

**Charter Township of Grand Blanc**

Consumer Confidence Report

2001

**Jeffrey Zittel  
Supervisor**

Charter Township of Grand Blanc  
Consumer Confidence Report  
2001

This report covers the drinking water quality for the Charter Township of Grand Blanc for the calendar year 2001. This information is a snapshot of the quality of the water that we provided in 2001. Included in this report are details about where your water comes from, what it contains and how it compares to Environmental Protection Agency (EPA) and state standards.

Our water comes from Lake Huron, (see map on page 4) which is considered a surface water supply. An assessment of our source water will be conducted by the Michigan Department of Environmental Quality by 2003. We will inform you on how to acquire this assessment report when it becomes available.

**Contaminants and their presence in water:** Drinking water, and bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants DOES NOT necessarily indicate that the 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. Immuno-compromised persons such as chemotherapy patients, organ transplant recipients, those suffering from 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 (800-426-4791)

Contaminants that may be present in the source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock 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.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and can also come from gas stations, urban runoff, and septic systems.

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 systems. Food & Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

## Water Quality Data

The following tables list all the drinking water contaminants that we detected during the 2001 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 these tables are from testing done during the calendar year 2001. The State allows us to monitor certain contaminants less than once each year because the concentration of the contaminants is 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.

**Lead:** Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of the materials used in your homes plumbing. If you are concerned about elevated lead levels in your homes water, you may wish to have your water tested. You can also flush your tap for 30 seconds to 2 minutes before using your water. Additional information is available from the Safe Drinking Water Hotline at 1-800-426-4791.

Lead and copper levels were tested during 2001 and were found to be within acceptable levels. The 90 percentile lead value was 1 ppb, and the 90 percentile copper value was 12 ppb. These values are well below the action levels mandated the Michigan Safe Drinking Water Act, 1976 P.A. 399, as amended.

Is our water system operating properly and meeting the rules established by the State and EPA?

**YES!** We have met all the State and EPA requirements, i.e., water testing, monitoring and reporting for 2001.

During 2001 we collected 96 bacteriological samples throughout our water distribution system. However, there was one sample that showed positive for bacti. Further investigation showed no presence of bacteria. We are certain that the positive test was due to laboratory or sampling errors. A violation was issued by the DEQ and the Township took appropriate action.

We are committed to providing you safe, reliable and healthy water. We are pleased to provide you with this information to keep you fully informed about your water. We will be updating this report annually, and will also keep you informed of any problems that may occur throughout the year

For more information on your water or the contents of this report, you may contact Norm Riopelle at 810-424-2642 or you can additional information on our web site [www.twp@grand-blanc.mi.us](mailto:twp@grand-blanc.mi.us) or on the EPA web site [www.epa.gov/epahome/rules.html](http://www.epa.gov/epahome/rules.html)

**Michigan Department of Environmental Quality**

**DWRP Laboratory Services - Drinking Water Lab**  
**USEPA Region V Drinking Water Lab Cert. No. MI00003**  
**P.O. Box 30270, Lansing, MI 48909-7770**

**TEL: 517/335-8184 FAX: 517/335-8562**

**Official Laboratory Report**

**Report To:**

Richard M Aubin  
G4612 Beecher Road  
Flint MI 48532

Sample Number: C2002019767

Customer Number: 25155000

**System Name/Owner:** GENESEE COUNTY WATER DEPT

**WSSN / Pool ID:** 2615

**Collection Address:** 4612 Beecher Road, Flint 48532

**Source:** Other

**Collected By:** RICHARD AUBIN

**Site Code:** O-M

**Twp/Sec/Well #:** Flint/04/ ?

**Collector:** County Personnel

**County:** Genesee

**Sample Date:**

**Sample Point:** KITCHEN

**Received:** 2/27/2002 11:37:00AM

**Sample Kit #:** 32

**Purpose:** Routine Monitoring

**Chlorination:** Yes

**Water System:** Treated Public Distribution

| <b>Test Result</b> | <b>Analyte Name</b> | <b>Tested</b> | <b>Limit MCL</b> | <b>Rpt Limit</b> | <b>Test Performed</b> |
|--------------------|---------------------|---------------|------------------|------------------|-----------------------|
| 7 mg/L             |                     |               |                  |                  | CRA                   |
| 0.9 mg/L           |                     |               | 4.0 mg/L         |                  | CRA                   |
| 89 mg/L            |                     |               |                  |                  | CRA                   |
| Not Detected       |                     |               |                  |                  | CRA                   |
| 0.4 mg/L           |                     |               | 10 mg/L          |                  | CRA                   |
| Not Detected       |                     |               | 1 mg/L           |                  | CRA                   |
| Not Detected       |                     |               |                  |                  | CRA                   |
| 21 mg/L            |                     |               |                  |                  | CRA                   |

