



February 22, 2023

The Corporation of the Municipality of Huron East
72 Main St. S
P.O. Box 610
Seaforth, ON
N0K 1W0

Attention: Brad McRoberts, CAO

**RE: Brucefield Well Supply System
2022 Annual Report**

Dear Brad,

Please find attached the 2022 Annual Operations Report for the Brucefield Water System, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31 and meets the requirement of being prepared by February 28 of this year.

Please ensure that a copy of this report is given, without charge, to every person who requests a copy. In addition, please make certain that effective steps are taken to advise residents that copies of the report are available, and of how a copy can be obtained.

As per Schedule 22 of O. Reg. 170/03, please ensure that at least a copy of the Summary Report is given to the members of municipal council no later than March 31, 2023.

Finally, please ensure that a letter is sent to Jacobs verifying that this report has been received and accepted by Council.

If you have any questions regarding the report, we would be pleased to address them and you should contact the undersigned accordingly.

Sincerely,

Jacobs (OMI Canada Inc.)

A handwritten signature in black ink, appearing to read "Lucas Egli", with a stylized flourish at the end.

Lucas Egli

Project Manager/Overall Responsible Operator (ORO)
Huron East Project
519 955 2746

cc. B. Mills, Municipality of Huron East

2022 ANNUAL REPORT FOR WATER

SYSTEMS Part 1 -ANNUAL REPORT (as required by O. Reg. 170/03, Section 11)

Drinking-Water System Number:	220007604
Drinking-Water System Name:	Brucefield Water System
Drinking-Water System Owner:	The Corporation of the Municipality of Huron East
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1-December 31, 2022

Complete if your Category is Large Municipal Residential or Small Municipal Residential	Complete for all other Categories
Does your Drinking-Water System serve more than 10,000 people? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Designated Facilities served: N/A
Is your annual report available to the public at no charge on a web site on the Internet? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Did you provide a copy of your annual report to all Designated Facilities you serve? <input type="checkbox"/> Yes <input type="checkbox"/> No
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. Town Office 72 Main St. S. Seaforth, ON	Number of Designated Facilities served: N/A Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? <input type="checkbox"/> Yes <input type="checkbox"/> No

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
N/A	N/A

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

N/A

Indicate how you notified system users that your annual report is available, and is free of charge.

<input checked="" type="checkbox"/> Public access/notice via the web	<input checked="" type="checkbox"/> Public access/notice via Government Office	<input type="checkbox"/> Public access/notice via a newspaper
<input type="checkbox"/> Public access/notice via Public Request	<input type="checkbox"/> Public access/notice via a Public Library	<input type="checkbox"/> Public access/notice via other method

Describe your Drinking Water System

Limited Groundwater Subsystem

Well located at the intersection of Highway 4 and County Road 3 is 88.3 m deep and a 200 mm diameter steel casing and a submersible pump rated for 318 L/minute. The pump house contains four 455 L bladder type pressure tanks. It is equipped with a 25 kW diesel generator and automatic transfer switch to provide back up power. Primary disinfection is supplied by ultraviolet reactors, secondary disinfection by sodium hypochlorite injection.

List all water treatment chemicals used over this reporting period

12% Sodium hypochlorite solution

Please provide a brief description and a breakdown of monetary expenses incurred

- Installed new PLC and HMI
- Upgrade communications system from radio to fibre optics
- Install new chlorine injection pump
- Purchase back up well pump, riser pipe, submersible wire and well pump checkvalve

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Units	Corrective Action	Corrective Action Date
None during this reporting period					

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period

	Number of Samples	Range of E.Coli Results (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw	12	0	0	N/A	N/A
Treated	N/A	N/A	N/A	N/A	N/A
Distribution	52	0	0	52	<10-50

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report

	Number of Grab Samples	Range of Results (min #) – (max #)	Units
Turbidity	12	0.15-0.81	NTU
Chlorine	8760	0.29- 2.94	mg/L
Fluoride (If the DWS provides fluoridation)	N/A		

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

None during this reporting period				
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Summary of Inorganic parameters tested during this reporting period or the most recent sample results (<MDL: Below Minimum Detection Limit) Note: Sampling required every 60 months.

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Apr 13/21	0.9	ug/L	No
Arsenic	Apr 13/21	0.2	ug/L	No
Barium	Apr 13/21	227	ug/L	No
Boron	Apr 13/21	21	ug/L	No
Cadmium	Apr 13/21	0.011	ug/L	No
Chromium	Apr 13/21	0.24	ug/L	No
Haloacetic Acids (HAA's) (Running Annual Average)	Q1 – Q4 2022	<5.3	ug/L	No
Lead-sampling conducted by the Municipality of Huron East; see summary below				
Mercury	Apr 13/21	<MDL	ug/L	No
Selenium	Apr 13/21	0.33	ug/L	No
Sodium (60 months)	Oct 2/18	9.07	mg/L	No
Uranium	Apr 13/21	1.90	mg/L	No
Fluoride (60 months)	Oct 2/18	1.08	mg/L	No
Nitrite & Nitrate sampling required Quarterly				
Nitrite	Jan 18/22	0.003	mg/L	No
Nitrate	Jan 18/22	0.668	mg/L	No
Nitrite	Apr 6/22	0.003	mg/L	No
Nitrate	Apr 6/22	0.680	mg/L	No
Nitrite	July 12/22	0.005	mg/L	No
Nitrate	July 12/22	0.735	mg/L	No
Nitrite	Oct 4/22	0.003	mg/L	No
Nitrate	Oct 4/22	0.715	mg/L	No

