



A N N U A L Water Quality Report for 2015

We are proud to report that the water provided by the City of St. Joseph meets or surpasses established water quality standards



The purpose of this report is to provide you with information on the quality of the drinking water produced by the St. Joseph Water Treatment Plant during the 2015 calendar year. The federal government established the requirement for this Water Quality Report, more formally known as a Consumer Confidence Report, in 1998. We welcome this opportunity to provide you with details of where your water comes from, what it contains, and how it compares to Environmental Protection Agency

(EPA) and Michigan Department of Environmental Quality (MDEQ) Standards. In addition to the required information, this report includes articles to help keep you informed on current and upcoming projects and the ongoing efforts by City of St. Joseph and Authority to meet the growing water demands of the service area in the most economical manner possible. Questions regarding this report can be directed to Greg Alimenti, Water Plant Superintendent. 🌍

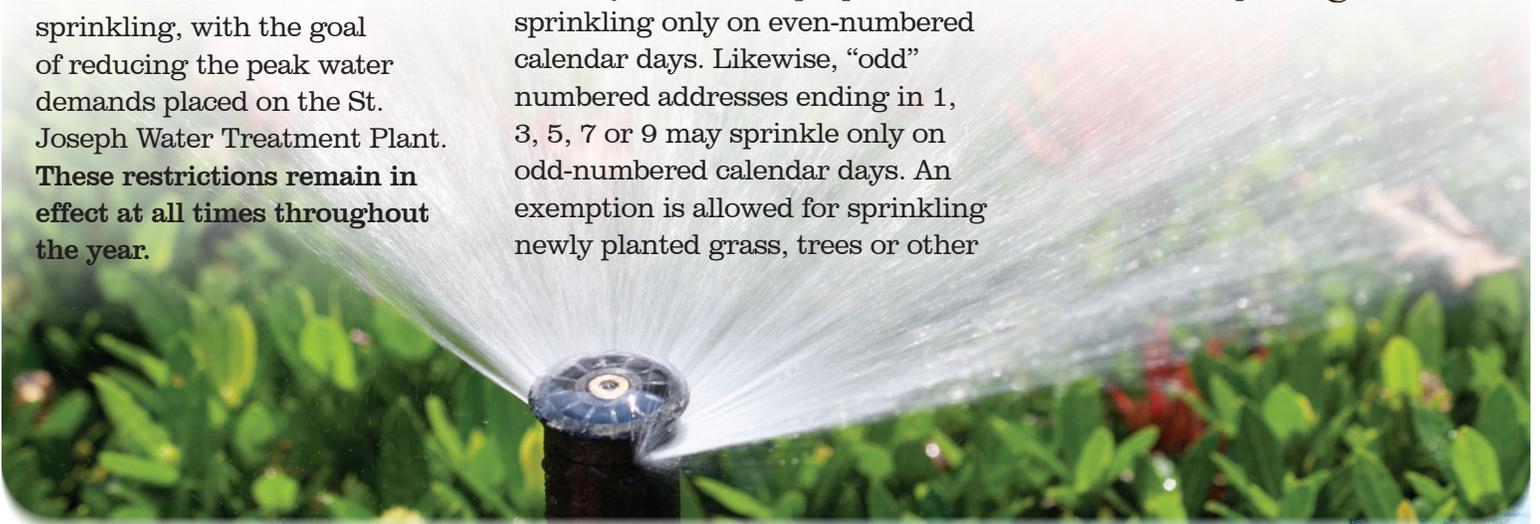


“Odd-Even” Sprinkling Ordinance Remains in Effect at All Times

In July of 2003, the City and the Lake Michigan Shoreline Water and Sewage Treatment Authority Municipalities introduced water conservation measures which restrict lawn sprinkling, with the goal of reducing the peak water demands placed on the St. Joseph Water Treatment Plant. **These restrictions remain in effect at all times throughout the year.**

Properties with “even” numbered street addresses, in which the last whole integer of the street address is 0, 2, 4, 6, or 8, may use water from the public water system for the purpose of sprinkling only on even-numbered calendar days. Likewise, “odd” numbered addresses ending in 1, 3, 5, 7 or 9 may sprinkle only on odd-numbered calendar days. An exemption is allowed for sprinkling newly planted grass, trees or other

plants for up to 30 days following planting; however, you should contact your City, Township or Village Hall to obtain a special permit in advance of watering under this exemption. 🌍



Communities Cooperating to Provide Water and Sewer Services to the Area

WSJOB - The City and Authority working together to provide safe drinking water of the highest quality to all of our customers at the lowest possible rate.

