

City of Benton Harbor Utility Services Department's 2010 Consumers Confidence Report

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Water Plant Renovations are Nearly Complete

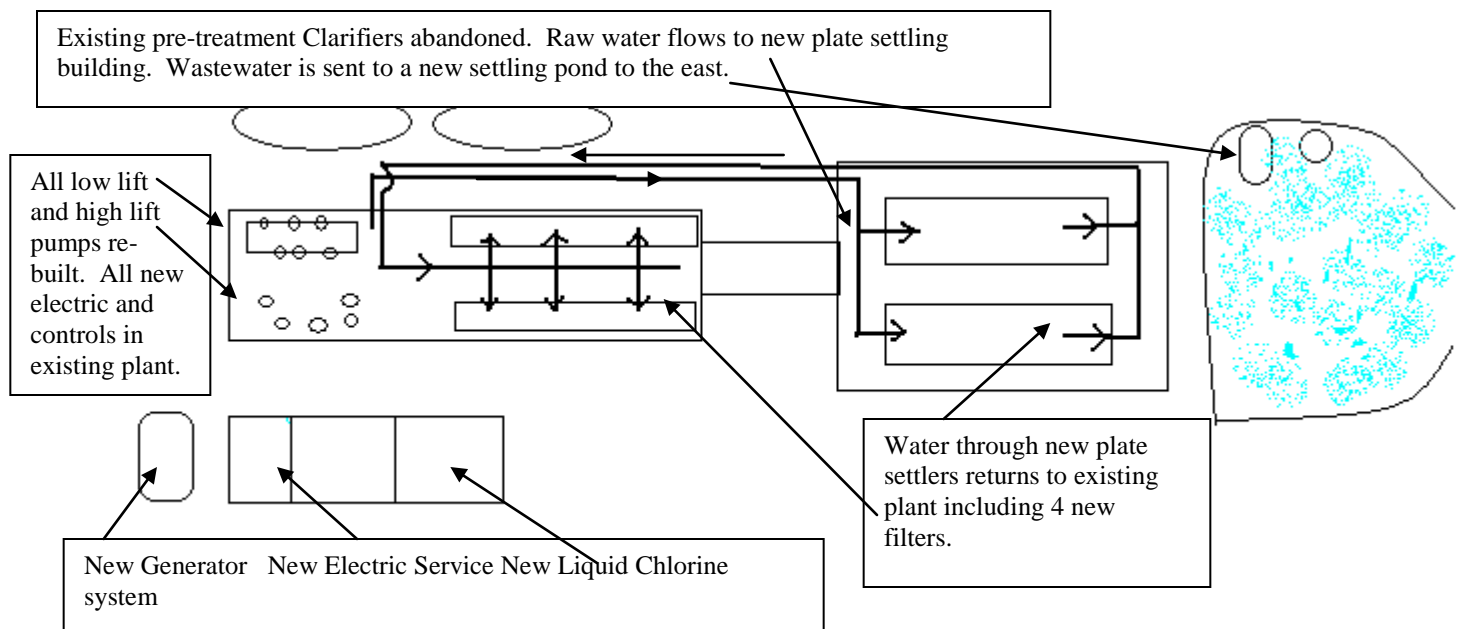
The Benton Harbor Water Plant is located in the southwest corner of Benton Harbor's beautiful Jean Klock Park. The Water Plant was constructed in the 1950's as a complete treatment plant that includes chemical addition for disinfection and particulate removal; mixing and settling chambers; filters; a storage reservoir; and high lift pumps to distribute the water to the City and the Townships of Benton Charter, St. Joe Charter, Hagar and Sodus. The water plant was aging and had experienced some failures. For the past 15 months the Contractor Davis Construction with several sub-contractors have been busy remodeling the existing plant and equipment and building the new treatment addition shown in the photograph. The project is nearly complete and will

probably finish slightly over the \$12 million budget. Funding for the project is through the State of Michigan's Drinking Water Revolving Loan Funds, which feature low interest loans to Michigan water projects. Additional funding was obtained from the Federal Government through the American Resources and Recovery Act, which will reduce the loan amount by 40%. The project is expected to be complete by October of 2011. Upon completion of the filtration plant project, the existing plant will have an anticipated life span in excess of 50 years and will offer 14 million gallons of water per day to our area users.

2010 Benton Harbor Water Quality Report

The Benton Harbor Water Plant uses Lake Michigan as its source. There are presently 5 water plants in Berrien County that use Lake Michigan as its source, including: New Buffalo, Bridgman, Lake Township and St. Joseph and the soon to be completed Benton Charter Township Water Plant. Lake Michigan is a surface water supply and is vulnerable to a wide range of contaminates. Because of this the EPA and MDEQ have very strict guidelines for the proper operation and testing of the water processed in these types of plants. Our Lake Michigan water is collected through a 36" pipeline that extends 4800 feet west of the water plant's shoreline. The Benton Harbor Utility Service Department's number one priority is to provide safe, high quality water to all of its customers. In pursuit of that mission, we consistently meet, and often exceed, federal and state standards for safe water.

