

THE CITY OF ROYAL OAK

1999 CONSUMERS ANNUAL REPORT ON WATER QUALITY

ATTENTION: THIS IS AN IMPORTANT REPORT ON WATER QUALITY AND SAFETY

The City of Royal Oak, The Southeastern Oakland County Water Authority and the Detroit Water and Sewerage Department (DWSD) are proud of the fine drinking water they supply and are honored to provide this report to you. The 1999 Consumers Annual Report on Water Quality shows the sources of our water, lists the results of our tests, and contains important information about water and health. We will notify you immediately if there is ever any reason for concern about our water. We are pleased to show you how we have surpassed water quality standards as mandated by the Environmental Protection Agency (EPA) and the State of Michigan Department of Environmental Quality (MDEQ).

About the System

The City of Royal Oak purchases water from the Southeastern Oakland County Water Authority (SOCWA) at sixteen locations. SOCWA provides Detroit water through its member distribution systems to a population of 220,000 within a 56 square mile area. Current members are: Berkley, Beverly Hills, Bingham Farms, Birmingham, Clawson, Huntington Woods, Lathrup Village, Pleasant Ridge, Royal Oak, Southfield and Southfield Township.

The source of supply from DWSD and SOCWA for Royal Oak is the Detroit River. Water from the Detroit River is taken through the Belle Isle intakes at the east end of the Island near the juncture of Lake St. Clair and the mouth of the River and is treated at the Northeast Plant.

How Do We Know the Water is Safe to Drink?

Detroit Water and Sewerage Department facilities operate twenty-four hours a day, seven days a week. The treatment process begins with disinfecting the source water with chlorine to kill harmful microorganisms that can cause illness. Next, a chemical called Alum is mixed with the water to remove the fine particles that make the water cloudy or turbid. Alum causes the particles to clump together and settle to the bottom. Fluoride is also added to protect our teeth from cavities and decay.

The water then flows through fine sand filters called beds. These filters remove even more particles and certain microorganisms that are resistant to chlorine. Finally, a small amount of phosphoric acid and chlorine are added to the treated water just before it leaves the treatment plant. The phosphoric acid helps control the lead that may dissolve in water from household plumbing systems. The chlorine keeps the water disinfected as it travels through water mains to reach your home.

In addition to a carefully controlled and monitored treatment process, the water is tested for a variety of substances before treatment, during various stages of treatment, and throughout the distribution system. Hundreds of samples are tested each week in certified laboratories by highly qualified, trained, staff. Our water not only meets safety and health standards but also ranks among the top 10 in the country for quality and value.

Additional Information

In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Detected Contaminants Tables

These tables are based on tests conducted by DWSD in the year 1999 or the most recent testing done within the last five (5) calendar years. **They conduct many tests throughout the year; however, only tests that show the presence of a contaminant are shown here.** The table on the next page is a key to the terms used in the tables.

Key to Detected Contaminants Tables		
Symbol	Abbreviation for	Definition/Explanation
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
ppb	Parts per billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts per million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
n/a	Not applicable	
≥	More than or equal to	

Drinking water, including bottled water, may reasonably be 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 Environmental Protection Agency's **Safe Drinking Water Hotline at (800-426-4791)**.

Northeast Water Treatment Plant 1999 Regulated Detected Contaminants Tables

Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Level Detected	Range		Major Sources in Drinking Water
						Low	High	
Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap								
Fluoride	Oct. 99	ppm	4	4	1.13	n/a	n/a	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	Oct. 99	ppm	10	10	0.37	n/a	n/a	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural soils.
Volatile Organic Compounds – Quarterly Monitoring at Plant Finished Water Tap								
Dichloromethane	Jan. 99	ppb	0	5	0.30	0	0.30	Discharge from pharmaceutical and chemical factories.
Disinfection By-Products – Quarterly Monitoring in Distribution System								
Total Trihalomethanes	3/99-12/99	ppb	n/a	100 *(80)	Average 15.3	9.9	23.0	By-Product of Drinking Water Chlorination.
Total Trihalomethanes is the sum of chloroform, dichlorobromomethane, dibromochloromethane, and bromoform. Compliance is based on the total. * New MCL effective December 16, 2001.								

