Resources Department's water rights database for private domestic points of diversion (using a threshold of 0.005 cubic feet per second for domestic surface water rights that are household use only, not irrigation) identified 42 private domestic surface water rights in the Middle Willamette Agricultural Water Quality Management Area (**Figure 1**).

Other Contaminants

Other contaminants potentially related to agriculture include a pentachlorophenol alert at the City of Wilsonville. Other contaminants unlikely to be related to agriculture within the management area include arsenic, sodium, styrene, lead, copper, tetrachloroethylene, xylenes, Di(2-ethylhexyl) - phthalate, total haloacetic acids (HAA5), and total trihalomethanes (TTHM). HAA5 and TTHM are disinfection byproducts that form when chlorine compounds that are used to disinfect water react with other naturally occurring chemicals in the water.

Contact

For more information, please contact the <u>Drinking Water Protection Program</u> or send an email to <u>drinkingwater.protection@deq.oregon.gov</u>.

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in administration of its programs or activities. Visit DEQ's <u>Civil Rights and Environmental Justice page.</u>

Table 1. Public Water Systems in the Middle Willamette Ag WQMA

Note: Table 1 does not include public water systems which purchase drinking water from these water systems.

PWS ID	Public Water System Name	System Type	Population	MCL Exceedance
4191799	AL KENNEDY ALTERNATIVE 45J3	Non-Transient Non-Community	100	
4191874	AMERICAN LAMINATORS TIDEWATER	Non-Transient Non-Community	50	
4100840	APPLEWOOD MOBILE HOME PARK	Community	125	E. coli
4100992	ARNEYS FOREST VIEW MHP	Community	50	
4191773	BELKNAP RESORT & HOT SPRINGS	Non-Community	150	
4101005	BELLA CASA PARK	Community	125	Nitrate
4195093	BLM MOSBY CREEK TRAILHEAD Inactive system	Non-Community	30	
4190624	BLM SHARPS CREEK REC SITE Inactive system	Non-Community	25	
4190625	BLM SHOTGUN REC SITE	Non-Community	221	
4100125	BLUE RIVER WATER DISTRICT	Community	150	
4194902	BLUE SKY MARKET	Non-Community	500	
4195206	BUCKHORN TAVERN	Non-Community	25	
4194411	BUY 2 AT PLEASANT HILL	Non-Community	300	Nitrate
4194091	CAMP CHRISTIAN INC Inactive system	Non-Community	25	
4194388	CAMP CREEK COMMUNITY CHURCH	Non-Community	150	
4191787	CAMP CREEK ELEM BRIDGEWAY SCHOOL	Non-Transient Non-Community	84	
4194838	CAMP CREEK STORE Inactive system	Non-Community	50	
4101007	CASEYS RIVERSIDE PARK	Community	90	
4195049	CITY LIFE CHURCH	Oregon Very Small	10	
4193949	CLEAR LAKE RESORT	Non-Community	130	
4195439	CLEARWATER PARK Inactive system	Non-Community	60	E. coli
4195118	COE COTTAGE GROVE	Non-Community	750	
4195128	COE LOOKOUT PT-PH/DEXTER	Non-Transient Non-Community	43	E. coli
4193632	CRAIGS LUCKY LOGGER REST AND HENRYS BAR	Non-Community	250	
4100942	DECEPTION CREEK MOBILE PARK	Community	56	
4100833	DEERHORN COMMUNITY WTR ASSN	Community	275	E. coli
4195092	DEERWOOD RV PARK	Non-Community	50	
4191800	DEXTER LAKE CLUB	Non-Community	100	
4100998	DEXTER OAKS CO-OP	Community	75	
4100997	DEXTER SHORES MOBILE HOME PARK	Community	120	
4105864	DUELING SPOONS	Non-Community	30	
4195379	EMERALD CHRISTIAN ACADEMY	Non-Transient Non-Community	80	
4100995	EMERALD VALLEY MH & RV PARK	Community	31	Nitrate
4101063	EUGENE MOBILE VILLAGE	Community	260	
4194629	EVERYONES MARKET #7	Non-Community	400	E. coli
4192005	FALL CREEK CHRISTIAN CHURCH	Non-Community	35	
4195551	FALL CREEK FARM AND NURSERY	Non-Transient Non-Community	120	
4191808	FALL CREEK TAVERN Inactive system	Non-Community	75	
4194782	FINN ROCK GRILL Inactive system	Non-Community	100	
4194095	GATEHOUSE PIZZA	Non-Community	125	
4195499	GET N GO GROCERY-4	Non-Community	100	E. coli

