



City of Thorold

DWQMS

2022 Internal Audit

October 5, 2022



DFA Infrastructure International Inc.



DFA Infrastructure International Inc.

664-B Vine Street St. Catharines Ontario Canada L2M 7L8
Telephone: (905) 321-9874 Email: dfa@dfainfrastructure.com

October 5, 2022

Kory Yungblut
Water & Wastewater Compliance Supervisor
City of Thorold
P.O. Box 1044, 3540 Schmon Parkway
Thorold, Ontario
L2V 4A7

Dear Kory,

**Re: City of Thorold
2022 DWQMS Internal Audit Report**

We are pleased to submit this report summarizing our findings from the recently completed DWQMS Internal Audit.

1. INTERNAL AUDIT PROCESS

The main objectives of the audit were to:

- Determine if non-conformances, potential non-conformances and opportunities for improvement identified in recent audits have been addressed and cleared;
- Identify possible new non-conformances and potential non-conformances; and
- Identify improvements to the QMS

The audit was completed by Derek Ali, MBA, P.Eng. and Certified DWQMS Internal Auditor and included the following main activities:

Review Previous Audits

This involved reviewing previous internal and external audits to identify:

- Existing non-conformances and potential non-conformances and any corrective actions taken; and
- Previously recommended improvements and whether or not these were implemented.

Undertake Audit Activities

The audit was undertaken by DWQMS Element. The following were completed using the detailed checklist normally utilized for internal audits:

- Reviewing the QMS Operational Plan for completeness in accordance with the DWQMS requirements and whether or not the Plan is up-to-date;

- Reviewing the Operational Plan against each Element of the QMS to identify:
 - Conformances (C)
 - Non-conformances (NC)
 - Potential non-conformances (PNC)
 - Opportunities for improvement. (OFI)
- Supplementing the audit of each element with discussions with staff as necessary during the process.

Review Preliminary Findings & Clear Non-Conformances & Potential Non-Conformances

This included reviewing each element with non-conformances and potential non-conformances with the Compliance Supervisor and providing guidance as required in addressing the non-conformances, potential non-conformances and opportunities for improvement

QMS Improvements

Identifying the actions required to improve the QMS.

2. AUDIT FINDINGS & RECOMMENDATIONS

The audit results for each element are contained in Appendix A attached. The audit found that the City's QMS conforms to all Elements of the Drinking Water Quality Management Standard. ***There are two (2) Opportunities for Improvement (OFI) identified. These should be addressed by December 31, 2022.***

We trust that this report provides the information necessary for continual improvement of the City's Water System QMS. However, please do not hesitate to call if you have any questions regarding our findings.

Respectfully submitted by,
DFA Infrastructure International Inc.



Derek Ali, MBA, P.Eng.
President

APPENDIX A:
2022 DWQMS INTERNAL AUDIT RESULTS

DWQMS Internal Audit Checklist

NOTE: C = Conformance Observed

NC = Non-Conformance Observed

PNC = Potential Non-Conformance Observed OFI = Opportunity for Improvement Observed

DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	
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1 Quality Management System

PLAN - The Operational Plan shall document a Quality Management System that meets the requirements of this Standard.

YES	YES	C	Version 20 Dated March 14,2022 contains all elements of the Standard.
YES	YES	C	QMS is being maintained in accordance with the OP

DO - The Operating Authority shall establish and maintain the Quality Management System in accordance with the requirements of this Standard and the policies and procedures documented in the Operational Plan.

1 Audit Findings

Non-Conformances Identified

Non-Conformances (NCs) are indicated in the respective section for each specific Element of the DWQMS.

Potential Non-Conformances Identified

Potential Non-Conformances (PNCs) are indicated in the respective section for each specific Element of the DWQMS

Opportunities for Improvement Identified

Opportunities for Improvement (OFIs) are indicated in the respective section for each specific Element of the DWQMS.

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc



Recorder

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	
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2 Quality Management System Policy

PLAN - The Operational Plan shall document a Quality Management System Policy that provides the foundation for the Quality Management System, and:

- a) includes a commitment to the maintenance and continual improvement of the Quality Management System,
- b) includes a commitment to the consumer to provide safe drinking water,
- c) includes a commitment to comply with applicable legislation and regulations, and
- d) is in a form that provides for ready communication to all Operating Authority personnel, the Owner and the public.

