Village of Maple Rapids
Water System Improvements

Michigan Clean Water State Revolving Fund Project Planning Document (2023)
Volume 2 – Appendix

23-0064

April 2023

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Lansing, MI 48933

APPENDIX A

NPDES Permit

Appendix A

Part 1: NPDES Certificate of Coverage

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
WATER RESOURCES DIVISION
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
Authorized by Part 31, Water Resources Protection, of the
Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended

CERTIFICATE OF COVERAGE (COC)

Under General Permit No. MIG580000
Wastewater Stabilization Lagoon General Permit

COC NO.: MIG580260

DESIGNATED NAME: Maple Rapids WWSL

PERMITTEE: Village of Maple Rapids
MAILING ADDRESS: 118 West Adelaide Street
PO Box 200
Maple Rapids, MI 48853

This COC authorizes the permittee to discharge treated municipal wastewater from the Village of Maple Rapids Wastewater Stabilization Lagoon located on Garfield Street, Maple Rapids, Michigan 48853, in Clinton County. Consistent with the criteria and requirements established in General Permit No. MIG580000, the permittee is authorized to discharge the following: 39.2 MGY of treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Maple River at Latitude 43.11148, Longitude -84.68028.

All sections of the General Permit are applicable to this facility **EXCEPT** the following:
- Part I.A.2. – Additional Final Effluent Limitation for Total Phosphorus
- Part I.A.4. – Groundwater Monitoring for Lagoon Exfiltration/Leakage
- Part I.A.11. – Residuals Management Program for Land Application of Biosolids: APPROVED RMPs
- Part I.A.15. – Industrial Waste (for non-POTWs such as mobile home parks, campgrounds, nursing homes, and marinas)

Prior to any land application of bulk biosolids, the permittee shall have a Residuals Management Program (RMP) approved by the Department of Environment, Great Lakes, and Energy (Department) in accordance with Part I.A.10. of the General Permit.

References in the General Permit to the Department shall be defined as the Lansing District Supervisor of the Water Resources Division. The Lansing District Office is located at 525 West Allegan Street, 1st Floor, South Tower, Lansing, MI 48933; Telephone: 517-284-6651; Fax: 517-241-3571.

Any person who is aggrieved by this COC may file a sworn petition with the Michigan Administrative Hearing System within the Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environment, Great Lakes, and Energy, setting forth the conditions of the COC that are being challenged and specifying the grounds for the challenge. The Michigan Administrative Hearing System may reject any petition filed more than 60 days after issuance as being untimely.

The issuance of this COC does not authorize violation of any federal, state, or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environment, Great Lakes, and Energy permits, or approvals from other units of government as may be required by law.

This COC is based on a complete application submitted on October 11, 2018, as amended through July 15, 2020. The permittee is subject to the conditions specified in General Permit No. MIG580000, issued January 29, 2019, expiring April 1, 2024. This COC may be modified, terminated, reissued, or revoked as allowed for in General Permit No. MIG580000. On its effective date, this COC shall supersede COC No. MIG580260 (expiring April 1, 2019).

This COC takes effect on November 1, 2020.

Issued August 20, 2020

Original certificate signed by_____
Byron Lane, Supervisor
Municipal Permits Unit
Permits Section
Water Resources Division

Appendix A

Part 2: NPDES Permit

PERMIT NO. MIG580000

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTEWATER DISCHARGE GENERAL PERMIT

WASTEWATER STABILIZATION LAGOON EFFLUENT

In compliance with the provisions of the Federal Clean Water Act, 33 U.S.C., Section 1251 *et seq*., as amended (CWA); Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2011-1, wastewater that is associated with stabilization lagoon effluent that is authorized to be discharged from facilities specified in individual "Certificates of Coverage" (COC) in accordance with effluent limitations, monitoring requirements and other conditions set forth in this general National Pollutant Discharge Elimination System (NPDES) permit (the "permit").

The applicability of this permit shall be limited to seasonal (spring/fall) discharges of sanitary or municipal wastewater that: (1) have been adequately treated by a wastewater stabilization lagoon; (2) are not subject to the industrial pretreatment program requirements under the NREPA and R 323.2301 through R 323.2317 of the Michigan Administrative Code (Part 23 Rules); and (3) have been determined by the Michigan Department of Environmental Quality (Department) not to need an individual permit. Aerobic lagoons, both mechanically aerated and non-mechanically aerated, which discharge treated sanitary wastewater, are included. The lagoon system shall: (1) meet accepted design criteria as determined by the Department; and (2) comply with secondary treatment standards for lagoon systems in Part I.A.1. of this permit and other requirements and limitations stated herein as specified in the COC. Discharges that may cause or contribute to a violation of a water quality standard (WQS) are not authorized by this permit.

In order to constitute a valid authorization to discharge, this permit must be accompanied by a COC issued by the Department. The COC will specify which sections of the General Permit apply at the individual facility, including if the Groundwater Monitoring for Lagoon Exfiltration/Leakage, Additional Final Effluent Limitation for Total Phosphorus, and/or Residuals Management Program for Land Application of Biosolids for New or Approved Programs.

Unless specified otherwise, all contact with the Department required by this permit shall be to the position(s) indicated in the COC.

This permit takes effect on April 1, 2019. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules.

This permit shall expire at midnight on **April 1, 2024**.

Issued: January 29, 2019

Original signed by Christine Alexander
Christine Alexander, Manager
Permits Section
Water Resources Division

PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of the occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by **January 15** for notices mailed by December 1. The fee is due no later than 45 days after receiving the notice for notices mailed after December 1.

In accordance with Section 324.3132 of the NREPA, the permittee shall make payment of an annual biosolids land application fee to the Department if the permittee land applies biosolids. In response to the Department's annual notice, the permittee shall submit the fee, which shall be postmarked no later than January 31 of each year.

CONTESTED CASE INFORMATION

The terms and conditions of this permit shall apply to an individual facility on the effective date of a COC for the facility. Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

1. Final Effluent Limitations

During the period beginning on the effective date of an individual COC under this permit, and lasting until the expiration of this permit or termination of the individual COC, the permittee is authorized to discharge treated sanitary wastewater to the surface waters of the state of Michigan. Effluent shall be discharged during high-flow conditions in the spring and/or fall of each year. There shall be no discharge from June 1 to September 30 and from January 1 to February 28/29 (see b. below). In addition, there shall be no discharge during periods of significant ice cover on the receiving stream unless authorized by the Department. Such discharge shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration					
Parameter	**Monthly**	**7-Day**	**Daily**	**Units**	**Monthly**	**7-Day**	**Daily**	**Units**	**Monitoring Frequency**	**Sample Type**
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow
Biochemical Oxygen Demand (BOD_5)										
	---	---	---	---	30	45	(report)	mg/l	see d. below	Composite
Total Suspended Solids (TSS)										
March – May	---	---	---	---	70	100	(report)	mg/l	see d. below	Composite
October – December	---	---	---	---	40	45	(report)	mg/l	see d. below	Composite
Ammonia Nitrogen (as N)	---	---	---	---	(report)	---	(report)	mg/l	see d. below	Composite
Total Phosphorus (as P)	---	---	---	---	(report)	---	(report)	mg/l	see d. below	Composite
Fecal Coliform Bacteria	---	---	---	---	200	400	(report)	cts/ 100 ml	see d. below	Grab
					Minimum Daily					
pH	---	---	---	---	6.5	---	10	S.U.	see d. below	Grab
Dissolved Oxygen	---	---	---	---	5.0	---	---	mg/l	Daily	Grab

a. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.

b. Acceptable Discharge Periods
If the Department determines that discharge periods of shorter duration than March 1 through May 31 and/or October 1 through December 31 are necessary to protect water quality, the reduced discharge periods will be stated in the COC. Upon approval by the Upper Peninsula District Supervisor, the spring discharge period may be extended to April 1 through June 21 for facilities located in the Upper Peninsula.

c. Discharges Outside of Acceptable Discharge Periods
For discharges outside the acceptable discharge periods, the permittee shall notify the Department of the potential noncompliance prior to discharge, as required by Part I.A.7. of this permit.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

d. Discharge Management
The discharge is to be managed consistent with all of the following requirements:

1) Cell Isolation - The permittee shall isolate a cell from cells receiving untreated sanitary wastewater at least two weeks in advance of a proposed discharge. There shall be no discharge to the surface waters from unisolated cells.

2) Pre-Discharge Sampling - The permittee shall sample the isolated cell for BOD_5, Total Suspended Solids, Ammonia Nitrogen, Total Phosphorus, Fecal Coliform Bacteria, and pH no more than two weeks in advance of a proposed discharge. Samples shall be drawn from a point approximately five feet from the edge of the cell and one (1) foot beneath the water surface. All samples shall be grab samples. If more than two weeks will pass prior to the beginning of an actual discharge, additional pre-discharge samples shall be obtained, analyzed, and reported to the Department prior to discharge.

3) Discharge Approval Required - The permittee shall notify and receive approval from the appropriate District Supervisor or staff authorized to act on his/her behalf prior to discharge of any effluent for each discharge event. The permittee shall supply the results of all pre-discharge effluent samples and the results of a Dissolved Oxygen sample taken no more than 24 hours prior to notification.

4) Discharge Duration - Multiple discharge events are authorized in the spring and/or fall of each year in accordance with Part I.A.1.b. of this permit and the following provision. Discharge event duration shall not exceed 10 days within a 14-day period. The discharge may be continuous or intermittent during the event. After the discharge event is ended, the permittee shall wait a minimum of seven calendar days prior to initiating a new discharge event.

5) Discharge Sampling Frequency - Flow and Dissolved Oxygen shall be measured daily during discharge. All other parameters shall be measured the first day and every other day during discharge, including the last day of discharge. The Department may approve alternate sampling frequencies that are demonstrated to be representative of the discharge.

6) Discharge Sample Type and Location - The sampling for BOD_5, Total Suspended Solids, Total Phosphorus, and Ammonia Nitrogen shall be 3-portion composite samples or 24-hour composite samples of the effluent. The sampling for Dissolved Oxygen, Fecal Coliform Bacteria, and pH shall be grab samples of the effluent.

e. Discharge Monitoring Reports
Monthly Discharge Monitoring Reports (DMRs) shall be submitted for the months of October, November, December, March, April, May, and June whether or not there has been a discharge. Upper Peninsula facilities authorized under Part I.A.1.b. of this permit shall also submit a monthly DMR for any approved discharge event. Daily DMRs shall be submitted only during months a discharge occurred.

f. Security Fencing
The lagoon shall be enclosed by security fencing. The fencing shall include gates wide enough to accommodate mowing machinery. All gates shall be locked to prevent unauthorized access. Metal warning signs shall be posted on the fencing. Lagoon systems that utilize sophisticated mechanical equipment should consider more secure fencing and access control.

g. Water Treatment Additives
This permit does not authorize the discharge of water treatment additives without approval. Approval of water treatment additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event a permittee proposes to discharge water treatment additives, including an increased discharge concentration of a previously approved water treatment additive, the permittee shall submit a request for approval in accordance with Part I.A.6. of this permit.

h. Construction Approval
This permit does not authorize the construction or modification of any physical structures of the wastewater treatment facility. The permittee shall receive any required approval of plans and specifications from the appropriate Department before commencing construction of the wastewater treatment facility necessary for compliance with this permit.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

2. Additional Final Effluent Limitation for Total Phosphorus

If the Department determines it is necessary to control total phosphorus discharges to protect downstream water quality, the discharge shall be limited and monitored by the permittee as specified below. Such determination will be indicated in the COC.

	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration					
Parameter	**Monthly**	**7-Day**	**Daily**	**Units**	**Monthly**	**7-Day**	**Daily**	**Units**	**Monitoring Frequency**	**Sample Type**
Total Phosphorus (as P)	---	---	---	---	1.0	---	(report)	mg/l	see Part I.A.d.5 above	Composite

3. Facility Operation and Maintenance

The permittee shall comply with the inspection, operation, and maintenance program requirements specified below. An alternate facility operations program may be approved by the Department.

a. Lagoon Inspection
The permittee shall inspect the lagoon facilities three times weekly year-round unless otherwise authorized by the Department. These inspections shall include all of the following:

1) The lagoon dikes for vegetative growth, erosion, slumping, animal burrowing or breakthrough, and condition of the lagoon liner.

2) The lagoon for growth of aquatic plants, offensive odors, insect infestations, scum, floating sludge, and septic conditions.

3) The depth of the water in each cell and the freeboard.

4) The drain pipe to ensure there is no discharge.

5) The control structures and pump stations to assure that valves, gates, and alarms are set correctly and properly functioning.

6) The lagoon security fence and warning signs.

7) Analysis for Dissolved Oxygen in each lagoon cell at least once weekly, except when the lagoons are ice covered. The data shall be kept as retained self-monitoring. See Part II.C.3. of this permit.

The permittee shall initiate steps to correct any condition that is not in accordance with the facility maintenance program outlined in Part I.A.3.b. of this permit. A record of the inspections shall be maintained by the permittee for a period of three (3) years.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

b. Facility Maintenance
The permittee shall implement a Facility Maintenance Program that incorporates all of the following management practices unless otherwise authorized by the Department:

1) Vegetation shall be maintained at a height not more than six (6) inches above the ground on lagoon dikes and around the fencing.

2) At all times, the facility shall be maintained to prevent the negative effects of floating material and/or water perimeter emergent rooted aquatic plants on Dissolved Oxygen concentrations, treatment efficiency, nuisance organisms, offensive odors, or other measurable impacts. However, in no case, even without demonstrated impact, shall the floating material and/or water perimeter emergent rooted aquatic plants exceed forty (40) percent cover.

3) Dike damage due to erosion or animal burrowing shall be corrected immediately and steps taken to prevent occurrences in the future.

4) The integrity of the lagoon liner shall be protected. Liner damages shall be corrected immediately and steps taken to prevent future occurrences.

5) The occurrence of scum, floating sludge, offensive odors, insect infestations, and septic conditions shall be minimized.

6) A schedule for the inspection and maintenance of the collection system, lift stations, mechanical and electrical systems, transfer stations, and control structures shall be developed and implemented.

c. Lagoon Drawdown Conditions
The permittee shall observe all of the following conditions when drawing down a cell for transfer or discharge, unless otherwise authorized by the Department:

1) Water discharged shall be removed from the surface two feet of the cell at a rate of less than one (1) foot per day.

2) The permittee shall maintain a minimum of two (2) feet of freeboard in all cells at all times.

3) The permittee shall maintain a minimum of two (2) feet of water in all cells at all times.

4. Groundwater Monitoring for Lagoon Exfiltration/Leakage

This condition is required if specified in the COC. The intent of this requirement is to demonstrate that lagoons have not impacted, and are not likely to impact, surface waters and/or groundwaters of the state in accordance with Part 31 of the NREPA; specifically, Part 4, Water Quality Standards (Part 4 Rules), and R 323.2222 of Part 22, Groundwater Quality Administrative Rules (Part 22 Rules). Information that may be/has been considered by the Department in making this determination includes but is not limited to: the date of lagoon construction; construction design methods and materials including whether liner specifications meet R 323.2237 of the Part 22 Rules or provide equivalency as allowed in R 323.2237; and indications of the presence of a direct vent to surface waters and whether such vent complies with surface water quality standards.

To ensure that leakage from lagoons to surface waters and/or groundwaters of the state is not causing unacceptable impacts, all of the following conditions shall apply unless previously satisfied:

a. The permittee shall install groundwater monitoring wells around the perimeter of the lagoons to document both groundwater water quality impacts and groundwater flow. A plan for the monitoring wells shall be submitted to the Department for approval within 90 days of notification by the Department. Within 90 days of approval of the plan, unless the Department approves an extended period (not to exceed 180 days), the groundwater monitoring wells shall be installed.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

b. The permittee shall submit a groundwater monitoring plan to the Department for approval within 90 days of the effective date of this permit. This groundwater monitoring plan may be submitted as part of the monitoring well work plan. The monitoring plan shall include monitoring of the groundwater elevation and the following parameters: total phosphorus, dissolved phosphorus, total inorganic nitrogen, sodium, chloride, pH, and specific conductance. Monitoring shall be conducted quarterly until the permittee is notified by the Department that the monitoring can end or be reduced.

c. The permittee shall begin implementation of the monitoring plan within 90 days of approval of the monitoring plan, or upon installation of the monitoring well, whichever occurs last. The result of the monitoring shall be submitted to the Department quarterly.

d. Upon written notification by the Department that unacceptable leakage is impacting surface waters and/or groundwater, the permittee shall develop a work plan to address the leakage. Within 6 months of such notification, the permittee shall submit an approvable lagoon leakage remediation work plan to the Department. The purpose of the work plan is to control exfiltration from the lagoon treatment system. The study shall include remediation methods, procedures, time schedules, and staff, as appropriate.

e. The permittee shall begin implementation of the lagoon leakage remediation work plan within 30 days of approval of the work plan.

f. The permittee shall complete implementation of the lagoon leakage remediation work plan and submit an approvable final report with supporting data to the Department on or before within one year of approval of the work plan. The final report shall include a plan and schedule for continued maintenance and monitoring of the lagoon treatment system.

Based on the results of groundwater monitoring, the Department may require the permittee to obtain an individual permit, as described under Part I.A.13. of this permit, to address compliance with R.323.2222 or surface water quality standards.

5. Quantification Levels and Analytical Methods for Selected Parameters

Quantification levels (QLs) are specified for selected parameters in the table below. These QLs shall be considered the maximum acceptable unless a higher QL is appropriate because of sample matrix interference. Justification for higher QLs shall be submitted to the Department within 30 days of such determination. Where necessary to help ensure that the QLs specified can be achieved, analytical methods may also be specified in the table below. The sampling procedures, preservation and handling, and analytical protocol for all monitoring conducted in compliance with this permit, including monitoring conducted to meet the requirements of the application for permit reissuance, shall be in accordance with the methods specified in the table below, or in accordance with Part II.B.2. of this permit if no method is specified in the table below, unless an alternate method is approved by the Department. With the exception of total mercury, all units are in ug/l. The table is continued on the following page:

Parameter	QL	Units	Analytical Method
1,2-Diphenylhydrazine (as Azobenzene)	3.0	ug/l	
2,4,6-Trichlorophenol	5.0	ug/l	
2,4-Dinitrophenol	19	ug/l	
3,3'-Dichlorobenzidine	1.5	ug/l	EPA Method 605
4-Chloro-3-Methylphenol	7.0	ug/l	
4,4'-DDD	0.05	ug/l	EPA Method 608
4,4'-DDE	0.01	ug/l	EPA Method 608
4,4'-DDT	0.01	ug/l	EPA Method 608
Acrylonitrile	1.0	ug/l	
Aldrin	0.01	ug/l	EPA Method 608
Alpha-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Antimony, Total	1	ug/l	

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

Parameter	QL	Units	Analytical Method
Arsenic, Total	1	ug/l	
Barium, Total	5	ug/l	
Benzidine	0.1	ug/l	EPA Method 605
Beryllium, Total	1	ug/l	
Beta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Bis (2-Chloroethyl) Ether	1.0	ug/l	
Bis (2-Ethylhexyl) Phthalate	5.0	ug/l	
Boron, Total	20	ug/l	
Cadmium, Total	0.2	ug/l	
Chlordane	0.01	ug/l	EPA Method 608
Chloride	1.0	mg/l	
Chromium, Hexavalent	5	ug/l	
Chromium, Total	10	ug/l	
Copper, Total	1	ug/l	
Cyanide, Available	2	ug/l	EPA Method OIA 1677
Cyanide, Total	5	ug/l	
Delta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Dieldrin	0.01	ug/l	EPA Method 608
Di-N-Butyl Phthalate	9.0	ug/l	
Endosulfan I	0.01	ug/l	EPA Method 608
Endosulfan II	0.01	ug/l	EPA Method 608
Endosulfan Sulfate	0.01	ug/l	EPA Method 608
Endrin	0.01	ug/l	EPA Method 608
Endrin Aldehyde	0.01	ug/l	EPA Method 608
Fluoranthene	1.0	ug/l	
Heptachlor	0.01	ug/l	EPA Method 608
Heptachlor Epoxide	0.01	ug/l	EPA Method 608
Hexachlorobenzene	0.01	ug/l	EPA Method 612
Hexachlorobutadiene	0.01	ug/l	EPA Method 612
Hexachlorocyclopentadiene	0.01	ug/l	EPA Method 612
Hexachloroethane	5.0	ug/l	
Lead, Total	1	ug/l	
Lindane	0.01	ug/l	EPA Method 608
Lithium, Total	10	ug/l	
Mercury, Total	0.5	ng/l	EPA Method 1631E
Nickel, Total	5	ug/l	
PCB-1016	0.1	ug/l	EPA Method 608
PCB-1221	0.1	ug/l	EPA Method 608
PCB-1232	0.1	ug/l	EPA Method 608
PCB-1242	0.1	ug/l	EPA Method 608
PCB-1248	0.1	ug/l	EPA Method 608
PCB-1254	0.1	ug/l	EPA Method 608
PCB-1260	0.1	ug/l	EPA Method 608
Pentachlorophenol	1.8	ug/l	
Perfluorooctane sulfonate (PFOS)	2.0	ng/l	ASTM D7979 or an isotope dilution method (sometimes referred to as Method 537 modified)
Perfluorooctanoic acid (PFOA)	2.0	ng/l	ASTM D7979 or an isotope dilution method (sometimes referred to as Method 537 modified)

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

Parameter	QL	Units	Analytical Method
Phenanthrene	1.0	ug/l	
Phosphorus (as P), Total	10	ug/l	
Selenium, Total	1.0	ug/l	
Silver, Total	0.5	ug/l	
Strontium, Total	1000	ug/l	
Sulfate	2.0	mg/l	
Sulfides, Dissolved	20	ug/l	
Thallium, Total	1	ug/l	
Toxaphene	0.1	ug/l	EPA Method 608
Vinyl Chloride	0.25	ug/l	
Zinc, Total	10	ug/l	

6. Request for Approval to Use Water Treatment Additives

Prior to use of any water treatment additive, the permittee shall obtain written approval from the Department. Requests for such approval shall be submitted via the Department's MiWaters system. The MiWaters website is located at https://miwaters.deq.state.mi.us. Instructions for submitting such a request may be obtained at http://www.michigan.gov/deqnpdes (near the bottom of the page, click on one or both of the links located under the Water Treatment Additives banner). Additional monitoring and reporting may be required as a condition for the approval to use the water treatment additive.

A request for approval to use water treatment additives shall include all of the following usage and discharge information for each water treatment additive proposed to be used:

a. The Safety Data Sheet (SDS).

b. Ingredient information, including the name of each ingredient, Chemical Abstracts Service (CAS) number for each ingredient, and fractional content by weight for each ingredient.

c. The proposed water treatment additive discharge concentration with supporting calculations.

d. The discharge frequency (i.e., number of hours per day and number of days per year).

e. The outfall(s) and monitoring point(s) from which the water treatment additive is to be discharged.

f. The type of removal treatment, if any, that the water treatment additive receives prior to discharge.

g. The water treatment additive's function (i.e., microbiocide, flocculant, etc.).

h. The SDS shall include a 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either *Ceriodaphnia sp*., *Daphnia sp*., or *Simocephalus sp*.). The results shall be based on the whole water treatment additive, shall not be results based on a similar product, and shall not be estimated.

i. The SDS shall include the results of a toxicity test for one (1) other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of R 323.1057(2) of the Water Quality Standards. The results shall be based on the whole water treatment additive, shall not be results based on a similar product, and shall not be estimated. Examples of tests that would meet this requirement include a 96-hour LC50 for rainbow trout, bluegill, or fathead minnow.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

7. Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements

In accordance with Section 324.3112a of the NREPA, if untreated sewage, including sanitary sewer overflows (SSO) and combined sewer overflows (CSO), or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the entity responsible for the sewer system shall immediately, but not more than 24 hours after the discharge begins, notify, by telephone, the Department, local health departments, a daily newspaper of general circulation in the county in which the permittee is located, and a daily newspaper of general circulation in the county or counties in which the municipalities whose waters may be affected by the discharge are located that the discharge is occurring.

The permittee shall also annually contact municipalities, including the superintendent of a public drinking water supply with potentially affected intakes, whose waters may be affected by the permittee's discharge of combined sewage, and if those municipalities wish to be notified in the same manner as specified above, the permittee shall provide such notification. Such notification shall also include a daily newspaper in the county of the affected municipality.

At the conclusion of the discharge, written notification shall be submitted in accordance with and on the “Report of Discharge Form” available via the internet at:https://miwaters.deq.state.mi.us/miwaters/external/home or, alternatively for combined sewer overflow discharges, in accordance with notification procedures approved by the Department.

In addition, in accordance with Section 324.3112a of the NREPA, each time a discharge of untreated sewage or partially treated sewage occurs, the permittee shall test the affected waters for *Escherichia coli* to assess the risk to the public health as a result of the discharge and shall provide the test results to the affected local county health departments and to the Department. The testing shall be done at locations specified by each affected local county health department but shall not exceed 10 tests for each separate discharge event. The affected local county health department may waive this testing requirement, if it determines that such testing is not needed to assess the risk to the public health as a result of the discharge event. The results of this testing shall be submitted with the written notification required above, or, if the results are not yet available, submit them as soon as they become available. This testing is not required, if the testing has been waived by the local health department, or if the discharge(s) did not affect surface waters.

Permittees accepting sanitary or municipal sewage from other sewage collection systems are encouraged to notify the owners of those systems of the above reporting and testing requirements.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

8. Facility Contact

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within ten (10) days after replacement (including the name, address and telephone number of the new facility contact).

a. The facility contact shall be (or a duly authorized representative of this person):
- For a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form.
- For a partnership, a general partner.
- For a sole proprietorship, the proprietor.
- For a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager, or other duly authorized employee.

b. A person is a duly authorized representative only if both of the following apply:
- The authorization is made in writing to the Department by a person described in paragraph a. of this section.
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section releases the permittee from properly submitting reports and forms as required by law.

9. Monthly Operating Reports

For wastewater treatment facilities that serve the public, Part 41, Sewerage Systems, of the NREPA, specifically Section 324.4106 and associated R 299.2953, requires that the permittee file with the Department, on forms prescribed by the Department, operating reports showing the effectiveness of the treatment facility operation and the quantity and quality of liquid wastes discharged into waters of the state.

FOR ALL **NEW** DISCHARGERS:
Within 60 days prior to start-up of the treatment facility, the permittee shall submit to the Department a treatment facility monitoring program to meet this requirement. Upon approval by the Department the permittee shall implement the treatment facility monitoring program. Applicable forms and guidance are available on the Department's web site at http://www.michigan.gov/deq/0,1607,7-135-3313_44117---,00.html. The permittee may use alternate forms if they are consistent with the approved treatment facility monitoring program. Unless the Department provides written notification to the permittee that monthly submittal of operating reports is required, operating reports that result from implementation of the approved treatment facility monitoring program shall be maintained on site for a minimum of three (3) years and shall be made available to the Department for review upon request.