**Lab Comments:**

None

Michigan Department of Environmental Quality

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Official Laboratory Report

Report To:

Richard M Aubin  
G4612 Beecher Road  
Flint MI 48532

Sample Number: C2002019768

Customer Number: 25155000

System Name/Owner: GENESEE COUNTY WATER DEPT

WSSN / Pool ID: 2615

Collection Address: G4612 Beecher Road, Flint 48532

Source: Other

Collected By: Richard M Aubin

Site Code: O-M

Twp/Sec/Well #: Flint/04/ ?

Collector: County Personnel

County: Genesee

Sample Date:

Sample Point: KITCHEN

Received: 2/27/2002 11:37:00AM

Sample Kit #: 36ME

Purpose: Routine Monitoring

Chlorination: Yes

Water System: Treated Public Distribution

| Test Result  | Analyte Name   |          |           |            |     |          |
|--------------|----------------|----------|-----------|------------|-----|----------|
| Not Detected | ARSENIC        | 3/5/2002 | 0.05 mg/L | 0.001 mg/L | CAS | 19970415 |
| Not Detected | COPPER         | 3/5/2002 |           | 0.05 mg/L  | CCU | 20011101 |
| Not Detected | IRON           | 3/5/2002 |           | 0.01 mg/L  | CFE | 20011101 |
| Not Detected | LEAD BY ICP/MS | 3/5/2002 |           | 0.001 mg/L | CPB | 19991210 |
| Not Detected | MANGANESE      | 3/5/2002 |           | 0.01 mg/L  | CMN | 20011101 |
| Not Detected | ZINC           | 3/5/2002 |           | 0.01 mg/L  | CZN | 20011101 |

Lab Comments:

None

Michigan Department of Environmental Quality

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Official Laboratory Report

RECEIVED

APR 09 2002

Report To:

Richard M Aubin  
G4612 Beecher Road  
Flint MI 48532

Sample Number: C2002019768

Customer Number: 25155000

System Name/Owner: GENESEE COUNTY WATER DEPT

WSSN / Pool ID: 2615

Collection Address: G4612 Beecher Road, Flint 48532

Source: Other

Collected By: Richard M Aubin

Site Code: O-M

Twp/Sec/Well #: Flint/04/ ?

Collector: County Personnel

County: Genesee

Sample Date:

Sample Point: KITCHEN

Received: 2/27/2002 11:37:00AM

Sample Kit #: 36ME

Purpose: Routine Monitoring

Chlorination: Yes

Water System: Treated Public Distribution

| Test Result  | Analyte Name   | Tested | Limit MCL  | Rpt Limit | Test Performed |
|--------------|----------------|--------|------------|-----------|----------------|
| Not Detected | ANTIMONY       |        |            |           | CSB            |
| 0.001 mg/L   | ARSENIC        |        |            |           | CAS            |
| Not Detected | BARIUM         |        |            |           | CBA            |
| Not Detected | BERYLLIUM      |        |            |           | CBE            |
| Not Detected | CADMIUM        |        |            |           | CCD            |
| Not Detected | CHROMIUM       |        |            |           | CCR            |
| 0.006 mg/L   | LEAD BY ICP/MS |        |            |           | CPB            |
| Not Detected | MERCURY        |        | 0.002 mg/L |           | CHG            |
| Not Detected | NICKEL         |        | 0.1 mg/L   |           | CNI            |
| Not Detected | SELENIUM       |        | 0.05 mg/L  |           | CSE            |
| Not Detected | THALLIUM       |        | 0.002 mg/L |           | CTL            |

Lab Comments:

None

Michigan Department of Environmental Quality

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TEL: 517/335-8184 FAX: 517/335-8562

Official Laboratory Report

Report To:

Richard M Aubin  
G4612 Beecher Road  
Flint MI 48532

Sample Number: C2002019769

Customer Number: 25155000

System Name/Owner: GENESEE COUNTY WATER DEPT

WSSN / Pool ID: 2615

Collection Address: 4612 Beecher Road, Flint 48532

Source: Other

Collected By: Richard M Aubin

Site Code: O-M

Twp/Sec/Well #: Flint/04/ ?