DO- The Operating Authority shall establish and maintain a Quality Management System that is consistent with the QMS Policy.

YES	YES	C	The Operational Plan (OP) contains the QMS Policy and all aspects ("a" through "d" of this sheet) of the standard are included in the Policy
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	OFI	Is there a poster with the Policy on walls at various locations at temporary Public Works yard and City Hall? (Yes) Is staff is aware of the policy? (Yes). Is the policy on the City's website? (Yes).
YES	YES	C	

2 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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3 Commitment and Endorsement

PLAN - The Operational Plan shall contain a written endorsement of its contents by Top Management and the Owner.

DO- Top Management shall provide evidence of its commitment to an effective Quality Management System by:

- a) ensuring that a Quality Management System is in place that meets the requirements of this Standard,
- b) ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements,
- c) communicating the Quality Management System according to the procedure for communications, and determining, obtaining or providing the resources needed
- d) to maintain and continually improve the Quality Management System.

YES	YES	C	Was the OP endorsed in 2022? The OP was endorsed & accepted by Council on & Top Management on May 4, 2022 and May 5, 2022 respectively. Endorsement by the new Council will be required following the October 24, 2022 Municipal Elections
YES	YES	C	Were internal and external audits completed? Yes
YES	YES	C	Was DWQMS orientation was provided to Council & Top Management? Yes orientation was provided. Orientation for new Council will be required following the October 24, 2022 Municipal Elections
YES	YES	C	Were reports to Council and annual quality reports prepared? Yes
YES	YES	C	Are sufficient resources are being provided for the QMS in the 2022 budget? Yes

3 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

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4 Quality Management System Representative

PLAN - The Operational Plan shall identify a Quality Management System representative.

DO - Top Management shall appoint, and authorize a Quality Management System representative who, irrespective of other responsibilities, shall:

administer the Quality Management System by ensuring

a) that procedures needed for the Quality Management System are established and maintained.

report to Top Management on the performance of the

b) Quality Management System and any need for improvement,

ensure that current versions of documents required by
c) the Quality Management System are being used at all times,

ensure that personnel are aware of all applicable

d) legislative and regulatory requirements that pertain to their duties for the operation of the subject system, and

e) promote awareness of the Quality Management System throughout the Operating Authority.

YES	YES	C	Confirm that OP identifies QMS Representative. Yes
YES	YES	C	Are the procedures referenced in the OP contained in the Operations and Maintenance Manual and up-to-date. Yes
YES	YES	C	Last Top Management Meeting held October 26, 2021. Were there any improvements discussed at the meeting? Development of Backflow Prevention Procedure was identified and not yet completed. Budget has been allocated and is in progress. Next meeting to be held by October 18 2022
YES	YES	C	Check with staff that QMS documents are being used. Hard copies of QMS documents are available at the dedicated DWQMS location and the Operational Plan is available at City Hall. Computer access to electronic files (which are the official DWQMS documents), is available to staff. These are used by staff.
YES	YES	C	Do MECP reports indicate any operational non-compliance? (No). Was staff training provided in 2022? (CEU and On-the-Job training In progress based on expiry date of individual licences)
YES	YES	C	Is staff is aware of QMS? Yes.

4 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

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5 Document and Records Control

PLAN - The Operational Plan shall document a procedure for document and records control that describes how:

a) documents required by the Quality Management System are:

i. kept current, legible and readily identifiable

ii. retrievable

iii. stored, protected, retained and disposed of, and

b) records required by the Quality Management System are:

i. kept legible, and readily identifiable

ii. retrievable

iii. stored, protected, retained and disposed of.

