



# Quality Assurance Form

Doc. #: WMS-CO-FR-0764  
 Issued: 14-Oct-2014  
 Revised: 04-Feb-2022  
 Revision #: 7.0  
 Page: 1 of 2

Approved by: Top Management – Tier 2

## Continuous Feed Method Watermain Disinfection

Initial Form - first form submission   
 Subsequent Form - continuing action [disinfection / sampling failed]

All work must be performed in accordance with [WMS-OPS-SOP-1109](#), [1111](#) or [1709](#), [WMS-CO-FR-0776](#), and related documents & standards

Company Performing Disinfection (Contractor or Peel): \_\_\_\_\_ Project #: \_\_\_\_\_

Location: \_\_\_\_\_ Peel Project Manager: \_\_\_\_\_

Peel Inspector: \_\_\_\_\_ Consultant Inspector: \_\_\_\_\_

**COMPANY PERFORMING DISINFECTION (Contractor or Peel) to complete Sections A, B & C and page 2 in FULL**

For Disinfection Contractor Use Only (\*for all certified Operators)

**Backflow Test Reports are to be filled out as per Peel requirements and e-mailed to ZZG-BackflowPrevention once complete**

**Pre-flush: Watermain Swabbed? Y / N** by: \_\_\_\_\_ (contractor) **Swabbing Date** (yy/mm/dd): \_\_\_\_\_

**A**

**Initial Flushing** (before chlorination) **Date** (yy/mm/dd): \_\_\_\_\_ **Time** (24:00): \_\_\_\_\_

Achieved flushing velocity of at least 0.91 m/s  **OR** Flushed minimum 3 pipe volumes  (check ONE)

**Post-flush turbidity** <sup>a</sup>: \_\_\_\_\_ NTU **Time** (24:00): \_\_\_\_\_ <sup>a</sup> Must be ≤1.0 NTU. If so, proceed with disinfection. If >1.0 NTU, test source.

**Source turbidity** <sup>b</sup>: \_\_\_\_\_ (if applicable) NTU **Time** (24:00): \_\_\_\_\_ <sup>b</sup> If source ≤1.0 NTU, continue flushing. If source >1.0 NTU, proceed with disinfection.

Water Meter Readings (m <sup>3</sup> )	Initial:	Final:	Water Used:
	Name (print)	Signature	Initials *OWWCO Operator #
Operator in Charge			
Operator/Assistant 1			
Operator/Assistant 2			

**B**

**Disinfection - Continuous Feed Method** **Date** (yy/mm/dd): \_\_\_\_\_

**Water Meter Readings (m<sup>3</sup>)** Initial: \_\_\_\_\_ Final: \_\_\_\_\_ Water Used: \_\_\_\_\_

Meets minimum requirement of 50 mg/L  **Time** (24:00): \_\_\_\_\_ (i.e. time **LAST** sample point residual was measured)

**Final meter reading Section A must be the same as Initial meter reading Section B! Do not reset digital**

Water Meter Readings (m <sup>3</sup> )	Initial:	Final:	Water Used:
	Name (print)	Signature	Initials *OWWCO Operator #
Operator in Charge			
Operator/Assistant 1			
Operator/Assistant 2			

**C**

**After Contact Time/Final** (dechlorination) **Flush** **Date** (yy/mm/dd): \_\_\_\_\_ **Time** (24:00): \_\_\_\_\_ **Min 24hr?** <sup>▲</sup> (Y / N)

**Final meter reading Section B must be the same as Initial meter reading Section C** <sup>▲</sup> **Time** (1<sup>st</sup> sample point) must be ≥ 24hr after **LAST** Time in Section B

**Water Meter Readings (m<sup>3</sup>)** Initial: \_\_\_\_\_ Final: \_\_\_\_\_ Water Used: \_\_\_\_\_

Maximum allowable decrease<sup>†</sup> of total chlorine residual is 40% of initial chlorine (to a max of 50 mg/L), before flushing:  
<sup>†</sup> a chlorine increase >5% is a FAIL **COPPER\***  (\*see note below Page 2 table) **PASS**  **FAIL**<sup>▲</sup>

**If residuals PASS, proceed to flushing** **After Flush residuals are recorded on Page 2**   
**After flush, residual at all locations is representative of local distribution**  <sup>▲</sup> **Must be independently collected from and before micro sampling**

Discharge of water to the environment must comply with [Municipal Drinking Water Licence Schedule C](#)

Water Meter Readings (m <sup>3</sup> )	Initial:	Final:	Water Used:
	Name (print)	Signature	Initials *OWWCO Operator #
Operator in Charge			
Operator/Assistant 1			
Operator/Assistant 2			

**CONTRACTOR: Hand over this Form to Region of Peel Operations Staff**

**D**

**Verification Sampling** (Microbiological) All sampling must be performed in accordance with [WMS-CO-SOP-1107](#)

	Date (yy/mm/dd)	Time (24:00)	Sampler(s)	Employee #(s)	OIC Signature
"Initial" Samples		last sample collected			
"16-hr" Samples		first sample collected			

**E**

**Approval to Connect to Distribution System** BV Job# (Initial): \_\_\_\_\_ BV Job# (16-hr): \_\_\_\_\_

All sample results have been reviewed  Date results reviewed (yy/mm/dd): \_\_\_\_\_