FOR ALL **EXISTING** DISCHARGERS**:**
Within 30 days of the effective date of the COC, the permittee shall submit to the Department a treatment facility monitoring program to meet this requirement. Upon approval by the Department the permittee shall implement the treatment facility monitoring program. Applicable forms and guidance are available on the Department's web site at http://www.michigan.gov/deq/0,1607,7-135-3313_44117---,00.html. The permittee may use alternate forms if they are consistent with the approved treatment facility monitoring program. Unless the Department provides written notification to the permittee that monthly submittal of operating reports is required, operating reports that result from implementation of the approved treatment facility monitoring program shall be maintained on site for a minimum of three (3) years and shall be made available to the Department for review upon request.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

10. Residuals Management Program (RMP) for Land Application of Biosolids: First RMP, including new uses (The individual COC indicates if applicable.)

A permittee seeking authorization to land-apply bulk biosolids or prepare bulk biosolids for land application shall develop and submit an RMP to the Department (see Part I.A.10.e. of this permit) for approval. Effective upon Department approval of the permittee's RMP, the permittee is authorized to land-apply bulk biosolids or prepare bulk biosolids for land application in accordance with the requirements established in R 323.2401 through R 323.2418 of the Michigan Administrative Code (Part 24 Rules) which can be obtained via the internet (http://www.michigan.gov/deq/ and near the top of the screen click on Water, Wastewater, Surface Water, then click on Biosolids & Industrial Pretreatment, Biosolids, then click on Biosolids Laws and Rules Information which is under the Laws & Rules banner in the center of the screen). The permittee's approved RMP, and any approved modifications thereto, are enforceable requirements of this permit. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit.

a. RMP Approval and Implementation
A permittee seeking approval of an RMP shall submit the RMP to the Department (see Part I.A.10.e. of this permit) at least 180 days prior to the land application of biosolids. The permittee may utilize the RMP Electronic Form which can be obtained via the internet (http://www.michigan.gov/biosolids then click on RMP Electronic Form which is under the Downloads banner in the center of the screen) or obtain detailed requirements from the Department. The RMP shall become effective and shall be implemented by the permittee upon written approval by the Department.

b. Annual Report
On or before October 30 of each year, the permittee shall submit an annual report to the Department for the previous fiscal year of October 1 through September 30. The report shall be submitted electronically via the Department's MiWaters system at https://miwaters.deq.state.mi.us. At a minimum, the report shall contain:

1) A certification that current residuals management practices are in accordance with the approved RMP, or a proposal for modification to the approved RMP.

2) A completed Biosolids Annual Report Form, available at https://miwaters.deq.state.mi.us.

c. Modifications to the Approved RMP
Prior to implementation of modifications to the RMP, the permittee shall submit proposed modifications to the Department (see Part I.A.10.e. of this permit) for approval. The approved modification shall become effective upon the date of approval. Upon written notification, the Department may impose additional requirements and/or limitations to the approved RMP as necessary to protect public health and the environment from any adverse effect of a pollutant in the biosolids.

d. Recordkeeping
Records required by the Part 24 Rules shall be kept for a minimum of five years. However, the records documenting cumulative loading for sites subject to cumulative pollutant loading rates shall be kept as long as the site receives biosolids.

e. Contact Information
RMP-related submittals shall be made to the Department.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

11. Residuals Management Program for Land Application of Biosolids: APPROVED RMPs (The individual COC indicates if applicable.)

The permittee is authorized to land-apply bulk biosolids or prepare bulk biosolids for land application in accordance with the permittee's approved RMP approved on the date specified in the COC and approved modifications thereto, in accordance with the requirements established in R 323.2401 through R 323.2418 of the Michigan Administrative Code (Part 24 Rules). The approved RMP, and any approved modifications thereto, are enforceable requirements of this permit. Incineration, landfilling, and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit. The Part 24 Rules can be obtained via the internet (http://www.michigan.gov/deq/ and near the top of the screen click on Water, Wastewater, Surface Water, then click on Biosolids & Industrial Pretreatment, Biosolids, then click on Biosolids Laws and Rules Information which is under the Laws & Rules banner in the center of the screen)

a. Annual Report
On or before October 30 of each year, the permittee shall submit an annual report to the Department for the previous fiscal year of October 1 through September 30. The report shall be submitted electronically via the Department's MiWaters system at https://miwaters.deq.state.mi.us. At a minimum, the report shall contain:

1) A certification that current residuals management practices are in accordance with the approved RMP, or a proposal for modification to the approved RMP.

2) A completed Biosolids Annual Report Form, available at https://miwaters.deq.state.mi.us.

b. Modifications to the Approved RMP
Prior to implementation of modifications to the RMP, the permittee shall submit proposed modifications to the Department (see Part I.A.11.d. for this permit) for approval. The approved modification shall become effective upon the date of approval. Upon written notification, the Department may impose additional requirements and/or limitations to the approved RMP as necessary to protect public health and the environment from any adverse effect of a pollutant in the biosolids.

c. Record Retention
Records required by the Part 24 Rules shall be kept for a minimum of five years. However, the records documenting cumulative loading for sites subject to cumulative pollutant loading rates shall be kept as long as the site receives biosolids.

d. Contact Information
RMP-related submittals shall be made to the Department.

12. Expiration and Reissuance

On or before October 1, 2023, a permittee seeking continued authorization to discharge under this permit beyond the permit's expiration date shall submit to the Department a written request containing such information, forms, and fees as required by the Department. Without an adequate request, a permittee's authorization to discharge will expire on **April 1, 2024**. With an adequate request, a permittee shall continue to be subject to the terms and conditions of the expired permit until the Department takes action on the request, unless this permit is terminated or revoked.

If this permit is terminated or revoked, all authorizations to discharge under the permit shall expire on the date of termination or revocation.

If this permit is modified, the Department will notify the permittee of any required action. Without an adequate response, a permittee's authorization to discharge will terminate on the effective date of the modified permit. With an adequate response, a permittee shall be subject to the terms and conditions of the modified permit on the effective date of the modified permit unless the Department notifies the permittee otherwise.

If a discharge is terminated, the permittee shall request termination of discharge authorization.

PART I

Section A. Final Effluent Limitations and Monitoring Requirements

13. Requirement to Obtain Individual Permit

The Department may require any person who is authorized to discharge, by a COC and this permit, to apply for and obtain an individual NPDES permit if any of the following circumstances apply:

a. The discharger is a significant contributor to pollution as determined by the Department on a case-by-case basis.

b. The discharger is not complying or has not complied with the conditions of this permit.

c. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of waste applicable to the point source discharge.

d. Effluent standards and limitations are promulgated for point source discharges subject to this permit.

e. The Department determines that the criteria under which the permit was issued no longer apply.

Any person may request the Department to take action pursuant to the provisions of Rule 2191 (R 323.2191 of the Michigan Administrative Code).

14. Industrial Waste Pretreatment Program

It is understood that the permittee does not receive the discharge of any type or quantity of substance which may cause interference with the operation of the treatment works; and, therefore, the permittee is not required to immediately develop an industrial pretreatment program in accordance with Section 307 of the CWA. The permittee is required to comply with Section 307 of the CWA upon accepting any such discharge for treatment. The permittee is required to notify the Department within thirty (30) days if any user discharges or proposes to discharge such wastes to the permittee for treatment.

Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system:

a. Pollutants which cause pass-through or interference.

b. Pollutants which create a fire hazard or explosion hazard in the sewerage system, including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in Title 40 of the Code of Federal Regulations (CFR), Section 261.21.

c. Pollutants which will cause corrosive structural damage to the sewerage system; but in no case, discharges with pH less than 5.0, unless the works is specifically designed to accommodate such discharges.

d. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the sewerage system resulting in interference.

e. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the treatment plant.

f. Heat in amounts which will inhibit biological activity in the treatment plant resulting in interference; but in no case, heat in such quantities that the temperature at the treatment plant exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless the Department, upon request of the permittee, approves alternate temperature limits.

g. Pollutants which result in the presence of toxic gases, vapors or fumes within the sewerage system in a quantity that may cause acute worker health and safety problems.

h. Any trucked or hauled pollutants, except at discharge points designated by the permittee.
If information is gained by the Department that the permittee receives or is about to receive industrial wastes, then the permittee may be required to obtain an individual permit (see Part I.A.13. of this permit).

15. Industrial Waste (for non-POTWs such as mobile home parks, campgrounds, nursing homes and marinas)

Under no circumstances shall the permittee allow introduction of waste into the sewerage system other than domestic sewage generated by the facility named on the COC.

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

Section A. Definitions

Acute toxic unit (TU_A) means $100/LC_{50}$ where the LC_{50} is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

Annual monitoring frequency refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Authorized public agency means a state, local, or county agency that is designated pursuant to the provisions of Section 9110 of Part 91 of the NREPA to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

Best management practices (BMPs) means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

Bioaccumulative chemical of concern (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than eight (8) weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

Biosolids are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

Bulk biosolids means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

Certificate of Coverage (COC) is a document, issued by the Department, which authorizes a discharge under a general permit.

Chronic toxic unit (TU_C) means $100/MATC$ or $100/IC_{25}$, where the maximum acceptable toxicant concentration (MATC) and IC_{25} are expressed as a percent effluent in the test medium.

Class B biosolids refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Combined sewer system is a sewer system in which storm water runoff is combined with sanitary wastes.

PART II

Section A. Definitions

Daily concentration is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any *individual* sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any *individual* sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. For dissolved oxygen, report the minimum concentration of any *individual* sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Daily loading is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

Daily monitoring frequency refers to a 24-hour day. When required by this permit, an analytical result, reading, value, or observation shall be reported for that period if a discharge occurs during that period.

Department means the Michigan Department of Environmental Quality.

Detection level means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

Discharge means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

EC_{50} means a statistically or graphically estimated concentration that is expected to cause one (1) or more specified effects in 50% of a group of organisms under specified conditions.

Fecal coliform bacteria monthly
FOR WASTEWATER STABILIZATION LAGOONS (WWSLs) THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

PART II

Section A. Definitions

Fecal coliform bacteria 7-day
FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

Flow-proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

General permit means a National Pollutant Discharge Elimination System permit issued authorizing a category of similar discharges.

Geometric mean is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

Grab sample is a single sample taken at neither a set time nor flow.

IC_{25} means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

Illicit connection means a physical connection to a municipal separate storm sewer system that primarily conveys non-storm water discharges other than uncontaminated groundwater into the storm sewer; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

Illicit discharge means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

Individual permit means a site-specific NPDES permit.

PART II

Section A. Definitions

Inlet means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: (1) inhibits or disrupts the publicly owned treatment works (POTW), its treatment processes or operations, or its sludge processes, use, or disposal; and (2) is therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the CWA, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

Land application means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

LC_{50} means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

Maximum acceptable toxicant concentration (MATC) means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

MGD means million gallons per day.

Monthly concentration is the sum of the daily concentrations determined during a reporting period event divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the “AVERAGE” column under “QUALITY OR CONCENTRATION” on the DMR.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Monthly loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the “AVERAGE” column under “QUANTITY OR LOADING” on the DMR.

Monthly monitoring frequency refers to a calendar month. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Municipal separate storm sewer means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a publicly-owned treatment works as defined in 40 CFR, Section 122.2.

PART II

Section A. Definitions

Municipal separate storm sewer system (MS4) means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the CWA that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the CWA. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

No observed adverse effect level (NOAEL) means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

Noncontact cooling water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

Outfall is the location at which a point source discharge enters the surface waters of the state.

Part 91 agency means an agency that is designated by a county board of commissioners pursuant to the provisions of Section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of Section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation activities under Part 615, Supervisor of Wells; Part 631, Reclamation of Mining Lands; or Part 632, Nonferrous Metallic Mineral Mining, of the NREPA pursuant to the provisions of Section 9115 of Part 91 of the NREPA.

Part 91 permit means a soil erosion and sedimentation control permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

Partially treated sewage is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's National Pollutant Discharge Elimination System permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

Point of discharge is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

Point source discharge means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

Polluting material means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

POTW is a publicly owned treatment works.

PART II

Section A. Definitions

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

Public (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

Public body means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

Qualified Personnel means an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the storm water sample.

Qualifying storm event means a storm event causing greater than 0.1-inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1-inch of rainfall. Upon request, the Department may approve an alternate definition meeting the condition of a qualifying storm event.

Quantification level means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

Quarterly monitoring frequency refers to a three (3)-month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value, or observation shall be reported for that period if a discharge occurs during that period.

Regional Administrator is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

Regulated area means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely-populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

Secondary containment structure means a unit, other than the primary container, in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

Separate storm sewer system means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

Significant industrial user is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

PART II

Section A. Definitions

Significant materials Significant Materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111 of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills and significant leaks means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

Special-use area means secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and/or areas with other activities that may contribute pollutants to the storm water for which the Department determines monitoring is needed.

Stoichiometric means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

Storm water means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

Storm water discharge point is the location where the point source discharge of storm water is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including *outfalls* which discharge directly to surface waters of the state, and *points of discharge* which discharge directly into separate storm sewer systems.

SWPPP means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

Tier I value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

Tier II value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

Total maximum daily loads (TMDLs) are required by the CWA for waterbodies that do not meet water quality standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet water quality standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

Toxicity reduction evaluation (TRE) means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Water Quality Standards means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.

Weekly monitoring frequency refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

PART II

Section A. Definitions

WWSL is a wastewater stabilization lagoon.

WWSL discharge event is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14-day period.

3-portion composite sample is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

7-day concentration
FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

7-day loading
FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

24-hour composite sample is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period. A time-proportioned composite sample may be used upon approval of the Department if the permittee demonstrates it is representative of the discharge.

PART II

Section B. Monitoring Procedures

1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the CWA (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations**. Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Manager of the Permits Section, Water Resources Division, Michigan Department of Environmental Quality, P.O. Box 30458, Lansing, Michigan, 48909-7958. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: (1) the exact place, date, and time of measurement or sampling; (2) the person(s) who performed the measurement or sample collection; (3) the dates the analyses were performed; (4) the person(s) who performed the analyses; (5) the analytical techniques or methods used; (6) the date of and person responsible for equipment calibration; and (7) the results of all required analyses.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

PART II

Section C. Reporting Requirements

1. Start-Up Notification for New or Upgraded Facilities

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge.

2. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring" the permittee shall submit self-monitoring data via the Department's MiWaters system.

The permittee shall utilize the information provided on the MiWaters website at https://miwaters.deq.state.mi.us to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20th day of the month following each month of the authorized discharge period(s). The permittee may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10th (April 1st for animal feeding operation facilities) of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

Retained self-monitoring may be denied to a permittee by notification in writing from the Department. In such cases, the permittee shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittee. Reissuance or modification of this permit or reissuance or modification of an individual permittee's authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

PART II

Section C. Reporting Requirements

5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a *written* notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

6. Noncompliance Notification

Compliance with all applicable requirements set forth in the CWA, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

a. 24-Hour Reporting
Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.

b. Other Reporting
The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: (1) a description of the discharge and cause of noncompliance; and (2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if the notice is provided after regular working hours, call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from **out-of-state** dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventative measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

PART II

Section C. Reporting Requirements

8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24 hours of becoming aware of such conditions; and within five (5) days, provide in writing, all of the following information:

a. That an upset occurred and that the permittee can identify the specific cause(s) of the upset.

b. That the permitted wastewater treatment facility was, at the time, being properly operated and maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation).

c. That the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

9. Bypass Prohibition and Notification

a. Bypass Prohibition
Bypass is prohibited, and the Department may take an enforcement action, unless all of the following apply:

1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.

2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass.

3) The permittee submitted notices as required under 9.b. or 9.c., below.

b. Notice of Anticipated Bypass
If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a., above.

c. Notice of Unanticipated Bypass
The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the second page of this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

PART II

Section C. Reporting Requirements

d. Written Report of Bypass
A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.

e. Bypass Not Exceeding Limitations
The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.11. of this permit.

f. Definitions

1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

11. Notification of Changes in Discharge

The permittee shall notify the Department, in writing, as soon as possible but no later than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: (1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; (2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or (3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

PART II

Section C. Reporting Requirements

12. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by (a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or (b) by notice if the following conditions are met: (1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; (2) the action or activity will not result in violations of the effluent limitations specified in this permit; (3) the action or activity is not prohibited by the requirements of Part II.C.10.; and (4) the action or activity will not require notification pursuant to Part II.C.11. Following such notice, the permit or, if applicable, the facility's COC may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: (1) the legal name and address of the new owner; (2) a specific date for the effective transfer of permit responsibility, coverage, and liability; and (3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; recordkeeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.

PART II

Section C. Reporting Requirements

15. Signatory Requirements

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the CWA and the NREPA.

The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than $2,500.00 or more than $25,000.00 for each violation. The court may impose an additional fine of not more than $25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than $25,000.00 per day and not more than $50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittee shall submit electronically all such reports or notifications as required by this permit.

PART II

Section D. Management Responsibilities

1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit, more frequently than, or at a level in excess of, that authorized, shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the CWA and constitutes grounds for enforcement action; for permit or Certificate of Coverage (COC) termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

a. Provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit.

b. Upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

PART II

Section D. Management Responsibilities

6. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the NREPA.

7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

a. To enter upon the permittee's premises where an effluent source is located or any place in which records are required to be kept under the terms and conditions of this permit.

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods, and equipment regulated or required under this permit; and to sample any discharge of pollutants.

9. Availability of Reports

Except for data determined to be confidential under Section 308 of the CWA and Rule 2128 (R 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit, shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and Sections 3112, 3115, 4106 and 4110 of the NREPA.

10. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

PART II

Section E. Activities Not Authorized by This Permit

1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the CWA except as are exempted by federal regulations.

5. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the CWA.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department permits, or approvals from other units of government as may be required by law.

APPENDIX B

SAW Executive Summary

VILLAGE OF MAPLE RAPIDS
SAW Grant Project No. 1059-1

EXECUTIVE SUMMARY

Prepared by: SPICER GROUP, INC.
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St. John's MI, 48879

Owner: **VILLAGE OF MAPLE RAPIDS**
118 West Adelaide Street
Maple Rapids, MI 48853
(989) 682-9227
Daryl Trefil, Village President

On November 24, 2015, the Village of Maple Rapids entered into an agreement with the Michigan Finance Authority for grant funds issued under Public Act No. 511 of 2012 for the *Stormwater, Asset Management, and Wastewater (SAW)* program. The Village received the follow grants:

Wastewater Asset Management Plan (WWAMP) – 100% Grant*	***$260,000***
Stormwater Asset Management Plan (SWAMP) – 90% Grant	$153,000
Eligible Cost Subtotal	$413,000
LESS Local Match	($15,300)
Total Grant Amount	$397,700

*Disadvantaged for Wastewater Asset Management Plan; no local match required

The Asset Management Plans (AMPs) needed to be completed within three years of the date of agreement; November 2018.

Each AMP has the following key components:

- Asset Inventory and Condition Assessment
- Level of Service Determination
- Critical Assets (Risk)
- Revenue Structure
- Capital Improvement Plan

Part 1: Asset Inventory and Condition Assessment

The Village's wastewater system consists of three main components: The collection system (pipes and manholes), a pumping facility, and the wastewater stabilization lagoons (WWSL).

For the collection system, Spicer Group, Inc. completed conventual survey of the entire Village, and used the survey information to develop a comprehensive Geographic Information System (GIS). This GIS is located on a new computer in the Village Hall office. It is considered a detailed "smart" mapping system with databases, utilizing the ArcGIS/Arc Online platform by ESRI (Environmental Systems Research Institute). This system can be accessed and updated in the field by DPW staff from new iPads supplied as part of the SAW grant project. From the GIS, as-built plans, pipe/manhole condition ratings, materials, year installed, inspection records, CCTV (closed circuit television) pipe inspections etc. can be accessed. This information can also be queried to provide specific lists and maps and updated easily when future improvements are made.

The Village has approximately 24,068 feet (4.5 miles) of 8-inch vitrified clay gravity sewer, 4,015 feet (0.8 miles) of 6-inch ductile iron force main, and 97 manholes, serving approximately 280 active customers. The majority of the sanitary sewer system was constructed between 1971 and 1972. Plummer's Environmental Services (PES), located in Byron Center MI, completed a comprehensive cleaning and televising program of the sanitary sewer pipes, and Spicer Group, Inc. completed a comprehensive inspection of the manholes using NASSCO (National Association of Sewer Service Companies) Manhole/Pipeline Assessment Certification Program (MACP/PACP) standards to identify and code the observations/defects. The MACP/PACP system is used to standardize the scoring and to quantify the condition of the wastewater assets.

The second main component of the Village's wastewater system is the main pumping station, located at the intersection of Maple Avenue and Mill Street. Spicer Group, Inc. completed an inspection and condition assessment for the station and provided recommendations to the Village for future improvements.

The third main component of the Village's wastewater system is the wastewater stabilization lagoons (WWSL) located at the north end of Garfield Street. The WWSL consists of a lagoon system with three total lagoons. Spicer Group completed an inspection and assessment of the WWSL and recommended several improvements to the facility. The recommended improvement projects are that are included in the Capital Improvement Plan (CIP).

Part 2: Level of Service (LOS)

The next phase of the AMP is a Level of Service determination. What level of service does the City want to provide to its wastewater customers? How are projects going to be prioritized and included in the CIP? What cost is the City willing to endure to provide that level of service? These are all questions that were discussed as a part of the overall asset management plan. The City's Level of Service Statement/Goals are as follows:

> *The City of Manistee is committed to improving and maintaining the public health protection and performance of our wastewater system, while minimizing the long-term cost of operating those assets. We strive to make the most cost-effective renewal and replacement investments and provide the highest-quality customer service possible.*

LOS - Basic Goals:

- Ensure adequate system capacity to customers
- Operate and maintain the system to minimize service disruptions to customers
- Mitigate inflow/infiltration (I/I) entering the system, therefore reducing pumping and treatment costs
- Review operations & maintenance practices and capital improvement projects to determine the lowest cost options for our residents.

Level of Service criteria includes the following categories:

1. "MINIMUM" Level of Service
    - Priority projects to meet the minimum local, Stae, and/or Federal regulations.
    - Actions taken may maintain service life of asset
    - Typically, the least cost option
2. "MEDIUM" Level of Service
    - Projects completed as when other infrastructure projects are occuring or if monies become available earlier than anticipated
    - Actions taken can keep up with depreciation of asset
    - Asset's service life is maintained, and possibly improved
3. "HIGH" Level of Service
    - Projects that are forecasted long range, some of which the current asset may have a considerable amount of remaining useful life
    - Most proactive service level
    - Typically the greatest cost option

As the AMP progressed, different scenarios were evaluated, to determine the City's desired Level of Service based on project costs, associated LOS, and the implication to current and future sewer rates.

Part 3: Criticality (Risk)

For each asset in the Village's wastewater system, a criticality/risk analysis was performed to determine and prioritize the Village's key components. Risk is the product of the Likelihood of Failure (LoF) and Consequence of Failure (CoF), as shown below.

RISK = LoF x CoF

Likelihood of Failure (LoF) for sewer and manhole assets is primarily based on the physical condition of the asset as inspected in the field. The grading system is based on a scale of 1 -5. The lowest grade of 1 is an unlikely probability of failure, with the highest grade of 5 being imminent probability of failure. Based on the condition assessments and the field inspections, the Likelihood of Failure (LoF) was calculated for sewers, manholes, pump stations and lagoons. For those pipes and manholes which could not be inspected, and estimated LoF was determined. Table ES-1 and ES-2 provides a summary of the system as it relates to a low, medium, or high probability of failure of the mainline sanitary sewers in the system.

LoF – Sanitary Sewer and Manholes

Table ES-1: Likelihood of Failure (LoF) – Mainline Sanitary Sewers

LoF	Pipe Segments	Length	Percent
Low	1	240	1.0%
Medium	75	19,679	81.8%
High	18	4,150	17.2%
Total	94	24,068	100.0%

Table ES-2: Likelihood of Failure (LoF) – Sanitary Manholes

LoF	Pipe Segments	Percent
Low	3	3.2%
Medium	73	76.8%
High	19	20.0%
Total	95	100.0%

LoF - Pump Station and WWSL

Each of the assets at the Village of Maple Rapids pump station and WWSL were given a likelihood of failure score. The likelihood of failure score was based on the field condition score given, the remaining useful life of the asset, and comments from Village Staff. Table ES-3 shows a summary of the rating system.

Table ES-3: Likelihood of Failure (LoF) – Pump Stations & WWSL

Rating	Description
1	Very Low Probability
2	Not Likely – No maintenance issues so far
3	50/50 – Asset is passed its expected service life / some maintenance issues
4	Likely to Fail – Asset is passed expected service life / many recorded maintenance issues
5	Asset will fail soon
6	Asset has already failed

The pumps and the electrical and instrumentation within the Pump Station received a score of 3. This was mainly due to the age of the equipment. All other assets had a score of 2.

Generally, the assets at the WWSL were given a likelihood of failure score of 1 or 2. Some components were still operating fine but are close to the end of their expected service life. These included the following:

- The entrance drive
- The outfall headwall
- The original fencing and gates

No assets received a score higher than 2.

CoF – Sanitary Sewer, Manholes, Pump Station and WWSL

Next, the Consequence of Failure (CoF) was calculated and scored for each asset. The Consequence of Failure (CoF) is aggregating the empirical value associated with failure of an asset as it directly and indirectly pertains to social, environmental, and economic (cost) implications. Table ES-4 and ES-5 summarize the CoF failure scale grade and definitions for the collection system (pipes and manholes) and the pump stations / WWSL.

Table ES-4: Consequence of Failure (CoF) – Sewers & Manholes

Description	Grade	Failure of Asset
Catastrophic Disruption	6	Massive system failure - severe health effect, extensive damages, LOS severely compromised
Major Disruption	5	Major effect - major capacity loss, health effects, and costs, LOS compromised
Moderate to Major Disruption	4	Major effect - moderate to major loss of system capacity, costs, and health effects, LOS may be compromised
Moderate Disruption	3	Moderate effect - moderate loss of system capacity, health effects, and costs, LOS still achieved
Minor Disruption	2	Minor effect - minor capacity loss, costs, and health effects
Insignificant Disruption	1	Slight effect - slight loss of system capacity, minor health effects, minor costs

Table ES-5: Consequence of Failure (CoF) – Pump Stations & WWSL

Rating	Description
1	Inconvenience – Equipment is used but not essential to operation
2	OK – 100% redundant system / no issues if equipment fails during peak flows
3	Marginal – redundant systems can handle daily average flow / equipment can be down for a short time period
4	Bad – backup systems are not reliable / short down time will cause problems / high potential for flooding or permit violation
5	Very Bad – no backup systems / flooding or permit violation will happen
6	Catastrophic – lives will be lost

Risk – Sanitary Sewer and Manholes

Finally, the Risk was calculated for asset in the system. Table ES-6 and ES-7 provides a summary of the system as it relates to low, medium, or high-Risk prioritization for the mainline sanitary sewers and manholes in the system.

