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MUNICIPAL WATER QUALITY REPORTS

MOOSE CREEK WATER

2002

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Chesterville Hub
5 Industrial Drive, P.O. Box 460
Chesterville, Ontario K0C 1H0
Tel: (613) 448-3098
Fax: (613) 448-1616
www.ocwa.com

Fax

To MOH MOE

Company

Fax Number 933-7930 268-6061

From Dave Markell

Date Oct. 9/02

Number of Pages 4 **(including this page)**

Subject Moose Creek Adverse Water

- 2 T.C. Treated water.
- FCl_2 1.86 T.Cl 2.18 @ Sample site
- Raw Water well 2 ABSENT
  well 3 ABSENT

Ontario Ministry of the Environment / Ministère de l'Environnement

Notice of Drinking Water Analysis and Remedial Actions for Waterworks as Required under Drinking Water Protection Regulation

In accordance with the Drinking Water Protection Regulation, Laboratories and Water Works Owners must immediately provide oral notification to the MOE Spills Action Centre (SAC) at 1-866-268-6060 or 1-416-325-3000 and the local Medical Officer of Health (MOH) of indicators of adverse drinking water quality and exceedances of standards as outlined in the Regulation and remedial actions taken. Further, within 24 hours of the oral notification, the party shall provide written notification on this completed form by Fax to the Spills Action Centre at 1-866-268-6061 or 1-416-325-3011 and the local Medical Officer of Health. Failure to notify these parties in accordance with the Regulation constitutes an offence under the Act. A copy of this form may be acquired through the Ministry of the Environment (MOE) public web site (www.ene.gov.on.ca) or by contacting any MOE office.

PART 1 – NOTIFICATION BY LABORATORY

Indicators of Adverse Water Quality ☒	**Phys/Chem** ☐ **Exceeds MAC** ☐ **Exceeds IMAC**	**Radiological** ☐ **Exceeds IMAC**	**CofA/Order** ☐ **Exceeds Limit**

ORAL NOTIFICATION to SPILLS ACTION CENTRE by LABORATORY

Date: Oct 9/02 Time: 2:15 P.M. By: KRYSTYNA PIPIN

Laboratory Name: CADUCEON ENV. LAB.	Laboratory Emergency Contact Name KRYSTYNA PIPIN
Address 2378 HOLLY LANE OTTAWA	Position SUPERVISOR
Email address	Phone # 613 526-0123 Fax # 613 526-1244
Waterworks Name MOOSE CREEK WELL SUPPLY	Waterworks Emergency Contact
Works # 220008033	Name DAVE MARKELL
Location 16950 McNeil Rd MOOSE CREEK	Position PROCESS TECHNICIAN
Email Address	Phone # 448-3098 Fax # 613 448-1616
NOTIFICATION OF WATER WORKS OWNER	**NOTIFICATION OF LOCAL MEDICAL OFFICER OF HEALTH**
Person Contacted DAVE MARKELL	Person Contacted IDALIA
Position PROCESS TECHNICIAN	Position SPEC. PROJECTS
Date Oct 9/02 Time 1:55 P.M	Date Oct 9/02 Time 2:10 P.M.

Laboratory Written Notification Prepared by: (Lab Results must be attached using Part 3 of form) Name (please print) KRYSTYNA PIPIN

Signature K. Pipin Date Oct 9/02

PART 2 - NOTIFICATION BY WATER WORKS OWNER

Indicators of Adverse Water Quality ☐	**Phys/Chem** ☐ **Exceeds MAC** ☐ **Exceeds IMAC**	**Radiological** ☐ **Exceeds IMAC**	**CofA/Order** ☐ **Exceeds Limit**

☐ *This notification is for operational problems identified at the waterworks; there is no Laboratory notification associated with this report*

SPILLS ACTION CENTRE ORAL NOTIFICATION BY OWNER	**WATERWORKS EMERGENCY CONTACT**
Date Oct. 9/02 Time 2:50	Name Dave Markell
Waterworks Name Moose Creek Wells	Position Process Tech.
Works # 220008033	Phone # 613-448-3098 Fax # 613-445-1616
Works Person Providing Oral Notification	
MEDICAL OFFICER OF HEALTH ORAL NOTIFICATION BY OWNER	**REMEDIAL ACTIONS TAKEN BY OWNER:**
Date Oct. 9/02 Time 2:50	Resampling Initiated ☒ Yes ☐ No
Person Contacted Adalia	Increase Chlorine Dose ☐ Yes ☐ No
Position Special	Flushing Mains ☐ Yes ☐ No
Phone # 800 267-4120 Fax # 933-7930	Other Actions Taken ☐ Yes ☐ No
Works Person Providing Oral Notification	Describe:
	Other information attached ☐

Water Works Written Notification Prepared by: Name (please print) Dave Markell

Signature Dave Markell Date Oct 9/02

For Ministry Use Only: **Occurrence Report #:**

1402-047 (07/00)