DO - The Operating Authority shall implement and conform to the procedure for document and records control and shall ensure that the Quality Management System documentation for the subject system includes:

YES	YES	OFI	Is the documents control procedure E-7 consistent with the description in the OP and are the documents up-to-date? Yes however a few of the revision dates noted in the control table do not match the revision dates on the actual documents. Suggest going through the control table to make the corrections.
YES	YES	C	Are documents retrievable according to the procedure E-7? Yes
YES	YES	C	Are documents stored according to the procedure E-7? Yes.
YES	YES		
YES	YES	C	Is the records control procedure E-7 consistent with the description in the OP and are the documents up-to-date? Yes
YES	YES	C	Are records retrievable according to the procedure E-7? Yes
YES	YES	C	Are records stored according to the procedure E-7? Yes.

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DWQMS Requirements

- a) the Operational Plan and its associated policies and procedures
- documents and records determined by the Operating
- b) Authority as being needed to ensure the effective planning, operation and control of its operations, and
- c) the results of internal and external audits and management reviews.

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
YES	YES	C	
YES	YES	OFI	SAI June 27 Stage 2 external audit indicated the following OFI: "Ensure your action items from the Management Review are transferred into the Corrective Action Database in a timely fashion." To be addressed following next Top Management meeting.
YES	YES	C	Are the results of the external and internal audits and management reviews documented in E-107 Corrective Actions Database? Yes

5 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

A few of the revision dates noted in the control table do not match the revision dates on the actual documents. Suggest going through the control table to make the corrections.
SAI June 27 Stage 2 external audit indicated the following OFI: "Ensure your action items from the Management Review are transferred into the Corrective Action Database in a timely fashion." To be addressed following next Management Review meeting.

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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6 Drinking-Water System

PLAN - The Operational Plan shall document, as applicable:

a) for the subject system:

- i. a description of the system including all treatment processes and distribution system components
- ii. the name of the Owner and Operating Authority
- iii. a process flow chart

iv. a description of the water source, including:

- general characteristics of the raw water supply
- common event-driven fluctuations
- any resulting operational challenges and threats

v. a description of any critical upstream or downstream processes relied upon to ensure the provision of safe drinking water.

if the subject system is an operational subsystem, a

b) summary description of the municipal residential drinking-water system it is part of.

if the subject system is connected to one or more other
c) drinking-water systems owned by different owners, a summary description of those systems which:

- i. indicates whether the subject system obtains water from or supplies water to those systems, and

			Do system descriptions meet the element requirements noted below (a to c)? Yes
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	

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DWQMS Requirements

ii. names the Owner and Operating Authority of those systems.

DO - The Operating Authority shall ensure that the description of the drinking-water system is kept current.

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
YES	YES	C	
YES	YES	C	Does the system description in the OP match the current system? Yes

6 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

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7 Risk Assessment

PLAN - The Operational Plan shall document a risk assessment process that:

considers potential hazardous events and associated hazards, as identified in the MECP document titled

a) Potential Hazardous Events for Municipal Residential Drinking Water Systems dated April 2022 as it may be amended.

b) identifies additional hazardous events and associated hazards,

c) assesses the risks associated with the occurrence of hazardous events,

d) ranks the hazardous events according to the associated risk,

e) identifies control measures to address the potential hazards and hazardous events,

f) identifies critical control points,

identifies a method to verify at least once every calendar

g) year, the currency of the information and the validity of the assumptions used in the risk assessment,

h) ensures that a risk assessment is conducted at least once every thirty-six months, and

			Check if the risk assessment procedure meet the element requirements noted below (a to i)
YES	YES	C	SAI Global June 7, 2022 external audit identified the following OFI: "Some hazardous events recommended by the MECP (water supply short fall, impacts of climate change, extreme weather events, and cyber security) are readily apparent as hazardous events identified during the risk assessment more apparent". Procedure E-9 and the OP Risk Assessment, Risk Assessment Outcomes and Appendix B Risk Assessment Outcomes were reviewed by Top Management & operations staff and updated to reflect the latest MECP document and the risks were updated on July 11, 2022. This OFI is closed
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	

i) considers the reliability and redundancy of equipment.