Table ES-6: Risk – Mainline Sanitary Sewers

Risk	Pipe Segments	Length	Percent
Low	31	8653.2	36.0%
Medium	61	15269.9	63.4%
High	2	145.1	0.6%
Total	94	24,068	100.0%

Table ES-7: Risk – Sanitary Manholes

Risk	Pipe Segments	Percent
Low	13	13.7%
Medium	79	83.2%
High	3	3.2%
Total	95	100.0%

Risk - Pump Station

The pump station within the Village of Maple sewer system is in the low range of the medium risk zone. The exterior of the station and the valves Risk was calculated to be Low Risk. The pumps, electrical/instrumentation, standby generator, and force main air release valves were considered Medium Risk. All other assets are on the border line of Low to Medium Risk. This is due to the high consequence of failure scores.

Risk - WWSL

Most assets at the WWSL are in the low to medium risk category. The entrance drive, fences and gates, flow control structure #1, and outfall headwall had a calculated Low Risk score. The Risk computed for all the lagoon berms, the remainder of the lagoon structures, and all of the buried piping at the facility was a 10, on the border of Low to Medium Risk. This is mainly due to the high consequence of failure scores they received.

Part 4: Capital Improvement Plan

The Capital Improvement Plan (CIP) is the culmination of all the parts of the Asset Management Plan (AMP). Reviewing the results of the wastewater system Inventory & Condition Assessment, Level of Service (LOS) determination, Criticality (Risk), Revenue Structure, and preliminary CIP project lists, a process was worked through to categorize and prioritize the final CIP. Various degrees of Level of Service and the associated CIP projects were evaluated and plugged into the Revenue Structure model, and the resulting sewer rates for that set of scenarios were reviewed. If the projected rates were too high, a lower LOS was chosen and those CIP projects were plugged into the Revenue Structure model and the resulting rates were then reviewed. The process then continued with different CIP projects at varying LOS's until an acceptable rate structure, level of service, and capital improvement plan was developed.

A 10-year CIP was developed that includes various wastewater system improvements including. The proposed improvements are summarized below:

Project	Payment	LOS	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
CIPP 9500 LFT of 8-inch sanitary sewer	Bond	Minimum								410,000			
Upgrade Control Panel	Bond	Minimum								35,000			
Upgrade Level Controls	Cash	Minimum						17,500					
New Pump Motors	Bond	Medium								22,000			
New Pumps	Bond	Medium								25,500			
Install Pump Station Flow Meter	Cash	Minimum		7,500									
Install Auto-dialer	Cash	Minimum	6,000										
Upgrade back-up pump building	Cash	High					6,000						
Paint Interior of PS drywell	Cash	High				4,500							
Valve replacement	Cash	Medium	7,500										
Sludge testing	Cash	High								5,000			
Replace Lagoon Outfall Headwall	Cash	Minimum			23,000								
TOTAL			13,500	7,500	23,000	4,500	6,000	17,500		497,500			

In total, $569,500 worth of projects are recommended. An additional $720,000 worth of lateral connection sealing is recommended however this is a high level of service with a low urgency. The Village also may need to expend $100,000 for sludge removal and $24,000 for gravel on the lagoon berm drives. The Village has deferred these projects until there is a greater need, cost and timing determined.

The largest number of projects and project costs will be occuring in or after 2026. The purpose of this is to allow for existing debt payment of a previous CIP project to sunset and free up revenue to support the identified projects in 2026.

Sanitary Sewer Improvements

1. **Cure in Place Pipe (CIPP) Lining. (Minimum to Medium Level of Service)**
   Description: CIPP Line the remaining sewers in the system which require CIPP that have not been completed in that past. There is currently 9,500 LFT of 8-inch sanitary sewer in the system that has not had trenchless rehabilitation performed.
   Cost: $410,000
   - This project will also include sewer spot repairs and sewer spot CIPP lining
   - The minimum cost of sewer rehabilitation is included in Item #2.

2. **Sewer Rehabilitation (Minimum Level of Service)**
   Description: Perform only required rehabilitation of defective sewers by CIPP lining.
   Cost: $263,750
   - Cost includes the minimum amount of sewer requiring rehabilitation identified through televising review
   - The project also includes limited sewer lateral sealing and sewer spot CIPP lining

Pump Station Improvements

3. **Upgrade Control Panel (Minimum Level of Service)**
   Description: Upgrade existing control panel inside of the drywell (can). Panel upgrades include electrical, logic for controls, pump starters, transfer switch for generator etc. The new control panel would be stainless / lockable / weatherproof / and explosion proof.
   Cost: $35,000.
   - Cost based on Spicer Group projects performed in the past 4 (four) years.

4. **Upgrade Level Controls (Minimum Level of Service)**
   Description: This project was driven by the age of the equipment. The level controls are past their useful life. The Installation date was approximately 1986.
   Cost: $17,500
   - Current system is an air-bubbler
   - Alternate choices include Pressure-Transducer with float backup system or Ultrasonic with a float backup system.
   - Spicer recommends a Pressure-Transducer with float backup system

5. **New Pump Motors (Medium Level of Service)**
   Description: This project was driven by the age of the equipment. The pump motors are past their useful life. Replacement of pump motors is typically 20 years. The Installation date was approximately 1986.
   Cost: $22,000
   - Current Pump Motors are Allis-Chalmers

6. **New Pumps (Medium Level of Service)**
   Description: This project was driven by the age of the equipment. The pumps are past their useful life. Replacement of pumps is typically 20 years. The Installation date was approximately 1986.
   Cost: $25,500
   - Costs are in line with removal and replacement of 2 (two) 10hp dry-pit vertical centrifugal pumps.
   - Current Pumps are Allis-Chalmers

7. **Replace Pump Station Flow Meter (Minimum Level of Service)**
   Description: Existing flow meter is not in operation. Replace with magnetic flowmeter
   Cost: $7,500
   - Recommended manufacturers include: ABB, Emerson/Rosemount, Foxboro, and Krone

8. **Install Auto-dialer (Minimum Level of Service)**
   Description: Install Auto-dialer to supplement the current light alarm by contacting Village and DPW staffing
   Cost: $6,000
   - $1,500 Auto-Dialer
   - $1,000 New Phone Service
   - $1,000 Wiring for various alarms / sensors (low water alarm, high water alarm, pump seal failure, sump pump failure, pump over temperature)
   - $2,500 Labor/Install by licensed electrician

9. **Upgrade Back-up Pump Building (High Level of Service)**
   Description: Improvements could include the following:
   - New ventilation system. Remove existing wood doors that open to induce air flow with a louver
   - Paint interior drywall
   - Paint exterior wood siding or reside with vinyl siding
   - Paint exterior exhaust piping

   Cost: $6,000

10. **Paint Drywell Interior (High Level of Service)**
    Description: Paint / Coat the drywell floor. The interior walls are in good to fair condition
    Cost: $4,500

11. **Replace Valves (Medium Level of Service)**
    Description: Remove and Replace Pump Station valves
    Cost: $7,500

Lagoon Improvements

12. **Sludge Testing**
    Description: Sludge will be tested to determine approximate volume, location, and heavy metal contamination. A Residual Management Plan (RMP) will be prepared and submitted to the MDEQ.
    Cost: $23,000
    - Residual Management Plan (RMP) will be developed and submitted to the MDEQ under the Village's current COC permit

13. **Replace Lagoon Outfall Headwall (Minimum Level of Service)**
    Description: Erosion around the existing headwall has forced the last section of pipe and attached headwall to detach itself.
    Cost: $23,000
    - Remove failed pipe and headwall
    - Stabilize soil and replace pipe and headwall
    - Install animal guard

Annual O&M Recommendations

14. **Sewer Cleaning and Televising Program. (Minimum Level of Service)**
    Description: Clean and Televise the entire collection system within a 15 year rotation.
    Cost: $75,000

Part 5: Revenue Structure

Spicer Group teamed with Municipal Analytics for the revenue structure analysis for the AMP. Wastewater account balances, expenditures, revenues, etc. were reviewed and inputted into Municipal Analytics financial software to determine if there were any deficiencies in the rates. The Village's current rate structure was found to have no deficiencies.

Next, the Capital Improvement Plan (CIP) projects were evaluated and allocated to various years of completion, and the rate structure to support those improvements was determined. Many iterations/scenarios were performed to come up with a rate structure that met the Village's Level of Service goals, and address CIP needs. The result was a recommendation for an annual increase of $3.00 to the Village's sanitary sewer rates.

The Village adopted the recommended rate structure with resolution of Ordinance No. 85 on November 7th, 2018. The yearly sewer rates charged on a quarterly basis are summarized below in Table ES-8. This should be reviewed annually as a part of the Village's normal budgeting process.

Table ES-8: The Adopted 10-Year Annual Sewer Rates

Current	Jan 19	Jan 20	Jan 21	Jan 22	Jan 23	Jan 24	Jan 25	Jan 26	Jan 27	Jan 28	Jan 29
$64.00	$67.00	$70.00	$73.00	$76.00	$79.00	$82.00	$85.00	$88.00	$91.00	$94.00	$97.00

Conclusion

The Village of Maple Rapid's wastewater system is a typical, aging municipal infrastructure system. The DPW staff have completed routine operation and maintenance of the components, and the system is in relatively good shape. There are a few areas that need attention, and there are many areas that can be monitored and left alone for years to come. A $3.00 annual rate increase is recommended to cover the planned operating expenses, capital improvement projects, and inflation for the next ten years. This should be reviewed annually during the Village's normal budgeting process.

In accordance with the SAW Grant requirements, the Village's Wastewater Asset Management Plan (WWAMP) needs to be kept available for citizen review for 15 years. The WWAMP should be reviewed annually, and the components updated and included in the Village's annual budget process.

Department of Environmental Quality (DEQ)
Stormwater, Asset Management, and Wastewater (SAW) Grant
Wastewater Asset Management Plan
Certification of Project Completeness

Completion Date November 30, 2018
(no later than 3 years from executed grant date)

The Village of Maple Rapids *(legal name of grantee)* certifies that all wastewater asset management plan (AMP) activities specified in SAW Grant No. 1059-0 have been completed and the implementation requirements, per Part 52 of the Natural Resources and Environmental Protection Act, 1994, PA 451, as amended, are being met. Section 5204e(3) requires implementation of the AMP and that significant progress toward achieving the funding structure necessary to implement the AMP be made within 3 years of the executed grant.

Please answer the following questions. If the answer to Question 1 is No, fill in the date of the rate methodology approval letter and skip Questions 2-4:

1) Funding Gap Identified: Yes or (No)
   If No - Date of the rate methodology approval letter: May 2018.
2) Significant Progress Made: Yes or No
   (The DEQ defines significant progress to mean the adoption of an initial rate increase to meet a minimum of 10 percent of any gain in revenue needed to meet expenses, as identified in a 5-year plan to eliminate the gap. A copy of the 5-year plan to eliminate the gap must be submitted with this certification.)
3) Date of rate methodology review letter identifying the gap: _____.
4) An initial rate increase to meet a minimum of 10 percent of the funding gap identified was adopted on _____.

Attached to this certification is a brief summary of the AMP that includes a list of major assets. Copies of the AMP and/or other materials prepared through SAW Grant funding will be made available to the DEQ or the public upon request by contacting:

Daryl Trefil, Village President	at 517-930-3200,	trefild@fultonpirates.net
Name	Phone Number	Email

Daryl J. Trefil 11/27/18

Signature of Authorized Representative (Original Signature Required) Date

Daryl Trefil, Village President

Print Name and Title of Authorized Representative

VILLAGE OF MAPLE RAPIDS
SAW Grant Project No. 1059-1

EXECUTIVE SUMMARY

Prepared by: **SPICER GROUP, INC.**
1400 Zeeb Drive
St. John's MI, 48879

Owner: **VILLAGE OF MAPLE RAPIDS**
118 West Adelaide Street
Maple Rapids, MI 48853
(989) 682-9227
Daryl Trefil, Village President

On November 24, 2015, the Village of Maple Rapids entered into an agreement with the Michigan Finance Authority for grant funds issued under Public Act No. 511 of 2012 for the *Stormwater, Asset Management, and Stormwater (SAW)* program. The Village received the follow grants:

Stormwater Asset Management Plan (SWAMP) – 90% Grant	***$153,000***
Stormwater Asset Management Plan (SWAMP) – 100% Grant*	$260,000
Eligible Cost Subtotal	$413,000
LESS Local Match	($15,300)
Total Grant Amount	$397,700

*Disadvantaged for Stormwater Asset Management Plan; no local match required

The Asset Management Plans (AMPs) needed to be completed within three years of the date of agreement; November 2018.

Each AMP has the following key components:

- Asset Inventory and Condition Assessment
- Level of Service Determination
- Critical Assets (Risk)
- Capital Improvement Plan
- Revenue Structure

Part 1: Stormwater Asset Inventory and Condition Assessment

For the Village's stormwater collection system, Spicer Group, Inc. completed conventual survey of the entire Village. The survey information, in conjunction with Village as-builts, was utilized to develop a comprehensive Geographic Information System (GIS) including all stormwater assets (manholes, catch basins, stormwater outfalls, etc.). From the GIS, as-built plans, pipe/manhole condition ratings, materials, year installed, inspection records, CCTV video inspections, ownership information etc. can be accessed. This information can also be queried to provide specific lists and maps and updated easily when future improvements are made.

The GIS information is located on a new computer in Village Hall and is a detailed "smart" mapping system with databases. The Village is employing ArcMap software from ESRI as the backbone of the GIS system. The Village is currently operating with ArcGIS Online from ESRI to access the information online. This system can be accessed and updated in the in the office via computer, or the field by Village staff with new iPads supplied as part of the SAW grant project.

The Village's stormwater collection system is approximately 6,254 feet (1.2 miles) in length and consists of storm sewer pipes ranging in diameter size from 6-inch to 18-inch. The storm sewer pipes consist of mainline sewer, catch basin leads, and culverts. In addition, the Village has approximately 43 structures consisting of manholes, catch basins, and leaching basins. A summary of the Village's storm sewer pipes by diameter and length is included in Table ES-1.

Table ES-1: Village - Stormwater Pipes by Diameter and Material

Diameter	Number of Pipes	Percent	Length(ft)
6"	16	2,673	42.7%
8"	9	1,686	27.0%
10"	1	123	2.0%
12"	6	1,294	20.7%
15"	1	93	1.5%
18"	1	39	0.6%
TOTAL	37	6,254	100.0%

The Village's storm sewers discharge into the Maple River. There is one County Drain, Peck Drain, which runs through the Village and conveys stormwater to the Maple River as well.

Plummer's Environmental Services (PES), located, in Byron Center MI, completed a comprehensive cleaning and televising program of the storm sewer pipes. The condition assessment was completed in NASSCO's (National Association of Sewer Service Companies) Pipeline Assessment Certification Program (PACP) standards.

Spicer Group completed a comprehensive inspection of the manholes. Manholes were inventoried and assessed manually or by use of remote inspection equipment which was deployed from the ground surface. The condition assessment was completed in NASSCO's Manhole Assessment Certification Program (MACP) standards.

Part 2: Level of Service (LOS)

The next phase of the AMP is a Level of Service determination. What level of stormwater service does the Village want to provide to its residents? How are projects going to be prioritized and included in the CIP? What cost is the Village willing to endure to provide that level of service? These are all questions that were discussed as a part of the overall asset management plan. The Village's Level of Service Statement/Goals are as follows:

> *The Village of Maple Rapids strives to maintain a basic stormwater collection system that addresses the residents' wants and needs and upholds the local, State, and Federal regulatory requirements at a minimum cost to our residents.*
>
> LOS - Basic Goals:
>
> - Operate and maintain the stormwater system to minimize flooding and property damage.
> - Review the condition of stormwater assets as a part of other infrastructure construction projects.
> - Seek a funding source for operation & maintenance and repair/replacement of stormwater assets.
> - Review the maintenance and capital improvement plans/projects annually to determine the lowest cost options for our residents.

Level of Service criteria includes the following categories:

1. "MINIMUM" Level of Service
    - Address resident complaints as they come in.
    - Rehabilitation to storm sewers or structures (manholes, catch basins) with isoloated structural deficiencies
2. "MEDIUM" Level of Service
    - Rehabilitation of storm sewers with significant structural and/or operations deficiencies involving trenchless rehabilitation (CIPP/CIPM Lining)
    - Replacement of existing storm sewers or structures which cannot be rehabilitated by trenchless means
3. "HIGH" Level of Service
    - Address areas in the Village with historic flooding or drainage issues
    - Increase capaVillage of existing stormwater infrastructure

Generally, the "high" level of service projects will have a higher construction/initial cost but would provide a better long-term or life cycle cost for the Village. The "minimum" level of service projects would address the immediate concerns that residents bring to the Village's attention as well as placing emphasis on the rehabilitating those structures and sewer pipes in need of limited repair that would generally be of a lower construction cost.

The Village will deliberate the findings and recommendations from the SAW to solidify the desired Level of Service, based upon the criteria above. Since there is no funding mechanism for stormwater assets currently, the Village has been maintaining a *Minimum* Level of Service, due to financial constraints.

Part 3: Criticality (Risk)

For each asset in the Village's stormwater system, a criticality/risk analysis was performed to determine and prioritize the Village's stormwater components. The components evaluated include the pipes (sewers) and manholes. Risk is the product of the Likelihood of Failure (LoF) and Consequence of Failure (CoF), as shown below.

RISK = LoF x CoF

Likelihood of Failue (LoF) is the structural and physical condition assessment of the asset. Based on the field inspections and condition assessment, a resulting the Likelihood of Failure (LoF) was calculated for each pipes and manholes.

The grading system for these assets are on NASSCO's PACP (pipes) and MACP (manholes). The grading system is based on a scale of 1 -5. The lowest grade of 1 is an unlikely probability of failure, with the highest grade of 5 being imminent probability of failure. Table ES-2 and Table ES-3 provide a summary of the system as it relates to a low, medium, or high probability of failure of the mainline sewers and manholes in the system.

Table ES-2: Likelihood of Failure (LoF) - Mainline Sanitary Sewers

LoF	Pipe Segments	Length	Percent
Low	0	0	0.0%
Medium	23	4,037	64.5%
High	14	2,217	35.5%
Total	37	6,254	100.0%

Table ES-3: Likelihood of Failure (LoF) - Manholes

LoF	No. of Manholes	Percent
Low	1	2.3%
Medium	40	93.0%
High	2	4.7%
Total	43	100.0%

Next, the Consequence of Failure (CoF) was calculated and scored for each asset. The Consequence of Failure (CoF) is aggregating the empirical value associated with failure of an asset as it directly and indirectly pertains to social, environmental, and economic (cost) implications. Table ES-4 summarize the CoF failure scale grade and definitions for the collection system (pipes and manholes).

Table ES-4: Consequence of Failure (CoF) – Sewers & Manholes

Description	Grade	Failure of Asset
Catastrophic Disruption	6	Massive system failure - severe health effect, extensive damages, LOS severely compromised
Major Disruption	5	Major effect - major capacity loss, health effects, and costs, LOS compromised
Moderate to Major Disruption	4	Major effect - moderate to major loss of system capacity, costs, and health effects, LOS may be compromised
Moderate Disruption	3	Moderate effect - moderate loss of system capacity, health effects, and costs, LOS still achieved
Minor Disruption	2	Minor effect - minor capacity loss, costs, and health effects
Insignificant Disruption	1	Slight effect - slight loss of system capacity, minor health effects, minor costs

Finally, the Risk was calculated for each asset in the system. Table ES-5 and ES-6 provides a summary of the system as it relates to low, medium, or high-Risk prioritization for the pipes and manholes in the system. Table ES-8 and Table ES-9 provide a summary of the system as it relates to a low, medium, or high probability of failure of the mainline sewers and manholes in the system.

Table ES-5: Risk – Mainline Sanitary Sewers

Risk	Pipe Segments	Length	Percent
Low	11	1,884	30.1%
Medium	23	3,844	61.5%
High	3	527	8.4%
Total	37	6,254	100.0%

Table ES-6: Risk – Manholes

Risk	No. of Manholes	Percent
Low	5	11.6%
Medium	30	69.8%
High	8	18.6%
Total	43	100.0%

Part 4: Capital Improvement Plan

The Capital Improvement Plan (CIP) is the culmination of all the parts of the Asset Management Plan (AMP). Reviewing the results of the storm water system Inventory & Condition Assessment, Level of Service (LOS) determination, Criticality (Risk), Revenue Structure, and preliminary CIP project lists, a process was worked through to categorize and prioritize the final CIP. The resulting CIP plan includes the following projects:

1. Storm Sewer Cleaning and Televising Program
   Level of Service - Minimum to Medium
   Construction Cost - $40,000 to $60,000

   Create a long-term storm sewer cleaning and televising program. The frequency of this program should be every 10 to 15 years. Assets should include any storm sewer piping (culverts, mainline storm sewer, catch basin leads)

2. Storm Sewer Rehabilitation
   Level of Service - Minimum to Medium
   Construction Cost - $320,000

   Recommendations for rehabilitation are included on Table ES-7 below for the storm sewer televised in the SAW which exhibited structural deficiencies. Construction costs do not include contingency or engineering fees.

Table ES-7: Storm Sewer Rehabilitation Costs

PSR (Pipe)	Street	US MH	DS MH	Diam. (in)	Length	Rehab Option Selected	Selected Rehab Cost
5010	Main St.	110	210	15	93	Suggested	$931
5020	Main St.	120	1420	12	305	CIPP	$12,797
5030	Main St.	1420	130	12	433	Suggested	$4,330
5080	Main St.	1170	1180	8	133	Suggested	$15,723
5090	Main St.	2000	1230	10	123	Suggested	$18,167
6000	Main St.	1230	1250	12	183	Replace	$54,960
6010	Main St.	1250	240	12	220	Replace	$66,030
6030	Main St.	1440	1220	6	265	Suggested	$2,647
6040	Main St.	1220	1240	8	182	Suggested	$10,000
6050	Main St.	1290	1270	6	415	Suggested	$4,150
6070	Main St.	1300	1280	8	70	Replace	$20,880
6080	Main St.	1280	260	8	335	Suggested	$20,000
7000	Main St.	1240	1260	8	287	Replace	$86,100
8010	Main St.	1340	1430	6	333	Suggested	$3,329
						Total:	**$320,000**

3. Annual Operations and Maintenance
   We recommended the Village consider incorporation of sufficient funds for the annual operations and maintenance budget for the following O&M activities.

   1. Catch Basin and Manhole Cleaning. ($2,000 - $3,000)
      a. 43 structures in the system
      b. Assume $50 to $70 / Structure to Clean

   2. Maintenance of GIS software system ($1,500 - $2,000)
      a. Revisions to GIS system and feature attributes
      b. Update collection system maps based on GIS revisions
      c. Work can be performed by the Village or 3rd Party

   3. Training and Development ($1,500)
      a. NASSCO PACP/MACP/LACP certification for pipe and manhole assessment
      b. NASSCO certification lasts 3 years, then the user must be recertified

Part 5: Revenue Structure

Spicer Group teamed with Municipal Analytics for the stormwater funding analysis. The primary goal of the study was to determine the financial resources available to fund the capital and operating costs of the Village's stormwater system, as identified in the Asset Management Plan (AMP) and Capital Improvement Plan (CIP) developed by Spicer Group.

In summary, the Village has limited financial resources to fund capital investments in the stormwater system. Any money used to pay for stormwater system maintenance will reduce the funds available to maintain and improve Village streets. Of the existing funds operated by the Village, the General Fund, Major Streets Fund, and Local Streets Fund are the primary stormwater funding options available. The Major and Local Streets funds are expected to have only minimal capacity for additional outlays for stormwater, and the Village's General Fund is forecasted to operate at a loss each year without any expenditures for stormwater maintenance. These financial realities restrict any ability to invest in capital improvements in the Maple Rapids stormwater system.

The Village is encouraged to include in future budgets, funds designated for stormwater maintenance. Annually, the financial forecasting model developed for the Village by Municipal Analytics should be reviewed and updated to understand the projected finances in each of the included funds. Village leaders should work to identify funding options for the future potential capital needs in the stormwater system.

Conclusion

The Village of Maple Rapids stormwater system is a typical, aging municipal infrastructure system. Since there has been no funding mechanism for stormwater assets, the Village had been maintaining a Minimum Level of Service for its residents. At this time, the CIP projects have not been included into the current fiscal year budget or forecasted in future FY's. The Village will evaluate where these projects should be included in future FY's when funding becomes available.

In accordance with the SAW Grant requirements, the Village's Stormwater Asset Management Plan (SWAMP) needs to be kept available for citizen review for 15 years. The SWAMP should be reviewed annually, and the components updated and included in the Village's annual budget process.

Department of Environmental Quality
SAW Grant
Stormwater Asset Management Plan
Certification of Project Completeness

Completion Due Date November 30, 2018
(no later than 3 years from executed grant date)

The Village of Maple Rapids *(legal name of grantee)* certifies that all stormwater asset management plan (SWAMP) activities specified in SAW Grant No. 1059-0 have been completed and the SWAMP, prepared with the assistance of SAW Grant funding, is being maintained. Part 52 of the Natural Resources and Environmental Protection Act, 1994, PA 451, as amended, requires implementation of the SWAMP within 3 years of the executed grant (Section 5204e(3)).