Turbidity – Monitored every 4 hours at Plant Finished Water Tap		
<u>Highest Single Measurement</u>	<u>Lowest Monthly % of Samples Meeting Turbidity Limit of 0.5 NTU (minimum 95%)</u>	Soil Runoff
0.52 NTU	99.5%	
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. For turbidity levels 5 NTU or above a treatment technique (TT) is required.		

Microbiological Contaminants – Monthly Monitoring in Distribution System				
Contaminant	MCLG	MCL	Highest Number Detected	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria ≥ 5% of monthly samples	in one month 0	Naturally present in the environment.
<i>E.coli</i>	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E.coli</i> positive.	entire year 0	Human waste and animal fecal waste.

<i>Lead and Copper Monitoring at Customers' Tap</i>							
Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples Over AL	<i>Major Sources in Drinking Water</i>
Lead	1999	ppb	0	15	7.0	0	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	1999	ppm	1.3	1.3	0.14	0	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value.

Northeast Water Treatment Plant 1999 Unregulated Detected Contaminants Tables

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

<i>Contaminant</i>	<i>Test Date</i>	<i>Units</i>	*Future MCLG	*Future MCL	Average Level Detected	Range	
						Low	High
Trichloromethane (Chloroform)	3/99-12/99	ppb	0	n/a	7.0	3.1	12.0
Bromodichloromethane	3/99-12/99	ppb	0	n/a	5.5	4.1	7.4
Dibromochloromethane	3/99-12/99	ppb	60	n/a	2.8	1.8	3.6
Bromoform	3/99-12/99	ppb	0	n/a	0.2	0.1	0.2

Chloroform, dichlorobromomethane, dibromochloromethane, and bromoform are trihalomethanes. The MCL is set for the total or sum of these individual components.

*New MCLG effective December 16, 2001.

Important Health Information

Lead

Since 1992, with the cooperation of many Royal Oak residents, DWSD has been testing homes with plumbing systems that may contribute lead to the household water supply. Our latest round of testing shows 0 out of the 11 homes tested have lead levels above the action level. If your home has a lead service line or piping that has lead soldered joints, you can take the following precautions to minimize your exposure to lead that may have leached into your drinking water from your pipes.

- Run your water for 30 to 60 seconds or until it feels cold. This practice should be followed anytime your water has not been used for more than 6 hours.
- Always use cold water for drinking, cooking or making baby formula.
- Use faucets and plumbing material that are either lead free or will not leach unsafe levels of lead into your water.

Health Effects

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

People With Special Health Concerns

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 at (800-426-4791)**.

Cryptosporidium

Cryptosporidium is a disease-causing parasite that lives in the intestinal tract of many animals including dogs and cats. Symptoms of infection include diarrhea, abdominal cramps, headaches, nausea and vomiting. The disease is typically spread through contact with feces of an infected animal or person and consuming contaminated food or water. *Cryptosporidium* can be introduced into bodies of water by way of surface water runoff containing animal waste and sewage discharge. The Detroit Water and Sewerage Department has been testing for *Cryptosporidium* since 1994 and has not detected it in any of our source water supplies.

National Primary Drinking Water Regulation Compliance

In 1999, DWSD had no monitoring violations.

Questions:

Local Distribution: City of Royal Oak, Department of Public Works
(248) 544-9710

Southeastern Oakland County Water Supply System – Water Authority offices:
(248) 288-5150. Visit our web site at www.socwa.org.

Detroit Water and Sewerage Department – Water Quality Division at (313) 267-3629.

Michigan Department of Environmental Quality - Drinking Water and Radiological
Protection Division – 517-335-9216.

U.S. Environmental Protection Agency – Safe Drinking Water Hotline: (800) 426-4791

Water quality data for community water systems throughout the United States is
available at: www.waterdata.com.

Other Monitoring

In addition to testing we are required to perform, our water system voluntarily tests for hundreds of additional substances and microscopic organisms to make certain our water is safe and of the highest quality. If you are interested in a more detailed report, contact the DWSD Water Quality Division at (313) 267-3629.