This template provides a format to document the information required to support successful private watermain commissioning in the City of Guelph. The completed template must be submitted to PrivateWMCommissioning@guelph.ca for approval.

A sketch of the site is to be included separate from this template indicating system layout with source, sampling locations, swab launch and exit clearly marked.

# Private Watermain Commissioning Plan

Address: Enter

Contractor Name: Enter

Contractor Primary Contact Information (Name, phone, email): Enter

# Sample Locations

Samples will be taken, using copper tails, from existing system facilities like service laterals and air relief valve fittings, or temporary service laterals, where necessary, on long runs. All services ≥100mm in diameter and all hydrant leads >6m in length must be sampled accordingly.

| Sample Point Number  | Street Name | Station | Distance from Source or Previous Sample Location  | Type of Sample Port |
| --- | --- | --- | --- | --- |
| (1-01, 1-02 etc.) |  | (0+xxx) | (max. 370 m) | (blowoff/hydrant) |
| Enter | Enter | Enter | Enter | Enter |
| Enter | Enter | Enter | Enter | Enter |
| Enter | Enter | Enter | Enter | Enter |
| Enter | Enter | Enter | Enter | Enter |
| Enter | Enter | Enter | Enter | Enter |
| Enter | Enter | Enter | Enter | Enter |

# Water Source

The watermain stage under test will be connected to the source as detailed below. The reduced pressure principle (RP) backflow preventer must be tested and certified on-site to prevent a possible reverse flow and contamination of the in-service source main. Any samples taken at the source end of the new main will come from the downstream side (new main side) of the backflow preventer.

**NOTE: The City of Guelph does not allow water trucks to be used for commissioning.**

|  |  |
| --- | --- |
| Address | Enter |
| Location of source (Station 0+xxx) | Enter |
| Source Size (mm) | Choose |
| Number of Fill Lines | Enter |
| Fill Line Size (mm) | Choose |
| Back Flow Preventer Type | Choose |

# Swabbing

Swabbing will be done wet and 4 (four) swabs will pass through all new mains. Water will be added to the pipelines ahead of the swabs by adding water via the source connection. Swabs will be a minimum of 50mm larger than the diameter of the pipe. Swabs will travel at a velocity of 0.5-1.0m/s.

| Street Name | Launch Station | Pipe Size | Swab Size | Swab Velocity | Retrieval Location Station |
| --- | --- | --- | --- | --- | --- |
|  | (0+xxx) | (mm) | (mm) | (m/sec) | (0+xxx) |
| Enter | Enter | Choose | Choose | Enter | Enter |
| Enter | Enter | Choose | Choose | Enter | Enter |
| Enter | Enter | Choose | Choose | Enter | Enter |
| Enter | Enter | Choose | Choose | Enter | Enter |

# Hydrostatic Testing/Leakage Calculation

As a minimum, the hydrostatic test pressure of 1035 kPa (150psi) will be applied to all points of the watermain within the test section, including high points.

| Point | Street Name | Station | Elevation | Pressure | Pipe Diameter | Length of Test Section |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | (0+xxx) | (m) | (kPa/psi) | (mm) | (m) |
| Test Pressure Application Point | Enter | Enter | Enter | Enter | Enter | Enter |
| High Elevation Point | Enter | Enter | Enter | Enter | Enter | Enter |
| Low Elevation Point | Enter | Enter | Enter | Enter | Enter | Enter |
| Leakage Calculation | Enter |

*This section is not applicable for temporary servicing. A visual inspection is required.*

# Disinfection and Testing

Sodium Hypochlorite will be provided in sealed containers with labels that demonstrate compliance with AWWA and NSF/ANSI/CAN 60 Standards.

Disinfection will be carried out in accordance with MECP’s Watermain Disinfection Procedure (as related to new watermain) and AWWA C651. Chlorine will be injected into the new main at the source end at a rate that will result in a free chlorine residual of between 50 and 100 mg/l (ppm) throughout the new pipeline.

After 24 hours, the maximum allowable decrease in concentration is 40%, to a maximum concentration decrease of 50 mg/L. All chlorinated water will be neutralized to less than 0.2 mg/l free chlorine for discharge to a storm sewer or less than 0.05 mg/l free chlorine when there may be detrimental effects to the natural environment.

| Type of Chlorine | Rate of Water Flow | Rate of Chlorine Injection | Time to Chlorinate Test Section | Target Chlorine Residual | Neutralizing Agent |
| --- | --- | --- | --- | --- | --- |
| (Sodium Hypochlorite/NaOCl) | (L/sec) | (L/sec) | (min) | (mg/L) | (Sodium Thiosulphate) |
| Choose | Enter | Enter | Enter | Enter | Choose |

Results of bacteriological sample analysis must be approved by Water Services prior to final connection. Ensure all sample results are forwarded to PrivateWMCommissioning@guelph.ca.