City of St. Joseph

The City of St. Joseph owns and operates the St. Joseph Water Plant. The Water Plant's average day demand is 3.9 million gallons per day (MGD) with a design capacity of 16.0 MGD. The maximum day water demand in 2015 was 7.9 MGD which occurred on August 12, 2015. The Water Plant provides water to approximately 34,000 people which include 8,800 in the City of St. Joseph and 25,000 in the townships.

Under the 2009 Water Service Agreement, the City sells water, provides maintenance and bills customers in the townships of Lincoln, St. Joseph and Royalton. The City bills all customers for water and sewer and then remits sewer charges and township water surcharges, in full, to the respective townships. Customers are billed quarterly: St. Joseph and Royalton Township customers are billed in January, April, July and October; St. Joseph Township Customers are billed in February, May, August and November; Lincoln Township customers are billed in March, June, September and December. Bills are mailed on the first of the month and due on the 21st of the month or the next business day.

Southwest Michigan Regional Sanitary Sewer and Water Authority

The Lake Michigan Shoreline Sewer & Water Authority was formed in 1964 by the communities of St. Joseph and Lincoln Charter Townships to represent their residents as they negotiated water and sewer services from the City of St. Joseph. Royalton Township joined the Authority in 1996. In 2008, the Southwest Michigan Regional Sanitary Sewer and Water Authority (SMRSS&WA) was formed to replace the Lake Michigan Shoreline Sewer & Water Authority. Each of the three townships owns and operates their local water and sewer mains; the SMRSS&WA owns and operates shared system assets including the sewer interceptor, water booster stations and water towers. Township representatives work together through

the SMRSS&WA to ensure that the three individual water and sewer systems operate cooperatively as one Authority System. The townships each contribute annually to the SMRSS&WA, providing the revenue necessary to maintain these shared capital assets and to deliver common maintenance services to the individual township systems; however each township is responsible for the repair and replacement of their own sewer mains, and for the replacement of their own water mains.

Joint Water Services Board -WSJOB

In 2009 area municipalities in northern Berrien County served by the St. Joseph water system approved a new 30 year water contract that included a new system oversight structure and established a new level of municipal cooperation.

The new six member Water Services Joint Operating Board (WSJOB) consists of three (3) members from the City of St. Joseph and one (1) member from each of the three townships.

Under the Water Agreement, members of the WSJOB have responsibility for setting the water rate for all water system customers; all water users are charged the same rate. The WSJOB is charged with the responsibility of setting a rate sufficient to generate the revenue necessary to pay all costs associated with the operation and maintenance of the water plant, the routine repair and maintenance of the distribution system of the entire systems as well as, the repair and replacement of water plant capital assets. Each community then establishes its own separate water rates to fund the installation and replacement of that community's own water mains.

The 2009 agreement made it possible for the water system to obtain funding



at favorable rates through the State of Michigan revolving loan program for improvements to the St. Joseph Water Plant, including construction of a new intake as well as electrical upgrades and filter replacements, which were completed in 2012. The projects also received several million dollars in federal funding, further reducing the cost to residents.

Joint Board of Commissioners of the Benton Harbor-St. Joseph Wastewater Treatment Plant

The Joint Board of Commissioners is the governing body of the Benton Harbor-St. Joseph Joint Wastewater Treatment Plant. The Joint Plant treats an average daily flow of about 8.5 million gallons per day (MGD) with a design capacity of 15.3 MGD. The Joint Plant serves approximately 60,000 people in its north Berrien County service area.

Established in 1951, the Joint Board provides oversight of the treatment plant's operation. This oversight extends to all aspects of facility operation, maintenance and improvement. The current eight member board consists of the Benton Harbor and St. Joseph City Managers (designated representatives by ordinance), two additional representatives from each city, and one representative each from Benton Township and the Lake Michigan Water & Sewage Treatment Authority. The Joint Board meets monthly on the third Thursday of the month at 11:00 a.m. 

Water Quality Data

The table below lists all the drinking water contaminants that we detected during the 2015 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2015. The State allows

us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one year old. Chlorine, HAA5 and TTHM results are reported as “Running Annual Averages” (RAAs). 