440446=	LIANAWC BOINT	C		
4101465	HAWKS POINT	Community	75	
4100583	HIGH PRAIRIE VILLA WTR SYSTEM	Community Non Community	49	
4194769	HILLCREST MARKET	Non-Community	250	
4100237	HILLTOP IMPROVEMENT DISTRICT	Community	45	
4191819	HOLIDAY FARM RESORT	Non-Community	40	
4195359	HOLIDAY FARM RV RESORT	Non-Community	30	
4105238	HOMESTEAD PARK	Non-Community	35	E. coli
4191683	HOODOO SKI BOWL	Non-Community	500	
4101279	HWY 58 TRAILER PARK	Oregon Very Small	16	
4191821	IKES LAKESIDE PIZZA	Non-Community	40	
4195069	JASPER MOUNTAIN CENTER	Non-Transient Non-Community	65	
4195071	JASPER MOUNTAIN SAFE CENTER	Non-Community	30	
4191823	JASPER STORE	Non-Community	350	
4195084	JASPER WOOD PRODUCTS	Non-Transient Non-Community	150	
4100999	LAKESIDE MOBILE HOME PARK	Community	56	E. coli
4100238	LAMONTAI IMPROVEMENT WTR DIST	Community	255	
4191046	LANE CO PARKS DORRIS PARK	Non-Community	30	
	Inactive system			
4190050	LANE CO PARKS HENDRICKS BRIDGE WAY	Non-Community	50	
4191826	LATHAM ELEMENTARY SD 45J3 Inactive system	Non-Transient Non-Community	150	
4100990	LAZY DAYS MOBILE HOME PARK Inactive system	Community	70	
4195462	LEES HWY 58 MARKET	Non-Community	200	
4105224	LEGACY PARK LLC	Oregon Very Small	20	
4191833	LOG CABIN INN	Non-Community	42	
4191830	LONDON ELEMENTARY SD 45J3	Non-Transient Non-Community	107	
4194011	LOST VALLEY EDUCATIONAL CENTER	Non-Community	40	E. coli
4195458	LOWELL GRANGE	Non-Community	75	_,,
4100508	MARCOLA WATER DISTRICT	Community	600	
4194395	MATHERS MARKET	Non-Community	130	
4194168	MCKENZIE BIBLE FELLOWSHIP	Non-Community	100	
4100923	MCKENZIE PALISADES WATER BOARD	Community	50	E. coli
4195469	MCKENZIE STATION ESPRESSO	Non-Community	30	L. COII
4192011	MCKENZIE VALLEY PRESBYTERIAN	Oregon Very Small	21	
4194575	MITCHELLS MERCANTILE Inactive	Non-Community	100	
FIJTJIJ	system	Non Community	100	
4100291	MOBILIFE WATER COMPANY INC	Community	175	E. coli
4191840	MOHAWK ELEMENTARY SD 19	Non-Transient Non-Community	60	L. COII
4194864	MOHAWK GENERAL STORE	Non-Community	250	
4191835	MOMS PIES INC Inactive system	Non-Community	25	
4195394	MOUNT PISGAH ARBORETUM	Non-Community	100	
4195394	NEW SONG CHURCH	Non-Community	32	
4195302	NINES AT RIVERRIDGE, THE Inactive	Non-Community Non-Community	72	
	system	,		
4194923	OAK HILL SCHOOL	Non-Transient Non-Community	242	
4195509	OAKRIDGE CHAPEL	Non-Community	60	E. coli
4100582	OAKRIDGE, CITY OF	Community	3,310	
4105766	ODF/WL LEABURG FISH HATCHERY	Non-Community	95	
4191112	ODOT HD GETTINGS CREEK REST AREA	Non-Community	2,400	Nitrate