Attached to this certification is a summary of the SWAMP that identifies major assets. Copies of the SWAMP and/or other materials prepared through SAW Grant funding will be made available to the Department of Environmental Quality or the public upon request by contacting:

Daryl Trefil, Village President	at 517-930-3200,	trefild@fultonpirates.net
Name	Phone Number	Email

Signature of Authorized Representative (Original Signature Required) — Date: 11/27/18

Daryl Trefil, Village President
Print Name and Title of Authorized Representative

APPENDIX C

Sanitary Sewer CCTV Inspection Report

WinCan

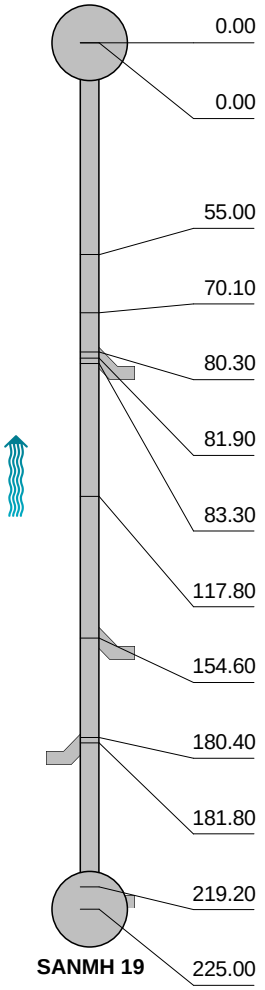
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/6/2016	**01**	**Dry**	**Andrew**	**U-914-06021529**	**3010**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Upstream**	**0.0**	**225.0**	**225.0**

City :		Drainage Area :		Upstream MH :	**SANMH 19**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 18**
Location Details :		Sheet Number :	**1**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :



1:1966 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 18	00:00:00		
0.00	MWL	Water Level	00:00:00		
55.00	RMJ	Roots Medium Joint, from 08 to 04 o'clock, within 8 inch	00:00:06		M3
70.10	MWLS	Water Level, Sag in pipe	00:00:08		
80.30	RMJ	Roots Medium Joint, at 08 o'clock, within 8 inch	00:00:09		M3
81.90	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim	00:00:09		
83.30	MWLS	Water Level, Sag in pipe	00:00:10		
117.80	RMJ	Roots Medium Joint, from 02 to 04 o'clock, within 8 inch	00:00:15		M3
154.60	TFA	Tap Factory Made Active, at 10 o'clock, 6 inch dim	00:00:20		
180.40	RMJ	Roots Medium Joint, at 04 o'clock, within 8 inch	00:00:23		M3
181.80	TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim	00:00:23		
219.20	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim	00:00:26		
225.00	AMH	Manhole / SAN MH 19	00:00:27		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	3400	0.0	12.0	12.0	0.0	3.0	3.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Poplar St**	**10/6/2016**	**3010**	**01**

3010_7c952435-0032-4a42-80a6-958e4892ad7c.jpg, 00:00:00, 0.00
Water Level

3010_751128d3-42f6-48c3-9afd-b3003edf7118.jpg, 00:00:06, 55.00
Roots Medium Joint, from 08 to 04 o'clock, within 8 inch

3010_63e467a3-424c-4770-a06d-634772caeca7.jpg, 00:00:08, 70.10
Water Level, Sag in pipe

3010_96e0badc-32bc-4bb3-b9bc-9b9ac733ed29.jpg, 00:00:09, 80.30
Roots Medium Joint, at 08 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Poplar St**	**10/6/2016**	**3010**	**01**

3010_6247a8b1-8071-4e8a-bd7d-95b08b3a3be1.jpg, 00:00:09, 81.90
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3010_ca52b791-b218-4710-b76c-161c7b6f11d1.jpg, 00:00:10, 83.30
Water Level, Sag in pipe

3010_50f36518-9c29-4c5a-ac56-9af001ea76bc.jpg, 00:00:15, 117.80
Roots Medium Joint, from 02 to 04 o'clock, within 8 inch

3010_28f04f93-77b3-4ebf-9b60-ee962aa2b304.jpg, 00:00:20, 154.60
Tap Factory Made Active, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Poplar St**	**10/6/2016**	**3010**	**01**

3010_42314b01-3a76-43fe-84ee-9549a578888e.jpg, 00:00:23, 180.40
Roots Medium Joint, at 04 o'clock, within 8 inch

3010_c9272ac5-5b67-4d90-9f01-f911c336ca44.jpg, 00:00:23, 181.80
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

3010_262b5cf4-236c-4fd3-bebf-8b4da6551b76.jpg, 00:00:26, 219.20
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3010_17a36f3d-658f-45f7-9a61-6809dc287b27.jpg, 00:00:27, 225.00
Manhole

WinCan

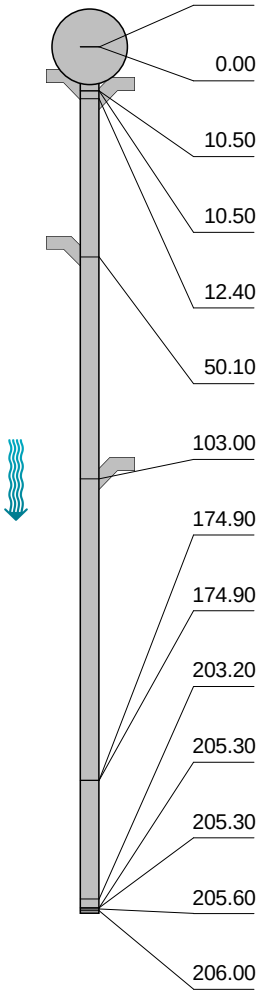
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3100**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**207.3**	**207.3**

City :		Drainage Area :		Upstream MH :	**SANMH 25**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 12**
Location Details :		Sheet Number :	**23**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :

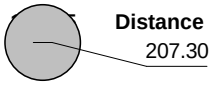


1:1805 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 25	00:00:00		
0.00	MWL	Water Level	00:00:00		
10.50	TFD	Tap Factory Made Defective, at 03 o'clock, 6 inch dim / capped lateral has major infiltration	00:00:02		M2
10.50	IR	Infiltration Runner, at 03 o'clock / from capped lateral	00:00:03		M4
12.40	TFC	Tap Factory Made Capped, at 09 o'clock, 6 inch dim / infiltration stains and encrustation from capped lateral	00:00:05		
50.10	TF	Tap Factory Made, at 03 o'clock, 6 inch dim	00:00:08		
103.00	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:14		
174.90	IS	Infiltration Stain, from 08 to 04 o'clock, within 8 inch	00:00:21		M4
174.90	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:21		M2
203.20	MWLS	Water Level, Sag in pipe	00:00:24		
205.30	JSM	Joint Separated Medium	00:00:25		S1
205.30	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:25		M2
205.60	IS	Infiltration Stain, from 08 to 04 o'clock, within 8 inch	00:00:26		M4
206.00	FC	Fracture Circumferential, from 04 to 06 o'clock, within 8 inch	00:00:27		S2

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3100**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**207.3**	**207.3**



SANMH 12

Distance	Code	Observation	Counter	Photo	Grade
207.30	AMH	Manhole / SAN MH 12	00:00:29		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
2111	4323	3.0	18.0	21.0	1.5	3.0	2.6

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Berkhousen St**	**10/11/2016**	**3100**	**01**

3100_0d1c0256-cf5a-4922-b386-0cb665322655.jpg, 00:00:02, 10.50
Tap Factory Made Defective, at 03 o'clock, 6 inch dim

3100_78877973-cdc6-42a0-bffa-56d600a3be76.jpg, 00:00:03, 10.50
Infiltration Runner, at 03 o'clock

3100_01d15003-ecdc-4a04-a77e-02e4276afe36.jpg, 00:00:05, 12.40
Tap Factory Made Capped, at 09 o'clock, 6 inch dim

3100_88244146-1b3b-47df-af96-837b674a9958.jpg, 00:00:08, 50.10
Tap Factory Made, at 03 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Berkhousen St**	**10/11/2016**	**3100**	**01**

3100_684e3001-691f-4785-93d0-4102ed4fc4cf.jpg, 00:00:14, 103.00
Tap Factory Made, at 10 o'clock, 6 inch dim

3100_a5f4d119-d8fa-499c-9fef-dd2f408cc66b.jpg, 00:00:21, 174.90
Infiltration Stain, from 08 to 04 o'clock, within 8 inch

3100_126885b8-b118-4739-8b7d-63b0c551ba99.jpg, 00:00:21, 174.90
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

3100_9653e56d-d8da-48c3-9c63-70001441afb8.jpg, 00:00:24, 203.20
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Berkhousen St**	**10/11/2016**	**3100**	**01**

3100_ef589ddb-4e97-4021-b9f2-20ec6e2626ca.jpg, 00:00:25, 205.30
Joint Separated Medium

3100_1f3d131f-cb32-4f3e-aae5-099d3a2d31aa.jpg, 00:00:25, 205.30
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

3100_be809c78-c976-488b-93fe-8730951ef095.jpg, 00:00:26, 205.60
Infiltration Stain, from 08 to 04 o'clock, within 8 inch

3100_5f6b24e2-a924-4add-966b-d66c8fe27095.jpg, 00:00:27, 206.00
Fracture Circumferential, from 04 to 06 o'clock, within 8 inch

WinCan

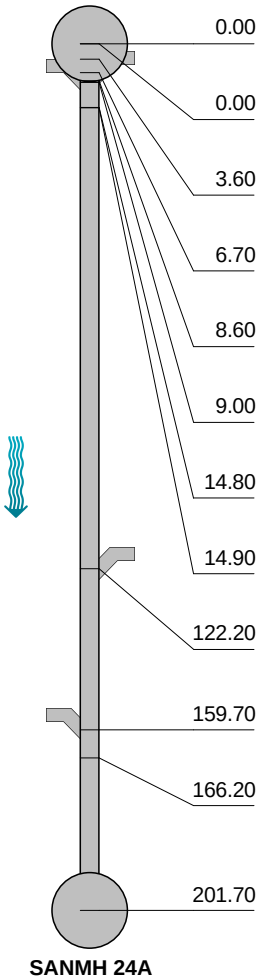
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3120**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**201.7**	**201.7**

City :		Drainage Area :		Upstream MH :	**SANMH 24**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 24A**
Location Details :		Sheet Number :	**24**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :



1:1762 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 24	00:00:00		
0.00	MWL	Water Level	00:00:00		
3.60	FC	Fracture Circumferential, from 12 to 12 o'clock	00:00:01		S2
6.70	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:06		
8.60	TFC	Tap Factory Made Capped, at 03 o'clock, 6 inch dim	00:00:06		
9.00	DSZ	Deposits Settled Other, at 06 o'clock / ashpalt	00:00:08		M2
14.80	RFJ	Roots Fine Joint, at 08 o'clock, within 8 inch	00:00:11		M1
14.90	FL	Fracture Longitudinal, at 05 o'clock, within 8 inch	00:00:12		S3
122.20	TF	Tap Factory Made, at 11 o'clock, 6 inch dim	00:00:22		
159.70	TFA	Tap Factory Made Active, at 03 o'clock, 6 inch dim	00:00:27		
166.20	CL	Crack Longitudinal, at 05 o'clock, within 8 inch	00:00:28		S2
201.70	AMH	Manhole / SAN MH 24A	00:00:33		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3122	2111	7.0	3.0	10.0	2.3	1.5	2.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple St**	**10/11/2016**	**3120**	**01**

3120_b258ade0-c589-4721-a85f-1f38e4a9b977.jpg, 00:00:01, 3.60
Fracture Circumferential, from 12 to 12 o'clock

3120_a82aec60-b12a-495e-be0b-0764d502d342.jpg, 00:00:06, 6.70
Tap Factory Made, at 10 o'clock, 6 inch dim

3120_4fd40679-8bb7-41c0-880f-5f40e0fc5836.jpg, 00:00:06, 8.60
Tap Factory Made Capped, at 03 o'clock, 6 inch dim

3120_48a35921-f667-4afa-bf75-a0f8ddce0925.jpg, 00:00:08, 9.00
Deposits Settled Other, at 06 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple St**	**10/11/2016**	**3120**	**01**

3120_22a49c61-1520-4352-afe6-b94d8852a813.jpg, 00:00:11, 14.80
Roots Fine Joint, at 08 o'clock, within 8 inch

3120_1903ecb3-9165-4d92-ac8b-10d537d11756.jpg, 00:00:12, 14.90
Fracture Longitudinal, at 05 o'clock, within 8 inch

3120_fb4e99b9-5c24-439a-b064-33bf75a14cae.jpg, 00:00:22, 122.20
Tap Factory Made, at 11 o'clock, 6 inch dim

3120_a5146c70-94aa-4adb-b413-77b141f4fe4f.jpg, 00:00:27, 159.70
Tap Factory Made Active, at 03 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple St**	**10/11/2016**	**3120**	**01**

3120_473d7112-31cc-4f3e-9252-d5c1a0e9851c.jpg, 00:00:28, 166.20
Crack Longitudinal, at 05 o'clock, within 8 inch

WinCan

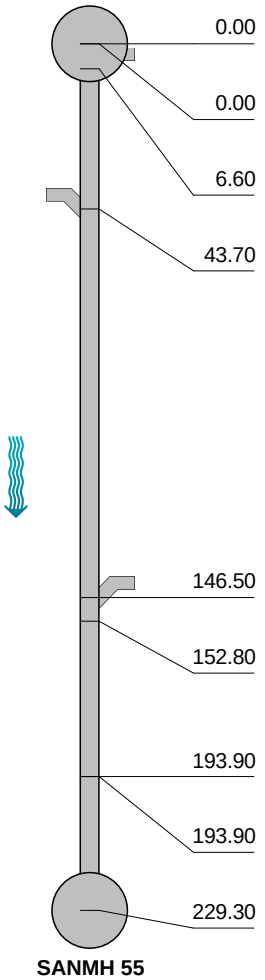
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3150**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**229.3**	**229.3**

City :		Drainage Area :		Upstream MH :	**SANMH 56**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 55**
Location Details :		Sheet Number :	**26**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :



1:2003	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / SAN MH 56	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	6.60	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:01		
	43.70	TF	Tap Factory Made, at 01 o'clock, 6 inch dim	00:00:05		
	146.50	TF	Tap Factory Made, at 10 o'clock, 6 inch dim / fernco failure	00:00:15		
	152.80	MGO	General Observation / chipped at joint	00:00:16		
	193.90	FM	Fracture Multiple, from 10 to 02 o'clock	00:00:20		S4
	193.90	RFB	Roots Fine Barrell, at 12 o'clock	00:00:21		M2
	229.30	AMH	Manhole / SAN MH 55	00:00:25		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	2100	4.0	2.0	6.0	4.0	2.0	3.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Cook St**	**10/11/2016**	**3150**	**01**

3150_34b722db-7e43-490b-a56b-06238c6aea6d.jpg, 00:00:01, 6.60
Tap Factory Made, at 10 o'clock, 6 inch dim

3150_36e81095-618b-4b7d-9da4-26e8bd726a25.jpg, 00:00:05, 43.70
Tap Factory Made, at 01 o'clock, 6 inch dim

3150_ef68d233-48c2-4366-ad99-9fc3a3ab8c41.jpg, 00:00:15, 146.50
Tap Factory Made, at 10 o'clock, 6 inch dim

3150_000312c5-4934-418f-bc74-b2a220901f2e.jpg, 00:00:16, 152.80
General Observation

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Cook St**	**10/11/2016**	**3150**	**01**

3150_6bbd1b71-ce94-4394-b229-f422db4be8c7.jpg, 00:00:20, 193.90
Fracture Multiple, from 10 to 02 o'clock

3150_f9af32aa-a18d-4a01-89bb-44ed3bcf4750.jpg, 00:00:21, 193.90
Roots Fine Barrell, at 12 o'clock

WinCan

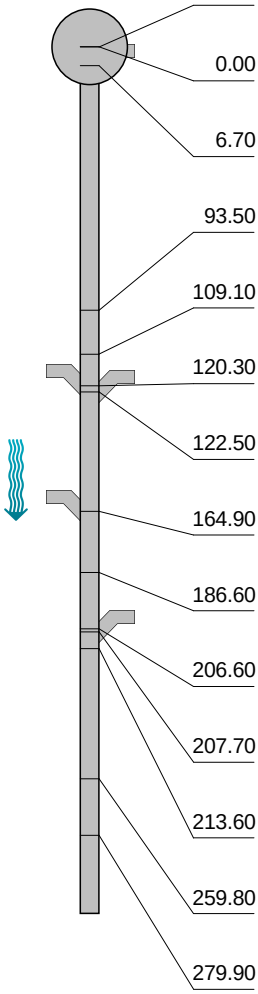
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3180**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Heavy Cleaning	**Downstream**	**0.0**	**382.3**	**382.3**

City :		Drainage Area :		Upstream MH :	**SANMH 58**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 54**
Location Details :		Sheet Number :	**5**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info : **Root Cut**

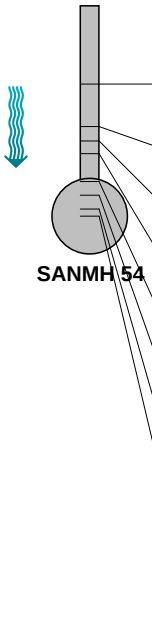


1:2687	Distance	Code	Observation	Counter	Photo	Grade
SANMH 58	0.00	AMH	Manhole / MH 58	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	6.70	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:01		
	93.50	RMJ	Roots Medium Joint, from 12 to 06 o'clock, within 8 inch	00:00:08		M3
	109.10	RFJ	Roots Fine Joint, from 07 to 05 o'clock, within 8 inch	00:00:09		M1
	120.30	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:11		
	122.50	TF	Tap Factory Made, at 10 o'clock, 6 inch dim / roots in lateral connection	00:00:11		
	164.90	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:14		
	186.60	FC	Fracture Circumferential, from 04 to 08 o'clock, within 8 inch	00:00:17		S2
	206.60	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:19		M3
	207.70	TF	Tap Factory Made, at 10 o'clock, 6 inch dim / roots in lateral	00:00:20		
	213.60	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:21		M3
	259.80	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:24		M3
	279.90	B	Broken, from 05 to 12 o'clock, within 8 inch	00:00:26		S5

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3180**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Heavy Cleaning	**Downstream**	**0.0**	**382.3**	**382.3**



1:2687 Distance	Code	Observation	Counter	Photo	Grade
335.40	FC	Fracture Circumferential, from 02 to 05 o'clock, within 8 inch	00:00:30		S2
350.50	RFJ	Roots Fine Joint, from 08 to 04 o'clock, within 8 inch	00:00:31		M1
355.60	RFJ	Roots Fine Joint, from 09 to 03 o'clock, within 8 inch	00:00:33		M1
360.10	RFJ	Roots Fine Joint, at 12 o'clock, within 8 inch	00:00:33		M1
370.00	RMJ	Roots Medium Joint, from 08 to 04 o'clock, within 8 inch	00:00:34		M3
374.90	MWLS	Water Level, Sag in pipe	00:00:35		
379.80	DAE	Deposits Attached Encrustation, at 05 o'clock	00:00:37		M2
382.30	AMH	Manhole / MH 54	00:00:38		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5122	3521	9.0	21.0	30.0	3.0	2.1	2.3

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/18/2016**	**3180**	**01**

3180_d5cb02d0-fa34-4c23-96c2-7eaf189b0ee0.jpg, 00:00:01, 6.70
Tap Factory Made, at 10 o'clock, 6 inch dim

3180_1e1ea754-6f72-4874-922a-2548c4be56de.jpg, 00:00:08, 93.50
Roots Medium Joint, from 12 to 06 o'clock, within 8 inch

3180_b7c01b91-460f-4eaf-8bc6-01fbf76c6417.jpg, 00:00:09, 109.10
Roots Fine Joint, from 07 to 05 o'clock, within 8 inch

3180_e44d18f7-35e2-4e5c-bfd1-ae4f04e880ca.jpg, 00:00:11, 120.30
Tap Factory Made, at 02 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/18/2016**	**3180**	**01**

3180_566cc142-7146-4ccb-8d86-11cde8e7edf7.jpg, 00:00:11, 122.50
Tap Factory Made, at 10 o'clock, 6 inch dim

3180_d5fc1eb0-c45e-4c89-997a-f27dae5d158e.jpg, 00:00:14, 164.90
Tap Factory Made, at 02 o'clock, 6 inch dim

3180_a4654c5d-5d09-41be-9bb9-f11a07e34484.jpg, 00:00:17, 186.60
Fracture Circumferential, from 04 to 08 o'clock, within 8 inch

3180_bb3c383d-2509-4cb7-b544-70f37835ec70.jpg, 00:00:19, 206.60
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/18/2016**	**3180**	**01**

3180_ae6207fe-7e5d-4deb-864f-1c447184553b.jpg, 00:00:20, 207.70
Tap Factory Made, at 10 o'clock, 6 inch dim

3180_0b801483-91c4-4278-bdaa-21aad5f9b092.jpg, 00:00:21, 213.60
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

3180_0b98427e-3268-44f4-87be-d6a08218679e.jpg, 00:00:24, 259.80
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

3180_42df683b-036e-4fc4-85a8-549118f48b47.jpg, 00:00:26, 279.90
Broken, from 05 to 12 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/18/2016**	**3180**	**01**

3180_3d623281-4522-4d8d-9a88-6ebf4609093e.jpg, 00:00:30, 335.40
Fracture Circumferential, from 02 to 05 o'clock, within 8 inch

3180_58d2108e-8f40-4a4b-a730-e1e09d684d45.jpg, 00:00:31, 350.50
Roots Fine Joint, from 08 to 04 o'clock, within 8 inch

3180_180f1cb1-3673-4ae7-9915-e2ca436aec4e.jpg, 00:00:33, 355.60
Roots Fine Joint, from 09 to 03 o'clock, within 8 inch

3180_a3db4632-351c-4a18-9708-bdc7e505ea3a.jpg, 00:00:33, 360.10
Roots Fine Joint, at 12 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/18/2016**	**3180**	**01**

3180_4770dd6f-5d3e-4818-84ca-6e64f3b5b13d.jpg, 00:00:34, 370.00
Roots Medium Joint, from 08 to 04 o'clock, within 8 inch

3180_938b4587-599c-4803-b4c6-61f267103f0f.jpg, 00:00:35, 374.90
Water Level, Sag in pipe

3180_65f45bc8-fb1f-4255-a36f-0d3407131711.jpg, 00:00:37, 379.80
Deposits Attached Encrustation, at 05 o'clock

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3190**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**130.2**	**130.2**

City :		Drainage Area :		Upstream MH :	**SANMH 54**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 88**
Location Details :		Sheet Number :	**4**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :

1:1138	Distance	Code	Observation	Counter	Photo	Grade
SANMH 54						
	0.00	AMH	Manhole / MH 54	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	10.00	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim	00:00:01		
	61.30	RFJ	Roots Fine Joint, at 09 o'clock, within 8 inch	00:00:05		M1
	76.50	RFJ	Roots Fine Joint, at 10 o'clock, within 8 inch	00:00:07		M1
	77.60	TF	Tap Factory Made, at 02 o'clock, 6 inch dim / roots in lateral	00:00:07		
	88.30	IS	Infiltration Stain, at 11 o'clock	00:00:09		M4
	90.10	IS	Infiltration Stain, at 12 o'clock	00:00:09		M4
	109.60	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim / roots intruding into mainline from lateral	00:00:12		
	110.50	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:13		M3
	111.60	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:13		
	122.80	MWLS	Water Level, Sag in pipe	00:00:16		
SANMH 88	130.20	AMH	Manhole / MH 54 DOWNSTREAM	00:00:17		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4231	0.0	13.0	13.0	0.0	2.6	2.6

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Poplar St**	**11/18/2016**	**3190**	**01**

3190_91efedb7-9823-486e-9841-183f1585b48d.jpg, 00:00:01, 10.00
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3190_e4129c58-a1e6-4c82-9329-428f87cf4de6.jpg, 00:00:05, 61.30
Roots Fine Joint, at 09 o'clock, within 8 inch

3190_7988817f-b799-4002-a455-2600bee9b824.jpg, 00:00:07, 76.50
Roots Fine Joint, at 10 o'clock, within 8 inch

3190_aa7518c0-eac8-4cf4-94c9-26810b331fe1.jpg, 00:00:07, 77.60
Tap Factory Made, at 02 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Poplar St**	**11/18/2016**	**3190**	**01**

3190_fecdbc32-0e55-4093-8968-d4bcfd75c711.jpg, 00:00:09, 88.30
Infiltration Stain, at 11 o'clock

3190_65bf15b3-782f-44a2-8b05-f6b42adbbc24.jpg, 00:00:09, 90.10
Infiltration Stain, at 12 o'clock

3190_c0490a67-de00-4b14-a125-6773a0bdebc0.jpg, 00:00:12, 109.60
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3190_7ce82c0d-ef6b-4242-af58-d43d1ef84ffa.jpg, 00:00:13, 110.50
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Poplar St**	**11/18/2016**	**3190**	**01**

3190_a7b7a810-739b-4b98-99db-ae8d6a5dbb49.jpg, 00:00:13, 111.60
Tap Factory Made, at 02 o'clock, 6 inch dim

3190_e14e2bce-7740-456b-ae6d-46e16da74bbd.jpg, 00:00:16, 122.80
Water Level, Sag in pipe

WinCan

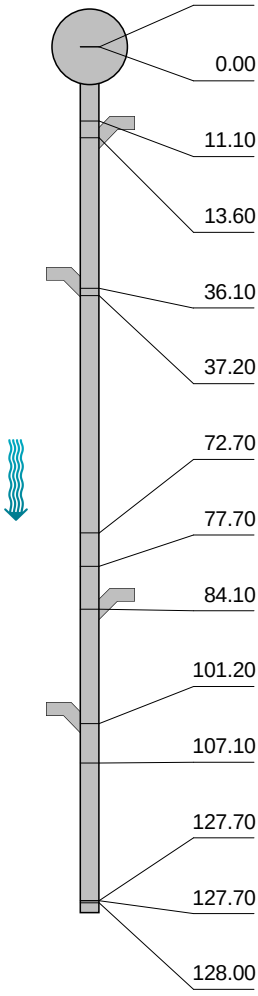
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3210**
Year laid :	Pre-cleaning : **Heavy Cleaning**	Direction : **Downstream**	Pipe Joint Length : **0.0**	Total Length : **265.7**	Length Surveyed : **265.7**

City :		Drainage Area :		Upstream MH :	**SANMH 60**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 61**
Location Details :		Sheet Number :	**3**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info : **Root cut**



1:1132	Distance	Code	Observation	Counter	Photo	Grade
SANMH 60	0.00	AMH	Manhole / MH 60	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	11.10	MWLS	Water Level, Sag in pipe	00:00:01		
	13.60	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:01		
	36.10	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:03		
	37.20	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:04		M2
	72.70	RFJ	Roots Fine Joint, from 08 to 03 o'clock, within 8 inch	00:00:06		M1
	77.70	RFJ	Roots Fine Joint, from 08 to 04 o'clock, within 8 inch	00:00:07		M1
	84.10	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:07		
	101.20	TF	Tap Factory Made, at 03 o'clock, 6 inch dim / roots in lateral	00:00:09		
	107.10	RFJ	Roots Fine Joint, from 08 to 04 o'clock, within 8 inch	00:00:10		M1
	127.70	DAE	Deposits Attached Encrustation, from 07 to 05 o'clock, within 8 inch	00:00:12		M2
	127.70	RFJ	Roots Fine Joint, from 07 to 05 o'clock, within 8 inch	00:00:12		M1
	128.00	FM	Fracture Multiple, from 12 to 12 o'clock, within 8 inch	00:00:13		S4

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3210**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Heavy Cleaning	**Downstream**	**0.0**	**265.7**	**265.7**

1:1132 Distance	Code	Observation	Counter	Photo	Grade
131.00	IS	Infiltration Stain, from 06 to 10 o'clock	00:00:14		M4
152.80	MWLS	Water Level, Sag in pipe	00:00:15		
172.70	MWLS	Water Level, Sag in pipe	00:00:16		
193.90	MWLS	Water Level, Sag in pipe	00:00:17		
214.50	MWLS	Water Level, Sag in pipe	00:00:18		
229.00	KD	Buckling Dimpling, at 02 o'clock	00:00:20		
239.00	MWLS	Water Level, Sag in pipe	00:00:21		
250.50	TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim	00:00:22		
265.70	AMH	Manhole / MH 61	00:00:23		

SANMH 61

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	4122	4.0	12.0	16.0	4.0	1.7	2.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**11/18/2016**	**3210**	**01**

3210_96c3feb0-db38-4dd1-9241-f7ca90a7999d.jpg, 00:00:01, 11.10
Water Level, Sag in pipe

3210_ef02fd62-e4aa-46e7-a4ff-3574319cc6ef.jpg, 00:00:01, 13.60
Tap Factory Made, at 10 o'clock, 6 inch dim