Collector: County Personnel

County: Genesee

Sample Date:

Sample Point: KITCHEN

Received: 2/27/2002 11:37:00AM

Sample Kit #: 36VO

Purpose: Routine Monitoring

Chlorination: Yes

Water System: Treated Public Distribution

| Test Result  | Analyte Name               | Tested   | Rpt Limit   |      |          |
|--------------|----------------------------|----------|-------------|------|----------|
| Not Detected | BENZENE                    | 3/7/2002 | 0.005 mg/L  | CXVO | 19960701 |
| Not Detected | BROMOBENZENE               | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | BROMOCHLOROMETHANE         | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | BROMOFORM                  | 3/7/2002 | 0.0004 mg/L | CXVO | 19960701 |
| Not Detected | BROMOMETHANE               | 3/7/2002 | 0.020 mg/L  | CXVO | 19960701 |
| Not Detected | BUTYLBENZENE, NORMAL-      | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | BUTYLBENZENE, SEC-         | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | BUTYLBENZENE, TERT-        | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | CARBON TETRACHLORIDE       | 3/7/2002 | 0.0004 mg/L | CXVO | 19960701 |
| Not Detected | CHLOROBENZENE              | 3/7/2002 | 0.1 mg/L    | CXVO | 19960701 |
| 0.0010 mg/L  | CHLORODIBROMOMETHANE       | 3/7/2002 | 0.080 mg/L  | CXVO | 19960701 |
| Not Detected | CHLOROETHANE               | 3/7/2002 | 0.020 mg/L  | CXVO | 19960701 |
| 0.0045 mg/L  | CHLOROFORM                 | 3/7/2002 | 0.0004 mg/L | CXVO | 19960701 |
| Not Detected | CHLOROMETHANE              | 3/7/2002 | 0.05 mg/L   | CXVO | 19960701 |
| Not Detected | CHLOROTOLUENE (COMBINED)   | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | DIBROMOMETHANE             | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | DICHLOROBENZENE,1,2-       | 3/7/2002 | 0.6 mg/L    | CXVO | 19960701 |
| Not Detected | DICHLOROBENZENE,1,3-       | 3/7/2002 | 0.0004 mg/L | CXVO | 19960701 |
| Not Detected | DICHLOROBENZENE,1,4-       | 3/7/2002 | 0.0004 mg/L | CXVO | 19960701 |
| 0.0029 mg/L  | DICHLOROBROMOMETHANE       | 3/7/2002 | 0.080 mg/L  | CXVO | 19960701 |
| Not Detected | DICHLORODIFLUOROMETHANE    | 3/7/2002 | 0.001 mg/L  | CXVO | 19960701 |
| Not Detected | DICHLOROETHANE,1,1-        | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | DICHLOROETHANE,1,2-        | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | DICHLOROETHYLENE,1,1-      | 3/7/2002 | 0.0005 mg/L | CXVO | 19960701 |
| Not Detected | DICHLOROETHYLENE,1,2-CIS   | 3/7/2002 | 0.0004 mg/L | CXVO | 19960701 |
| Not Detected | DICHLOROETHYLENE,1,2-TRANS | 3/7/2002 | 0.0004 mg/L | CXVO | 19960701 |