The State MDEQ performed an assessment of our source water in 2003 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a six-tiered scale from "very-low" to "high" based primarily on geologic sensitivity, water chemistry and contaminant sources. The susceptibility of our source is moderately high. This is due to the fact that the source water area for the Benton Harbor intake includes 1,236 potential contaminant sources, 121 listed potential contaminant sources within the susceptible area, plus urban and agricultural runoff from the St. Joseph River watershed in the St. Joseph River. A copy of the full report can be obtained by calling the water plant at (269) 927-8471.



General Health Information Provided by EPA

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water.

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 (800-426-4791).

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:

- A. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B. Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- C. Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm-water runoff, and residential uses.
- D. 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.
- E. Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities. 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. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 healthcare providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800-426-4791).

National Primary Drinking Water Regulation Compliance

For more information about our water quality, or to receive an additional copy of this report, please contact the Water Superintendent, Michael O'Malley (269) 927-8471 or e-mail to momalley@bhcit.org.

Tours of the Water Plant are easily arranged for school or community groups by contacting the plant. For more information about safe drinking water, visit the U.S. Environmental Protection Agency (EPA) at www.epa.gov/safewater

Water Quality Detect Tables

Benton Harbor water personnel routinely monitor over 80 potential contaminants in our drinking water according to Federal and State laws. The following table lists detects of regulated contaminants found in our water for the year beginning January 1, 2010 and ending December 31, 2010, unless otherwise noted. The test results show that these contaminants were found, but are well below the drinking water guidelines.

Regulated Monitoring at the Plant

Detected Substance	Highest Level Allowed (MCL)	EPA Goal Level (MCLG)	Highest Level Detected (RAA)	Range	Violation Yes or No	Date of Sample	Likely Source of Contaminants
Arsenic	10*	0*	Less than 2 ppb	NA	No	9/6/10	Erosion of natural deposits; Runoff from Orchards; Runoff from glass and electronics production waste.
Nitrate (ppm)	10	N/A	ND	NA	No	9/6/10	Naturally present in the environment.
Fluoride (ppm)	4	4	1.1	1.1	No	9/6/10	Water additive, which promotes strong teeth.
Chlorine Residual	4	MRDL=4	1.51	1.23 to 1.97	No	2010	Disinfectant
TOC**	TT	N/A	1.8	1.5 to 2.0	No	2010	Naturally present in the environment
Bromodichloromethane (ppb)	80	N/A	7.5	7.5	No	9/6/10	Formed when chlorine is added to water containing naturally occurring organic material.

Chlorodibromomethane (ppb)	80	N/A	2.8	2.8	No	9/6/10	Formed when chlorine is added to water containing naturally occurring organic material.
Chloroform (ppb)	80	N/A	13	13	No	9/6/10	Formed when chlorine is added to water containing naturally occurring organic material.
Total Tri-halomethanes (ppb)	80	N/A	23.6	23.6	No	9/6/10	Formed when chlorine is added to water containing naturally occurring organic material.

**The Total Organic Carbon (TOC) was measured each quarter and the system met all TOC removal requirements set by the State of Michigan.

Regulated Monitoring Distribution System (Stage 1 Disinfection Byproduct Rule)

Detected Substance	Highest Level Allowed (MCL)	EPA Goal Level (MCLG)	Highest Level Detected/ (RAA)	Range	Violation Yes or No	Date of Sample	Likely Source of Contaminants
TTHM (ppb)	80	N/A	54	28 to 54	NO	2010	Formed when chlorine is added to water containing naturally occurring organic material
HAA5 (ppb)	60	N/A	33	17 to 33	NO	2010	Formed when chlorine is added to water containing naturally occurring organic material

Unregulated Monitoring Distribution System (Stage 2 Disinfection Byproduct Rule) Testing in 2008-2009

Detected Substance	Benton Harbor city Samples Avg/High	Benton Twp Samples Ave/High	Range Across System	Likely Source of Contaminants. This testing is being conducted over a 12 month period to determine the vulnerability of various points in the 2 largest distribution systems served by the Benton Harbor Water Plant. Results listed are for tests run October to December 2008 only.
TTHM (ppb)	57/78	39/71	21 to 79	Formed when chlorine is added to water containing naturally occurring organic material
HAA5 (ppb)	19/21	26/35	3 to 56	Formed when chlorine is added to water containing naturally occurring organic material

TTHM's are Total Trihalomethanes and HAA5's are Haloacetic Acids. We have completed a 1- year study of these Chlorine by-products in the City and Township distribution systems. The results will dictate what sites we will sample from in the coming years to better assure the community that the waters are properly disinfected and do not pose a threat from these by-products.