3210_eee3f166-ab83-4c03-9162-f7e3dbdd359a.jpg, 00:00:03, 36.10
Tap Factory Made, at 02 o'clock, 6 inch dim

3210_d8a812dd-589b-4361-a852-3e2a480d76d7.jpg, 00:00:04, 37.20
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**11/18/2016**	**3210**	**01**

3210_84c6fb8e-967e-4f00-a594-74989724a46b.jpg, 00:00:06, 72.70
Roots Fine Joint, from 08 to 03 o'clock, within 8 inch

3210_9fd843ab-a749-499a-995a-de4c2aa5909a.jpg, 00:00:07, 77.70
Roots Fine Joint, from 08 to 04 o'clock, within 8 inch

3210_fa6a3951-7180-401b-b9c0-be1fb1ff3bb8.jpg, 00:00:07, 84.10
Tap Factory Made, at 10 o'clock, 6 inch dim

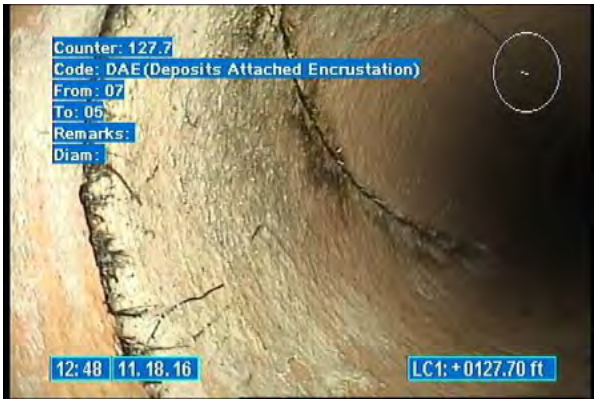
3210_658efefa-f4f2-45fc-b452-26c2a60528f5.jpg, 00:00:09, 101.20
Tap Factory Made, at 03 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**11/18/2016**	**3210**	**01**

3210_8ada517f-5b95-41ab-ae9c-c71541db9d06.jpg, 00:00:10, 107.10
Roots Fine Joint, from 08 to 04 o'clock, within 8 inch

3210_a199ed30-16a3-4876-8a80-105724a74621.jpg, 00:00:12, 127.70
Deposits Attached Encrustation, from 07 to 05 o'clock, within 8 inch



3210_a21ae127-3283-46f9-908a-a4838daf3ae5.jpg, 00:00:12, 127.70
Roots Fine Joint, from 07 to 05 o'clock, within 8 inch

3210_361a2bdd-fd0c-409a-9991-b8c17da00235.jpg, 00:00:13, 128.00
Fracture Multiple, from 12 to 12 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**11/18/2016**	**3210**	**01**

3210_ec9192d1-964c-4215-81c8-a59c2b88123d.jpg, 00:00:14, 131.00
Infiltration Stain, from 06 to 10 o'clock

3210_b82d1017-3f6c-492a-ba4e-911ede1d330b.jpg, 00:00:15, 152.80
Water Level, Sag in pipe

3210_122e696a-02c5-431b-80bd-561da0c55d33.jpg, 00:00:16, 172.70
Water Level, Sag in pipe

3210_51ffd84a-5f82-4e95-8892-11275f7aca04.jpg, 00:00:17, 193.90
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**11/18/2016**	**3210**	**01**

3210_63610f0f-139e-4dcc-b57d-7a7d3050779b.jpg, 00:00:18, 214.50
Water Level, Sag in pipe

3210_0b94685d-56aa-4103-8179-6b9365832b81.jpg, 00:00:20, 229.00
Buckling Dimpling, at 02 o'clock

3210_c67f142a-f207-459c-ba56-ddbe3545cbc7.jpg, 00:00:21, 239.00
Water Level, Sag in pipe

3210_09f424ae-94f7-41fe-b246-e3efc5865ccf.jpg, 00:00:22, 250.50
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/7/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3230**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**248.6**	**248.6**

City :		Drainage Area :		Upstream MH :	**SANMH 42**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 41**
Location Details :		Sheet Number :	**14**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :

1:2172 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 42	00:00:00		
0.00	MWL	Water Level	00:00:00		
6.50	TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim	00:00:00		
48.90	TFC	Tap Factory Made Capped, at 03 o'clock, 6 inch dim	00:00:06		
71.30	TF	Tap Factory Made, at 09 o'clock, 6 inch dim	00:00:08		
158.00	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:16		M3
159.40	TF	Tap Factory Made, at 03 o'clock, 6 inch dim / roots in lateral	00:00:17		
170.30	RMJ	Roots Medium Joint, from 02 to 04 o'clock, within 8 inch	00:00:18		M3
180.40	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:20		M3
181.70	TFA	Tap Factory Made Active, at 09 o'clock, 6 inch dim	00:00:20		
248.60	AMH	Manhole / SAN MH 41	00:00:27		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	3300	0.0	9.0	9.0	0.0	3.0	3.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple St**	**10/7/2016**	**3230**	**01**

3230_49ee1782-df18-4ac0-a46f-f8e458f3380a.jpg, 00:00:00, 6.50
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

3230_397ab0d6-4729-425a-aeb4-0b4ac2f9a15e.jpg, 00:00:06, 48.90
Tap Factory Made Capped, at 03 o'clock, 6 inch dim

3230_8783906d-3b9c-42a3-afd8-ffcff2043b13.jpg, 00:00:08, 71.30
Tap Factory Made, at 09 o'clock, 6 inch dim

3230_db1121ef-8c97-4286-b28b-4bcac16af369.jpg, 00:00:16, 158.00
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple St**	**10/7/2016**	**3230**	**01**

3230_0545705b-c7f8-4a6c-9083-c6562070dff1.jpg, 00:00:17, 159.40
Tap Factory Made, at 03 o'clock, 6 inch dim

3230_fd13d62c-1727-42d8-b895-287d885ee66a.jpg, 00:00:18, 170.30
Roots Medium Joint, from 02 to 04 o'clock, within 8 inch

3230_4f540b86-00dd-4b29-8447-c42528393716.jpg, 00:00:20, 180.40
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

3230_5f2a1e4b-63fa-42eb-b7b4-f98d95ddc609.jpg, 00:00:20, 181.70
Tap Factory Made Active, at 09 o'clock, 6 inch dim

WinCan

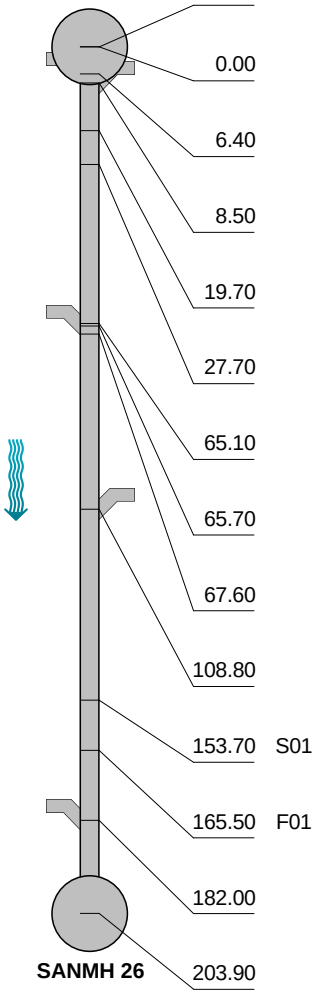
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/21/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3280**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**0.0**	**203.9**	**203.9**

City :		Drainage Area :		Upstream MH :	**SANMH 27**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 26**
Location Details :		Sheet Number :	**7**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :



1:1781 Distance		Code	Observation	Counter	Photo	Grade
0.00		AMH	Manhole / MH 27	00:00:00		
0.00		MWL	Water Level	00:00:00		
6.40		TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:01		
8.50		TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:01		
19.70		MWLS	Water Level, Sag in pipe	00:00:03		
27.70		DAE	Deposits Attached Encrustation, from 11 to 01 o'clock	00:00:03		M2
65.10		RFJ	Roots Fine Joint, from 09 to 03 o'clock, within 8 inch	00:00:07		M1
65.70		TFD	Tap Factory Made Defective, at 02 o'clock, 6 inch dim / root mass completely blocking lateral	00:00:08		M2
67.60		MWLS	Water Level, Sag in pipe	00:00:09		
108.80		TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:11		
153.70	S01	MWLS	Water Level, Sag in pipe, S01	00:00:15		
165.50	F01	MWLS	Water Level, Sag in pipe, F01	00:00:15		
182.00		TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:17		
203.90		AMH	Manhole / MH 26	00:00:19		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	2211	0.0	5.0	5.0	0.0	1.7	1.7

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City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/21/2016**	**3280**	**01**

3280_df35267c-2048-43bb-a086-fab28dfb3300.jpg, 00:00:01, 6.40
Tap Factory Made, at 02 o'clock, 6 inch dim

3280_aaa468d1-f3e5-4dd1-9862-1ae95a642f6d.jpg, 00:00:01, 8.50
Tap Factory Made, at 10 o'clock, 6 inch dim

3280_5dc0ad9e-3fc3-439a-9e3a-9a0a63ad9319.jpg, 00:00:03, 19.70
Water Level, Sag in pipe

3280_c07432bd-4926-4b00-b1e1-0cbdc7851953.jpg, 00:00:03, 27.70
Deposits Attached Encrustation, from 11 to 01 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/21/2016**	**3280**	**01**

3280_8c517bf0-59b6-4aa0-aef6-d3ba022b38be.jpg, 00:00:07, 65.10
Roots Fine Joint, from 09 to 03 o'clock, within 8 inch

3280_4bb46c9b-f3e0-4514-9a9e-fce6eb829d9b.jpg, 00:00:08, 65.70
Tap Factory Made Defective, at 02 o'clock, 6 inch dim

3280_b011b40c-24d9-4069-bf29-2493745224ea.jpg, 00:00:09, 67.60
Water Level, Sag in pipe

3280_9d340dfd-99d7-4a2d-8cd9-74615205a0df.jpg, 00:00:11, 108.80
Tap Factory Made, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/21/2016**	**3280**	**01**

3280_32a35a7b-e931-48f7-8ca2-1d3ce0112bc7.jpg, 00:00:15, 153.70
Water Level, Sag in pipe, S01

3280_009b5d4a-e3d6-43b2-89cd-0a2558919bb2.jpg, 00:00:15, 165.50
Water Level, Sag in pipe, F01

3280_21fedd0e-91c6-48f7-852a-77b8ea600c0d.jpg, 00:00:17, 182.00
Tap Factory Made, at 02 o'clock, 6 inch dim

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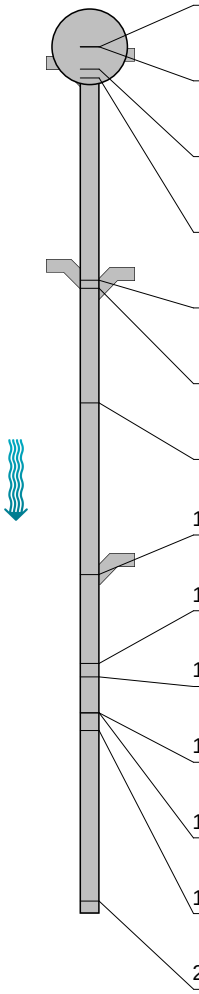
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/21/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3290**
Year laid :	Pre-cleaning : **Heavy Cleaning**	Direction : **Downstream**	Pipe Joint Length : **0.0**	Total Length : **208.4**	Length Surveyed : **208.4**

City :		Drainage Area :		Upstream MH :	**SANMH 26**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 10**
Location Details :		Sheet Number :	**8**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :



1:1796	Distance		Code	Observation	Counter	Photo	Grade
SANMH 26	0.00		AMH	Manhole / MH 26	00:00:00		
	0.00		MWL	Water Level	00:00:00		
	5.30		TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim / roots and encrustation in capped lateral	00:00:01		
	7.40		TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim / roots and infiltration stains in capped lateral	00:00:03		
	55.40		TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim / encrustation and infiltration stains from capped lateral	00:00:09		
	57.30		TFD	Tap Factory Made Defective, at 10 o'clock, 6 inch dim / encrustation and infiltration stains, also fractured	00:00:11		M2
	84.50		MWLS	Water Level, Sag in pipe	00:00:13		
	125.20		TFA	Tap Factory Made Active, at 11 o'clock, 6 inch dim	00:00:17		
	146.30	S01	MWLS	Water Level, Sag in pipe, S01	00:00:19		
	149.50		IS	Infiltration Stain, at 10 o'clock	00:00:20		M4
	158.00		CL	Crack Longitudinal, at 03 o'clock	00:00:21		S2
	158.00		IS	Infiltration Stain, at 03 o'clock	00:00:21		M4
	162.20	F01	MWLS	Water Level, Sag in pipe, F01	00:00:22		
	202.70		MWLS	Water Level, Sag in pipe	00:00:25		

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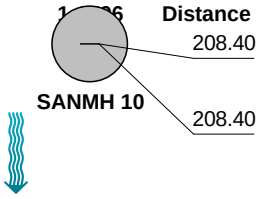
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/21/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3290**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Heavy Cleaning	**Downstream**	**0.0**	**208.4**	**208.4**



1 06	Distance	Code	Observation	Counter	Photo	Grade
	208.40	TF	Tap Factory Made, at 06 o'clock, 6 inch dim / drop pipe	00:00:26		
	208.40	AMH	Manhole / MH 10	00:00:27		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
2100	4221	2.0	10.0	12.0	2.0	3.3	3.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/21/2016**	**3290**	**01**

3290_26d783c9-6051-4091-8d43-0c75f35e66c8.jpg, 00:00:01, 5.30
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3290_91e65760-4da5-417e-b8e8-3b9390280dff.jpg, 00:00:03, 7.40
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

3290_962e0a4f-bfdb-46f2-99ff-4c3c9a8a600f.jpg, 00:00:09, 55.40
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

3290_16c9ffca-11fd-47bb-a9f4-cc59c1d6fd5c.jpg, 00:00:11, 57.30
Tap Factory Made Defective, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/21/2016**	**3290**	**01**

3290_0063699e-ca59-4180-ae2c-d333fe92194f.jpg, 00:00:13, 84.50
Water Level, Sag in pipe

3290_7ac31017-401f-4164-9682-b07387f599b5.jpg, 00:00:17, 125.20
Tap Factory Made Active, at 11 o'clock, 6 inch dim

3290_f032c9f8-93c8-4872-9156-d49f686d544e.jpg, 00:00:19, 146.30
Water Level, Sag in pipe, S01

3290_b5f6115a-72e6-42fe-9158-9eccaed32fef.jpg, 00:00:20, 149.50
Infiltration Stain, at 10 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/21/2016**	**3290**	**01**

3290_cf4b19d1-138e-4822-a6dc-40a03134df0f.jpg, 00:00:21, 158.00
Crack Longitudinal, at 03 o'clock

3290_9ab01cc8-2a8a-48d2-a25f-9d85badff1c9.jpg, 00:00:21, 158.00
Infiltration Stain, at 03 o'clock

3290_5cc72e0b-bdb3-44ef-ac7e-33291cbb2398.jpg, 00:00:22, 162.20
Water Level, Sag in pipe, F01

3290_bde35199-aa08-46ae-8707-fb2c4ccb3e51.jpg, 00:00:25, 202.70
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Union St**	**11/21/2016**	**3290**	**01**

3290_a9b8b1a5-07e0-4870-932b-d384d38d5093.jpg, 00:00:26, 208.40
Tap Factory Made, at 06 o'clock, 6 inch dim

WinCan

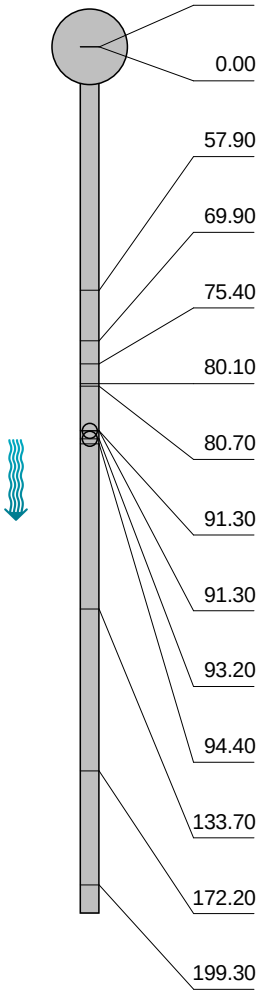
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/10/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3300**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**328.0**	**328.0**

City :		Drainage Area :		Upstream MH :	**SANMH 10**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 9**
Location Details :		Sheet Number :	**19**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :



1:1800	Distance	Code	Observation	Counter	Photo	Grade
SANMH 10	0.00	AMH	Manhole / SAN MH 10	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	57.90	DSGV	Deposits Settled Gravel, at 06 o'clock	00:00:07		M3
	69.90	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:13		M3
	75.40	RFJ	Roots Fine Joint, at 03 o'clock, within 8 inch	00:00:13		M1
	80.10	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:14		M3
	80.70	FC	Fracture Circumferential, from 08 to 04 o'clock, within 8 inch	00:00:16		S2
	91.30	TFA	Tap Factory Made Active, at 12 o'clock, 6 inch dim	00:00:18		
	91.30	MWLS	Water Level, Sag in pipe	00:00:18		
	93.20	TF	Tap Factory Made, at 12 o'clock, 6 inch dim / lateral is fractured	00:00:20		
	94.40	MWLS	Water Level, Sag in pipe	00:00:20		
	133.70	MWLS	Water Level, Sag in pipe	00:00:24		
	172.20	MWLS	Water Level, Sag in pipe	00:00:27		
	199.30	MWLS	Water Level, Sag in pipe	00:00:29		

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/10/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3300**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**328.0**	**328.0**

1:1800 Distance	Code	Observation	Counter	Photo	Grade
212.70	DSGV	Deposits Settled Gravel, at 06 o'clock	00:00:30		M3
214.10	FC	Fracture Circumferential, from 12 to 12 o'clock	00:00:31		S2
214.20	IG	Infiltration Gusher, at 06 o'clock	00:00:32		M5
302.60	MWLS	Water Level, Sag in pipe	00:00:40		
312.50	MWLS	Water Level, Sag in pipe	00:00:41		
324.70	FM	Fracture Multiple, from 12 to 12 o'clock, within 8 inch	00:00:44		S4
328.00	AMH	Manhole / SAN MH 9	00:00:46		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4122	5134	8.0	18.0	26.0	2.7	3.0	2.9

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City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Oak St**	**10/10/2016**	**3300**	**01**

3300_4c1be84f-20cc-4472-8f3e-679a527da3b6.jpg, 00:00:07, 57.90
Deposits Settled Gravel, at 06 o'clock

3300_c5178672-055c-4719-b3d7-966367c1b590.jpg, 00:00:13, 69.90
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

3300_95ca4457-b75e-4b6a-a0c3-2360d58d5a37.jpg, 00:00:13, 75.40
Roots Fine Joint, at 03 o'clock, within 8 inch

3300_b80f7030-6859-4075-9310-e8e08a257267.jpg, 00:00:14, 80.10
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Oak St**	**10/10/2016**	**3300**	**01**

3300_1b15b9a4-91bd-4969-ac58-51636d15e050.jpg, 00:00:16, 80.70
Fracture Circumferential, from 08 to 04 o'clock, within 8 inch

3300_62f7e6ec-0a84-4c66-af20-fba12121a601.jpg, 00:00:18, 91.30
Tap Factory Made Active, at 12 o'clock, 6 inch dim

3300_1eda52d7-b403-4e94-afb8-8ad340ca6450.jpg, 00:00:18, 91.30
Water Level, Sag in pipe

3300_d23f61b9-bb37-4e5f-9542-b22c6c04fcde.jpg, 00:00:20, 93.20
Tap Factory Made, at 12 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Oak St**	**10/10/2016**	**3300**	**01**

3300_1aa6e0d0-67d4-4c46-9ec8-b314eb79eab7.jpg, 00:00:20, 94.40
Water Level, Sag in pipe

3300_aa5a4151-93df-4096-9627-5a1e6c386363.jpg, 00:00:24, 133.70
Water Level, Sag in pipe

3300_5d526f15-2280-4f35-9c32-f4b782d449c4.jpg, 00:00:27, 172.20
Water Level, Sag in pipe

3300_bdc799ee-640c-46d7-a42f-8cd18fa94470.jpg, 00:00:29, 199.30
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Oak St**	**10/10/2016**	**3300**	**01**

3300_e51eb558-4776-4ca2-86e3-f5f814a43b67.jpg, 00:00:30, 212.70
Deposits Settled Gravel, at 06 o'clock

3300_fcb360f1-c01b-47cc-91e4-4ddb1f4e774c.jpg, 00:00:31, 214.10
Fracture Circumferential, from 12 to 12 o'clock

3300_8aa1ccb1-c1c9-4297-a74e-3dbf19d8dd77.jpg, 00:00:32, 214.20
Infiltration Gusher, at 06 o'clock

3300_a0e1744b-f921-4aba-a9d7-a6c41f30396b.jpg, 00:00:40, 302.60
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Oak St**	**10/10/2016**	**3300**	**01**

3300_438749d7-13bf-4b96-94a6-cf39c178c0a3.jpg, 00:00:41, 312.50
Water Level, Sag in pipe

3300_1d73a4d3-75e5-47c9-9ca7-c5686586b554.jpg, 00:00:44, 324.70
Fracture Multiple, from 12 to 12 o'clock, within 8 inch

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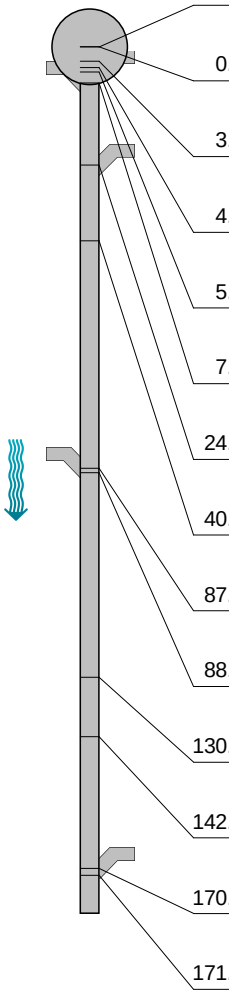
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/10/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3310**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**249.6**	**249.6**

City :		Drainage Area :		Upstream MH :	**SANMH 28**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 9**
Location Details :		Sheet Number :	**20**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :



1:1568	Distance		Code	Observation	Counter	Photo	Grade
SANMH 28	0.00		AMH	Manhole / SAN MH 28	00:00:00		
	0.00		MWL	Water Level	00:00:00		
	3.00		MGO	General Observation / video restart after I drove camera to end to clear cobwebs	00:00:09		
	4.30		RFJ	Roots Fine Joint, from 08 to 04 o'clock, within 8 inch	00:00:01		M1
	5.20		TF	Tap Factory Made, at 09 o'clock, 6 inch dim	00:00:02		
	7.50		TFC	Tap Factory Made Capped, at 03 o'clock, 6 inch dim	00:00:03		
	24.50		TF	Tap Factory Made, at 09 o'clock, 6 inch dim / roots in lateral	00:00:05		
	40.20		MWLS	Water Level, Sag in pipe	00:00:13		
	87.30		TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:17		
	88.20		RFJ	Roots Fine Joint, at 04 o'clock, within 8 inch	00:00:18		M1
	130.60	S01	MWLS	Water Level, Sag in pipe, S01	00:00:22		
	142.90	F01	MWLS	Water Level, Sag in pipe, F01	00:00:23		
	170.20		TF	Tap Factory Made, at 09 o'clock, 6 inch dim	00:00:25		
	171.60		MWLS	Water Level, Sag in pipe	00:00:26		

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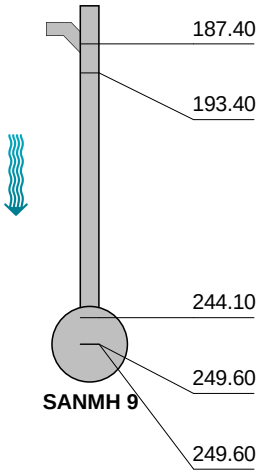
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/10/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3310**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**249.6**	**249.6**



1:1568 Distance	Code	Observation	Counter	Photo	Grade
187.40	TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim / roots from capped lateral	00:00:28		
193.40	MWLS	Water Level, Sag in pipe	00:00:28		
244.10	MWLS	Water Level, Sag in pipe	00:00:32		
249.60	TF	Tap Factory Made, at 06 o'clock, 6 inch dim / drop pipe	00:00:33		
249.60	AMH	Manhole / SAN MH 9	00:00:34		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	1200	0.0	2.0	2.0	0.0	1.0	1.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**10/10/2016**	**3310**	**01**

3310_c7bded77-88ab-4b61-9a18-9bda95b48adb.jpg, 00:00:09, 3.00
General Observation

3310_01a686ed-3bd7-4dd4-9578-9af21579e50d.jpg, 00:00:01, 4.30
Roots Fine Joint, from 08 to 04 o'clock, within 8 inch

3310_40823228-b556-4d7a-b5ce-2710e7dd9235.jpg, 00:00:02, 5.20
Tap Factory Made, at 09 o'clock, 6 inch dim

3310_0c52f952-2617-4218-8a97-349bfa18571e.jpg, 00:00:03, 7.50
Tap Factory Made Capped, at 03 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**10/10/2016**	**3310**	**01**

3310_6f7dcc97-8329-4dd8-92f7-4a9444625a5f.jpg, 00:00:05, 24.50
Tap Factory Made, at 09 o'clock, 6 inch dim

3310_f2f4d776-9274-4cf6-b513-adcc4e35c9d1.jpg, 00:00:13, 40.20
Water Level, Sag in pipe

3310_2f9f28bc-cc03-4786-a923-19f78c3ec0d8.jpg, 00:00:17, 87.30
Tap Factory Made, at 02 o'clock, 6 inch dim

3310_cd67154b-d8c0-4490-b304-b108d8d528cd.jpg, 00:00:18, 88.20
Roots Fine Joint, at 04 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Washington St**	**10/10/2016**	**3310**	**01**

3310_aec7d82a-f7e2-410f-91be-ae04106e20ab.jpg, 00:00:22, 130.60
Water Level, Sag in pipe, S01

3310_afeb7514-12db-426e-b58b-aeef781a7856.jpg, 00:00:23, 142.90
Water Level, Sag in pipe, F01

3310_873f5951-527d-4c6d-bd14-a8efd62218be.jpg, 00:00:25, 170.20
Tap Factory Made, at 09 o'clock, 6 inch dim

3310_a3b703a4-2e3c-42f1-beed-08048399a0c2.jpg, 00:00:26, 171.60
Water Level, Sag in pipe

3310_05b0bd53-914d-4f51-97b1-1dd4f6d1ec67.jpg, 00:00:28, 187.40
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

3310_56c59044-c4f3-437d-86c2-7cc57f153a70.jpg, 00:00:28, 193.40
Water Level, Sag in pipe

3310_93c8ffb4-fc37-4e16-8f04-93b6b5ea9371.jpg, 00:00:32, 244.10
Water Level, Sag in pipe