Michigan Department of Environmental Quality  
Official Laboratory Report

3/13/2002  
C2002019769

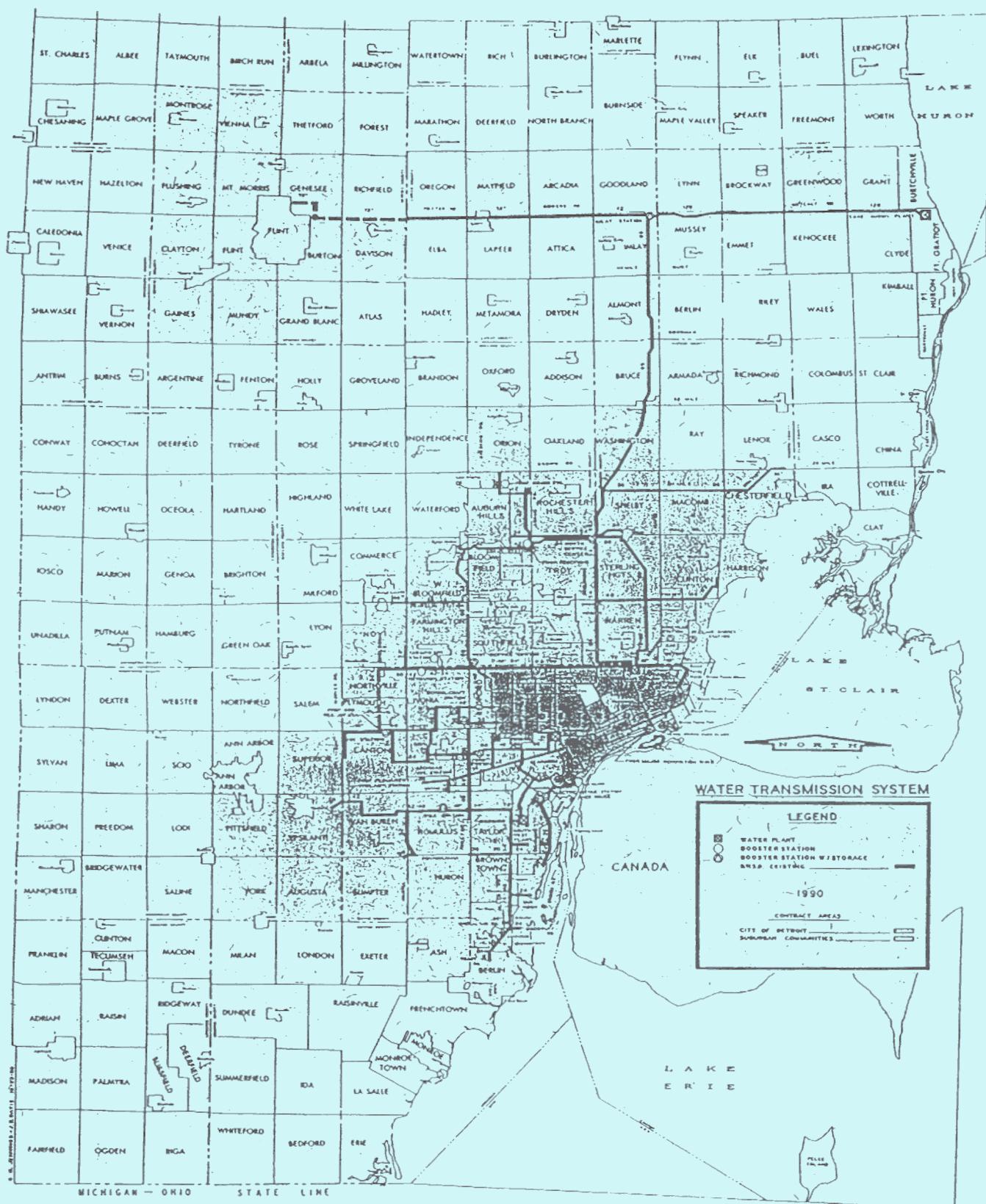
4612 Beecher Road, Flint 48532

| Test Result  | Analyte Name               | Tested   | Limit MCL  | Rpt Limit   | Test Performed |          |
|--------------|----------------------------|----------|------------|-------------|----------------|----------|
| Not Detected | DICHLOROPROPANE,1,2-       | 3/7/2002 | 0.005 mg/L | 0.0004 mg/L | CXVO           | 19960701 |
| Not Detected | DICHLOROPROPANE,1,3-       | 3/7/2002 |            | 0.001 mg/L  | CXVO           | 19960701 |
| Not Detected | DICHLOROPROPANE,2,2-       | 3/7/2002 |            | 0.001 mg/L  | CXVO           | 19960701 |
| Not Detected | DICHLOROPROPENE,1,1-       | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | DICHLOROPROPENE,1,3-CIS    | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | DICHLOROPROPENE,1,3-TRANS  | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | ETHYLBENZENE               | 3/7/2002 | 0.7 mg/L   | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | FLUOROTRICHLOROMETHANE     | 3/7/2002 |            | 0.001 mg/L  | CXVO           | 19960701 |
| Not Detected | HEXACHLOROBUTADIENE        | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | ISOPROPYL BENZENE          | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | ISOPROPYL TOLUENE, PARA-   | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | METHYL ETHYL KETONE        | 3/7/2002 |            | 0.02 mg/L   | CXVO           | 19960701 |
| Not Detected | METHYL ISOBUTYL KETONE     | 3/7/2002 |            | 0.005 mg/L  | CXVO           | 19960701 |
| Not Detected | METHYL TERT-BUTYL ETHER    | 3/7/2002 |            | 0.001 mg/L  | CXVO           | 19960701 |
| Not Detected | METHYLENE CHLORIDE         | 3/7/2002 | 0.005 mg/L | 0.0006 mg/L | CXVO           | 19960701 |
| Not Detected | NAPHTHALENE                | 3/7/2002 |            | 0.001 mg/L  | CXVO           | 19960701 |
| Not Detected | NITROBENZENE               | 3/7/2002 |            | 0.01 mg/L   | CXVO           | 19960701 |
