

# Drinking Water Quality Report 2004

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## CONSUMER CONFIDENCE REPORT

The City of Cottage Grove is pleased to present you with this year's annual Water Quality Report. This report is designed to inform you about the quality of drinking water and services we deliver to you every day. Our constant goal is to supply you with a reliable supply of high quality drinking water. We are committed to ensuring the quality of your water. If you have any questions about this report or your water utility, please contact Ray Pardee, Water Production Superintendent, at (541) 942-3349.

Cottage Grove's drinking water supply comes from the surface water intakes located on Layng Creek, Prather Creek and Row River. The Layng Creek and Prather Creek intakes are located within the Umpqua National Forest. The Row River intake is located on the Row River.

The public water system serves approximately 9,300 citizens. The combination of the geographic areas contributing to the Row River, Prather Creek, and Layng Creek intakes make up Cottage Grove's drinking water protection area for surface water sources. The intakes located in the Lower Row River and Layng Creek Watersheds are part of the Coast Fork Willamette Sub-Basin of the Willamette Basin. The streams that contribute to the intakes have a total tributary area of approximately 371 square miles.

All of Cottage Grove's drinking water is treated before it is distributed to the consumer. The City's water treatment plant operators are state certified and

complete educational courses annually to maintain certification and to assure technical competence in the most recent advances in water treatment.

The City of Cottage Grove recognizes the importance of identifying any unsafe material or compounds in the water. With the aid of on-line analyzers, the operators monitor the water treatment process seven days a week, 365 days a year.



Water treatment plant operators analyze the water, screening for any of the approximately 91 different regulated contaminants that could be in your drinking water, according to Federal and State laws. One of these contaminants, Turbidity, is a measure of the cloudiness of the water. The City monitors it because it is a good indicator of the effectiveness of the treatment process.

The following tables show the results of Cottage Grove's water quality analysis. Every regulated contaminant that was detected in Cottage Grove's water from January 1, 2004 to December 31, 2004 is listed. The regulations do not require the water to be tested for all of the contaminants each and every year. The data presented in the report are from the most recent testing done in accordance with the regulations. In these tables you may find many terms and abbreviations you might not be familiar with. To help you better understand the terms used in the tables, definitions are provided on the following page.

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## DEFINITIONS



**Action Level (AL)** – The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

**Lead** - Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in a household should be identified and removed, replaced or reduced.

**Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**Maximum Contaminant Level (MCL)** – The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

**Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination.

**Maximum Residual Disinfectant Level (MRDL)** – The highest level of disinfectant allowed in drinking water.

**Nephelometric Turbidity Unit (NTU)** – Nephelometric turbidity unit is an empirical measure of the clarity of water. Turbidity in excess of 5 NTU is just visibly noticeable to the average person.

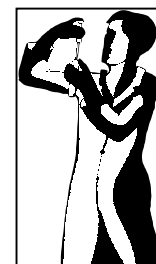
**Non-Detects (ND)** – Contaminant not detectable at laboratory testing limits.

**Parts Per Billion (PPB) or Micrograms Per Liter** – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Parts Per Million (PPM) or Milligrams Per Liter** – One part per million corresponds to one minute in two years or a single penny in \$10,000.

**Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.

**Turbidity** - Turbidity has no health effects, however, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may mask the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.



### Key To Abbreviations In The Tables

AL	Action Level	NTU	Nephelometric Turbidity Unit
MCL	Maximum Contaminant Level	PPB	Parts Per Billion
MCLG	Maximum Contaminant Level Goal	PPM	Parts Per Million
MRDLG	Maximum Residual Disinfectant Level Goal	TT	Treatment Technique
MRDL	Maximum Residual Disinfectant Level	RAA	Running Annual Average
ND	Non-Detects	N/A	Not Applicable

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The Layng Creek Water Treatment Plant supplies finished water to all City of Cottage Grove customers.

**TABLE I**  
**Layng Creek Water Treatment Plant**

<b>TEST RESULTS</b>						
Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants</b>						
Turbidity – highest single measurement	No	1.78	NTU	N/A	5 TT	Soil erosion
Turbidity – lowest monthly percentage	No	98.9	NTU	N/A	95% <0.5 TT	Soil erosion
<b>Radiological Contaminants</b>						
Uranium – Layng Creek (most recent test date May 2003)	No	0.02	PPB	0	30	Erosion of natural deposits
Uranium – Prather Creek (most recent test date May 2003)	No	0.02	PPB	0	30	Erosion of natural deposits

The Row River Water Treatment Plant Supplies finished water to all City of Cottage Grove customers except those customers east of the City starting on the east side of the Row River.