3310_f4b38433-e467-43c0-b6eb-944edd541f5b.jpg, 00:00:33, 249.60
Tap Factory Made, at 06 o'clock, 6 inch dim

WinCan

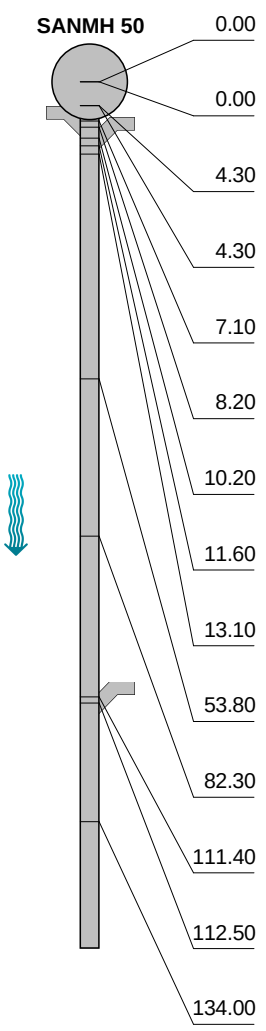
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3350**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**0.0**	**338.5**	**338.5**

City :		Drainage Area :		Upstream MH :	**SANMH 50**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 49**
Location Details :		Sheet Number :	**1**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :



1:1371	Distance	Code	Observation	Counter	Photo	Grade
SANMH 50	0.00	AMH	Manhole / MH 50	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	4.30	FC	Fracture Circumferential, from 12 to 12 o'clock, within 8 inch	00:00:01		S2
	4.30	RFJ	Roots Fine Joint, from 07 to 02 o'clock, within 8 inch	00:00:02		M1
	7.10	MWLS	Water Level, Sag in pipe	00:00:03		
	8.20	TF	Tap Factory Made, at 01 o'clock, 6 inch dim	00:00:03		
	10.20	TFC	Tap Factory Made Capped, at 11 o'clock, 6 inch dim / roots in lateral	00:00:05		
	11.60	RFJ	Roots Fine Joint, at 03 o'clock, within 8 inch	00:00:05		M1
	13.10	MWLS	Water Level, Sag in pipe	00:00:06		
	53.80	MWLS	Water Level, Sag in pipe	00:00:08		
	82.30	FM	Fracture Multiple, from 12 to 12 o'clock, within 8 inch	00:00:11		S4
	111.40	MWLS	Water Level, Sag in pipe	00:00:13		
	112.50	TF	Tap Factory Made, at 11 o'clock, 6 inch dim	00:00:14		
	134.00	MWLS	Water Level, Sag in pipe	00:00:15		

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3350**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**0.0**	**338.5**	**338.5**

1:1371 Distance		Code	Observation	Counter	Photo	Grade
179.80		CL	Crack Longitudinal, at 10 o'clock, within 8 inch	00:00:19		S2
217.10		MWLS	Water Level, Sag in pipe	00:00:22		
226.80	S01	MWLS	Water Level, Sag in pipe, S01	00:00:23		
238.40	F01	MWLS	Water Level, Sag in pipe, F01	00:00:24		
307.20	S02	MWLS	Water Level, Sag in pipe, S02	00:00:28		
320.00	F02	MWLS	Water Level, Sag in pipe, F02	00:00:29		
326.60		MWLS	Water Level, Sag in pipe	00:00:30		
332.40		MWLS	Water Level, Sag in pipe	00:00:30		
338.50		AMH	Manhole / MH 49	00:00:32		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4122	1200	8.0	2.0	10.0	2.7	1.0	2.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**11/18/2016**	**3350**	**01**

3350_d4b2a187-7a2f-4e7f-a82f-2a240d45ad36.jpg, 00:00:01, 4.30
Fracture Circumferential, from 12 to 12 o'clock, within 8 inch

3350_0f779a2b-5d65-4469-80fb-41e30c44c82d.jpg, 00:00:02, 4.30
Roots Fine Joint, from 07 to 02 o'clock, within 8 inch

3350_26244ea5-4db7-4b50-aaff-0d593874cd54.jpg, 00:00:03, 7.10
Water Level, Sag in pipe

3350_02c3d70a-6b44-44f3-acc8-8422fce7fa43.jpg, 00:00:03, 8.20
Tap Factory Made, at 01 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**11/18/2016**	**3350**	**01**

3350_4f80a37f-1843-485e-82ea-6b0765d81f4f.jpg, 00:00:05, 10.20
Tap Factory Made Capped, at 11 o'clock, 6 inch dim

3350_3887208c-2e63-4bc5-9cd1-656ebeaec836.jpg, 00:00:05, 11.60
Roots Fine Joint, at 03 o'clock, within 8 inch

3350_331dcfa1-fc25-4757-8335-775d45f48723.jpg, 00:00:06, 13.10
Water Level, Sag in pipe

3350_e1091a3d-1d12-4845-9132-b4ae0f79dbbc.jpg, 00:00:08, 53.80
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**11/18/2016**	**3350**	**01**

3350_36196537-7552-4243-9398-677411a86415.jpg, 00:00:11, 82.30
Fracture Multiple, from 12 to 12 o'clock, within 8 inch

3350_2002798b-de82-48b5-abc4-df4d0890aa13.jpg, 00:00:13, 111.40
Water Level, Sag in pipe

3350_d7af9a17-3b25-49cc-8f0a-2a3e0fc9a5f0.jpg, 00:00:14, 112.50
Tap Factory Made, at 11 o'clock, 6 inch dim

3350_4735eb51-50d1-4a7a-bcee-f5369ec0c387.jpg, 00:00:15, 134.00
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**11/18/2016**	**3350**	**01**

3350_10ed5cdf-cfb9-4fb3-a910-09fced922627.jpg, 00:00:19, 179.80
Crack Longitudinal, at 10 o'clock, within 8 inch

3350_6f523ad1-c221-4b5f-89ea-cdb16420d5ff.jpg, 00:00:22, 217.10
Water Level, Sag in pipe

3350_d852944c-4d93-4429-9c03-d037154c891a.jpg, 00:00:23, 226.80
Water Level, Sag in pipe, S01

3350_7a3f1223-7c9f-43b6-ac04-466e91dc73bb.jpg, 00:00:24, 238.40
Water Level, Sag in pipe, F01

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**11/18/2016**	**3350**	**01**

3350_94ab898b-328d-4709-be36-d07261f8b230.jpg, 00:00:28, 307.20
Water Level, Sag in pipe, S02

3350_8d179a1e-b423-4423-b50b-e80a0c9f58f9.jpg, 00:00:29, 320.00
Water Level, Sag in pipe, F02

3350_4c0adbe2-6b45-40d9-bd9c-c069a7ebaa16.jpg, 00:00:30, 326.60
Water Level, Sag in pipe

3350_acb3f889-3578-4a24-ba31-9a7fcdc7a50e.jpg, 00:00:30, 332.40
Water Level, Sag in pipe

WinCan

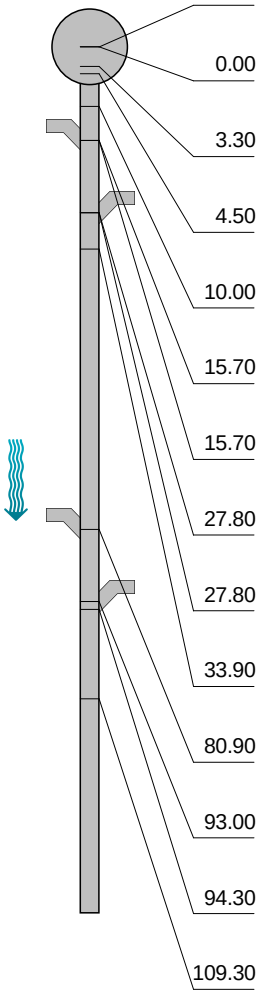
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/7/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3410**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**186.4**	**186.4**

City :		Drainage Area :		Upstream MH :	**SANMH 64**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 47**
Location Details :		Sheet Number :	**13**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :

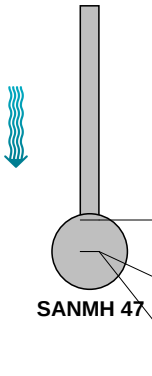


1:1269 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 64	00:00:00		
0.00	MWL	Water Level	00:00:00		
3.30	CM	Crack Multiple, from 07 to 05 o'clock	00:00:01		S3
4.50	RFJ	Roots Fine Joint, at 02 o'clock, within 8 inch	00:00:02		M1
10.00	MWLS	Water Level, Sag in pipe	00:00:03		
15.70	TF	Tap Factory Made, at 02 o'clock, 6 inch dim / root mass in lateral	00:00:05		
15.70	RML	Roots Medium Lateral, at 03 o'clock	00:00:06		M3
27.80	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim / roots from capped lateral	00:00:08		
27.80	RML	Roots Medium Lateral, at 08 o'clock / from capped lateral connection	00:00:08		M3
33.90	RFJ	Roots Fine Joint, from 07 to 10 o'clock, within 8 inch	00:00:10		M1
80.90	TF	Tap Factory Made, at 03 o'clock, 6 inch dim	00:00:14		
93.00	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:16		
94.30	MGO	General Observation / piece wedged into joint	00:00:19		
109.30	RMJ	Roots Medium Joint, at 07 o'clock, within 8 inch	00:00:20		M3

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/7/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3410**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**186.4**	**186.4**



1:1269 Distance	Code	Observation	Counter	Photo	Grade
181.10	MWLS	Water Level, Sag in pipe	00:00:26		
186.40	TF	Tap Factory Made, at 06 o'clock, 6 inch dim / drop pipe	00:00:27		
186.40	AMH	Manhole / SAN MH 47	00:00:28		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3100	3312	3.0	11.0	14.0	3.0	2.2	2.3

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/7/2016**	**3410**	**01**

3410_33ad65c3-c5aa-4836-9b66-d9abecae31d8.jpg, 00:00:01, 3.30
Crack Multiple, from 07 to 05 o'clock

3410_f8181940-dc6c-4612-a128-68d0bbddcfda.jpg, 00:00:02, 4.50
Roots Fine Joint, at 02 o'clock, within 8 inch

3410_792dcbe0-c089-4109-adaf-cbab90721ff6.jpg, 00:00:03, 10.00
Water Level, Sag in pipe

3410_a4f77346-3e91-47cc-9528-2d81957bf81e.jpg, 00:00:05, 15.70
Tap Factory Made, at 02 o'clock, 6 inch dim

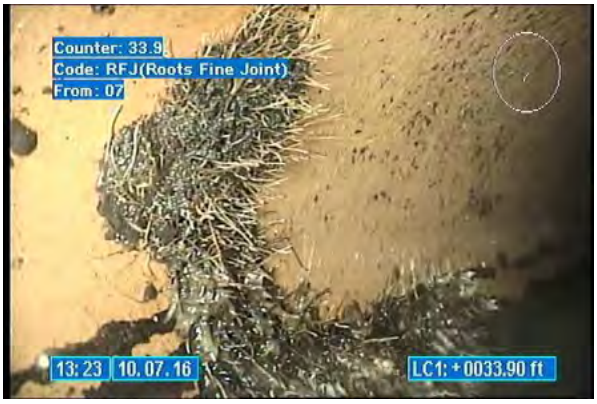
WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/7/2016**	**3410**	**01**

3410_a6a6c1fc-a87e-4026-b5d4-96856385819c.jpg, 00:00:06, 15.70
Roots Medium Lateral, at 03 o'clock

3410_de58cd3c-b749-4b93-9e9e-7daf0a1ef35b.jpg, 00:00:08, 27.80
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3410_0376d592-332a-4ce7-a68b-881beccd956d.jpg, 00:00:08, 27.80
Roots Medium Lateral, at 08 o'clock



3410_5eabf177-cd50-4f7c-857d-e19d9793fc6b.jpg, 00:00:10, 33.90
Roots Fine Joint, from 07 to 10 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/7/2016**	**3410**	**01**

3410_6196f058-e4d7-438a-8090-18ca0d2f755e.jpg, 00:00:14, 80.90
Tap Factory Made, at 03 o'clock, 6 inch dim

3410_af3ad8e4-07ca-4a33-b5b1-70a0b250d1be.jpg, 00:00:16, 93.00
Tap Factory Made, at 10 o'clock, 6 inch dim

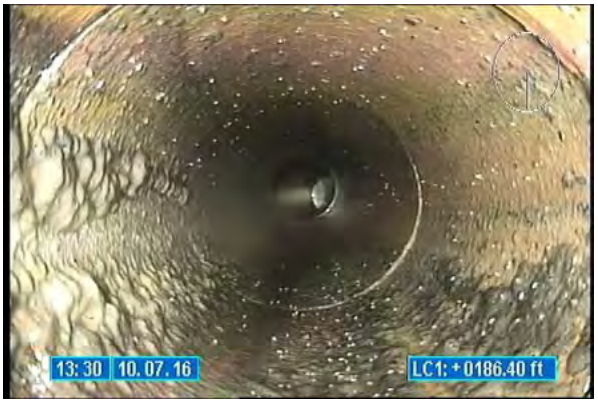
3410_88f63706-029b-4e9e-804a-fe5a197b343b.jpg, 00:00:19, 94.30
General Observation

3410_322bd7f1-9474-4c2f-8bf6-c407b2eb2d01.jpg, 00:00:20, 109.30
Roots Medium Joint, at 07 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/7/2016**	**3410**	**01**

3410_eff85735-3d69-4b88-95d5-12269c2a54c2.jpg, 00:00:26, 181.10
Water Level, Sag in pipe



3410_7e5a5f40-34d9-4dd6-9309-611fb2fee927.jpg, 00:00:27, 186.40
Tap Factory Made, at 06 o'clock, 6 inch dim

WinCan

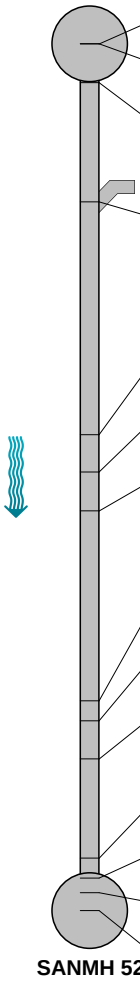
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/18/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3430**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Heavy Cleaning	**Downstream**	**0.0**	**229.9**	**229.9**

City :		Drainage Area :		Upstream MH :	**SANMH 63**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 52**
Location Details :		Sheet Number :	**2**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info : **Root cut**



1:2008 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / MH 63	00:00:00		
0.00	MWL	Water Level	00:00:00		
10.30	MWLS	Water Level, Sag in pipe	00:00:01		
41.90	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:03		
103.70	IS	Infiltration Stain, at 02 o'clock, within 8 inch	00:00:09		M4
113.60	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:11		M3
123.90	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:12		M3
174.30	RFJ	Roots Fine Joint, from 07 to 05 o'clock, within 8 inch	00:00:16		M1
179.60	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:16		M3
189.70	RMJ	Roots Medium Joint, from 07 to 05 o'clock, within 8 inch	00:00:17		M3
216.00	MWLS	Water Level, Sag in pipe	00:00:35		
221.30	MWLS	Water Level, Sag in pipe	00:00:35		
225.20	JOM	Joint Offset Medium	00:00:35		S1
229.90	AMH	Manhole / MH 52	00:00:37		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
1100	4134	1.0	17.0	18.0	1.0	2.8	2.6

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**11/18/2016**	**3430**	**01**

3430_db200f3a-c9b3-4eef-bbaf-37aabdfe6d23.jpg, 00:00:01, 10.30
Water Level, Sag in pipe

3430_070e7b54-14f2-4533-864c-ff3e975a4ca1.jpg, 00:00:03, 41.90
Tap Factory Made, at 10 o'clock, 6 inch dim

3430_ca148b6c-2142-48b7-b9f2-8bb025d9bb62.jpg, 00:00:09, 103.70
Infiltration Stain, at 02 o'clock, within 8 inch

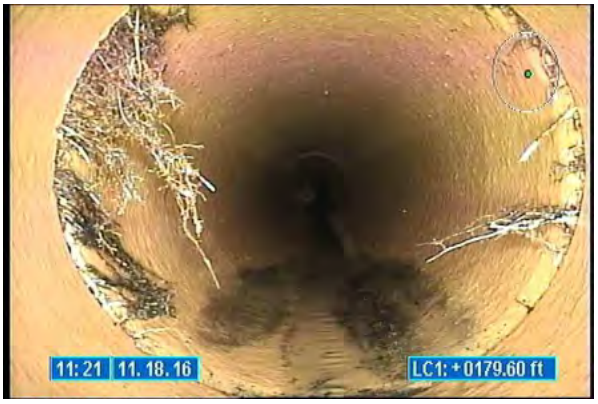
3430_2e251305-ded0-4791-ba00-a20cb20fea52.jpg, 00:00:11, 113.60
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**11/18/2016**	**3430**	**01**

3430_ff2d6d6e-9907-4fa9-9ecb-18f0861c171e.jpg, 00:00:12, 123.90
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

3430_5b2a1f56-7541-43cd-b776-b2754c747551.jpg, 00:00:16, 174.30
Roots Fine Joint, from 07 to 05 o'clock, within 8 inch



3430_dc3c9709-296b-4eca-876b-b88f237f14ca.jpg, 00:00:16, 179.60
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

3430_47eec5e2-b142-46a1-8ef3-439f8dcc7568.jpg, 00:00:17, 189.70
Roots Medium Joint, from 07 to 05 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**11/18/2016**	**3430**	**01**

3430_c9d63cd6-bbc7-481d-8e40-95e9a479d759.jpg, 00:00:35, 216.00
Water Level, Sag in pipe

3430_7d187d8a-88e8-47c3-adcf-6d5b251520de.jpg, 00:00:35, 221.30
Water Level, Sag in pipe

3430_2bf181ed-525c-4f25-9432-76f93918b01b.jpg, 00:00:35, 225.20
Joint Offset Medium

WinCan

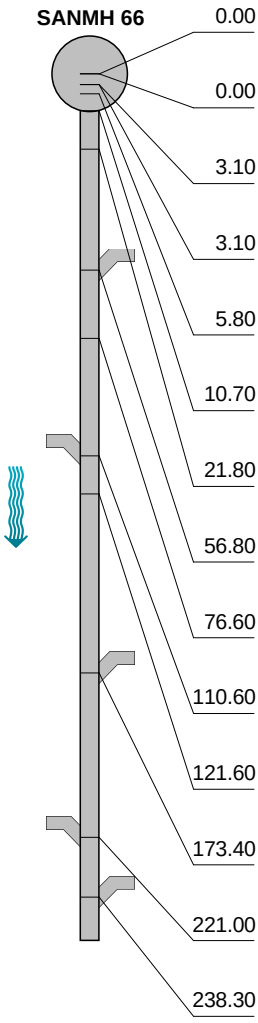
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/21/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3450**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Heavy Cleaning	**Downstream**	**0.0**	**331.5**	**331.5**

City :		Drainage Area :		Upstream MH :	**SANMH 66**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 45**
Location Details :		Sheet Number :	**6**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :



1:2191 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / MH 66	00:00:00		
0.00	MWL	Water Level	00:00:00		
3.10	FC	Fracture Circumferential, from 12 to 12 o'clock	00:00:01		S2
3.10	IS	Infiltration Stain, from 06 to 09 o'clock	00:00:01		M4
5.80	MWLS	Water Level, Sag in pipe	00:00:02		
10.70	FM	Fracture Multiple, from 03 to 07 o'clock, within 8 inch	00:00:03		S4
21.80	MWLS	Water Level, Sag in pipe	00:00:04		
56.80	TFD	Tap Factory Made Defective, at 10 o'clock, 6 inch dim	00:00:07		M2
76.60	MWLS	Water Level, Sag in pipe	00:00:10		
110.60	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:14		
121.60	MWLS	Water Level, Sag in pipe	00:00:16		
173.40	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:23		
221.00	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:30		
238.30	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:32		

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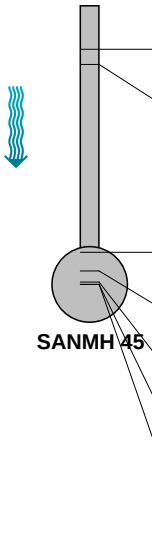
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/21/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3450**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Heavy Cleaning	**Downstream**	**0.0**	**331.5**	**331.5**



1:2191 Distance	Code	Observation	Counter	Photo	Grade
263.40	MWLS	Water Level, Sag in pipe	00:00:35		
267.80	MWLS	Water Level, Sag in pipe	00:00:35		
322.20	MWLS	Water Level, Sag in pipe	00:00:40		
327.60	MWLS	Water Level, Sag in pipe	00:00:41		
330.80	B	Broken, from 04 to 08 o'clock, within 8 inch	00:00:42		S5
331.50	TF	Tap Factory Made, at 06 o'clock, 6 inch dim / drop pipe	00:00:43		
331.50	AMH	Manhole / MH 45	00:00:43		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5141	4121	11.0	6.0	17.0	3.7	3.0	3.4

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**11/21/2016**	**3450**	**01**

3450_3264803d-c945-45ae-9973-4e7ff883be20.jpg, 00:00:01, 3.10
Fracture Circumferential, from 12 to 12 o'clock

3450_6852d5a6-f71b-4114-b210-e91d0053aaf1.jpg, 00:00:01, 3.10
Infiltration Stain, from 06 to 09 o'clock

3450_fdf8f00a-04ff-43f0-a372-9ae19c53431a.jpg, 00:00:02, 5.80
Water Level, Sag in pipe

3450_59b8cba1-520e-4298-b6e8-a2dfe49f743d.jpg, 00:00:03, 10.70
Fracture Multiple, from 03 to 07 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**11/21/2016**	**3450**	**01**

3450_5d941d3e-c575-4547-8193-08da863161d1.jpg, 00:00:04, 21.80
Water Level, Sag in pipe

3450_0e94781a-f801-4ddd-ace5-63a945e8afae.jpg, 00:00:07, 56.80
Tap Factory Made Defective, at 10 o'clock, 6 inch dim

3450_58bad82b-8685-404b-b498-f9829c9e0903.jpg, 00:00:10, 76.60
Water Level, Sag in pipe

3450_67a4bcde-3bf4-46c5-9821-390852036a17.jpg, 00:00:14, 110.60
Tap Factory Made, at 02 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**11/21/2016**	**3450**	**01**

3450_5fbcd45a-f211-4a3d-81de-89cf53e2b99c.jpg, 00:00:16, 121.60
Water Level, Sag in pipe

3450_6ca00d96-a211-40a1-b068-de65cfdff635.jpg, 00:00:23, 173.40
Tap Factory Made, at 10 o'clock, 6 inch dim

3450_c7c59913-cb0b-40dd-ab3d-70cfad8fadde.jpg, 00:00:30, 221.00
Tap Factory Made, at 02 o'clock, 6 inch dim

3450_4f775aba-ca21-4437-b2ce-70962c255d72.jpg, 00:00:32, 238.30
Tap Factory Made, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**11/21/2016**	**3450**	**01**

3450_ebf1b9b9-62d5-4974-bb09-63b72260be68.jpg, 00:00:35, 263.40
Water Level, Sag in pipe

3450_f1dea24a-a1f5-4b3a-bc54-691e574861ca.jpg, 00:00:35, 267.80
Water Level, Sag in pipe

3450_b4276123-3d9e-4138-a4f5-0c552775d772.jpg, 00:00:40, 322.20
Water Level, Sag in pipe

3450_ad1b9ddb-6e4a-49a0-9b10-f1b8d3792dd6.jpg, 00:00:41, 327.60
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**11/21/2016**	**3450**	**01**

3450_579d77ce-fcda-4728-82f5-56cc72045e34.jpg, 00:00:42, 330.80
Broken, from 04 to 08 o'clock, within 8 inch

3450_dbb99722-3d6d-4e39-acee-c1b7605ff936.jpg, 00:00:43, 331.50
Tap Factory Made, at 06 o'clock, 6 inch dim

WinCan

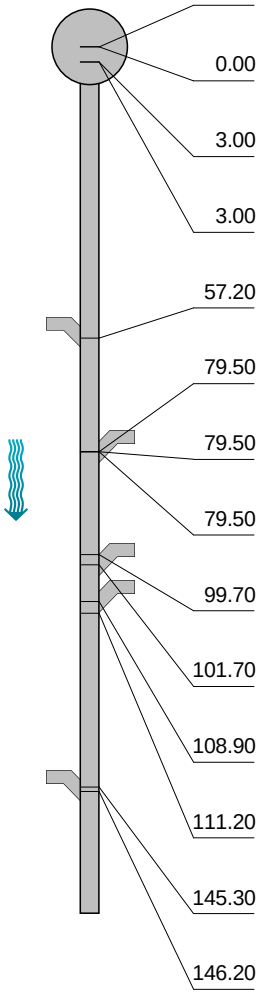
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/7/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3500**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**328.8**	**328.8**

City :		Drainage Area :		Upstream MH :	**SANMH 38**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 36**
Location Details :		Sheet Number :	**10**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :



1:1486 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 38	00:00:00		
0.00	MWL	Water Level	00:00:00		
3.00	DAE	Deposits Attached Encrustation, from 07 to 05 o'clock, within 8 inch	00:00:01		M2
3.00	DAE	Deposits Attached Encrustation, from 02 to 05 o'clock, within 8 inch	00:00:02		M2
57.20	TFA	Tap Factory Made Active, at 02 o'clock, 6 inch dim	00:00:08		
79.50	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim / cap has encrustation and infiltration dripper	00:00:11		
79.50	DAE	Deposits Attached Encrustation, at 10 o'clock	00:00:11		M2
79.50	ID	Infiltration Dripper, at 10 o'clock / in lateral cap	00:00:12		M3
99.70	DSGV	Deposits Settled Gravel, at 06 o'clock	00:00:14		M2
101.70	TFA	Tap Factory Made Active, at 10 o'clock, 6 inch dim	00:00:15		
108.90	TFA	Tap Factory Made Active, at 10 o'clock, 6 inch dim	00:00:16		
111.20	DSGV	Deposits Settled Gravel, at 06 o'clock	00:00:17		M2
145.30	JOM	Joint Offset Medium	00:00:20		S1
146.20	TFD	Tap Factory Made Defective, at 03 o'clock, 6 inch dim / lateral is half full of encrustation	00:00:22		M2

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Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/7/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3500**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**328.8**	**328.8**

1:1486 Distance	Code	Observation	Counter	Photo	Grade
194.00	TFC	Tap Factory Made Capped, at 09 o'clock, 6 inch dim / encrustation and infiltration stains from capped lateral	00:00:28		
216.30	TFA	Tap Factory Made Active, at 02 o'clock, 6 inch dim	00:00:31		
223.50	TFA	Tap Factory Made Active, at 09 o'clock, 6 inch dim	00:00:32		
224.90	MWLS	Water Level, Sag in pipe	00:00:33		
276.50	TFA	Tap Factory Made Active, at 10 o'clock, 6 inch dim	00:00:37		
327.90	FC	Fracture Circumferential, from 12 to 12 o'clock, within 8 inch	00:00:42		S2
328.80	AMH	Manhole / SAN MH 36	00:00:43		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
2111	3126	3.0	15.0	18.0	1.5	2.1	2.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3500**	**01**