| Not Detected | PROPYLBENZENE, NORMAL-     | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | STYRENE                    | 3/7/2002 | 0.1 mg/L   | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TETRACHLOROETHANE,1,1,1,2- | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TETRACHLOROETHANE,1,1,2,2- | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TETRACHLOROETHYLENE        | 3/7/2002 | 0.005 mg/L | 0.0004 mg/L | CXVO           | 19960701 |
| Not Detected | TETRAHYDROFURAN            | 3/7/2002 |            | 0.005 mg/L  | CXVO           | 19960701 |
| Not Detected | TOLUENE                    | 3/7/2002 | 1 mg/L     | 0.0005 mg/L | CXVO           | 19960701 |
| 0.0084 mg/L  | TOTAL TRIHALOMETHANES      | 3/7/2002 | 0.10 mg/L  | 0.0004 mg/L | CXVO           | 19960701 |
| Not Detected | TRICHLOROBENZENE,1,2,3-    | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TRICHLOROBENZENE,1,2,4-    | 3/7/2002 | 0.07 mg/L  | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TRICHLOROETHANE,1,1,1-     | 3/7/2002 | 0.2 mg/L   | 0.0004 mg/L | CXVO           | 19960701 |
| Not Detected | TRICHLOROETHANE,1,1,2-     | 3/7/2002 | 0.005 mg/L | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TRICHLOROETHYLENE          | 3/7/2002 | 0.005 mg/L | 0.0004 mg/L | CXVO           | 19960701 |
| Not Detected | TRICHLOROPROPANE,1,2,3-    | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TRIMETHYLBENZENE,1,2,4-    | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | TRIMETHYLBENZENE,1,3,5-    | 3/7/2002 |            | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | VINYL CHLORIDE             | 3/7/2002 | 0.002 mg/L | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | XYLENE, ORTHO-             | 3/7/2002 | 10 mg/L    | 0.0005 mg/L | CXVO           | 19960701 |
| Not Detected | XYLENE,META-&PARA-         | 3/7/2002 | 10 mg/L    | 0.0005 mg/L | CXVO           | 19960701 |

Lab Comments:

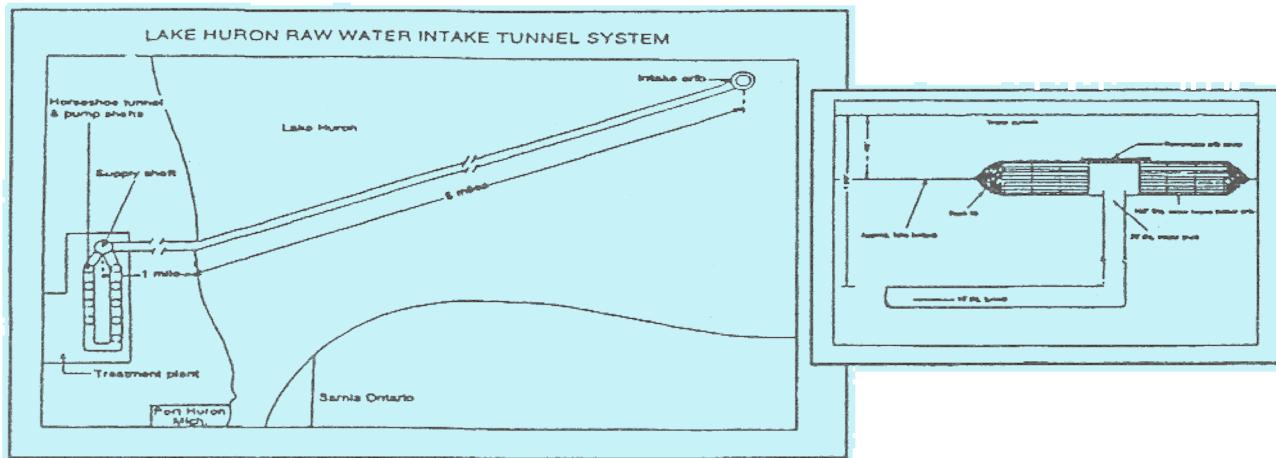
Sample collection date was not given or incorrect date given. Results will be evaluated by regulating agency.