4194588	ON THE WAY MARKET	Non-Community	200	
4194886	OPRD CASCARA CAMPGROUND	Non-Community	100	E. coli
4195011	OPRD ELIJAH BRISTOW EQUES WELL	Non-Community	25	
4191822	OPRD JASPER PARK	Non-Community	120	Nitrate
4194190	OPRD LOWELL PARK Inactive system	Non-Community	120	
4191892	OPRD WINBERRY CREEK PARK	Non-Community	200	
4194120	OREGON CASCADE RV CO-OP	Non-Community	150	
4100127	PATIO RV PARK	Non-Community	125	
4191867	PINE RIDGE GOLF CLUB	Non-Community	114	
4191865	PISGAH PUBLIC MARKET	Non-Transient Non-Community	700	
4194277	PLEASANT HILL DAIRY QUEEN	Non-Community	250	
4192004	PLEASANT HILL LUTHERAN CHURCH	Oregon Very Small	10	
4191851	PLEASANT HILL SCHOOLS	Non-Transient Non-Community	1,200	
4194845	PRT USA INC-COTTAGE GROVE NURSERY	Non-Community	38	
4101073	RAINBOW PARK MHP	Community	30	
4100839	RAINBOW WATER DISTRICT	Community	6,300	
4194746	RIVERRIDGE GOLF COURSE Inactive system	Non-Community	100	
4194353	RIVERSIDE INN Inactive system	Non-Community	30	
4100240	RIVERSTONE MOBILE HOME PARK	Community	168	E. coli
4194771	RIVERVIEW MARKET	Non-Community	450	2. 0011
4100994	RIVERWOOD MHP LANE CO	Community	325	
4194094	RUSTIC SKILLET Inactive system	Non-Community	100	
4194671	SAGINAW MARKET Inactive system	Non-Community	100	
4100996	SAGINAW PARK WATER SYSTEM	Community	60	
4100289	SEAVEY LOOP WATER COMPANY	Community	110	
4100835	SHANGRI-LA WATER DISTRICT	Community	200	
4100836	SHENANDOAH HOMEOWNERS INC	Community	84	
4105741	SKY CAMP	Non-Community	25	
4194167	SNACKTOWN MARKET	Non-Community	70	
4191770	SOUTH LANE CHRISTIAN CENTER Inactive system	Oregon Very Small	7	
4194334	ST BENEDICTS LODGE	Non-Community	25	
4100290	STAFFORDSHIRE WATER SYSTEM	Community	150	
4194904	STATION 58	Non-Community	250	
4194449	THE LEABURG STORE	Non-Community	250	
4195061	THE MCKENZIE RESORT	Non-Community	45	E. coli
4100841	THURSTON OAKS MHP	Community	38	
4100988	TILLICUM PARK LLC	Community	34	
4191876	TOKATEE GOLF CLUB	Non-Community	70	
4191878	TRENT ELEMENTARY SD #1 Inactive system	Non-Transient Non-Community	280	
4191880	TWILIGHT ACRES NURSING HOME Inactive system	Community	60	
4193666	UPPER MCKENZIE RURAL COOP INC	Non-Community	13	
4194147	USFS BEDROCK CAMPGROUND Inactive system	Non-Community	35	
4193815	USFS BLACK CANYON CG	Non-Community	72	E. coli
4192806	USFS BLUE POOL CAMPGROUND Inactive system	Non-Community	130	