3500_2f890bac-0cc9-4340-adcb-2dd6acc17f3b.jpg, 00:00:01, 3.00
Deposits Attached Encrustation, from 07 to 05 o'clock, within 8 inch

3500_f5c833a9-0544-4b7e-b067-4d8335f0c706.jpg, 00:00:02, 3.00
Deposits Attached Encrustation, from 02 to 05 o'clock, within 8 inch

3500_cb7ec75f-5de4-4aed-ab7b-d4d7158a5fff.jpg, 00:00:08, 57.20
Tap Factory Made Active, at 02 o'clock, 6 inch dim

3500_f27cd354-dc0b-4295-8fd2-2886ec76f0f2.jpg, 00:00:11, 79.50
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3500**	**01**

3500_aaf3d719-e6da-40c3-84ec-775dd691524d.jpg, 00:00:11, 79.50
Deposits Attached Encrustation, at 10 o'clock

3500_9786b028-762c-4273-a3c4-64a9e31a3a60.jpg, 00:00:12, 79.50
Infiltration Dripper, at 10 o'clock

3500_9bddd870-38f8-4e75-954f-bfc94736aded.jpg, 00:00:14, 99.70
Deposits Settled Gravel, at 06 o'clock

3500_a13ea253-2692-4ec3-9c42-3fdb08e682fd.jpg, 00:00:15, 101.70
Tap Factory Made Active, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3500**	**01**

3500_0feed9e5-7dcf-4270-ad80-489e804d088a.jpg, 00:00:16, 108.90
Tap Factory Made Active, at 10 o'clock, 6 inch dim

3500_5e8cec27-0618-4e14-9229-ab5fb6dd3725.jpg, 00:00:17, 111.20
Deposits Settled Gravel, at 06 o'clock

3500_125950b3-fb18-44a8-a354-0669542f7a5c.jpg, 00:00:20, 145.30
Joint Offset Medium

3500_29c6ff5d-0b9c-43b6-8cc8-abd14ab4a076.jpg, 00:00:22, 146.20
Tap Factory Made Defective, at 03 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3500**	**01**

3500_1f927df7-ee92-477d-af5b-6cbdaeb67f57.jpg, 00:00:28, 194.00
Tap Factory Made Capped, at 09 o'clock, 6 inch dim

3500_496328aa-d87e-40d3-91ed-8d309d8363fa.jpg, 00:00:31, 216.30
Tap Factory Made Active, at 02 o'clock, 6 inch dim

3500_309f7b71-fb42-45f3-b6f3-1a5f92e71eda.jpg, 00:00:32, 223.50
Tap Factory Made Active, at 09 o'clock, 6 inch dim

3500_f4a4d7c5-0ab3-47e9-b6a7-4fd1a2f2b9b0.jpg, 00:00:33, 224.90
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3500**	**01**

3500_5f8183c5-e27f-43a4-97d9-11db5071d392.jpg, 00:00:37, 276.50
Tap Factory Made Active, at 10 o'clock, 6 inch dim

3500_aa56e070-7e1b-4338-9f31-8f10eacbe31d.jpg, 00:00:42, 327.90
Fracture Circumferential, from 12 to 12 o'clock, within 8 inch

WinCan

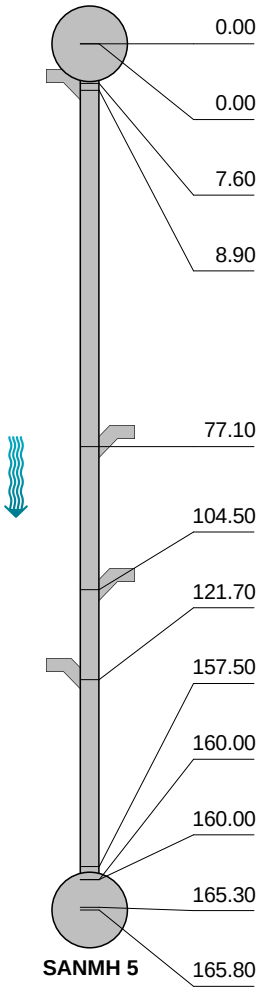
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/7/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3520**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**165.8**	**165.8**

City :		Drainage Area :		Upstream MH :	**SANMH 5A**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 5**
Location Details :		Sheet Number :	**9**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :



1:1449 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 5A	00:00:00		
0.00	MWL	Water Level	00:00:00		
7.60	RFJ	Roots Fine Joint, from 07 to 10 o'clock, within 8 inch	00:00:03		M1
8.90	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:03		
77.10	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim	00:00:15		
104.50	TF	Tap Factory Made, at 09 o'clock, 6 inch dim	00:00:20		
121.70	TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim	00:00:24		
157.50	MWL	Water Level	00:00:30		
160.00	MWLS	Water Level, Sag in pipe	00:00:31		
160.00	DSF	Deposits Settled Fine, at 06 o'clock	00:00:31		M4
165.30	DSF	Deposits Settled Fine, at 06 o'clock, within 8 inch	00:00:42		M4
165.80	MSA	Survey Abandoned / debris blocking camera, drop pipe 3ft ahead. No reverse setup needed	00:00:46		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4211	0.0	9.0	9.0	0.0	3.0	3.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3520**	**01**

3520_ce242b34-08bc-4109-a9e0-498dbbd87258.jpg, 00:00:03, 7.60
Roots Fine Joint, from 07 to 10 o'clock, within 8 inch

3520_832fc31b-5a54-41e5-9606-014d7f3ff1f4.jpg, 00:00:03, 8.90
Tap Factory Made, at 02 o'clock, 6 inch dim

3520_56aa8790-a467-448f-a749-25c291fbed93.jpg, 00:00:15, 77.10
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3520_e3018640-9b78-4726-9ca6-02e43c58551e.jpg, 00:00:20, 104.50
Tap Factory Made, at 09 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3520**	**01**

3520_540961d3-b2f6-4cd8-bd5d-c741a9d47ed4.jpg, 00:00:24, 121.70
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

3520_3ff49abc-81a1-46de-bfb1-f982a0dd4067.jpg, 00:00:30, 157.50
Water Level

3520_6421cf81-c6b6-4142-9957-84e826cdd9fa.jpg, 00:00:31, 160.00
Water Level, Sag in pipe

3520_a79bd56c-ac86-4c71-9806-a2334418946c.jpg, 00:00:31, 160.00
Deposits Settled Fine, at 06 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple Ave**	**10/7/2016**	**3520**	**01**

3520_e76b623f-05be-4179-b3e2-d42d17bc39c4.jpg, 00:00:42, 165.30
Deposits Settled Fine, at 06 o'clock, within 8 inch

3520_a6086b09-d391-40a3-9eb3-fedc3d4ac682.jpg, 00:00:46, 165.80
Survey Abandoned

WinCan

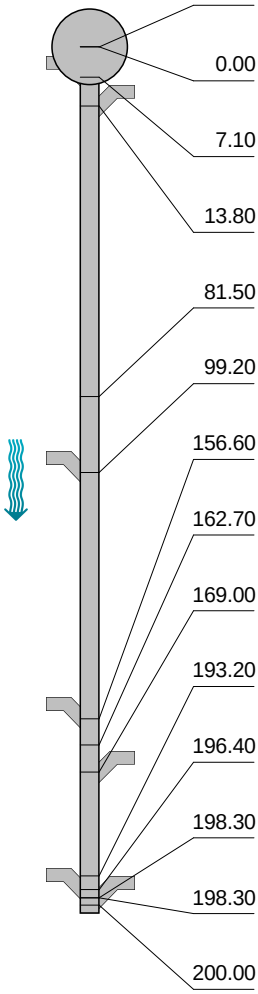
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3540**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**265.8**	**265.8**

City :		Drainage Area :		Upstream MH :	**SANMH 35**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 7**
Location Details :		Sheet Number :	**29**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :



1:1764	Distance	Code	Observation	Counter	Photo	Grade
SANMH 35	0.00	AMH	Manhole / SAN MH 35	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	7.10	TF	Tap Factory Made, at 03 o'clock, 6 inch dim	00:00:01		
	13.80	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:03		
	81.50	MGO	General Observation / lined over lateral	00:00:12		
	99.20	TF	Tap Factory Made, at 03 o'clock, 6 inch dim / roots in lateral connection	00:00:15		
	156.60	TF	Tap Factory Made, at 03 o'clock, 6 inch dim	00:00:24		
	162.70	MWLS	Water Level, Sag in pipe	00:00:25		
	169.00	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:26		
	193.20	MWLS	Water Level, Sag in pipe	00:00:30		
	196.40	TF	Tap Factory Made, at 03 o'clock, 6 inch dim	00:00:31		
	198.30	TF	Tap Factory Made, at 09 o'clock, 6 inch dim	00:00:32		
	198.30	MWLS	Water Level, Sag in pipe	00:00:32		
	200.00	MWLS	Water Level, Sag in pipe	00:00:33		

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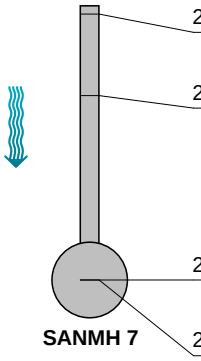
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3540**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**265.8**	**265.8**



Distance		Code	Observation	Counter	Photo	Grade
203.80	S01	MWLS	Water Level, Sag in pipe, S01	00:00:34		
222.80	F01	MWLS	Water Level, Sag in pipe, F01	00:00:36		
265.80		TF	Tap Factory Made, at 06 o'clock, 6 inch dim / drop pipe	00:00:43		
265.80		AMH	Manhole / SAN MH 7	00:00:43		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/11/2016**	**3540**	**01**

3540_086046a7-eb4e-47e2-aabe-928e0cc6f971.jpg, 00:00:01, 7.10
Tap Factory Made, at 03 o'clock, 6 inch dim

3540_0932673a-a133-4d36-9b87-f15647aea061.jpg, 00:00:03, 13.80
Tap Factory Made, at 10 o'clock, 6 inch dim

3540_b50dc594-759d-44b5-a99b-8cb1606ac8fa.jpg, 00:00:12, 81.50
General Observation

3540_0cef4280-299c-4ae2-9599-0d4a1ba2eb1c.jpg, 00:00:15, 99.20
Tap Factory Made, at 03 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/11/2016**	**3540**	**01**

3540_d9e91841-c7e4-41be-b6ed-74417fc06717.jpg, 00:00:24, 156.60
Tap Factory Made, at 03 o'clock, 6 inch dim

3540_93ffba7c-d0ab-404c-9d26-5e1a1a1c917b.jpg, 00:00:25, 162.70
Water Level, Sag in pipe

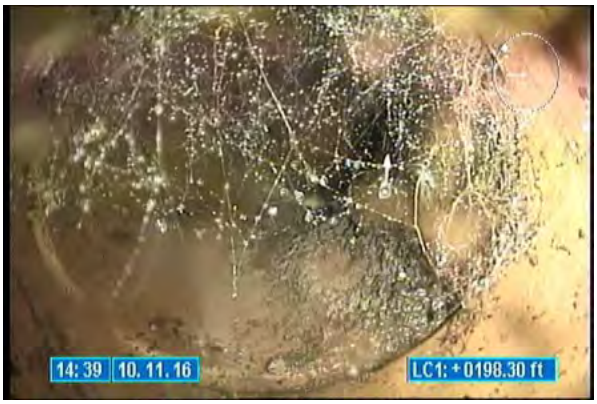
3540_dba867dc-5236-4729-ad27-2697d8c680ed.jpg, 00:00:26, 169.00
Tap Factory Made, at 10 o'clock, 6 inch dim

3540_51f9942c-f162-4767-b372-0236e3972883.jpg, 00:00:30, 193.20
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/11/2016**	**3540**	**01**

3540_a5463d70-424c-46e9-ab2c-1fd0dfe5a537.jpg, 00:00:31, 196.40
Tap Factory Made, at 03 o'clock, 6 inch dim



3540_77f4c20b-e0bb-4953-aa22-0f918bfa3c7d.jpg, 00:00:32, 198.30
Tap Factory Made, at 09 o'clock, 6 inch dim

3540_bcc1d1e8-51fb-451f-98b3-fa8b5742b03a.jpg, 00:00:32, 198.30
Water Level, Sag in pipe

3540_92bae998-dfac-4f62-9919-eee192d4cd10.jpg, 00:00:33, 200.00
Water Level, Sag in pipe

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City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Main St**	**10/11/2016**	**3540**	**01**

3540_7e5730d1-17f3-4f77-8209-9085fc4e16b1.jpg, 00:00:34, 203.80
Water Level, Sag in pipe, S01

3540_a6fb6589-a6e1-420a-b164-ae40ab4efd6c.jpg, 00:00:36, 222.80
Water Level, Sag in pipe, F01

3540_da77d353-846d-47bc-9ca4-cd043addb966.jpg, 00:00:43, 265.80
Tap Factory Made, at 06 o'clock, 6 inch dim

WinCan

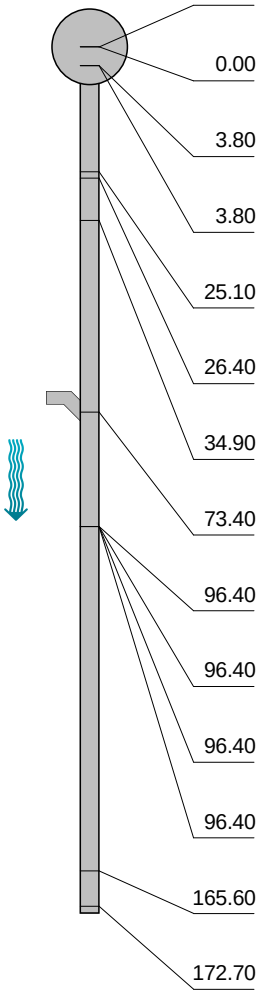
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/12/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3560**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**181.0**	**181.0**

City :		Drainage Area :		Upstream MH :	**SANMH 45**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 44**
Location Details :		Sheet Number :	**30**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :



1:1521 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 45	00:00:00		
0.00	MWL	Water Level	00:00:00		
3.80	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:02		M2
3.80	IS	Infiltration Stain, from 08 to 04 o'clock, within 8 inch	00:00:02		M4
25.10	DSGV	Deposits Settled Gravel, at 06 o'clock, within 8 inch	00:00:06		M3
26.40	DSGV	Deposits Settled Gravel, at 06 o'clock, within 8 inch	00:00:11		M3
34.90	DSZ	Deposits Settled Other, at 06 o'clock / ashpalt chunk	00:00:34		M4
73.40	TFA	Tap Factory Made Active, at 01 o'clock, 6 inch dim	00:00:46		
96.40	FM	Fracture Multiple, from 12 to 12 o'clock, within 8 inch	00:00:54		S4
96.40	DAE	Deposits Attached Encrustation, from 07 to 05 o'clock	00:00:55		M2
96.40	IS	Infiltration Stain, from 08 to 04 o'clock	00:00:55		M4
96.40	RFB	Roots Fine Barrell, from 07 to 05 o'clock	00:00:56		M2
165.60	RFJ	Roots Fine Joint, from 08 to 04 o'clock, within 8 inch	00:01:20		M1
172.70	DSGV	Deposits Settled Gravel, at 06 o'clock	00:01:21		M4

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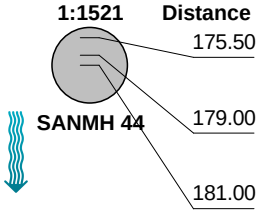
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/12/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3560**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**181.0**	**181.0**



1:1521 Distance	Code	Observation	Counter	Photo	Grade
175.50	RFJ	Roots Fine Joint, from 08 to 04 o'clock, within 8 inch	00:01:21		M1
179.00	DSGV	Deposits Settled Gravel, at 06 o'clock	00:01:26		M3
181.00	AMH	Manhole / SAN MH 44	00:01:27		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	4433	4.0	33.0	37.0	4.0	2.8	2.8

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**10/12/2016**	**3560**	**01**

3560_2af37fd7-f3a4-4382-b81c-5e3e9b3d3362.jpg, 00:00:02, 3.80
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

3560_75fa6616-943f-4ef8-90de-d25695fa0218.jpg, 00:00:02, 3.80
Infiltration Stain, from 08 to 04 o'clock, within 8 inch

3560_37501c0a-8f5d-466c-bb7b-4eca425fc60e.jpg, 00:00:06, 25.10
Deposits Settled Gravel, at 06 o'clock, within 8 inch

3560_34b0a8cb-8e10-42c8-8739-9eea4adff4d6.jpg, 00:00:11, 26.40
Deposits Settled Gravel, at 06 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**10/12/2016**	**3560**	**01**

3560_ea814fa4-e7ea-4e22-91b6-fc880c59a7f5.jpg, 00:00:34, 34.90
Deposits Settled Other, at 06 o'clock

3560_88d48c11-1245-4755-afbe-35e70317584c.jpg, 00:00:46, 73.40
Tap Factory Made Active, at 01 o'clock, 6 inch dim

3560_5bcc1352-d9cf-4c88-96cb-6eb58bf5ae39.jpg, 00:00:54, 96.40
Fracture Multiple, from 12 to 12 o'clock, within 8 inch

3560_2c32a0c7-36ac-4c0a-a829-b47f893b4d73.jpg, 00:00:55, 96.40
Deposits Attached Encrustation, from 07 to 05 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**10/12/2016**	**3560**	**01**

3560_e736aaa8-007f-4d2e-83de-0b7606db2ee1.jpg, 00:00:55, 96.40
Infiltration Stain, from 08 to 04 o'clock

3560_402a3c67-9191-4976-ade3-dde1a2baf16a.jpg, 00:00:56, 96.40
Roots Fine Barrell, from 07 to 05 o'clock

3560_c5a1e9ea-bd4e-4551-9524-9a2eed7bb003.jpg, 00:01:20, 165.60
Roots Fine Joint, from 08 to 04 o'clock, within 8 inch

3560_d870a9eb-27d8-4fe8-b1fe-ac59f8194a38.jpg, 00:01:21, 172.70
Deposits Settled Gravel, at 06 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**10/12/2016**	**3560**	**01**

3560_536bb00d-7f45-424a-aa6c-1ce4ee9b7793.jpg, 00:01:21, 175.50
Roots Fine Joint, from 08 to 04 o'clock, within 8 inch

3560_88eb8ff0-6b15-4504-b1f2-8c59c1e0b5e9.jpg, 00:01:26, 179.00
Deposits Settled Gravel, at 06 o'clock

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3620**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**274.3**	**274.3**

City :		Drainage Area :		Upstream MH :	**SANMH 34**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 33**
Location Details :		Sheet Number :	**28**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

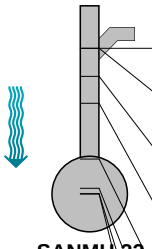
Additional Info :

1:1969 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 34	00:00:00		
0.00	MWL	Water Level	00:00:00		
2.50	DSZ	Deposits Settled Other, at 06 o'clock / ashpalt	00:00:03		M2
2.90	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:01		
10.20	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:05		
27.20	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:08		
73.20	IR	Infiltration Runner, at 12 o'clock, within 8 inch	00:00:15		M4
105.10	TF	Tap Factory Made, at 03 o'clock, 6 inch dim / infiltration from joint in lateral connection	00:00:19		
105.10	IR	Infiltration Runner, at 02 o'clock, within 8 inch / in lateral connection	00:00:20		M4
117.30	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim / encrustation from capped lateral	00:00:23		
117.30	IS	Infiltration Stain, at 10 o'clock / from capped lateral	00:00:23		M4
159.70	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:27		
212.10	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:32		
214.30	TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim / infiltration stains inside capped lateral	00:00:34		

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/11/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3620**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**274.3**	**274.3**



1:1969 Distance	Code	Observation	Counter	Photo	Grade
236.40	TFC	Tap Factory Made Capped, at 10 o'clock, 6 inch dim / encrustation from capped lateral	00:00:38		
236.40	IS	Infiltration Stain, at 10 o'clock / from capped lateral	00:00:38		M4
243.70	MWL	Water Level	00:00:39		
250.70	MWLS	Water Level, Sag in pipe	00:00:40		
265.20	MWLS	Water Level, Sag in pipe	00:00:43		
272.80	RMJ	Roots Medium Joint, from 01 to 05 o'clock, within 8 inch	00:00:46		M3
274.20	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:50		M2
274.30	AMH	Manhole / SAN MH 33	00:00:53		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4431	0.0	23.0	23.0	0.0	3.3	3.3

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**10/11/2016**	**3620**	**01**

3620_69edcade-d517-4010-ab58-988f5f483955.jpg, 00:00:03, 2.50
Deposits Settled Other, at 06 o'clock

3620_751062fd-33a3-4d21-9e38-2cb380e3ee50.jpg, 00:00:01, 2.90
Tap Factory Made, at 10 o'clock, 6 inch dim

3620_2aee5511-02c4-4978-be2b-23ba9f513399.jpg, 00:00:05, 10.20
Tap Factory Made, at 02 o'clock, 6 inch dim

3620_5a03ee69-3e87-403e-8818-d71d297232b2.jpg, 00:00:08, 27.20
Tap Factory Made, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**10/11/2016**	**3620**	**01**

3620_e1875589-e238-4d30-b85c-cfeadf070732.jpg, 00:00:15, 73.20
Infiltration Runner, at 12 o'clock, within 8 inch

3620_264cf0c7-ddb3-438d-aee1-ee76fd787eab.jpg, 00:00:19, 105.10
Tap Factory Made, at 03 o'clock, 6 inch dim

3620_cf8efdb9-eaad-48dc-a10d-1f7bb8d2f109.jpg, 00:00:20, 105.10
Infiltration Runner, at 02 o'clock, within 8 inch

3620_68e30b90-bcb9-4ab3-9478-b97c111b0d0c.jpg, 00:00:23, 117.30
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**10/11/2016**	**3620**	**01**

3620_1f6d6054-043b-4d45-a81f-d23ad4939f3c.jpg, 00:00:23, 117.30
Infiltration Stain, at 10 o'clock

3620_1d5b24c8-c504-4f9b-8087-77d63875452b.jpg, 00:00:27, 159.70
Tap Factory Made, at 02 o'clock, 6 inch dim

3620_71f74a2f-a395-448b-b642-05be41a52d3c.jpg, 00:00:32, 212.10
Tap Factory Made, at 10 o'clock, 6 inch dim

3620_0510000d-769a-4db4-86c5-32b760e7c4e8.jpg, 00:00:34, 214.30
Tap Factory Made Capped, at 02 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**10/11/2016**	**3620**	**01**

3620_2191137e-35d4-4cdd-830a-d66ac6e3ec5f.jpg, 00:00:38, 236.40
Tap Factory Made Capped, at 10 o'clock, 6 inch dim

3620_8cdaed4e-3dba-40ee-9184-ecd8cbf470d2.jpg, 00:00:38, 236.40
Infiltration Stain, at 10 o'clock

3620_0dae617d-9216-40c2-8255-c2e0aadc5449.jpg, 00:00:39, 243.70
Water Level

3620_b229f97c-598d-4536-9a7b-d69856782fcc.jpg, 00:00:40, 250.70
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Adelaide St**	**10/11/2016**	**3620**	**01**

3620_5ca9c15b-4ba0-49a7-a704-966908a6174c.jpg, 00:00:43, 265.20
Water Level, Sag in pipe

3620_6f8ed916-e783-445b-b644-d1e16970e776.jpg, 00:00:46, 272.80
Roots Medium Joint, from 01 to 05 o'clock, within 8 inch

3620_a5b88384-b860-4a3a-aba3-ecabf1a748d0.jpg, 00:00:50, 274.20
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/12/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3650**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Downstream**	**0.0**	**80.9**	**80.9**

City :		Drainage Area :		Upstream MH :	**SANMH 4**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 3**
Location Details :		Sheet Number :	**31**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :	**Cured in Place**	Owner :	

Additional Info :

1:707 Distance	Code	Observation	Counter	Photo	Grade
0.00	AMH	Manhole / SAN MH 4	00:00:00		
0.00	MWL	Water Level	00:00:00		
40.30	RFJ	Roots Fine Joint, at 02 o'clock, within 8 inch	00:00:05		M1
78.60	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock	00:00:09		M2
79.90	IG	Infiltration Gusher, from 09 to 03 o'clock	00:00:12		M5
80.00	FC	Fracture Circumferential, from 12 to 12 o'clock	00:00:11		S2
80.90	AMH	Manhole / SAN MH 3	00:00:14		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
2100	5121	2.0	8.0	10.0	2.0	2.7	2.5

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Maple St**	**10/12/2016**	**3650**	**01**

3650_58e1a8c9-11aa-4433-96f4-61edb275afed.jpg, 00:00:05, 40.30
Roots Fine Joint, at 02 o'clock, within 8 inch

3650_faf91cee-bd8c-4089-ad56-365ded1ebc57.jpg, 00:00:09, 78.60
Deposits Attached Encrustation, from 08 to 04 o'clock

3650_44c3b86d-0e71-469f-a174-3ccdc4d8be02.jpg, 00:00:12, 79.90
Infiltration Gusher, from 09 to 03 o'clock

3650_790d8b17-78d1-4c9f-a5c1-4afa8ce40de6.jpg, 00:00:11, 80.00
Fracture Circumferential, from 12 to 12 o'clock

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/29/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3660**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**0.0**	**284.2**	**284.2**

City :		Drainage Area :		Upstream MH :	**SANMH 43**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 3**
Location Details :		Sheet Number :	**11**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :

1:2483	Distance		Code	Observation	Counter	Photo	Grade
SANMH 43							
	0.00		AMH	Manhole / MH 43	00:00:00		
	0.00		MWL	Water Level	00:00:00		
	160.70		IR	Infiltration Runner, at 04 o'clock, within 8 inch	00:00:10		M4
	238.40	S01	MWLS	Water Level, Sag in pipe, S01	00:00:15		
	272.50		CC	Crack Circumferential, from 09 to 03 o'clock	00:00:19		S1
	272.50		DAE	Deposits Attached Encrustation, from 09 to 03 o'clock	00:00:19		M2
	272.50		IS	Infiltration Stain, from 09 to 03 o'clock	00:00:19		M4
	284.20	F01	MWLS	Water Level, Sag in pipe, F01	00:00:23		
SANMH 3	284.20		AMH	Manhole / MH 3	00:00:23		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
1100	4221	1.0	10.0	11.0	1.0	3.3	2.8

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**11/29/2016**	**3660**	**01**

3660_421d952e-4a72-4d81-91a9-12ff4f27f839.jpg, 00:00:10, 160.70
Infiltration Runner, at 04 o'clock, within 8 inch

3660_7bd1882f-311f-445e-bc92-95f43a5c2824.jpg, 00:00:15, 238.40
Water Level, Sag in pipe, S01

3660_d8507451-8d32-4c78-b2a0-4bdfca2bdea9.jpg, 00:00:19, 272.50
Crack Circumferential, from 09 to 03 o'clock