DO – The Operating Authority shall perform a risk assessment consistent with the documented process

YES	YES	C	
YES	YES	C	Were annual risk reviews & full assessments in accordance with Procedure E-9? Yes - Full Risk Assessment Completed July 11, 2022

7 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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8 Risk Assessment Outcomes

PLAN - The Operational Plan shall document:

- a) the identified potential hazardous events and associated hazards,
- b) the assessed risks associated with the occurrence of hazardous events,
- c) the ranked hazardous events,
- d) the identified control measures to address the potential hazards and hazardous events,
- e) the identified critical control points and their respective critical control limits,
- f) procedures and/or processes to monitor the critical control limits,
- g) procedures to respond to deviations from the critical control limits, and
- h) procedures for reporting and recording deviations from the critical control limits.

DO - The Operating Authority shall implement and conform to the procedures.

YES	YES	C	Verify the OP and Risk Outcomes Table contain all the standards noted below (a to h) and identify the actions to take when issues arise
YES	YES	C	The MECP document titled Potential Hazardous Events for Municipal Residential Drinking Water Systems was updated in April 2022. The OP Appendix B Risk Outcome Table and E-9 were updated on June 27 to reflect the new hazards/risks in the latest MECP document
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	

8 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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9 Organizational Structure, Roles, Responsibilities and Authorities

PLAN - The Operational Plan shall:

describe the organizational structure of the Operating

a) Authority including respective roles, responsibilities and authorities,

delineate corporate oversight roles, responsibilities and

b) authorities in the case where the Operating Authority operates multiple subject systems,

c) identify the person, persons or group of people within the management structure of the organization responsible for undertaking the Management Review,

d) identify the person, persons or group of people, having top Management responsibilities required by this Standard, along with their responsibilities, and

e) identify the Owner of the subject system.

DO - The Operating Authority shall keep current the description of the organizational structure including respective roles, responsibilities and authorities, and shall communicate this information to Operating Authority personnel and the Owner.

			Does the OP describe the items noted below (a to e)? Yes
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	Verify that actual structure and roles and responsibilities match the information in the OP and Top Management is identified. Yes

9 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Recorder

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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10 Competencies

PLAN - The Operational Plan shall document:

- a) competencies required for personnel performing duties directly affecting drinking water quality, activities to develop and maintain competencies for
- b) personnel performing duties directly affecting drinking water quality, and activities to ensure that personnel are aware of the
- c) relevance of their duties and how they affect safe drinking water.

DO - The Operating Authority shall undertake activities to:

- meet and maintain competencies for personnel directly
- a) affecting drinking water quality and shall maintain records of these activities, and ensure that personnel are aware of the relevance of their
- b) duties and how they affect safe drinking water, and shall maintain records of these activities.

			Does the OP describe the items noted in the standards below (a to c)?. Yes
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	Are the Operator Licences are valid and documented in Operations & Maintenance Manual? Yes
YES	YES	C	Are daily logs completed correctly? These are usually noted in MECP reports and quarterly reports to Council. Yes - All logs completed correctly.

10 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

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Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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11 Personnel Coverage

PLAN - The Operational Plan shall document a procedure to ensure that sufficient personnel meeting identified competencies are available for duties that directly affect drinking water quality.

DO - The Operating Authority shall implement and conform to the procedure.

YES	YES	C	Does the OP have a procedure? Yes
YES	YES	C	Is the procedure noted in E-8 of O&M Manual used for scheduling staff during non-business hours? Yes. Are there any issues with staffing/ coverage? No.

11 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



if the subject system is an operational subsystem, a summary description of the

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	
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12 Communications

PLAN - The Operational Plan shall document a procedure for communications that describes how the relevant aspects of the Quality Management System are communicated between Top Management and:

- a) the Owner,
- b) Operating Authority personnel,
- c) Suppliers, and
- d) the public

DO - The Operating Authority shall implement and conform to the procedure.

			Does the OP contain a procedure describing communications with stakeholders noted below (a to d)? Yes
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	Were verbal/ written reports are made to Council? (Yes), OP is made available to public and if staff training is provided. All were undertaken and included communication with staff on operational changes due to Covid-19

12 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

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Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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13 Essential Supplies and Services

PLAN - The Operational Plan shall:

identify all supplies and services essential for the delivery
a) of safe drinking water and shall state, for each supply or service, the means to ensure its procurement; and

include a procedure by which the Operating Authority
b) ensures the quality of essential supplies and services, in as much as they may affect drinking water quality.