Regulated Contaminant	MCL	MCLG	Your Water	Range	SAMPLE DATE	VIOLATION YES/NO	TYPICAL SOURCE OF CONTAMINANT
Fluoride (ppm)	4	4	1.1	N/A	2/18/2015	No	Water additive to protect teeth.
Barium (mg/L)	2	2	.02	N/A	1/24/2011	No	Discharge of drilling wastes, discharge from metal refineries, erosion of natural deposits.
TTHM - Total Trihalomethanes (ppb)	80	N/A	50.8	15 to 45	4 quarters	No	Byproduct of drinking water disinfection.
HAA5 Haloacetic Acids (ppb)	60	N/A	44.7	9 to 40	4 quarters	No	Byproduct of drinking water disinfection.
M&P-Xylene	1000	NA	0.5		6/19/2012	No	Discharge from petroleum factories, discharge from chemical factories.
Chlorine (ppm)	4	4	1.17	0.88 to 1.44	Daily	No	Water additive used to control microbes.
Gross Alpha	15	0	.48	N/A	4/22/2013	No	Erosion of natural deposits.
Beta emitters (pCi/L)	50	0	0	N/A	1/21/2010	No	Decay of natural and man-made deposits.
Combined radium (pCi/L)	5	0	2.2	N/A	4/22/2013	No	Erosion of natural deposits.
Nitrate (ppm)	10	N/A	0.4	0.4	2/18/2015	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Special Monitoring and Unregulated Contaminant **			Your Water	Range	SAMPLE DATE	TYPICAL SOURCE OF CONTAMINANT	
Sulfate (ppm)			41	N/A	2/18/2015	Treatment process additive to help remove suspended particles in water & erosion of natural deposits.	
Sodium (ppm)			11	N/A	2/18/2015	Erosion of natural deposits.	
Chromium (ppb)			0.2	0.2 - 0.3	2014	Erosion of natural deposits, manufacturing.	
Chromium 6+ (ppb)			0.18	0.2 - 0.3	2014	Erosion of natural deposits, manufacturing.	
Manganese			2.6	N/A	4/23/2014	Erosion of natural deposits, manufacturing.	
Molybdenum (ppl)			1.2	1.2 - 1.3	2014	Erosion of natural deposits, manufacturing.	
Strontium (ppb)			119	115 - 122	2014	Erosion of natural deposits, manufacturing.	
Vanadium (ppb)			0.226	N/A	1/22/2014	Erosion of natural deposits, manufacturing.	
Contaminant Subject to AL	Action Level	MCLG	90% OF SAMPLES < THIS LEVEL	SAMPLE DATE		NUMBER OF SAMPLES ABOVE AL	TYPICAL SOURCE OF CONTAMINANT
Lead (ppb)	15	0	2.0	6/11/2014		0	Corrosion of household plumbing systems.
Copper (ppb)	1300	1300	160	6/11/2014		0	Corrosion of household plumbing systems.

Water Quality Data (continued)

Microbial Contaminants	MCL	MCLG	Number Detected	Violation Yes / No	Typical Source of Contaminant	
Total Coliform Bacteria	>1 positive monthly sample (>5% of monthly samples positive)	0	0	No	Naturally present in the environment	
Fecal Coliform and E. coli	Routine and repeat sample total coliform positive, and one is also fecal or E. coli positive	0	0	No	Human and animal fecal waste	
Substance (units)	MCL	MCLG	Highest Level Detected	Range of Detection	Violation Yes/No	Typical Source of Contaminant
Turbidity (NTU)	TT= 1 NTU TT=percentage of samples equal to or below 0.3 NTU	N/A	0.15	0.02 - 0.15	No	Soil Runoff

If present, elevated levels of lead can cause serious health problems, especially for pregnant woman and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of St. Joseph Water Treatment Plant is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

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. Nephelometric Turbidity Units (NTU) is a measure of the clarity of water. The lowest monthly average meeting the turbidity limits was 99.6%.

Contaminant and Unit of Measurement	MCL	MCLG	Lowest Running Annual Average, Computed Quarterly, of Monthly Removal Ratios	Range 2015	Violation Yes/No	Likely Source of Contamination
Total Organic Carbon	TT	N/A	1.13	1.13 - 1.46	No	Naturally present in the environment

**Treatment Technique for TOC is based on the lowest running annual average of the monthly ratios of the % TOC removal achieved to the % TOC removal required. A minimum ratio of 1.00 is required to meet the TT.