Ontario Ministry of the Environment / Ministère de l'Environnement

PART 3:

ADVERSE ANALYTICAL RESULTS - For Indicators Listed in SCHEDULE 6 - Drinking Water Protection Regulation

Microbiological Testing

Laboratory Sample ID No.	Sample Field ID No.	Date/Time Collected (M/D/Y) (: a.m. p.m.)	Sample Type / Location	Membrane Filtration Count/100ml			P-A/100ml Presumptive/ Confirmed (if applicable)	HPC/ 1ml	Date of Analysis (M/D/Y)
				Total Coliforms	Back-ground	E.coli/ Fecal C.			
220010590	MC-04	10/07/02	TREATED WATER	2	—	ABSENT	—		10/08/02

ADVERSE ANALYTICAL RESULTS - For Parameters Listed in SCHEDULE 4 and 5 or in a C of A or Order Drinking Water Protection Regulation

Physical/Chemical/Radiological Testing

Laboratory Sample ID No.	Sample Field ID No.	Date/Time Collected (M/D/Y) (: a.m. p.m.)	Sample Type/ Location	Parameter	Result	Unit	MAC/ IMAC	Date of Analysis (M/D/Y)

Laboratory Results Authorized by: KRYSTNA PIPIN

Authorization Date: Oct. 9/02

For Ministry Use Only:

Occurrence Report #:

1402-047 (07/00)

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220010890**
Project: Moose Creek WTP
Date Sampled: October 7, 2002
Date Received: October 8, 2002
Date Printed: October 09, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	absent	absent			absent	
Well #3 Raw	2	absent			absent	
Treated Water		absent	1.86		2	2.18
M.C. Hall		absent	1.12		absent	1.52
Paul Adams Cons.		absent	0.96		absent	1.16

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

For Michael Ziebell, General Manager

HP OfficeJet K Series K80
Personal Printer/Fax/Copier/Scanner

Log for
OCWA
613 448-1616
Oct 09 2002 3:29pm

Last Transaction

Date	Time	Type	Identification	Duration	Pages	Result
Oct 9	3:26pm	Fax Sent	16139337930	2:54	4	OK

HP OfficeJet K Series K80
Personal Printer/Fax/Copier/Scanner

Log for
OCWA
613 448-1616
Oct 09 2002 3:25pm

Last Transaction

Date	Time	Type	Identification	Duration	Pages	Result
Oct 9	3:24pm	Fax Sent	18002686061	0:56	4	OK

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Chesterville Hub
5 Industrial Drive, P.O. Box 460
Chesterville, Ontario K0C 1H0
Tel: (613) 448-3098
Fax: (613) 448-1616
www.ocwa.com

Fax

To MOH. MOE

Company

Fax Number 613-933-7930 1-800-267-6061

From OCWA. D. Markell

Date June 19/02

Number of Pages 4 **(including this page)**

Subject Adverse Water.

Moose Creek. Treated Water @ Plant.
- T-coli plate OVERGROWN.
- E-coli absent.
- Raw water Tcoli, Ecoli, Background ABSENT.
- Resampling initiated.

Ontario Ministry of the Environment / Ministère de l'Environnement

Notice of Drinking Water Analysis and Remedial Actions for Waterworks as Required under Drinking Water Protection Regulation

In accordance with the Drinking Water Protection Regulation, Laboratories and Water Works Owners must immediately provide oral notification to the MOE Spills Action Centre (SAC) at 1-800-268-6060 or 1-416-325-3000 and the local Medical Officer of Health (MOH) of Indicators of adverse drinking water quality and exceedances of standards as outlined in the Regulation and remedial actions taken. Further, within 24 hours of the oral notification, the party shall provide written notification on this completed form by Fax to the Spills Action Centre at 1-800-268-6021 or 1-416-325-3011 and the local Medical Officer of Health. Failure to notify these parties in accordance with the Regulation constitutes an offence under the Act. A copy of this form may be acquired through the Ministry of the Environment (MOE) public web site (www.ene.gov.on.ca) or by contacting any MOE office.