4195251	USFS CEDAR CREEK CG Inactive system	Non-Community	50	
4192796	USFS CLARK CREEK ORG CMP	Non-Community	34	
4192805	USFS COLD WATER COVE BOAT	Non-Community	175	
	LAUNCH	,		
4193818	USFS COLD WATER COVE-LAST	Non-Community	175	
4102770	CHANCE CG	Naga Camananaita	٦٢	
4192770	USFS DELTA CG-HP #1 Inactive system	Non-Community	25	
4192773	USFS DELTA CG-HP #2 Inactive system	Non-Community	25	
4192774	USFS DELTA CG-HP #3 Inactive system	Non-Community	50	
4192820	USFS FISH LAKE GUARD STATION	Non-Community	25	
4192768	USFS FRENCH PETE CG-HP #1	Non-Community	30	
4192807	USFS GOLD LAKE CAMPGROUND	Non-Community	28	
4194927	USFS HJ ANDREWS EXPER FOREST	Non-Community	25	
4192799	USFS HORSE CREEK GROUP CG	Non-Community	50	
4192803	USFS ICE CAP CREEK CG HP #2	Non-Community	55	
4194338	USFS KIAHANIE CG	Oregon Very Small	15	
4192756	USFS LAYNG CREEK WORK CTR	Non-Community	25	
	Inactive system	,		
4192778	USFS LOST PRAIRIE CAMPGROUND-1	Non-Community	50	
4192798	USFS MCKENZIE BRIDGE CG HP	Non-Community	50	
4194339	USFS MCKENZIE BRIDGE CG HP #2	Oregon Very Small	50	E. coli
	Inactive system			
4194340	USFS MCKENZIE BRIDGE CG HP #3	Non-Community	50	
4192804	USFS MCKENZIE RIVER RANGER STATION	Non-Transient Non-Community	63	
4192813	USFS MIDDLE FORK RS	Non-Transient Non-Community	125	
4193813	USFS MONA CAMPGROUND	Non-Community	25	
4192814	USFS NORTH WALDO CAMPGROUND	Non-Community	125	
	Inactive system	-		
4194478	USFS OLALLIE CG LOWER HP	Non-Community	85	
4192817	USFS PACKARD CREEK CAMPGROUND	Non-Community	50	
4193817	USFS PARADISE CAMPGRD/HELIPORT	Non-Community	25	
4192809	USFS SALMON CREEK FALLS CG (HP) Inactive system	Non-Community	25	E. coli
4192793	USFS SHADY DELL CAMPGROUND Inactive system	Non-Community	25	
4192808	USFS SKOOKUM CREEK CAMPGROUND Inactive system	Non-Community	35	
4192771	USFS SLIDE CREEK	Non-Community	50	
4192792	USFS TIMPANOGAS CAMPGROUND	Non-Community	33	
4191881	VIDA CAFE	Non-Community	90	E. coli
	VIDA-LEA COMMUNITY	Community	45	
4101004				
	COOPERATIVE	•	150	
4101004 4100285 4195086		Community Non-Community	150 40	

4194416	WALTERVILLE CENTER WS	Non-Community	200	
4191884	WALTERVILLE ELEM SD 19	Non-Transient Non-Community	194	
4191882	WAYFARER RESORT	Non-Community	25	
4191889	WESTRIDGE MIDDLE SCHOOL SD 76	Oregon Very Small	19	Nitrate
4100941	WESTRIDGE WATER DISTRICT	Community	78	
4194560	WESTWOOD INDUSTRIES-SAGINAW Inactive system	Oregon Very Small	20	
4191894	WILLAMETTANS, THE	Community	60	
4194033	WILLAMETTE PASS RESORT	Non-Community	80	
4100003	ADAIR VILLAGE WATER SYSTEM	Community	980 *	
4192152	CASCADE PACIFIC PULP LLC	Non-Transient Non-Community	800	
4100225	CORVALLIS, CITY OF	Community	56,000 *	
4100236	COTTAGE GROVE, CITY OF	Community	10,005	
4100246	CRESWELL, CITY OF	Community	5,585	
4100287	EUGENE WATER & ELECTRIC BOARD	Community	176,000	E. coli
4100239	LONDON WATER CO-OP	Community	63	E. coli
4100492	LOWELL, CITY OF	Community	1,264	
4101515	ROW RIVER VALLEY WATER DIST	Community	340	
4100837	SPRINGFIELD UTILITY BOARD	Community	62,100	E. coli
4100939	WESTFIR, CITY OF	Community	250	
4191783	WHITE BRANCH YOUTH CAMP	Non-Community	65	E. coli
4100954	WILSONVILLE, CITY OF	Community	25,915 *	E. coli

System Type

- C "Community Water System (C)" means a public water system that has 15 or more service connections used by year-round residents, or that regularly serves 25 or more year-round residents.
- NTNC "Non-Transient Non-Community Water System (NTNC)" means a public water system that is not a Community Water System and that regularly serves at least 25 of the same persons over 6 months per year.
- NC "Transient Non-Community Water System (NC)" means a public water system that serves a transient population of 25 or more persons.
- OVS "Oregon Very Small" means a public water system, which serves 4 to 14 service connections or serves 10 to 24 people. Monitoring requirements for these systems are the same as those for Transient Non-Community water systems.
- * Population for these water systems located outside of South Willamette Agriculture Water Quality Management Area. Part of the source water area for these water systems extends into the South Willamette Agriculture Water Quality Management Area.