DO - The Operating Authority shall implement the procedure.

			Does OP have procedure addressing items below (a and b)? Yes
YES	YES	C	
YES	NO	C	
YES	NO	C	
YES	NO	C	Are suppliers required to acknowledge the requirements of the City's QMS? (Yes) Is a contact list maintained? (Yes)

13 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

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14 Review and Provision of Infrastructure

PLAN - The Operational Plan shall document a procedure for the annual review of the adequacy of the infrastructure necessary to operate and maintain the subject system.

DO - The Operating Authority shall implement and conform to the procedure and communicate the findings of the review to the Owner.

YES	YES	C	Does OP have a procedure? Yes
YES	YES	C	This is an OFI from SAI 2021 external audit: "Consider describing how critical control points and the risk assessment outcomes are considered during the review of infrastructure". Procedure E-1 includes review of the critical control points. This has also been added to the review agenda. This OFI is closed
YES	YES	C	Was a meeting held this calendar year (E-1) to discuss infrastructure needs? No. Last meeting held October 26, 2021. Next meeting will be held before October 18 2022. Most items addressed. A few are in progress (see Document E-107).
YES	YES	C	Were most items addressed from last meeting? Yes. Low pressure in south system identified and awaiting water system study to address (see Document E-107).

14 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

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15 Infrastructure Maintenance, Rehabilitation and Renewal

PLAN - The Operational Plan shall document a summary of the Operating Authority's infrastructure maintenance, rehabilitation and renewal programs for the subject system.

DO - The Operating Authority shall:

- a) keep the summary current,
- b) communicate the programs to the Owner, and
- c) monitor the effectiveness of the maintenance program.

YES	YES	C	Does OP describe the processes for infrastructure maintenance rehabilitation and renewal? Yes
YES	YES	C	Is Summary Table noted in E-1 updated annually? Yes updated October 5 2022
YES	YES	C	Are reports provided to Council? Yes- report provided on May 4, 2020
YES	YES	C	Was this item is discussed at last Infrastructure Review Meeting. Yes

15 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

Element Lead Auditor

Recorder

DWQMS Internal Audit Checklist

NOTE: C = Conformance Observed

NC = Non-Conformance Observed

PNC = Potential Non-Conformance Observed OFI = Opportunity for Improvement Observed

DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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16 Sampling, Testing and Monitoring

PLAN - The Operational Plan shall document:

a) a sampling, testing and monitoring procedure for process control and finished drinking water quality including requirements for sampling, testing and monitoring at the conditions most challenging to the subject system,

b) a description of any relevant sampling, testing or monitoring activities that take place upstream of the subject system, and

c) a procedure that describes how sampling, testing and monitoring results are recorded and shared between the Operating Authority and the Owner, where applicable.

DO - The Operating Authority shall implement and conform to the procedures.

			Check that OP addresses the items noted below (a to c)
YES	YES	C	
YES	YES	C	
YES	YES	C	Done through CAO via verbal and/or written reports to Council
YES	YES	C	Does MECP report for each system to identify any issues with sampling testing and monitoring? Reports indicated no issues and all operations completed according to procedure

16 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Recorder

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

DWQMS Internal Audit Checklist

NOTE: C = Conformance Observed

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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17 Measurement and Recording Equipment Calibration and Maintenance

PLAN - The Operational Plan shall document a procedure for the calibration and maintenance of measurement and recording equipment.

DO - The Operating Authority shall implement and conform to the procedure.

YES	YES	C	
YES	YES	C	Do testing/ calibration certificates to confirm that all equipment is certified annually.? Yes

17 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Recorder

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

DWQMS Internal Audit Checklist

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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18 Emergency Management

PLAN - The Operational Plan shall document a procedure to maintain a state of emergency preparedness that includes:

- a) a list of potential emergency situations or service interruptions,
- b) processes for emergency response and recovery,
- c) emergency response training and testing requirements,
- d) Owner and Operating Authority responsibilities during emergency situations,
- e) references to municipal emergency planning measures as appropriate, and
- f) an emergency communication protocol and an up-to-date list of emergency contacts.