## Water System: Service Area





# Lake Huron Treatment Plant



Water for treatment at the Lake Huron Plant arrives via a deep tunnel with the intake off shore under 45 feet of water.

The six-mile long, 16-foot diameter raw water tunnel system and the Lake Huron Treatment Plant, located five miles north of the City of Port Huron, were constructed in the early 70's.

The main tunnel is 200 feet below the surrounding ground surface. After a 20-foot diameter vertical shaft was constructed at the plant site, an 18-foot diameter horizontal hole was bored through antrim shale deposits by means of a mechanical mole - one mile to the lake shore and five miles out under the lake to a second vertical shaft.

The second shaft was constructed from the tunnel vertically to the bottom of the lake using soil freezing methods. The free-standing horizontal hole was then lined with a one-foot-thick layer of concrete resulting in the 16-foot inside tunnel diameter.

The shaft facilities at the plant site were constructed using complex soil freezing techniques to insure that lake

or ground water would not seep into the construction work.

For practical reasons and design economy, a raw water intake should be built at its ultimate or final desired size. Once a tunnel is in use, it is not feasible to close it down and enlarge at a later date. Constructing two smaller diameter tunnels at different times can be prohibitively expensive. Therefore, a mathematical principle used was allowing tunnel flow volume to be doubled without a tunnel diameter increase.

For example, the Lake Huron plant was sized to produce 800 million gallons a day (MGD) of treated water. Phase I called for a plant one-half that size of 400 MGD. A tunnel to supply Phase I would have been 11-feet, 4-inches in diameter. A second tunnel would have been required in the future.

By increasing the 11-foot, 4-inch tunnel by only 4-feet, 8-inches (to the 16-foot diameter size constructed), the tunnel's potential capacity was increased to 800 MGD. This was an investment in DWSD's future.

Due to the lowered population projections, the initial output capacity of the plant was scaled back to 240 MGD (300 MGD if all pumps are running). The 400 MGD can be reached by simply adding pumps. To reach the 800 MGD level, a transmission main, a sedimentation basin, pumps and filter sand would be needed.

Another built-in advantage for either population increases or for security and reliability purposes, allows an increase in the tunnel's capacity to 1,200 MGD simply by increasing intake velocities.

This additional 400 MGD increase can be made available under ideal no-icing (i.e., summer) conditions. However, to use this potential capacity on a permanent basis, additional pumps, treatment facilities and transmission mains would be necessary.

Construction of such facilities could increase the water system's reliability by providing alternate supplies to DWSD's two other downstream intake systems at Belle Isle and Fighting Island.

# Lake Huron Treatment Plant

## GENERAL STATISTICS

|                            |                   |                               |                  |
|----------------------------|-------------------|-------------------------------|------------------|
| Area of site               | - 457 Acres       | Total Reservoir Capacity      | - 2 @ 15 MG Each |
| Normal Rated Capacity      | - 800 MGD         | PRODUCTION RATES              |                  |
| High Lift Pumping Capacity | - 300 MGD Present | Average Day                   | - 121.7 MG       |
| Number of Filters          | - 15 Future Pumps | Maximum Day                   | - 173 MG         |
|                            | - 20 Present      | Maximum Hour                  | - 210 MG         |
| Number of High Lift Pumps  | - 20 Future       |                               |                  |
| Number of Low Lift Pumps   | - 5               |                               |                  |
|                            | - 4               | • MGD Million Gallons per Day |                  |