**TABLE II**  
**Row River Water Treatment Plant**

<b>TEST RESULTS</b>						
Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants</b>						
Turbidity – highest single measurement	No	1.00	NTU	N/A	5 TT	Soil erosion
Turbidity – lowest monthly percentage	No	98.6	NTU	N/A	95% <0.5 TT	Soil erosion
<b>Radiological Contaminants</b>						
Uranium (Most recent test date May 2003)	No	0.01	PPB	0	30	Erosion of natural deposits

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

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**TABLE III  
Water Distribution System**

<b>TEST RESULTS</b>						
Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
<b>Inorganic Contaminants</b>						
Copper (most recent test date August 2003)	No	90 <sup>th</sup> % value= 0.292	PPM	1.3	AL = 1.3 0 sites exceeded the action level	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (most recent test date August 2003)	No	90 <sup>th</sup> % value = 8	PPB	0	AL = 15 1 site exceeded the action level	Corrosion of household plumbing systems, erosion of natural deposits
<b>Disinfection Byproducts, Byproduct Precursors, and Disinfectant Residuals</b>						
TTHM (Total Trihalomethanes)	No	Range 14.3-36.3 RAA 25.5	PPB	N/A	80	By-product of drinking water disinfection
HAA5 (Haloacetic Acid)	No	Range 9.4-26.4 RAA 25.0	PPB	N/A	60	By-product of drinking water disinfection
Chlorine	No	Range 0.04-1.08 RAA 0.65	PPM	MRDLG 4	MRDL 4.0	Water additive used to control microbes
Finished Water TOC (Total Organic Carbon) Layng Creek WTP Row River WTP	No	Layng Creek Range 0.52-1.01 RAA 0.64 Row River Range 0.78-1.18 RAA 0.97	PPM	N/A	TT 2 PPM Finished Water	Naturally present in the environment



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Unregulated contaminants monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

**TABLE IV  
Detected Levels of Unregulated Contaminants**

Contaminant	Unit of Measure	Layng Creek Plant Level Detected	Row River Plant Level Detected	Likely Source of Contaminant
<b>Inorganic Contaminants</b>				
Sodium (most recent test date July 2002)	PPM	4.99	2.88	Naturally present in the environment
Sulfate (most recent test date July 2002)	PPM	5.89	3.91	Naturally present in the environment
Hardness (as CaCO <sub>3</sub> ) Finished Water	PPM	Avg = 19.0 Range = 15 - 28	Avg = 18.0 Range = 13 - 25	Naturally present in the environment
pH Finished Water	pH Units	Avg = 7.1 Range = 6.1 - 7.4	Avg = 7.1 Range = 6.9 - 7.4	Naturally present in the environment
Chloroform	PPB	Avg = 24.7 Range = 13.3 - 33.2	Avg = 22.0 Range = 13.2 - 30.7	By-product of drinking water disinfection
Bromodi-Chloromethane	PPB	Avg = 2.0 Range = 1.2 - 3.1	Avg = 1.8 Range = 1.2 - 2.5	By-product of drinking water disinfection
Dichloro-Acetic Acid	PPB	Avg = 2.8 Range = 1.4 - 4.5	Avg = 3.3 Range = 1.6 - 5.1	By-product of drinking water disinfection
Trichloro-Acetic Acid	PPB	Avg = 14.4 Range = 8.6 - 23.5	Avg = 14.3 Range = 8.6 - 24.3	By-product of drinking water disinfection

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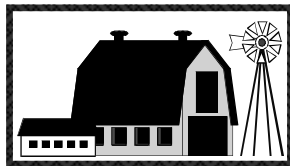
## Water Source Information

A Source Water Assessment was recently completed by the Department of Environmental Quality (DEQ) to identify the surface areas (and/or subsurface areas) that supply water to the City of Cottage Grove's public water system intakes and to inventory the potential contaminant sources that may impact the water supply.



The City of Cottage Grove's source water is obtained from the delineated drinking water protection area. The delineated drinking water protection area is primarily dominated by managed forestland uses in the upper reaches and by residential and limited commercial development along the main rivers, creeks and Dorena Lake.

Potential contaminant sources or "sensitive areas" identified in the watershed include managed forestlands, campgrounds and recreational areas, nurseries, quarries, several parks, residential areas with septic systems and wells, gas stations (currently active and historic), a former mill, and the drinking water treatment plants.