Results are within regulatory limits and pass Peel Standards (per [WMS-CO-PR-0515](#)) **PASS**  **FAIL**<sup>#</sup>

**#** If any sample result fails, Foreperson's direction is (check all that apply):  Flush  Swab  Sample  Disinfect

Signature below signifies that the entire form was reviewed, and all Sections pass requirements.  
 Approval is given to connect the watermain to the distribution system

	Name (print)	Signature - PASSED	Signature - FAILED
Foreperson			

**Note:** A **Water Quality Analyst** may be used for bacteriological sampling and chlorine testing under Sections B, C and D

<sup>▲</sup> If **DISINFECTION** fails, start another 'Watermain Disinfection Form', check '**Subsequent Form**' box (top) & complete sections **A, B, C, D, E**

<sup>#</sup> If **SAMPLING** fails, start another 'Watermain Disinfection Form', check '**Subsequent Form**' box (top) & complete sections as per Foreperson direction

**OPERATIONS STAFF:** Scan a copy of this form and email to the Region of Peel Project Manager, Disinfection Contractor, Peel Construction Inspector, ZZG-WWW RegulatoryComplianceRecords and ZZG-WaterQualityInquiries

Location	Disinfection (Section B)				After "Post" Contact Time (before final flush) (Section C)						After Final (dechlorination) Flush (Section C) <i>Residuals must be independently collected (i.e. before) microbiological sampling</i>				
	Date (yy/mm/dd)	Time (24:00)	Total Chlorine (mg/L)	Initials	Date (yy/mm/dd)	Time (24:00)	Total Chlorine (mg/L)	Chlorine DECREASE <sup>†</sup> * (mg/L) [= Initial - Post]	Chlorine DECREASE (%) <sup>†</sup> [= (Initial - Post) ÷ Initial x 100%]	Initials	Date (yy/mm/dd)	Time (24:00)	Chlorine (mg/L)		Initials
													Free	Total	
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															

All chlorine measurements must be performed using calibrated digital testing equipment.

\*Due to chlorine demand exerted by copper, no minimum chlorine concentration is required following the 24-hour contact time for copper pipes. [Ministry Watermain Disinfection Procedure, Section 1.1.2]

Print Date: 18/02/22

**THIS IS A CONTROLLED DOCUMENT**

## Review & Revision History

Date	Revision #	Reason for Review/ Revision
14-Oct-2014	0.0	Original Issue
26-Aug-2015	1.0	Revised based upon approved Staff Suggestion, compliance requirements, and formatting improvements
13-Oct-2015	1.1	Revised based upon staff input from first uses of version 1.0 in the field. Direction added for paperwork flow.
11-Oct-2016	2.0	Revised per new 'MOECC Watermain Disinfection Procedure'; added OWWCO Operator # (For Contractor Use Only); added section letters, checkbox at top INITIAL vs SUBSEQUENT, moved direction in event of failure to a footnote, added checkbox for SWABBED to Section A, added Continuing Actions options to Section E, Clarified direction to PM at very bottom.
25-Jul-2017	3.0	Section C: added note chlorine increase is a FAIL. Section C: added checkbox for Copper. Table: added asterisks on 2 headers and a footnote about copper.
08-Sep-2017	3.1	Adjusted form title and edited grey note above Section A. Added "/Assistant" for contractor use in Sections A,B,C and shaded OWWCO# column. Adjusted recipients in highlighted directions at bottom of Page 1.
14-Feb-2018	4.0	Added flushing velocity or 3 volumes to Section A. Added post-flush turbidity limit to Section A. Added signature for approval to connect to system in Section E. Mandated use of digital chlorine test equipment.
10-Oct-2018	5.0	Added note regarding water meter reading requirements (continuous readings – cannot reset), clarified note on post-flush turbidity limit, updated formatting to chlorine residuals table on page 2 and added Disinfection Contractor as recipient of scanned FORM once completed.
24-Dec-2018	5.1	Updated footer and changed titled to document history section.
01-Dec-2020	6.0	Staff Suggestion 2020-74. Updated for Watermain Disinfection Procedure v2.0 (August 2020). Changed section # in table footnote. Added note that WQA may perform sampling and testing. Updated ZZG e-mail address for records and changed Maxxam to BV Labs.
06-May-2021	6.0	Administrative update performed by QA Team to reflect the new numbering convention. Document numbering has been updated for all QA controlled documents reflected within the Water Master List.
26-May-2021	6.1	Updated date format from dd/mm/yy to yy/mm/dd to align with Chain of Custody. Staff Suggestion 2021-41.
18-Jan-22	6.2	Revision date and number updates as per the 2021 DWQMS Internal Audit Finding (NCAP finding 2021-03) and WWIMS Internal Audit Finding (CI-2021-30)
04-Feb-2022	7.0	Updates to Section A (Initial Flushing) as per Ministry Inspection BMP finding: Removed chlorine residual monitoring of source water, moved Swabbing field to above Section A as it occurs prior to initial flushing, and added time stamp for turbidity monitoring. Added BFP Test Report requirement. Staff Suggestion #2021-119.