PART 1 – NOTIFICATION BY LABORATORY

Indicators of Adverse Water Quality ☒ — Phys/Chem ☐ Exceeds MAC ☐ Exceeds IMAC — Radiological ☐ Exceeds IMAC — Cof A/Order ☐ Exceeds Limit

ORAL NOTIFICATION to SPILLS ACTION CENTRE by LABORATORY

Date: JUNE 19 2002 Time: 3:05 PM By: KRYSTYNA PIPIN

Laboratory Name: CAUCEON ENV LAB	Laboratory Emergency Contact Name: MIKE ZIEBELL
Address: 2378 HOLLY LANE OTTAWA	Position: GENERAL MANAGER
Email address:	Phone # 613 526-0123 Fax # 613 526-1244
Waterworks Name: MOOSE CREEK WELL SUPPLY	Waterworks Emergency Contact: ONTARIO CLEAN WATER AGENCY
Works # 220008033	Name:
Location: MOOSE CREEK	Position:
Email Address:	Phone # (613) 448-3098 Fax # (613) 448-1616
NOTIFICATION OF WATER WORKS OWNER	**NOTIFICATION OF LOCAL MEDICAL OFFICER OF HEALTH**
Person Contacted: DAVE MARKELL	Person Contacted: LINE MARCHAND
Position: TECHNICIAN	Position: ADM. ASSIST.
Date: June 19/02 Time	Date: JUNE 19/02 Time: 2:55 P.M.

Laboratory Written Notification Prepared by: (Lab Results must be attached using Part 3 of form) — Name (please print): KRYSTYNA PIPIN — Date: June 19/02

Signature: K. Pipin

PART 2 – NOTIFICATION BY WATER WORKS OWNER

Indicators of Adverse Water Quality ☒ — Phys/Chem ☐ Exceeds MAC ☐ Exceeds IMAC — Radiological ☐ Exceeds IMAC — Cof A/Order ☐ Exceeds Limit

☐ *This notification is for operational problems identified at the waterworks; there is no Laboratory notification associated with this report*

SPILLS ACTION CENTRE ORAL NOTIFICATION BY OWNER

Date: June 19/02 Time: 15:25

Waterworks Name: 220008033

Works #: Moose Creek Water

Works Person Providing Oral Notification: Dave Markell

MEDICAL OFFICER OF HEALTH ORAL NOTIFICATION BY OWNER

Date: June 19/02 Time: 15:20

Person Contacted: Adalia

Position: Special Projects

Phone # 800-267-7120 Fax # 613-933-7530

Works Person Providing Oral Notification: D. Markell

WATERWORKS EMERGENCY CONTACT

Name: Dave Markell

Position: Process Tech.

Phone # 613-448-3098 Fax # 448-1616

REMEDIAL ACTIONS TAKEN BY OWNER:

Resampling Initiated	☑ Yes	☐ No
Increase Chlorine Dose	☐ Yes	☐ No
Flushing Mains	☐ Yes	☐ No
Other Actions Taken	☐ Yes	☐ No

Describe:

Other information attached ☑

Water Works Written Notification Prepared by: — Name (please print): Dave Markell — Date: June 19/02

Signature: Dave Markell

For Ministry Use Only: — Occurrence Report #:

0402-047 (07/02)

Ontario Ministry of the Environment / Ministère de l'Environnement

PART 3:

ADVERSE ANALYTICAL RESULTS - For Indicators Listed in SCHEDULE 6 - Drinking Water Protection Regulation

Microbiological Testing

Laboratory Sample ID No.	Sample Field ID No.	Date/Time Collected (M/D/Y) (: a.m./p.m.)	Sample Type / Location	Membrane Filtration Count/100ml			P-A/100ml Presumptive/ Confirmed (if applicable)	HPC/ 1ml	Date of Analysis (M/D/Y)
				Total Coliforms	Back-ground	E.coli/ Fecal C.			
220006128	MC-04	06/17/02	DRINKING	OCr	OCr	ABSENT	———		06/18/02

ADVERSE ANALYTICAL RESULTS - For Parameters Listed in SCHEDULE 4 and 5 or in a C of A or Order Drinking Water Protection Regulation

Physical/Chemical/Radiological Testing

Laboratory Sample ID No.	Sample Field ID No.	Date/Time Collected (M/D/Y) (: a.m./p.m.)	Sample Type/ Location	Parameter	Result	Unit	MAC/ IMAC	Date of Analysis (M/D/Y)

Laboratory Results Authorized by: KRYSTYNA PIPIN

Authorization Date: 06/19/02

For Ministry Use Only:

Occurrence Report #:

1402-047 (07/00)

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

PARTIAL

Attention: **Dave Markell**

Report: **220006128**
Project: Moose Creek WTP
Date Sampled: June 17, 2002
Date Received: June 18, 2002
Date Printed: June 19, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC
Unit	/100mL	/100mL	mg/L	/mL	/100mL
MDL	1	1	0.05	2	1
Sample ID					
Well #2 Raw	absent	absent			absent
Well #3 Raw	absent	absent			absent
Treated Water		absent	1.60		OG
Dist. Sewage Pumping Station		absent	0.70		absent
Dist. Moose Creek Mall		absent	0.90		absent

Page 4 of 4

OG - OVERGROWN

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

M. Ziebell
Michael Ziebell, General Manager

HP OfficeJet K Series K80
Personal Printer/Fax/Copier/Scanner

Log for
OCWA
613 448-1616
Jun 19 2002 3:51pm

Last Transaction

Date	Time	Type	Identification	Duration	Pages	Result
Jun 19	3:47pm	Fax Sent	16139337930	3:03	4	OK