These "sensitive areas" are the main existing potential sources of contamination that could, if improperly managed or released, impact the water quality in the watershed.

A total of 45 potential contaminant sources were identified in the City of Cottage Grove's drinking water protection area. All of these sources are located in the "sensitive areas" and 43 are high-to-moderate risk sources within "sensitive areas". These "sensitive areas" include areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1,000 feet from the river or streams.

The information in this assessment provides a basis for prioritizing areas in and around our community that are most vulnerable to potential impacts and can be used by the City of Cottage Grove community to develop a voluntary Drinking Water Protection Plan.

Assessment was completed to provide information that the City of Cottage Grove's public water system



staff/operator, consumers, and community citizens can use to begin developing strategies to protect the source of their drinking water, and to minimize future public expenditures for drinking water treatment. The assessment was prepared under the requirements and guidelines of the Federal Safe Drinking Water Act (SDWA).

All sources of water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **EPA's Safe Drinking Water Hotline (1-800-426-4791)**.

## Additional Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the **Safe Drinking Water Hotline (1-800-426-4791)**.



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The City of Cottage Grove's Source Water Assessment Report provides additional details on the methodology and results of this assessment. The full report is available for review at: **Cottage Grove Public Library, 700 East Gibbs Avenue.**

We want our valued customers to be informed about their water quality. If you want to learn more, please attend any of our regularly scheduled City Council meetings. They are held on the second and fourth Monday of each month at 7:30 p.m. in the City Hall Council Chambers.

The City of Cottage Grove considers it our paramount responsibility to supply safe water for the health and future of our community. Please call our office if you have any questions, (541) 942-3349 or visit our web site at:

 [www.cottagegrove.org](http://www.cottagegrove.org) 

Additional information can be obtained from the following websites:

- (1) Environmental Protection Agency at: [www.epa.gov/safewater/](http://www.epa.gov/safewater/)
- (2) Department of Human Services/Drinking Water Program at: [www.ohd.hr.state.or.us/dwp/](http://www.ohd.hr.state.or.us/dwp/)
- (3) National Sanitation Foundation at [www.nsf.org](http://www.nsf.org) or call 1-877-8NSF-HELP

## Water System Planning and Improvements

The City's water production facilities are comprised of two (2) water treatment plants producing water from four (4) separate diversions of surface water from Layng Creek, Prather Creek and the Row River. The source water for the Layng Creek water treatment plant is Layng and Prather Creeks, and the source water for the Row River water treatment plant is the Row River.

The Row River water treatment plant is a modern treatment facility that was constructed in 1992, and it is located on the east boundary of the City's Urban Growth Boundary. The source water for this treatment plant is diverted from the Row River. Finished water from the Row River plant is filtered and disinfected before it is pumped from that location to the City's reservoirs where it is held until required by the water demand in the distribution system. The Row River water treatment plant was

built with expansion capabilities, and additional treatment units will be added as water demand increases with population growth.

The Layng Creek water treatment plant is located approximately 20 miles east of Cottage Grove, and finished water from that plant is conveyed to the City through a 14" transmission line. The Layng Creek plant and the transmission line are both quite old, and they are very near the end of their useful lives. The treatment plant was built in 1977, and the transmission line was installed in 1947. Because of the age of these facilities and their ability to comply with regulatory requirements and/or provide continued satisfactory service, significant effort and expense is required to operate, maintain and replace them. Replacement of the treatment plant and a large portion of the transmission line is required in the immediate future. Failure to replace the Layng Creek water treatment plant will prevent the City from producing a drinking water of sufficient quality to comply with the future drinking water standards that will be issued by the Environmental Protection Agency in 2005.

Because the Layng Creek water treatment plant is at the end of its useful life and because it will not be able to comply with the new drinking water standards, it must be taken out of service and replaced with modern water production facilities. Over the past four (4) years the City has performed an engineering evaluation of the Layng Creek water system to determine the best option for replacement. The City considered abandonment of the facility and increasing water production capacity of the Row River Treatment plant; however, because the City chose to continue providing water service to the existing customers served along the transmission line, it has elected to replace the Layng Creek water treatment plant by 2007 and the transmission line over the next 20 years thereby continuing to produce water from two separate surface water sources.

The preliminary design phase of the new Layng Creek treatment and transmission line facilities began in August 2004, and the design will be completed approximately 12 months thereafter. The design phase of the project will result in the development of bidding documents for the treatment plant and transmission line replacement, and the project will be constructed by general contract over a 2 year period.