DO - The Operating Authority shall implement and conform to the procedure.

YES	YES	C	Does the OP address items below (a to f)? Yes
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	Was EM training provided? Yes ERP review completed February 10, 2022. Table top to be completed By December 2022

18 Audit Findings

if the subject system is an operational subsystem, a
Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Recorder

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

DWQMS Internal Audit Checklist

NOTE: C = Conformance Observed

NC = Non-Conformance Observed

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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19 Internal Audits

PLAN - The Operational Plan shall document a procedure for internal audits that:

a) evaluates conformity of the QMS with the requirements of this Standard,

b) identifies internal audit criteria, frequency, scope, methodology and record-keeping requirements,

c) considers previous internal and external audit results, and

d) describes how Quality Management System corrective actions are identified and initiated.

DO - The Operating Authority shall implement and conform to the procedure and shall ensure that internal audits are conducted at least once every calendar year.

YES	YES	C	Does the OP describe the procedure including items below (a to d below)? Yes.
YES	YES	C	
YES	YES	C	SAI June 27 2022 external audit indicated the following OFI: "The Internal Audit Checklist for the 2021 Internal Audit Report included notes which suggest the audit of some elements were incomplete or the checklist was an older version completed before the audit" The notes referred to in the OFI were added to the 2021 criteria to address the following 2021 external audit OFI: "Consider indentifying both the Drinking Water Quality Management Standard (DWQMS) and the requirements of the City of Thorold's Quality Management System (QMS) as explicit criteria for the internal audit and the developed checklists". Further adjustments were made to the 2022 internal audit criteria for better clarity. This OFI is now closed.
YES	YES	C	SAI external 2021 audit identified the following OFI: "Consider referring to procedure E-15 of the O&M Procedure Manual within Element 19 or 21 of the operational plan". This OFI was outstanding at last Internal Audit but is now closed.
YES	YES	C	
YES	YES	C	Check Document E-107 which tracks status of all corrective actions required from external and internal audits. All corrective actions from 2021 internal and 2022 external audits have been taken except for 4 OFIs (identified under other elements) which are in progress.
YES	YES	C	Is the internal audit completed at least 1 month in advance of the Top Management meeting as noted in Document E-10? Yes - Internal Audit completed earlier this year on October 5, 2022. The OFI from the previous internal audit is now closed

19 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Recorder

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

DWQMS Internal Audit Checklist

NOTE: C = Conformance Observed

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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20 Management Review

PLAN - The Operational Plan shall document a procedure for management review that evaluates the continuing suitability, adequacy and effectiveness of the Quality Management System and that includes considerations of:

a) incidents of regulatory non-compliance,

b) incidents of adverse drinking-water tests,

c) deviations from critical control point limits and response actions,

d) the efficacy of the risk assessment process,

e) internal and third party audit results,

f) results of emergency response testing,

g) operational performance,

YES	YES	C	Does the OP have a procedure covering items a to p below? Yes
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	SAI 2021 external audit identified the following OFI: "Consider separating item 5) "effectiveness of risk assessment process - results of internal and 3rd party audits" into two separate items in the management review agenda, minutes, and procedure (E11 - Management Review)". Procedure E-11, Management Review agenda and minutes were changed to separate the 2 audits. This OFI is now closed
YES	YES	C	
YES	YES	C	

NOTE: C = Conformance Observed

NC = Non-Conformance Observed

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DWQMS Requirements

h) raw water supply and drinking water quality trends,

i) follow-up on action items from previous management reviews,

j) the status of management action items identified between reviews

k) changes that could affect the Quality Management System,

l) consumer feedback,

m) the resources needed to maintain the Quality Management System,

n) the results of the infrastructure review,

o) Operational Plan currency, content and updates, and

p) staff suggestions.