- The average water hardness is 142 ppm (as CaCO₃) - This equates to 8.3 Grains

What are PPM and PPB?

Parts per million (ppm) and parts per billion (ppb) are units used to measure the concentration of a substance in water. Here are some examples that illustrate how small a ppm and ppb actually are:

One part per million (ppm) is the same as:

- One drop of gas in the gas tank of a mid-sized car
- One second in 11 days; one minute in two years
- One car in bumper-to-bumper traffic from St. Joseph to Cleveland
- One penny in \$10,000
- One dollar bill in a stack of new dollar bills 250 feet high

One part per billion (ppb) is the same as:

- One drop in a railroad tanker car
- One second in 32 years; one minute in 1900 years
- One four-inch hamburger in a chain of hamburgers circling the earth at the equator 2.5 times
- One inch in the distance from St. Joseph to Hong Kong and back
- One silver dollar in a roll of silver dollars from Detroit to Salt Lake City 



Lead in Drinking Water

There's no detectable lead in City of St. Joseph drinking water when it leaves our water plant. But water is naturally corrosive and can pick up microscopic amounts of lead if it sits idle for extended periods of time in pipes, plumbing or fixtures that contain lead. Lead levels in drinking water are likely to be highest:

- In homes with lead service lines connecting the water main to the house.
- In homes with lead indoor plumbing, or in homes that have copper plumbing joined by lead solder.
- In homes that have brass faucets or other fixtures. Even brass fixtures certified as "lead-free" can contain up to 8% lead.

The City of St. Joseph most recently sampled for Lead and Copper from homes in the City and SMRSS & WA distribution system during the summer of 2014. We have been notified by the MDEQ of our compliance with the Safe Drinking Water Act. Our results of 2.0 parts per billion (ppb) for Lead is considerably lower than the action level of 15 ppb for compliance with the SDWA.

If the City identifies a lead service line to a property, we will contact the owner and offer to have the water tested. We will then work with the owner to help them understand the results of the test and what action might be appropriate. If no action is taken and the lead line remains in service, we will offer to add the property to our pool of testing sites so it is regularly tested on the schedule established by MDEQ to see if there is any change in the future.

Sources of Lead

Lead is a common metal found in the environment. The main sources of lead exposure are lead-based paint and lead-contaminated dust or soil, and some plumbing materials. In addition, lead can be found in certain types of pottery, pewter, brass fixtures, food and cosmetics. Other sources include exposure in the work place and exposure from certain hobbies (lead can be carried on clothing or shoes). Brass faucets, fittings, and valves, including those advertised as "lead-free", may contribute lead to drinking water. EPA estimates that 10 to 20 percent of a person's potential exposure to lead may come from drinking water. Infants who consume mostly formula mixed with lead-containing water can receive 40 to 60 percent of their exposure to lead from drinking water.

Health Effects of Lead

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood

cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Steps you can take to reduce lead in your drinking water

There are many steps you can take to reduce your exposure to lead in drinking water, but if you have lead service lines, the best step you can take is to have them replaced. In addition:

- **Run your water to flush out lead.** Run your water for 15 seconds to 2 minutes to flush lead from interior plumbing or until it becomes cold or reaches a steady temperature before using for drinking or cooking if it hasn't been used for several hours. Remember to catch the flushed tap water for plants or some other household use such as cleaning.
- **Always use cold water for drinking, cooking and preparing baby formula.** Never cook with or drink water from the hot water tap. Never use water from the hot water tap to make formula.
- **Do not boil water to remove lead.** Boiling water will not reduce lead.
- **Periodically remove and clean the faucet screen/aerator.** While removed, run the water to eliminate debris.
- **You may consider investing in a home water treatment device.** When purchasing a water treatment device, make sure it is certified under NSF/ANSI 53 to remove lead. Search for certified products at NSF International (800)-NSF-8010) or the Water Quality Association (630) 505-0160. Remember to periodically change the filters based on the manufacturer's recommendation.
- **Identify and replace plumbing fixtures containing lead.** Brass facets, fittings and valves may leach lead into drinking water. Products sold after Jan 4, 2014 must by law contain very low levels of lead.
- **Have a licensed electrician check your wiring.** Your home electrical system may be attached to your service line or elsewhere in your plumbing. If this connection is electrified, it can accelerate corrosion. Check with a licensed electrician to correct ground faults. DO NOT attempt to change the wiring yourself because improper bonding or grounding can cause electrical shock and fire hazards.
- **Test your water for lead.** If you are concerned about lead, have the water tested. Call us at (269) 983-1240 to find out how to get your water tested for lead. Information will be provided regarding local certified testing labs.