# Final Connections

# Less than or equal to 6m

Final connection <6m will be made in dry conditions. All required pipe and fittings shall be swabbed with a minimum 1% solution of chlorine prior to installation.

**If the connection is being made to City of Guelph owned infrastructure, a Certified Water Services Operator must be on site to witness the connection, with a minimum of 48 hours notice given.**

| Type of Connection | Gap to Connect | Connection Details |
| --- | --- | --- |
| (cut-in tee or sleeve etc.) | (<6m) |  |
| Enter | Enter | Enter |

| Type of Connection | Gap to Connect | Connection Details |
| --- | --- | --- |
| (cut-in tee or sleeve etc.) | (<6m) |  |
| Enter | Enter | Enter |

*This section is not applicable for temporary servicing.*

**Greater than 6m and less than 40m**

Connections greater than one pipe length (generally > 6 m) shall be undertaken in accordance with Section 4.10.2 of ANSI/AWWA Standard C651.

**Exception:** The procedure described below may be used at the discretion of the Operating Authority for the installation and disinfection of Connections greater than one pipe length and up to a total length of 40 m if the Connection:

1. Crosses a transportation corridor, the extended closure of which could result in significant community impacts (e.g., traffic congestion, loss of emergency vehicle access, safety concerns), or
2. Cannot be constructed to within one pipe length of the existing watermain due to the potential for destabilizing an existing thrust block.
* A Certified Operator is required to witness the installation of the Connection to the existing municipal infrastructure to ensure that sanitary construction practices are followed, and proper disinfection is performed.
* The Connection shall remain Isolated from the existing Drinking Water System, except while being flushed or sampled, until satisfactory results are received from two Microbiological Samples taken by a Certified Operator
* Where required by the Operating Authority, hydrostatic testing of the Connection shall not be undertaken against the isolating valve until satisfactory results from the Microbiological Samples referred to above are received. Drinking Water shall be used for hydrostatic testing.

Are you requesting an exception to 4.10.2 of ANSI/AWWA Standard C651? Choose

Reason for exception (including address/location): Enter

Type of Connection: Enter

Length of gap to connect: Enter

**Exception Approval (completed by Water Services)**

Exception approved: Choose

Water Services Representative Approval: Name

Date: Click or tap to enter a date.

*This section is not applicable for temporary servicing.*

# Site Diagram

Site diagram has been attached to this submission indicating system layout with source, sampling locations, swab launch and exit clearly marked: [ ]

# Review

Commissioning plan reviewed: Choose

Reviewer: Name

Date: Click or tap to enter a date.

# Approval (completed by Water Services)

Commissioning plan approved: Choose

Water Services Representative Approval: Name

Date: Click or tap to enter a date.

# Final Approval for connection to city infrastructure (if applicable)

Prior to final approval for connection to municipal infrastructure, Water Services must receive confirmation of the following information:

* Backflow Prevention:
	+ Air gap (as defined in CSA Standard B64.10 “Selection and Installation of Backflow Preventers) or Reduced Pressure Principle Backflow Preventer installed as per Section 4.8.9 of ANSI/AWWA Standard C651; and
	+ Backflow preventer tested as per Section 1.1.1 of this procedure.
* Pre-disinfection swabbing and/or flushing have been completed.
* Disinfection Process:
	+ Method of disinfection;
	+ Disinfection chemical meets the requirements of both the AWWA and NSF/ANSI/CAN 60 Standards.
	+ Date and time disinfection started and ended;
	+ Chlorine concentration at start and end of contact time at each sampling point; and
	+ Decrease in chlorine concentration in mg/L and/or percentage as applicable.
* Microbiological Sampling:
	+ Schematic or drawing showing approximate location where Microbiological Samples were taken;
	+ Microbiological and disinfectant residual sample results; and
	+ For staged sampling: flow rate, time each sample was taken and calculated length.
* Connections:
	+ Length of Connection;
	+ Confirmation whether sanitary construction practices were followed;
	+ Confirmation that proper disinfection was performed;
	+ Name of Certified Operator present for the installation of the Connection if required;
	+ Results of Microbiological and disinfectant residual samples if required;
	+ Reason for using the exception under s. 1.1.4.2 (if used);
	+ Disinfectant residual after watermain is flushed and put in service; and
	+ Date and time watermain was placed into service.

**This must be submitted at the time of request for Operator attendance. Please note, 48 hours notice is required.**