DO - Top Management shall implement and conform to the procedure and shall:

a) ensure that a management review is conducted at least once every calendar year

consider the results of the management review and

b) identify deficiencies and action items to address the deficiencies,

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	Was a Top Management Review Meeting held this year? No. Last meeting was held October 26, 2021. Next meeting scheduled to be held by October 18, 2022
YES	YES	C	Is there any action items from last meeting minutes. Yes - those are in progress

NOTE: C = Conformance Observed

NC = Non-Conformance Observed

PNC = Potential Non-Conformance Observed OFI = Opportunity for Improvement Observed

DWQMS Requirements

- provide a record of any decisions and action items related to the management review including the personnel responsible for delivering the action items and the proposed timelines for their implementation,
- c) report the results of the management review, the
- d) identified deficiencies, decisions and action items to the Owner.

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
YES	YES	C	
YES	YES	C	

20 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Element Lead Auditor

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Recorder

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

DWQMS Internal Audit Checklist

NOTE: C = Conformance Observed

NC = Non-Conformance Observed

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DWQMS Requirements

Process in Place?	Process Documented?	C / NC / PNC / OFI	Notes
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21 Continual Improvement

PLAN - The Operating Authority shall develop a procedure for tracking and measuring continual improvement of its Quality Management System by:

a) reviewing and considering applicable best management practices including any published by the MECP and available on [www.ontario.ca/drinking water](http://www.ontario.ca/drinking_water) at least once every 36 months

b) documenting a process for identification and management of Quality Management System Corrective Actions that includes:

(i) investigating the causes of a non-conformity

(ii) documenting the actions that will be undertaken to correct the non-conformity and prevent the non-conformity from re-occurring and

(iii) reviewing the actions taken to correct the non-conformity verifying that they are implemented and are effective in correcting and preventing the reoccurrence of the non-conformity

		C	SAI external 2021 audit identified the following OFI: "Consider referring to procedure E-15 of the O&M Procedure Manual within Element 19 or 21 of the operational plan". This was outstanding at the time of the 2021 internal audit but has since been closed
YES	YES	C	SAI external 2021 audit identified the following OFI: "Consider documenting the process for considering best management practices within the operational plan or E-15 Corrective and Preventive Action Procedure". SAI June 7 2022 external audit also identified a similar OFI: "identified the following OFI: "Neither the Operational Plan nor the Corrective and Preventive Action Procedure describe how best management practices are considered". "best management practices" were added to the body of the OP. This OFI is closed
YES	YES	C	Does Document E-107 track status of all corrective actions required from external and internal audits? Yes
YES	YES	C	
YES	YES	C	
YES	YES	C	

documenting a process for identifying and implementing
c) Preventative Actions to eliminate the occurrence of potential non-conformities in the QMS that includes:

(i) reviewing potential non-conformities that are identified to determine if preventative actions may be necessary

documenting the outcome of the review including the
(iii) actions if any, that will be taken to prevent a non-conformity from occurring, and

reviewing the actions taken to prevent a non-conformity
(ii) verifying that they are implemented and are effective in preventing the occurrence of a non-conformity.

DO - The Operating Authority shall strive to continually improve the effectiveness of its Quality Management System through the use of corrective actions.

YES	YES	C	
YES	YES	C	
YES	YES	C	
YES	YES	C	
YES		C	SAI 2022 external audit stated the following OFI "Consider reaching out to the auditor in a timely fashion for any required clarification to audit findings". The DWQMS Supervisor has taken note and will contact the auditor earlier in the future. This OFI is closed.

21 Audit Findings

Non-Conformances Identified

Potential Non-Conformances Identified

Opportunities for Improvement Identified

Please Print and Sign Your Name and the Date Completed

Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Derek Ali, MBA, P.Eng., DFA Infrastructure International Inc.



Date Audit Completed: October 5, 2022

Element Lead Auditor

Recorder

SUMMARY OF 2022 AUDIT FINDINGS

Element	Audit Findings	Resolution Status	Target Date
Non- Conformances:			
	None		
Potential Non-Conformances:			
	None		
Opportunities for Improvement:			
3	A few of the revision dates noted in the control table do not match the revision dates on the actual documents. Suggest going through the control table to make the corrections.	In Progress	December 31, 2022
3	SAI June 27 Stage 2 external audit indicated the following OFI: "Ensure your action items from the Management Review are transferred into the Corrective Action Database in a timely fashion." To be addressed following next Management Review meeting.	In Progress	December 31, 2022
Other Recommendations:			