- **Get your child's blood tested.** Contact your healthcare provider to find out how you can get your child tested for lead, if you are concerned about lead.

What Do Lead Service Lines Look Like?

The water mains in our distribution system contain no lead. However, some service lines especially those serving homes built between 1930 and 1960 may contain lead. Below is a helpful guide provided by USEPA to assist the homeowner in identifying lead pipe.



Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color. Do not use a knife or other sharp instrument and take care not to puncture a hole in the pipe.

Note: Galvanized piping can also be dull gray in color. A strong magnet will typically cling to galvanized pipes, but will not cling to lead pipes.



Lead service lines can be connected to the residential plumbing using solder and have a characteristic solder "bulb" at the end, a compression fitting, or other connector

made of galvanized iron or brass/bronze. 🌍

General Information

Contaminants and their presence in water: Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of 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 (800-426-4791).

Vulnerability of sub-populations: Some people may be more vulnerable to contaminants in

drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS 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 (800-426-4791)**.

Sources of drinking water: The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. Our water comes from surface water. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, 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 and residential uses.
- Radioactive contaminants, which are naturally occurring or the result of oil and gas production and mining activities.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

In order to ensure tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health. Many water suppliers add a disinfectant to drinking water to kill germs such as giardia and *E. coli* especially after heavy rainstorms. Your water system may add more disinfectant to guarantee that these germs are killed. 🌍

Terms and abbreviations used on the facing page

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

Maximum Contaminant Level (MCL): 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.

Maximum Residual Disinfectant Level (MRDL): means the highest level of a disinfectant allowed in drinking water.

There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): means the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A: Not applicable ND: not detectable at testing limit ppb: parts per billion or micrograms per liter ppm: parts per

million or milligrams per liter pCi/l: Picouries per liter (a measure of radioactivity).

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

* EPA considers 50 pCi/l to be the level of concern for beta particles.

** Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.



Your Opinion Counts

The Water Services Joint Operating board meetings are held at the St. Joseph Water Plant, 1701 Lions Park Drive on the third Wednesday of each month at 4:00 PM. We recommend that you call to confirm the meeting time and date prior to attending or visit our website at www.sjcity.com for the exact date and time of the meetings.

Lake Michigan...

is the source of the water for the St. Joseph Water Treatment Plant. The new intake construction in 2011 extends approximately one mile into the Lake. In 2004 a Source Water Assessment was conducted by the Michigan Department of Environmental Quality using procedures established in the Great Lakes Protocol, Source Water Assessment Program. The criteria were used to develop a “sensitivity” rating, which reflects the natural ability of our

source water area to provide protection against contamination of the water supply. A water source “susceptibility” rating was then established based upon the sensitivity rating coupled with other factors that affect whether a contaminant reaches the intake. Surface source sensitivity and susceptibility ratings range from moderate sensitivity/moderately low susceptibility to very high sensitivity/very high susceptibility. The conclusion of the assessment

indicated the Lake Michigan water used by the St. Joseph Water Treatment Plant is considered highly sensitive and highly susceptible to potential contamination but the report also stated the “City of St. Joseph Water Treatment Plant has effectively treated this source water to meet drinking water standards.” A copy of the Source Water Assessment Report is available at the Water Treatment Plant, Superintendent office. 

The St. Joseph Water Plant quality control laboratory performs more than 58,000 water tests annually on your water before it reaches you.





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The St. Joseph Water Treatment Plant was originally constructed in 1892 serves the St. Joseph area with water drawn through the 48” diameter intake pipe installed in 2011. Treatment plant processes include screening, disinfection, settling and filtering. The treatment plant is manned 24 hours per day and your water is constantly monitored for quality. The current Water Plant personnel, listed here, have more than 80 years of collective experience at the St. Joseph Water Treatment Plant and are dedicated to providing safe and reliable drinking water to our community. 

Contact Information:

Water Plant Superintendent:Greg Alimenti
.....Email: galimenti@sjcity.com
Chief Plant Operator:Shawn Orlaske
Maintenance Foreman:Mark Thornton
Water Plant Operators:Jeff Faultersack, Jerrold Thomas,
Jeff Peden, Rory Dickey, Kevin Kelley
Water Treatment Plant Phone:269-983-1240