HP OfficeJet K Series K80
Personal Printer/Fax/Copier/Scanner

Log for
OCWA
613 448-1616
Jun 19 2002 3:47pm

Last Transaction

Date	Time	Type	Identification	Duration	Pages	Result
Jun 19	3:46pm	Fax Sent	18002686061	1:00	4	OK

ETRL Division of Caduceon Enterprises Inc.
133 Dalton Ave. Kingston, ON K7K 6C2 Tel: (613) 544-2001 Fax: (613) 544-2770 email: etrl@kingston.net

05 March 2002

re: HPC reporting

To all drinking water clients:

You have probably already noticed the recent change we have made in reporting HPC results. Samples with no detection of HPC will now be reported as <10 cfu/mL. We recently changed our analysis protocol to incorporate 100 uL of sample instead of 1000 uL. This will allow us to more clearly identify and count plates at and above the objective of 500 cfu/mL.
The ODWS objective for HPC is 500 cfu/mL so a results reported as <10 cfu/mL will be acceptable by the Ministry of the Environment.

I hope we have not caused any confusion with this recent change.

If you have any questions please do not hesitate to contact me at (613)544-2001.

Regard's

Steve Garrett
Lab Manger

ATTN: Blair H.
Dave M.

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Chesterville Hub
5 Industrial Drive, P.O. Box 460
Chesterville, Ontario K0C 1H0
Tel: (613) 448-3098
Fax: (613) 448-1616
www.ocwa.com

Fax

To IRENE

Company M O H

Fax Number 1-613- ~~267-7930~~ 933-7930

From Dave

Date FEB 21

Number of Pages 5 **(including this page)**

Subject Please find attached

lab sheets from Moose Creek, Finch, Chesterville and Winchester Wells # 1, 5 & 6.
These are as a required follow-up to notifications of adverse water (Sodium over 20 ms/c) FEB 7/02.

any questions please call Dave

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Chesterville Hub
5 Industrial Drive,
Chesterville, Ontario K0C 1H0
Tel: (613) 448-3098
Fax: (613) 448-1616
bhenderson@ocwa.com

Fax

To	Rheal Delaquis
Company	Ministry of Environment
Fax Number	(613) 933-6402
From	Blair Henderson
Date	February 21, 2002
Number of Pages	1 **(including this page)**
Subject	**Finch Water and Moose Creek Water - Sodium Exceedance**

As a follow up to notification of sodium exceedance dated February 7, 2002, as per ODWR, all sites have been resampled and the results are as follows.

Finch Treated Water - 77.0 mg/Litre
Moose Creek Treated Water - 27 mg/Litre

These results have been forwarded to the Ministry of Health.

These results are consistent with historic sodium results.

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr Blair Henderson

Report Number: 2201834
Date: 2002-02-20
Date Submitted: 2002-02-14

Project: Moose Creek Wells

P.O. Number:
Matrix: Supply Water

		LAB ID:	169945				
		Sample Date:	2002-02-13				
		Sample ID:	MCW-04				
PARAMETER	UNITS	MDL	TREATEDWATER				
Na	mg/L	2	27				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL:

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

TRANSMISSION VERIFICATION REPORT

TIME : 02/21/2002 13:47

DATE,TIME	02/21 13:45
FAX NO./NAME	16139337930
DURATION	00:02:05
PAGE(S)	05
RESULT	OK
MODE	STANDARD

Accutest Laboratories Ltd. 146 Colonnade Rd., Unit 8, Nepean, Ontario, K2E 7Y1 www.accutestlabs.com

ACCUTEST FAX

Date: **February 7, 2002**

Number of pages including cover sheet: 15

To:

Blair Henderson
OCWA Chesterville

Phone: 613-448-3098
Fax phone: 613-448-1616
CC:

From:

Kristina Hay
QA/QC Coordinator

Phone: 613-727-5692
Fax phone: 613-727-5222
e-mail: khay@accutestlabs.com

REMARKS ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment
Originals to follow: ☐ YES ☐ NO **VIA:** ☐ Mail ☐ Courier

Your Reference: Na ODWS Exceedances **Our Reference:**

Mr. Henderson,

This is a notice of adverse Na results for the Winchester, Finch, Moose Creek and Chesterville Well Supplies I have attached a preliminary copy of the reports as well as Part 1 and 3 of the MOE Notice of Drinking Water Analysis form.

Please contact me if you have any questions.