Summary of Lead Results*

Sampling Period	Range of Results (µg/L)	Non-residential	Distribution	Adverse Incidents?
Dec-15-21-Apr 15-22	0.58	N/A	1	No
Jun-15-22-Oct-15-22	0.17	N/A	1	No

Summary of Organic parameters tested during this reporting period or the most recent sample results (<MDL: Below Minimum Detection Limit) Note: Sampling required every 60 months.

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Apr 13/21	<MDL	ug/L	No
Atrazine + N-dealkylated metabolites	Apr 13/21	<MDL	ug/L	No
Atrazine	Apr 13/21	<MDL	ug/L	No
Desethyl atrazine	Apr 13/21	<MDL	ug/L	No
Azinphos-methyl	Apr 13/21	<MDL	ug/L	No
Benzene	Apr 13/21	<MDL	ug/L	No
Benzo(a)pyrene	Apr 13/21	<MDL	ug/L	No
Bromoxynil	Apr 13/21	<MDL	ug/L	No
Carbaryl	Apr 13/21	<MDL	ug/L	No
Carbofuran	Apr 13/21	<MDL	ug/L	No
Chlorpyrifos	Apr 13/21	<MDL	ug/L	No

Summary of Organic parameters tested during this reporting period or the most recent sample results (<MDL: Below Minimum Detection Limit) Note: Sampling required every 60 months.

Diazinon	Apr 13/21	<MDL	ug/L	No
Dicamba	Apr 13/21	<MDL	ug/L	No
1,2-Dichlorobenzene	Apr 13/21	<MDL	ug/L	No
1,4-Dichlorobenzene	Apr 13/21	<MDL	ug/L	No
1,2-Dichloroethane	Apr 13/21	<MDL	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Apr 13/21	<MDL	ug/L	No
Dichloromethane	Apr 13/21	<MDL	ug/L	No
2-4 Dichlorophenol	Apr 13/21	<MDL	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 13/21	<MDL	ug/L	No
Diclofop-methyl	Apr 13/21	<MDL	ug/L	No
Dimethoate	Apr 13/21	<MDL	ug/L	No
Diquat	Apr 13/21	<MDL	ug/L	No
Diuron	Apr 13/21	<MDL	ug/L	No
Glyphosate	Apr 13/21	<MDL	ug/L	No
Malathion	Apr 13/21	<MDL	ug/L	No
Metolachlor	Apr 13/21	<MDL	ug/L	No
Metribuzin	Apr 13/21	<MDL	ug/L	No
Monochlorobenzene	Apr 13/21	<MDL	ug/L	No
MCPA	Apr 13/21	<MDL	mg/L	No
Paraquat	Apr 13/21	<MDL	ug/L	No
Pentachlorophenol	Apr 13/21	<MDL	ug/L	No
Phorate	Apr 13/21	<MDL	ug/L	No
Picloram	Apr 13/21	<MDL	ug/L	No
Polychlorinated Biphenyls(PCB's)	Apr 13/21	<MDL	ug/L	No
Prometryne	Apr 13/21	<MDL	ug/L	No
Simazine	Apr 13/21	<MDL	ug/L	No
Trihalomethanes (THM's) (NOTE: show latest running annual average). THM exemption in effect.	Q1 2020 Q2, Q3, Q4 2022	5.28	ug/L	No
Terbufos	Apr 13/21	<MDL	ug/L	No
Tetrachloroethylene	Apr 13/21	<MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	Apr 13/21	<MDL	ug/L	No
Triallate	Apr 13/21	<MDL	ug/L	No
Trichloroethylene	Apr 13/21	<MDL	ug/L	No
2,4,6-Trichlorophenol	Apr 13/21	<MDL	ug/L	No
Trifluralin	Apr 13/21	<MDL	ug/L	No
Vinyl Chloride	Apr 13/21	<MDL	ug/L	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Sample Date	Result Value	Unit of Measure	ODWS Criteria
N/A				

Part 2 – SUMMARY REPORT (as required by O. Reg. 170/03, Schedule 22)

Non – Compliance with Legislations, Regulations, Approvals & Orders

During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility's approval, save and except for the following:

Requirement	Duration of Failure	Measures to Correct the Failure
N/A (Received a 100% inspection rating in MECP Inspection Report).		

System Capability Assessment		
Monthly Raw Water Taking (m ³ /d):		
Month	Average Flow	Maximum Flow
January	58	65
February	51	60
March	52	67
April	60	106
May	69	96
June	88	124
July	86	125
August	83	123
September	66	82
October	63	70
November	68	82
December	70	79
AVERAGE	68	90
MAXIMUM	88	125
SYSTEM CAPACITY	458	458
% CAPACITY	14.8%	19.7%
Total Annual Flow: 24 818 m³		