Long Term 2 (Enhanced Surface Water Treatment Rule) Testing in 2008-2009

Detected Substance	Largest Number Detected	Range of organisms detected	Likely Source of Contaminants is Lake Michigan. Lake Michigan testing is was conducted over a 24 month period that began April 2008. Testing is complete in 2009
Cryptosporidium (# of organisms)	3	0 to 3	Open Lake Michigan. Cryptosporidium are microbes found in open water sources.
<i>E. coli</i> (# of organisms)	7	1 to 82	Open Lake Michigan. <i>E. coli</i> are bacteria found in open water sources.
<i>Giardia</i>	3	0 to 3	Open Lake Michigan. <i>Giardia</i> are microbes found in open water sources.

Turbidity Monitoring at the Plant

Water Clarity	Highest Level Allowed (MCL)	EPA Goal Level (MCLG)	Highest Level Detected	Range	Violation Yes or No	Date of Sample	Likely Source of Contaminants
Filter Effluent NTU	0.3* or no sample above 1.00	N/A	0.48 & 0.38	0.07 to 0.48	No	2010	Soil runoff.

* Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indication of the effectiveness of our filtration system. The turbidity level of the filtered water shall be less than or equal to 0.30 NTU in 95% of the samples taken each month and shall not exceed 1.0 NTU at any time.

Distribution System Monitoring Lead and Copper. Last required test date 2008.

Detected Substance	Highest Level Allowed (AL)	EPA Goal Level (AL)	90 th Percentile Detected	Range	Sites Found Above AL	Violation	Likely Source of Contaminants
Lead (ppb)	15.0	0	5	2.2 to 17	0	No	Corrosion of Household plumbing
Copper (ppb)	1300	1300	76	660 to 1.9	0	No	Corrosion of Household plumbing

The testing for lead and copper was conducted at 41 homes and completed in September of 2008. Lead and copper monitoring began in the early 1990's. Testing has been done with success every three years since 1996. The results of the 2008 test are excellent with all samples tested found to be below the action level (AL) of 15 ppb for Lead and 1300 ppb for Copper. The tri-annual testing will be done as required by September 30, 2011.

Unregulated and Special Monitoring

Detected Substance	Highest Level Allowed (MCL)	EPA Goal Level (MCLG)	Level Detected	Likely Source
Sodium	N/A	N/A	7	Naturally present in the environment
Sulfate	N/A	N/A	28	Naturally present in the environment

Definitions

- 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.
- MCLG** Maximum Contaminant Level Goal: 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.
- MRDL** Maximum Residual Disinfectant Level or 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.
- MRDLG** Maximum residual disinfectant level goal, or 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.
- AL** Action Level: The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.
- PPM** parts per million or milligrams per liter (mg/l)
- PPB** parts per billion, or micrograms per liter (ug/l)
- NTU** Nephelometric Turbidity Units, a measure of the cloudiness of water
- N/A** Not applicable
- RAA** Running Annual Average.
- TT** Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Other Water Quality Parameters of Interest

At the plant we routinely perform other water quality tests. These tests are not for official reporting, but are useful when describing the quality of our drinking water.

Parameter	2010 Average	2010 Range	Units
Chlorine, distribution	0.82	.06 to 1.45	Mg/L as free Cl-
PH	7.1	6.6to 7.7	pH units
Total Alkalinity	97.4	80 to 122	Mg/L as CaCO3
Total Hardness	145	127 to 184	Mg/L as CaCO3
Calcium Hardness	45	37 to 74	Mg/L as Ca
Magnesium Hardness	8.5	2 to 13	Mg/L as Mg
Chloride	10.5	3.1 to 17.3	Mg/L as Cl-

- For Customers owning a new dishwasher the Benton Harbor average water hardness is *8-10 grains per gallon*.

Other water testing in 2010 included full testing for synthetic and additional organic chemicals. There were no detectable levels found among any of the un-regulated contaminates tested. And no detects found among the list of the contaminates including: 2 types of Carbamates; 5 types of Chlorinated Acid Herbicides; and 20 types of Pesticides.

Other Water and Sewer Projects in and around Benton Harbor

- The MDOT Business Loop I-94 project was completed in 2010. Two years of construction to replace all water, sewer a sewer lift station and storm water infrastructure; new road and sidewalks and attractive landscaping and lighting.
- Benton Charter Township began construction of its treatment plant and distribution piping in 2010 and should be complete near September of 2011. The raw water intake and pump station is on Rocky Gap Road. The treatment plant is on North Shore Drive. Water main for distribution and separation from the City lines is complete or underway on North Shore, Paw Paw Ave, Waukonda Ave, Fair Ave, Emery St, and Donald Atkins. Projects that will begin soon include M-139, Pipestone, and Colfax Ave. The City and Benton Township water departments have worked closely together to minimize interruptions in service and the project is proceeding according to plan.
- The City of Benton Harbor Sewer Department will begin an important sewer and sewer lift station project after the summer. Some badly needed sewer lines, 3 new lift stations and quality control upgrades to the other lift stations will improve overall sewer service for the residents of Benton Harbor. Funding for this project is through the State Revolving Fund (SRF) and will be approved in early to mid October 2011.