Best regards,

Kristina Hay

Kristina Hay

Ontario Ministry of the Environment / Ministère de l'Environnement

Notice of Drinking Water Analysis and Remedial Actions for Waterworks as Required under Drinking Water Protection Regulation

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PART 1 – NOTIFICATION BY LABORATORY

Indicators of Adverse Water Quality ☑ — Phys/Chem ☐ Exceeds MAC ☐ Exceeds IMAC — Radiological ☐ Exceeds IMAC — CofA/Order ☐ Exceeds Limit

ORAL NOTIFICATION to SPILLS ACTION CENTRE by LABORATORY

Date: Feb 7, 2002 Time: 4:10 pm By: Kristina Hay

Laboratory Name: Accutest Laboratories Ltd.	Laboratory Emergency Contact Name: Peter Heulena
Address: 146 Colonnade Rd., Unit 8, Nepean, ON K2E 7Y1	Position: Analytical Services Manager
Email address: info@accutestlabs.com	Phone #: (613) 727-5692 Fax #: (813) 727-5222
Waterworks Name: Moose Creek Well Supply	Waterworks Emergency Contact
Works #: 220008033.	Name: Blair Henderson
Location	Position: Operator
Email Address	Phone #: (613)448-3098 Fax #: (613)448-1616
NOTIFICATION OF WATER WORKS OWNER	**NOTIFICATION OF LOCAL MEDICAL OFFICER OF HEALTH**
Person Contacted: Blair Henderson	Person Contacted: Irene Marchand.
Position: Operator.	Position: Admin.
Date: Feb 7 2002. Time: 3:15 pm.	Date: Feb 7, 2002. Time: 4:06 pm.

Laboratory Written Notification Prepared by: (Lab Results must be attached using Part 3 of form) Name (please print): Kristina Hay

Signature: Kristina Hay. Date: Feb 7, 2002.

PART 2 - NOTIFICATION BY WATER WORKS OWNER

Indicators of Adverse Water Quality ☑ — Phys/Chem ☐ Exceeds MAC ☐ Exceeds IMAC — Radiological ☐ Exceeds IMAC — CofA/Order ☐ Exceeds Limit

☐ *This notification is for operational problems identified at the waterworks; there is no Laboratory notification associated with this report*

SPILLS ACTION CENTRE ORAL NOTIFICATION BY OWNER	**WATERWORKS EMERGENCY CONTACT**
Date: FEB 7/02 Time: 16:16	Name: Blair Henderson.
Waterworks Name: 220008033	Position: Ops Manager.
Works #: Moose Creek Wells	Phone #: 448-3098 Fax #: 613-448-1616
Works Person Providing Oral Notification: BLAIR HENDERSON	
MEDICAL OFFICER OF HEALTH ORAL NOTIFICATION BY OWNER	**REMEDIAL ACTIONS TAKEN BY OWNER:**
Date: FEB 7/02 Time: 16:25	Resampling Initiated ☑ Yes ☐ No
Person Contacted: Claudette	Increase Chlorine Dose ☐ Yes ☐ No
Position: Receptionist	Flushing Mains ☐ Yes ☐ No
Phone #: 613-933-1375 Fax #: 613-933-7930	Other Actions Taken ☐ Yes ☐ No
Works Person Providing Oral Notification: Dave Markell	Describe: Other information attached ☑

Water Works Written Notification Prepared by: Name (please print): Dave Markell

Signature: Dave Markell Date: FEB 7/02

For Ministry Use Only: Occurrence Report #:

1402-047 (07/00)

ACCUTEST LABORATORIES LTD.

Report of Analysis

Client: MOOSE CREEK WELL SUPPLY
5 Industrial Drive
Chesterville, ON
K0C 1H0

Attention: Mr. Blair Henderson

Report Number: 2201009
Date Reported:
Date Submitted: 2002-01-29
Date Collected 2002-01-28
Project: Moose Creek Wells
Quarterly Chemicals

P.O. Number:
Matrix Supply Water

PARAMETER	UNITS	MDL	167759 Treated MCW-04
Al	mg/L	0.05	<0.05
Alkalinity as CaCO3	mg/L	5	205
Ca	mg/L	1	86
Cl	mg/L	1	29
Colour	TCU	2	2
Conductivity	uS/cm	5	707
Cu	mg/L	0.001	<0.001
DOC	mg/L	0.5	1.9
F	mg/L	0.10	0.23
Fe	mg/L	0.01	0.45
Hardness as CaCO3	mg/L	1	326
Mg	mg/L	1	27
Mn	mg/L	0.01	0.04
N-NH3	mg/L	0.02	<0.02
N-NH3 (unionized)	mg/L	0.02	<0.02
Na	mg/L	2	28
pH			7.84
SO4	mg/L	1	137
TOC	mg/L	0.5	2.1
Total Kjeldahl Nitrogen	mg/L	0.05	0.10

MDL = METHOD DETECTION LIMIT
Comment:

APPROVAL:

Ontario Ministry of the Environment / Ministère de l'Environnement

PART 3:

ADVERSE ANALYTICAL RESULTS - For Indicators Listed in SCHEDULE 6 - Drinking Water Protection Regulation

Microbiological Testing

Laboratory Sample ID No.	Sample Field ID No.	Date/Time Collected (M/D/Y) a.m. p.m. (:)	Sample Type / Location	Membrane Filtration Count/100ml			P-A/100ml Presumptive/ Confirmed (if applicable)	HPC/ 1ml	Date of Analysis (M/D/Y)
				Total Coliforms	Back-ground	E.coli/ Fecal C.			