3660_463f702c-f6af-4eeb-8181-abc10c0ae744.jpg, 00:00:19, 272.50
Deposits Attached Encrustation, from 09 to 03 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Franklin St**	**11/29/2016**	**3660**	**01**

3660_2cf7b744-8154-4459-b376-09f52a36a021.jpg, 00:00:19, 272.50
Infiltration Stain, from 09 to 03 o'clock

3660_a7cedd30-4b3a-4aa9-8c36-383aa06658c5.jpg, 00:00:23, 284.20
Water Level, Sag in pipe, F01

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
10/12/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3690**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Upstream**	**0.0**	**43.6**	**43.6**

City :		Drainage Area :		Upstream MH :	**SANMH 1A**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 1**
Location Details :		Sheet Number :	**32**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :

1:381 Distance	Code	Observation	Counter	Photo	Grade
SANMH 1					
0.00	AMH	Manhole / SAN MH 1	00:00:00		
0.00	MWL	Water Level	00:00:00		
3.00	FC	Fracture Circumferential, from 12 to 12 o'clock, within 8 inch	00:00:01		S2
7.10	TFA	Tap Factory Made Active, at 11 o'clock, 6 inch dim	00:00:07		
41.60	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:11		M2
43.60	AMH	Manhole / SAN MH 1A	00:00:12		
SANMH 1A					

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
2100	2100	2.0	2.0	4.0	2.0	2.0	2.0

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Mill St**	**10/12/2016**	**3690**	**01**

3690_ad5351fe-39c0-4759-a875-3176dfb53352.jpg, 00:00:01, 3.00
Fracture Circumferential, from 12 to 12 o'clock, within 8 inch

3690_4fdeeb1d-c919-4359-a93b-6589e505dbbd.jpg, 00:00:07, 7.10
Tap Factory Made Active, at 11 o'clock, 6 inch dim

3690_2ba00e99-b2f0-432a-933e-555eee8c93e9.jpg, 00:00:11, 41.60
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

WinCan

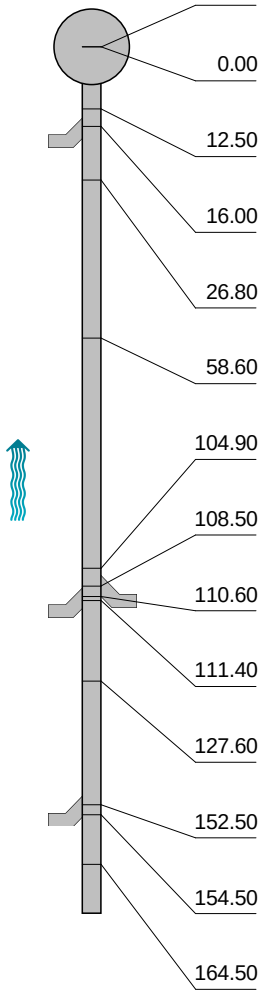
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/21/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3750**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**0.0**	**289.7**	**289.7**

City :	Drainage Area :	Upstream MH :	**SANMH 73**
Street :	Media Label :	Up Rim to Invert :	**0.0**
Location Code : **Main highway- suburban/rural**	Flow Control :	Downstream MH :	**SANMH 72**
Location Details :	Sheet Number : **9**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :



1:1523	Distance	Code	Observation	Counter	Photo	Grade
SANMH 72	0.00	AMH	Manhole / MH 72	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	12.50	MWLS	Water Level, Sag in pipe	00:00:02		
	16.00	TF	Tap Factory Made, at 03 o'clock, 6 inch dim	00:00:03		
	26.80	MWLS	Water Level, Sag in pipe	00:00:05		
	58.60	MWLS	Water Level, Sag in pipe	00:00:09		
	104.90	MWLS	Water Level, Sag in pipe	00:00:12		
	108.50	TF	Tap Factory Made, at 11 o'clock, 6 inch dim	00:00:13		
	110.60	TFC	Tap Factory Made Capped, at 02 o'clock, 6 inch dim	00:00:14		
	111.40	MWLS	Water Level, Sag in pipe	00:00:14		
	127.60	MWLS	Water Level, Sag in pipe	00:00:16		
	152.50	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:18		
	154.50	MWLS	Water Level, Sag in pipe	00:00:19		
	164.50	MWLS	Water Level, Sag in pipe	00:00:19		

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/21/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3750**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**0.0**	**289.7**	**289.7**

SANMH 73

1:1523 Distance	Code	Observation	Counter	Photo	Grade
184.20	MWLS	Water Level, Sag in pipe	00:00:20		
195.10	TFA	Tap Factory Made Active, at 11 o'clock, 6 inch dim	00:00:22		
208.60	MWLS	Water Level, Sag in pipe	00:00:24		
226.10	MWLS	Water Level, Sag in pipe	00:00:25		
264.90	MWLS	Water Level, Sag in pipe	00:00:28		
274.50	DAE	Deposits Attached Encrustation, from 12 to 05 o'clock	00:00:30		M2
275.00	CC	Crack Circumferential, from 12 to 12 o'clock	00:00:29		S1
280.90	MWLS	Water Level, Sag in pipe	00:00:31		
285.90	DAE	Deposits Attached Encrustation, from 07 to 05 o'clock, within 8 inch	00:00:32		M2
289.70	AMH	Manhole / MH 73	00:00:34		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
1100	2200	1.0	4.0	5.0	1.0	2.0	1.7

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/21/2016**	**3750**	**01**

3750_cd4a52d2-4c81-4c3f-9d13-e15f094b1340.jpg, 00:00:02, 12.50
Water Level, Sag in pipe

3750_071ceb18-8a48-45ce-9011-77878d866850.jpg, 00:00:03, 16.00
Tap Factory Made, at 03 o'clock, 6 inch dim

3750_5e0e665b-d286-4408-a6a2-e56a4ca11285.jpg, 00:00:05, 26.80
Water Level, Sag in pipe

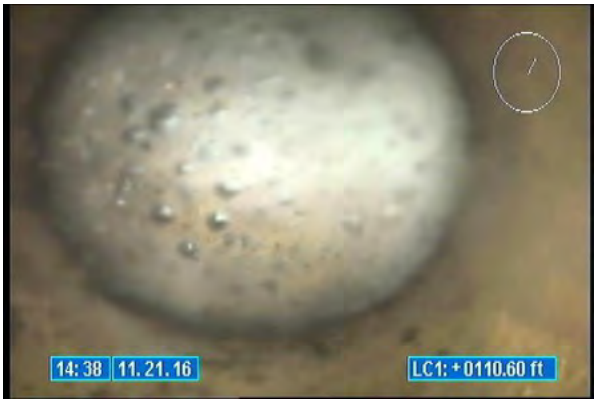
3750_1a126f4a-27c6-45ef-ae57-0bddb77d39f4.jpg, 00:00:09, 58.60
Water Level, Sag in pipe

WinCan

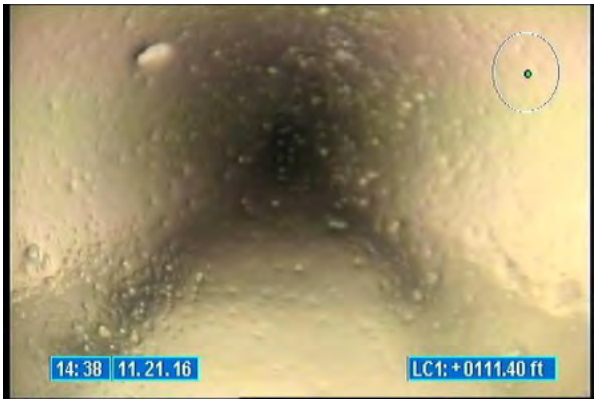
City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/21/2016**	**3750**	**01**

3750_3dbf86bf-d74c-411e-973a-05ee187260f2.jpg, 00:00:12, 104.90
Water Level, Sag in pipe

3750_5219058b-ba55-4650-a344-16df8ab27186.jpg, 00:00:13, 108.50
Tap Factory Made, at 11 o'clock, 6 inch dim



3750_c8602ff1-f170-4840-b140-356e8de99c80.jpg, 00:00:14, 110.60
Tap Factory Made Capped, at 02 o'clock, 6 inch dim



3750_17bcf455-cb2c-4f2c-8a77-6cf1a9248f9b.jpg, 00:00:14, 111.40
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/21/2016**	**3750**	**01**

3750_0c70e91d-c3a3-416b-a575-b42d2c49a80a.jpg, 00:00:16, 127.60
Water Level, Sag in pipe

3750_42b8a338-644d-41a5-80df-2313c3f458f6.jpg, 00:00:18, 152.50
Tap Factory Made, at 02 o'clock, 6 inch dim

3750_f7642c40-d923-40d9-a2b8-0a90f2d3a65e.jpg, 00:00:19, 154.50
Water Level, Sag in pipe

3750_9259c17a-3fb1-4d67-8fab-32df62b45b2c.jpg, 00:00:19, 164.50
Water Level, Sag in pipe

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/21/2016**	**3750**	**01**

3750_f2406eab-b7cb-439b-bf45-2cf79c0e5348.jpg, 00:00:20, 184.20
Water Level, Sag in pipe

3750_bd50da92-0bdc-43a0-b8fd-aea83babced5.jpg, 00:00:22, 195.10
Tap Factory Made Active, at 11 o'clock, 6 inch dim

3750_9b6d8cf3-0fee-4f7c-946b-2f216e4f4000.jpg, 00:00:24, 208.60
Water Level, Sag in pipe

3750_81a0bd06-4620-472b-ba9e-b8a19559b8bf.jpg, 00:00:25, 226.10
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/21/2016**	**3750**	**01**

3750_b17e39fd-c3f1-4c2e-829e-688db773d6b6.jpg, 00:00:28, 264.90
Water Level, Sag in pipe

3750_ddb3d5bf-6582-4273-9633-dc0e8626dae2.jpg, 00:00:30, 274.50
Deposits Attached Encrustation, from 12 to 05 o'clock

3750_0da8913e-5a90-42f3-8db3-ec0a9802aa68.jpg, 00:00:29, 275.00
Crack Circumferential, from 12 to 12 o'clock

3750_e197e2af-7df5-4ce7-b655-b41d2b3c54b9.jpg, 00:00:31, 280.90
Water Level, Sag in pipe

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/21/2016**	**3750**	**01**

3750_bc13b1a0-decf-41f5-bfb1-e53fb28dfdb4.jpg, 00:00:32, 285.90
Deposits Attached Encrustation, from 07 to 05 o'clock, within 8 inch

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/29/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3870**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	No Pre-Cleaning	**Upstream**	**0.0**	**38.2**	**38.2**

City :	Drainage Area :	Upstream MH : **SANMH 70**
Street :	Media Label :	Up Rim to Invert : **0.0**
Location Code : **Easement/Right of way**	Flow Control :	Downstream MH : **SANMH 69**
Location Details :	Sheet Number : **43**	Down Rim to Invert : **0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :

1:334 Distance	Code	Observation	Counter	Photo	Grade
SANMH 69					
0.00	AMH	Manhole / SAN MH 69	00:00:00		
0.00	MWL	Water Level	00:00:00		
3.10	RMJ	Roots Medium Joint, from 08 to 04 o'clock, within 8 inch	00:00:01		M3
6.70	RFJ	Roots Fine Joint, from 09 to 03 o'clock, within 8 inch	00:00:02		M1
10.90	MWLS	Water Level, Sag in pipe	00:00:02		
16.90	RFJ	Roots Fine Joint, from 08 to 03 o'clock, within 8 inch	00:00:04		M1
38.20	AMH	Manhole / SAN MH 70	00:00:07		
SANMH 70					

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	3112	0.0	5.0	5.0	0.0	1.7	1.7

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/29/2016**	**3870**	**01**

3870_ef22c97f-f7b1-491d-b74a-96068f662970_20170412_133549_258.jpg, 00:00:00, 0.00
Water Level

3870_e4f826b3-7fbe-4c5c-80bd-408ce021ebc6_20170412_133558_814.jpg, 00:00:00, 0.00
Water Level

3870_1c268518-b998-4f22-b4d0-b8dd3a1ae3a0.jpg, 00:00:01, 3.10
Roots Medium Joint, from 08 to 04 o'clock, within 8 inch

3870_daf9ae71-2bba-469b-8003-2733e61613a0.jpg, 00:00:02, 6.70
Roots Fine Joint, from 09 to 03 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Ewen St**	**11/29/2016**	**3870**	**01**

3870_93be6e96-702a-4811-8586-a4457c1869b4.jpg, 00:00:02, 10.90
Water Level, Sag in pipe

3870_b2f920b0-de13-4794-b6af-a4c76d0b66f8.jpg, 00:00:04, 16.90
Roots Fine Joint, from 08 to 03 o'clock, within 8 inch

WinCan

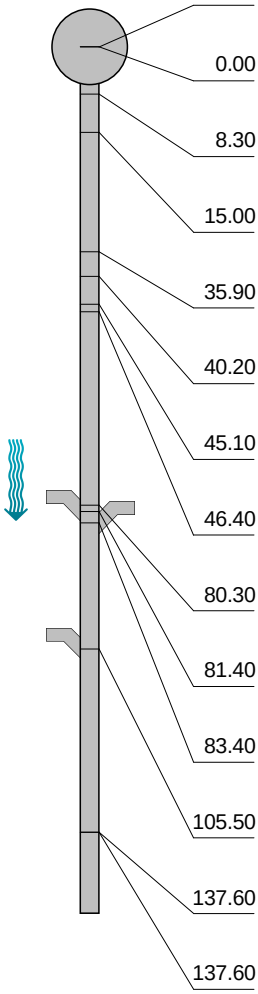
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/29/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3940**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**0.0**	**322.0**	**322.0**

City :		Drainage Area :		Upstream MH :	**SANMH 6**
Street :		Media Label :		Up Rim to Invert :	**0.0**
Location Code :	**Main highway- suburban/rural**	Flow Control :		Downstream MH :	**SANMH 5**
Location Details :		Sheet Number :	**40**	Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Sanitary**
Pipe size:	**8**	Sewer Category :	**SEC**
Pipe material:	**Vitrified Clay Pipe**	Purpose:	
Lining Method :		Owner :	

Additional Info :

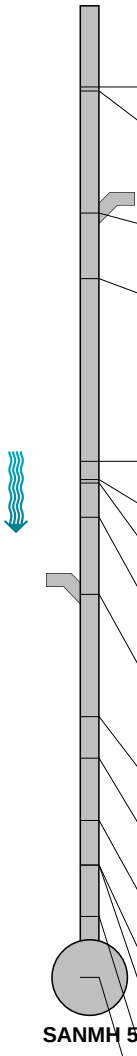


1:1326	Distance	Code	Observation	Counter	Photo	Grade
SANMH 6	0.00	AMH	Manhole / SAN MH 6	00:00:00		
	0.00	MWL	Water Level	00:00:00		
	8.30	FC	Fracture Circumferential, from 07 to 05 o'clock	00:00:01		S2
	15.00	MWLS	Water Level, Sag in pipe	00:00:03		
	35.90	DAE	Deposits Attached Encrustation, at 02 o'clock	00:00:06		M2
	40.20	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:07		M2
	45.10	MWLS	Water Level, Sag in pipe	00:00:08		
	46.40	DSGV	Deposits Settled Gravel, at 06 o'clock	00:00:09		M3
	80.30	DAE	Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch	00:00:14		M2
	81.40	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:14		
	83.40	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:15		
	105.50	TFA	Tap Factory Made Active, at 02 o'clock, 6 inch dim	00:00:19		
	137.60	MWLS	Water Level, Sag in pipe	00:00:22		
	137.60	DSGV	Deposits Settled Gravel, at 06 o'clock	00:00:22		M2

WinCan

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
11/29/2016	**01**	**Dry**	**Jake**	**U-409-8726**	**3940**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**0.0**	**322.0**	**322.0**



1:1326 Distance	Code	Observation	Counter	Photo	Grade
166.00	DSGV	Deposits Settled Gravel, at 06 o'clock	00:00:26		M3
166.70	RMJ	Roots Medium Joint, at 05 o'clock, within 8 inch	00:00:27		M3
188.10	TF	Tap Factory Made, at 10 o'clock, 6 inch dim	00:00:30		
199.60	FL	Fracture Longitudinal, at 10 o'clock, within 8 inch	00:00:32		S3
231.60	OBM	Obstacles Pipe Material, at 06 o'clock	00:00:38		M4
234.80	MWLS	Water Level, Sag in pipe	00:00:53		
235.40	MGO	General Observation / have to clean from this point on	00:00:46		
241.40	MWLS	Water Level, Sag in pipe	00:00:54		
254.90	TF	Tap Factory Made, at 02 o'clock, 6 inch dim	00:00:55		
276.30	DAE	Deposits Attached Encrustation, from 07 to 11 o'clock, within 8 inch	00:00:57		M2
283.60	MWLS	Water Level, Sag in pipe	00:00:58		
294.50	MWLS	Water Level, Sag in pipe	00:00:59		
302.30	FC	Fracture Circumferential, from 12 to 12 o'clock	00:01:00		S2
302.30	DAE	Deposits Attached Encrustation, from 12 to 05 o'clock	00:01:01		M2
311.30	FH4	Fracture Longitudinal Hinge, 4, from 12 to 12 o'clock, within 8 inch	00:01:03		S5
322.00	AMH	Manhole / SAN MH 5	00:01:05		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5131	4133	12.0	25.0	37.0	3.0	2.5	2.6

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Water St**	**11/29/2016**	**3940**	**01**

3940_68c20f11-1fbe-4ffe-903a-c830a3454888.jpg, 00:00:01, 8.30
Fracture Circumferential, from 07 to 05 o'clock

3940_7a555b58-d1c2-438b-9be4-90eac712b26f.jpg, 00:00:03, 15.00
Water Level, Sag in pipe

3940_54869c28-7f1d-4dbf-b46f-0a4117d66aaa.jpg, 00:00:06, 35.90
Deposits Attached Encrustation, at 02 o'clock

3940_d6cc5d3f-2c92-4faf-b469-af2ece6166f3.jpg, 00:00:07, 40.20
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Water St**	**11/29/2016**	**3940**	**01**

3940_e8bd78d2-7ade-4fa1-9acf-e6dccd31b785.jpg, 00:00:08, 45.10
Water Level, Sag in pipe

3940_3e67d28a-384e-4c20-87ef-d34d5f7bcb01.jpg, 00:00:09, 46.40
Deposits Settled Gravel, at 06 o'clock

3940_129a0731-f7e2-4910-ba05-2e5cc384c581.jpg, 00:00:14, 80.30
Deposits Attached Encrustation, from 08 to 04 o'clock, within 8 inch

3940_bca7e39a-cfae-402c-a728-0e1459ba6836.jpg, 00:00:14, 81.40
Tap Factory Made, at 02 o'clock, 6 inch dim

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Water St**	**11/29/2016**	**3940**	**01**

3940_38f2c972-04e0-4cf6-be54-4ea248a8143e.jpg, 00:00:15, 83.40
Tap Factory Made, at 10 o'clock, 6 inch dim

3940_6ce4164c-6714-4dc9-bbf0-952e4e253a20.jpg, 00:00:19, 105.50
Tap Factory Made Active, at 02 o'clock, 6 inch dim

3940_fbd9f18c-71b1-4fe2-a828-b0a7689b847d.jpg, 00:00:22, 137.60
Water Level, Sag in pipe

3940_16c99795-1313-47f9-b81d-b294a03a2fa4.jpg, 00:00:22, 137.60
Deposits Settled Gravel, at 06 o'clock

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Water St**	**11/29/2016**	**3940**	**01**

3940_109c41e6-c040-4842-bd77-d3852f18f1ff.jpg, 00:00:26, 166.00
Deposits Settled Gravel, at 06 o'clock

3940_a4acd987-6ac7-439c-b7d0-7c2e0a40698a.jpg, 00:00:27, 166.70
Roots Medium Joint, at 05 o'clock, within 8 inch

3940_05be227a-9aa7-4691-9669-ea8c4db91697.jpg, 00:00:30, 188.10
Tap Factory Made, at 10 o'clock, 6 inch dim

3940_8c856fc8-0c6d-4460-aef8-0f6d2132eeed.jpg, 00:00:32, 199.60
Fracture Longitudinal, at 10 o'clock, within 8 inch

WinCan

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Water St**	**11/29/2016**	**3940**	**01**

3940_e79fabd4-7a0b-454b-b0a0-564fb507b550.jpg, 00:00:38, 231.60
Obstacles Pipe Material, at 06 o'clock

3940_9d6336e4-db55-4756-a227-2aa93d7e7be3.jpg, 00:00:53, 234.80
Water Level, Sag in pipe

3940_4590cdbf-32b2-44e7-8412-678cd120599f.jpg, 00:00:46, 235.40
General Observation

3940_ec63616d-3e23-4262-9e6d-2404daddbac9.jpg, 00:00:54, 241.40
Water Level, Sag in pipe

City	Street	Date	Pipe Segment Reference	Work Order
Maple Rapids	**Water St**	**11/29/2016**	**3940**	**01**

3940_187c7b58-8ea1-4f96-8389-48f85658e08c.jpg, 00:00:55, 254.90
Tap Factory Made, at 02 o'clock, 6 inch dim

3940_cae37ef3-dce0-466b-bdd0-e28e3a322bea.jpg, 00:00:57, 276.30
Deposits Attached Encrustation, from 07 to 11 o'clock, within 8 inch

3940_ba2382ff-7990-41d2-adc7-b1f66891b3c1.jpg, 00:00:58, 283.60
Water Level, Sag in pipe

3940_1e2100f3-dcf3-4c6d-8142-0da4eba7e0aa.jpg, 00:00:59, 294.50
Water Level, Sag in pipe

3940_679c5e36-e982-4847-a13d-f371584007f7.jpg, 00:01:00, 302.30
Fracture Circumferential, from 12 to 12 o'clock

3940_cbbded02-768b-4075-b8e2-c97fd2ca415e.jpg, 00:01:01, 302.30
Deposits Attached Encrustation, from 12 to 05 o'clock

3940_eb26960e-462a-4ec1-80b0-02b41397219b.jpg, 00:01:03, 311.30
Fracture Longitudinal Hinge, 4, from 12 to 12 o'clock, within 8 inch

3940_4d8815c0-6a8a-48a8-97ca-9eb8fe92be34.jpg, 00:01:05, 322.00
Manhole

APPENDIX D

Overburdened Community Status Determination Worksheet

APPENDIX E

Public Meeting

Appendix E

Part 1: Public Meeting Notice

NOTICE OF PROJECT PLANNING PUBLIC MEETING

The Village of Maple Rapids will hold a public meeting on the proposed Wastewater System Improvements and Storm Water System Improvements project for the purpose of receiving comments from interested persons.

The meeting will be held in person at 6:30 p.m. EST on Wednesday, April 26, 2023 at the Maple Rapids Community Center, 209 Union Street, Maple Rapids, MI 48853

The purpose of the proposed project is to implement wastewater system improvements and storm water system improvements to meet present day regulatory standards, to replace deteriorated wastewater and storm water assets, and to minimize long term operation costs.

Project construction will involve the following:

- Wastewater Main Pump Station Replacement
- Lagoon Outfall Headwall Replacement and Gravel Berm Drive Rehabilitation
- Sanitary Sewer System Rehabilitation via CIPP
- Storm Sewer Replacement and Road Reconstruction

Impacts of the proposed project include short term construction related impacts and financial impacts to the Village wastewater system users. No significant long term adverse impacts are anticipated to cultural or environmentally sensitive resources.

The estimated cost to users for the proposed project will be approximately $2,390,000 with costs to individual users dependent on the level and type of project financing that can be secured by the Village for the project. The Village intends to pursue project financing with the goal of minimizing the impact to system users.

Copies of the plan detailing the proposed project are available for inspection at the following location:

- An electronic PDF is available on the Village of Maple Rapids website at www.maplerapids.org

Written comments received before the meeting record is closed on Wednesday, April 26, 2023 will receive responses in the final project plan. Written comments should be sent to:

Village of Maple Rapids, Office of the Clerk
C/O Diana Henry, Village Clerk
118 Adelaide Street
Maple Rapids, MI 48853
Henrydiana59@gmail.com

VILLAGE OF MAPLE RAPIDS (/)

NOTICES

RETURN TO HOME PAGE (/HOME-2)

Village of Maple Rapids

Special Council Meeting

Wednesday, April 26th @ 6:30 pm

VILLAGE OF MAPLE RAPIDS (/)

Location: Maple Rapids Community Center

209 Union St, Maple Rapids, MI 48853

This meeting is for the propsosed Wastewater System Improvements and Storm Water System Improvements project for the

VILLAGE OF MAPLE RAPIDS (2)

purpose of receiving comments from interested persons.

Click here to view the entire notice (/s/230063_2023_CWSRF_EGLE_PublicNotice.pdf)

VILLAGE OF MAPLE RAPIDS (/)

Village of Maple Rapids is currently looking for someone to run the ***Maple Rapids Community Center****. Please contact the Village Clerk with any*

VILLAGE OF MAPLE RAPIDS (MI)

questions and if you are interested.

Clerk Office 989-682-9227. Thank you

Maple Rapids Farmers Market -

VILLAGE OF MAPLE RAPIDS

June -October every other weekend

Click this link to view the information (/s/Maple-Rapids-Farmers-Market.pdf)

Click here for a link to facebook page (https://www.facebook.com/Maple-Rapids-Farmers-Market-110675724956831)

CMS Internet is bringing fiber option internet

VILLAGE OF MAPLE RAPIDS M/Y

service to our area.

Click this link to view more infomation. *(/s/CMS-Residential-Fiber-Letter-coming-soon.pdf)*

VILLAGE OF MAPLE RAPIDS

Village of Maple Rapids Water Quality Report for 2021 has been added to the documents page.

Village will be working on a new Call Notification System to be used for some emergency notifications.

Watch for additional information in the with July Water Bill and July Newsletter.
— A form will be need to be completed with your information so it can be added to the system. Please only add those numbers that are needed. We have to pay for each and every call. It is your responsibility to contact the Village for any contact information changes. There is a copy of the form in the documents page on out website.

THIS CALL SYSTEM IS FOR THE VILLAGE TO CONTACT YOU IN CASE OF A VILLAGE EMERGENCY ANNOUNCEMENT. For example like last November when the sewer system was having issues and we needed limited water use.

Click here to go the documents page. (/documents)

VILLAGE OF MAPLE RAPIDS (/)

Click here to go the documents page. *(/documents)*

RETURN TO HOME PAGE (/HOME-2)

VILLAGE OF MAPLE RAPIDS (7)

VILLAGE OF MAPLE RAPIDS
118 W ADELIADE ST
PO BOX 200
MAPLE RAPIDS, MI 48853
OFFICE # 989-682-9227
DPW # 989-682-4569

Email the Webmaster by clicking here (mailto:mindy_thomas@hotmail.com)

Appendix E

Part 2: Public Meeting Presentation

Appendix E

Part 3: Public Meeting Comment Summary

Appendix E

Part 4: Public Meeting Attendee List

Appendix E

Part 5: Adoption of the Project Plan