## GENERAL INFORMATION

|                         |   |
|-------------------------|---|
| Location                | - 3993 Metcalf Road, North Street, Fort Gratiot |
| Area of Site            | - 457 Acres                                     |
| Water Source            | - Lake Huron                                    |
| Raw Water Tunnel        | - 6 Miles - 16 ft. in diameter                  |
| Average Depth of Tunnel | - 190 Feet                                      |
| Rated Plant Capacity    | - 1200 MGD (Intake Capacity)                    |
| Reservoir Capacity      | 2 @ 15 Millions Gallons Each                    |
| Underfilter Storage     | 4 Million Gallons                               |
| Electric Power Supply   | - Detroit Edison                                |
| Transformers            | - 2 @ 120 - 13.8 K.V.                           |

## PUMPING PLANTS

### Low Lift Plant:

#### Function of Building

#### Building Shape

Cassion Depth

#### Building Height

#### Elevations (Sea Level)

#### Pump Floor

#### Center Line of Pumps

#### Motor Floor

#### Number of Pumps

#### Type of Pumps

#### Rated Capacity (53' Head)

Pump Motors - Synchronous

Houses pump which lift water from raw water tunnel to treatment plant level.

Rectangular

243 Feet

59.5 Feet

618.5

623 (100 MGD) 624.7 (200 MGD)

629.2 (100 MGD) 631.2 (200 MGD)