ADVERSE ANALYTICAL RESULTS - For Parameters Listed in SCHEDULE 4 and 5 or in a C of A or Order Drinking Water Protection Regulation

Physical/Chemical/Radiological Testing

Laboratory Sample ID No.	Sample Field ID No.	Date/Time Collected (M/D/Y) a.m. p.m. (:)	Sample Type/ Location	Parameter	Result	Unit	MAC/ IMAC (Per Sched 6)	Date of Analysis (M/D/Y)
167759		01/28/02 930	Treated MCN-04	Na	26	mg/L	20	02/07/02.

Laboratory Results Authorized by: Kristina Hay

Authorization Date: Feb 7, 2002

For Ministry Use Only:

Occurrence Report #:

1402-047 (07/00)

Page ____ of ____

TRANSMISSION VERIFICATION REPORT

TIME : 02/07/2002 17:24

DATE,TIME	02/07 17:21
FAX NO./NAME	16139337930
DURATION	00:02:27
PAGE(S)	04
RESULT	OK
MODE	STANDARD

TRANSMISSION VERIFICATION REPORT

TIME : 02/07/2002 17:30

DATE,TIME	02/07 17:25
FAX NO./NAME	18002686061
DURATION	00:04:48
PAGE(S)	09
RESULT	OK
MODE	STANDARD ECM

QUARTERLY REPORT ON DRINKING WATER QUALITY

January - March 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Moose Creek Drinking Water Quality

Ontario Drinking Water Protection Regulations

The Ontario Clean Water Agency, as the contract operator of the Moose Creek Water Treatment Facility on behalf of the Township of North Stormont, is pleased to present the 2002 First Quarter Report on drinking water quality. This report has been prepared in response to legislative changes brought about by "Operation Clean Water", an initiative of Ontario's Ministry of the Environment to ensure high quality drinking water for the residents of Ontario. The new regulations put into law what was formerly the Ontario Drinking Water Objectives (ODWO), and sets requirements for public waterworks with regard to sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

Further information on the Ontario Drinking Water Regulations can be found on the Ministry of the Environment web site at www.ene.gov.on.ca

Where to contact us for information

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Web site at www.ocwa.com

Client Services Representative: John Kingsbury
Phone : (613) 774-3663
E-mail Address: jkingsbury@ocwa.com

Operations Manager: Blair Henderson
Phone: (613) 448-3098
E-mail Address: bhenderson@ocwa.com

You may also contact the Township of North Stormont directly by contacting Rheal Charbonneau, Clerk-Treasurer, Tel. (613) 984-2821 or e-mail address: norstor@cnwl.igs.net

Free copies of this report are available at the Township office or their website @ www.cnwl.igs.net/~northstormont

INSIDE THIS REPORT

QUARTERLY REPORT ON DRINKING WATER QUALITY

January - March 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Introduction

We are proud to report that for the period January to March 2002, your water conformed to the Ontario Drinking Water Standards as set out in Ontario Regulation 459/00. The Ontario Clean Water Agency (OCWA) is dedicated to maximizing public health and safety through efficient and reliable operation of your water facility and distribution system.

Plant Description and Treatment Processes

Facility Name:	Moose Creek WTP & Distribution System
Total Design Capacity	896 cubic meters/day
Raw Water Source	Groundwater
Disinfection Method	Sodium Hypochlorite
Municipal Location	Municipal Office, 2 Victoria Street, Berwick, Ontario
Service Area	Village of Moose Creek
Service Population	400

Operational Description:

Raw water source: Three drilled wells located southwest of the water pumping station.

Low Lift Pumps: Three low lift pumps lift the water from the wells to the main pumping station. There is one header that directs the water to the Chlorine Contact Chamber. At this point, Sodium Hypochlorite is added to the raw water for disinfection.

Reservoir: From the Chlorine Contact Chamber the treated water enters a 75 cubic meter underground reservoir.

High Lift Pumps: Two high lift pumps, one duty and one standby, move the treated water from the reservoir into the distribution system and elevated tank.

Elevated Tank: There is approximately 622 cubic meters of water in the elevated water tower located on County Road 15.

Distribution System: There are approximately 400 persons supplied with water from the Moose Creek Water Treatment System.

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Quality Control & Compliance With Provincial Regulations

This plant provides multiple barriers against bacteriological contamination. Bacteriological testing is carried out on raw water, treated water and distribution samples on a regular frequency. On-line analysers for chlorine residuals and turbidity ensures daily monitoring of water leaving the plant. Chlorine levels in the distribution system are also checked on a regular basis. More specialized testing occurs monthly and quarterly and includes Volatile Organics, Inorganics, Pesticides and PCB's.

OCWA uses internal compliance auditing techniques by teams from within the organization. OCWA operates the Moose Creek Water Treatment Facility in accordance with provincial regulations. Here is how we do it:

- Use of Accredited Labs. Analytical tests to monitor your water quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods.

- Operation by Licensed Operators. Your water treatment plant is operated and maintained by the Ontario Clean Water Agency's competent and licensed staff. The mandatory licensing program for operators of drinking water facilities is regulated under the *Ontario Water Resources Act (OWRA)* Regulation 435/93. Licensing means that an individual meets the education and experience requirements and has successfully passed the certificate exam.

- Sampling and Analytical requirements. OCWA follows a sampling and analysis schedule required by *OWRA* Regulation 459/00, the Ontario Drinking Water Standards. More information on sampling and analysis including results are available in this report and from your municipal office.

- Adherence to Ministry Guidelines and Procedures. To ensure the protection of the health and operational excellence, the OCWA adheres to the guidelines and procedures developed by the Ministry of the Environment and the Ministry of Health.

Did We Exceed the Standards?

During this quarter, there were no micro biological parameters that exceeded the MAC/IMAC limits. In respect to Operational Parameters, 16 turbidity exceedences were reported as per Regulation 459/00. These samples are taken continuously in-house by online equipment and these spikes are believed to be caused from the starting and stopping of pumps, equipment maintenance/calibration and/or air and a buildup of iron sediment in the sample lines. During these spikes, the system was being adequately disinfected; therefore, reducing any risks that may be associated with the high turbidity.

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During the First Quarter, Sodium was found to exceed the Ontario Drinking Water Standards concentration of 20 mg/L as set out in Ontario Regulation 459/00. The sodium concentrations of the treated water at Moose Creek Well Water System in the first quarter were 26 mg/L and 27 mg/L. The local Medical Officer of Health must be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to the local physicians for their use with patients on sodium restricted diets. The aesthetic objective for sodium in drinking water is 200 mg/L at which it can be detected by a salty taste.

As a result we actively undertook the following remedial actions:
Immediately notified the Ministry of Environment and the Ministry of Health as per the Ontario Drinking Water Standards. The result of the first sample was 26 mg/L and as per Reg. 459 re-sampling was initiated and the results were 27 mg/L.

Definitions & Terms

m^3 - Cubic Meter, $1m^3 = 1000$ litres
TCU - True Colour Units
$CaCO_3$ - Calcium Carbonate
mg - milligram
mg/L - milligrams per litre
ug/L - micrograms per litre
ng/L - nanograms per litre
NTU - Nephelometric Turbidity Units
MAC - Maximum Acceptable Concentration
IMAC - Interim Maximum Acceptable Concentration
Coliform Bacteria - a group of commonly occurring rod shaped bacteria. Their presence in a water sample is indicative of inadequate filtration and/or disinfection.
Fecal Coliform Bacteria - refers to a subgroup of coliform bacteria present in the digestive system of warm blooded animals and humans.
Heterotrophic Plate Count - a method of measuring bacterial content in water samples. Also known as Standard Plate Count.
Organic Parameter - a group of chemical compounds containing carbon.
Inorganic Parameter - a group of chemical compounds not containing carbon.
Raw Water - Surface or ground water available as a source of drinking water that has not received any treatment.

Required Testing

The Ontario Drinking Water Regulations and Certificates of Approval (C of A) set sampling requirements for the plant. All other sampling conforms to the Drinking Water Protection Regulation schedule for sampling and analysis. As water travels over the surface of the land or through the ground,

it dissolves naturally occurring minerals and, in some cases can pick up substances resulting from the presence of animals or from human activity. Your water is extensively tested for the presence of dozens of compounds. The results of all analytical tests are available at your municipal office. The following table lists all compounds analyzed.