4

Byron Jackson Vertical Single Stage

2 @ 100 MGD, 2 @ 200 MGD

2 @ 100 MGD 1250 Horse Power 450 RPM -

2 @ 200 MGD 2250 Horse Power 327 RPM

### High Lift Plant:

#### Functions of Building

#### Elevations (Sea Level)

Pump Floor - 603.5

Motor Floor - 616.5

Center Line of Pumps - 609

#### Building Height

#### Number of Pumps

#### Rated Capacity (416.5' Head)

Pump Motors - Synchronous

#### Type of Pump

45.75 feet

5

5 @ 60 MGD

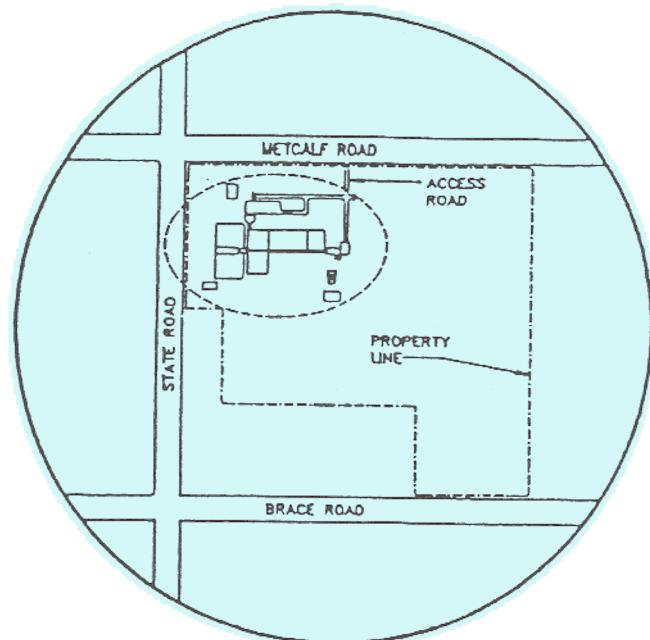
5 @ 5500 Horse Power 600 RPM

Johnson vertical four stage

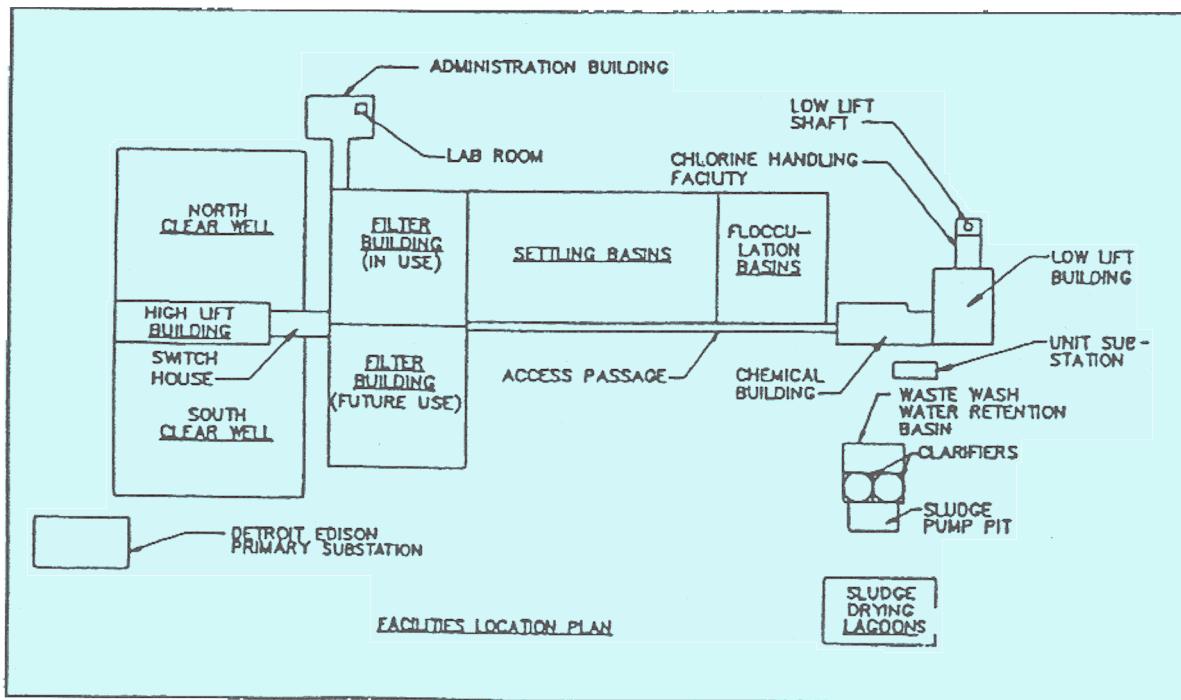
\*MGD = Million Gallons Per Day  
HP = Horsepower  
RPM = Revolutions Per Minute

# Lake Huron Treatment Plant

3993 Metcalf Road • Fort Gratiot, MI 48059



LOCATION MAP



FACILITIES LOCATION PLAN

**Disinfection**  
**Pre & Post Chlorination**

Liquid chlorine to evaporators then gas to V-notch chlorinators

**Turbidity Removal**  
Chemical  
Feed system  
Rate of Feed

Aluminum Sulfate (Aluminum Ion)  
3 Rotodip feeders  
0.5 to 660 Gallons per hour

**Taste & Odor Control**  
Chemical  
Feed System  
Rate of Feed

Powdered Activated Carbon  
3 Rotodip feeders  
Raw water conduits

**Sedimentation**  
Rapid Mix Units  
Number of Basins  
Number of Flocculator  
Paddle Units  
Flocculation Rotation  
Basin Retention Time

4 Vertical turbines  
2 Capacity 15 Million gallons each  
  
20 units 8 paddles each  
Vertical  
2.4 - 6.6 Hrs.

**Filtration**  
Number of Filters  
Area Per Filter  
Filtration Capacity  
Water Per Unit  
Length of Filter Run  
Type of Underdrain  
Gravel Layers  
Gravel Size  
Filter Media (Dual)  
Effective Size  
Uniformity Coefficient  
Troughs, Above Anthrafilt  
Frequency of Backwash  
Wash Water Rates  
Length of Wash  
Surface of Wash Units

20  
2320 Square feet  
Average = 14 MGD  
129,000 Gallons above the media  
Average 30 hours  
Wheeler  
5 layers 14 inch deep reverse graded  
1/8" to 1" Diameter  
Sand - Anthracite  
0.56mm - 0.9mm  
1.40 - 1.80  
32 inches  
7 Per Day average  
5 & 60 MGD (2 - 28 inch rise/min.)  
13 Minutes  
Palmer Sweeps

**Wash Water System**  
Capacity  
Wash Water Pumps  
Type of Pump  
Type of Motors  
Surface Wash

3 Pumps @ 60 MGD each  
3  
Johnson vertical single stage  
Induction 900 Horse power  
House service used

|     |   |                    |
|-----|---|--------------------|
| ppm | = | parts per million  |
| mm  | = | millimeter         |
| gpm | = | gallons per minute |

Grand Blanc Township  
Department of Public Works  
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