Moose Creek Water Quality Test Results

Microbiological Parameters	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d)	Range	Exceedence?	Typical Source of Contaminant
Total Coliform (counts/100ml)	0	39	0	01/01-03/31	n/a	no	Indicate possible presence of coliform
Escherichia Coliform (counts/100ml)	0	39	0	01/01-03/31	n/a	no	Definite indicator of fecal contamination
Fecal Coliform (counts/100ml)	0	39	0	01/01-03/31	n/a	no	Indicator of sewage contamination
Heterotrophic Plate Count (counts/100ml)	500	39	2	01/01-03/31	4-40	no	Indicator of deteriorating water quality if greater than 500
Parameters related to Microbiological Quality	**MAC or IMAC**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Turbidity (NTU)	1	Continuous	Continuous	01/01-03/31	0.40->5.0	yes	Turbidity is a measure of particles in water
Free Chlorine – Plant Effluent (mg/l)	-	Continuous	Continuous	01/01-03/31	1.67-2.80	no	Chlorine added for Disinfection
Free Chlorine- Distribution (mg/l min 0.05 & max. 4.0)	-	Grab samples weekly	Weekly	01/01-03/31	0.70-2.20	no	Objective is 0.20 mg/l in the Distribution System (min. 0.05 mg/l required)
Inorganic Parameters (mg/l)	**MAC or IMAC**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d/y)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Lead - Distribution	0.01	1	1	01/21/02	<0.001	no	Leached from lead solder or brass plumbing fixtures
Nitrate	10	1	1	01/21/02	<0.1	no	Natural component of water
Nitrite	1	1	1	01/21/02	<0.1	no	
Arsenic	IMAC= 0.025	1	1	09/19/00	<0.001	no	
Barium	1	1	1	09/19/00	0.24	no	
Boron	IMAC= 5.0	1	1	09/19/00	0.06	no	
Cadmium	0.005	1	1	09/19/00	<0.0001	no	
Chromium (Total)	0.05	1	1	09/19/00	<0.01	no	
Copper	1	1	1	01/21/02	<0.001	no	
Iron	0.3	1	1	01/21/02	0.45	yes	Comments below
Lead	0.01	1	1	09/19/00	<0.001	no	
Manganese	0.05	1	1	01/21/02	0.04	no	
Mercury	0.001	1	1	09/19/00	<0.0001	no	
Selenium	0.01	1	1	09/19/00	<0.001	no	
Uranium	0.1	1	1	09/19/00	<0.001	no	
Sodium	200	1	1	01/28/02-02/13/02	26-27	no	

Fluoride	2.4	3	3	01/28/02	0.23	no	

Comment: Iron may be present in groundwater as a result of mineral deposits and chemically reducing underground conditions. The aesthetic objective for Iron, set by appearance effects in drinking water is 0.3 mg/L. Excessive Iron levels in drinking water supplies may impart a brownish color to laundered goods, plumbing fixtures and the water itself; it may produce a bitter, astringent taste in water and beverages; the precipitation of iron can also promote growth of iron bacteria in water mains and service pipes. The Moose Creek Water Pumping Station has no design features for the removal of Iron.

Volatile Organics (ug/l)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d)	Range	Exceedence?	Typical Source of Contaminant
Trihalomethanes - Plant	100	2	2	01/21	74.7	no	
Trihalomethanes - Dist.	100	2	2	01/21	52.1	no	
Benzene	5	1	1	01/21	<0.5	no	
Carbon Tetrachloride	5	1	1	01/21	<0.9	no	
Dichloromethane	50	1	1	01/21	<4	no	
1,2 - Dichlorobenzene	200	1	1	01/21	<0.4	no	
1, 4 - Dichlorobenzene	5	1	1	01/21	<0.4	no	
1,2 - Dichloroethane	IMAC=5	1	1	01/21	<0.7	no	
1,1 - Dichloroethylene	14	1	1	01/21	<0.5	no	
Ethylbenzene	24	1	1	01/21	<0.5	no	
Monochlorobenzene	80	1	1	01/21	<0.2	no	
Tetrachloroethylene	30	1	1	01/21	<0.3	no	
Toluene	24	1	1	01/21	<0.5	no	
Trichloroethlyene	50	1	1	01/21	<0.3	no	
Vinyl chloride	2	1	1	01/21	<0.5	no	
Xylene	300	2	2	01/21	<2.0	no	
Bromodichloromethane	n/a	1	1	01/21	17.5	no	
Bromoform	n/a	1	1	01/21	<0.4	no	
Chloroform	n/a	1	1	01/21	47.6	no	
Dibromochloromethane	n/a	1	1	01/21	9.6	no	

Pesticides & PCB (ug/L)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d)	Range	Exceedence?	Typical Source of Contaminant
Alachlor	IMAC=5	1	1	01/21	<0.5	no	
Aldicarb	9	1	1	01/21	<5.0	no	
Aldrin+Dieldrin	0.7	1	1	01/21	<0.7	no	
Atrazine	IMAC=5	1	1	01/21	<1.0	no	
Azinphos-methyl	20	1	1	01/21	<2.0	no	
Bendiocarb	40	1	1	01/21	<2.0	no	
Bromoxynil	IMAC=5	1	1	01/21	<0.5	no	
Carbaryl	90	1	1	01/21	<5.0	no	
Carbofuran	90	1	1	01/21	<5.0	no	
Chlordane	7	1	1	01/21	<0.7	no	
Chorpyrifus	90	1	1	01/21	<1.0	no	
Cyanazine	IMAC=10	1	1	01/21	<1.0	no	
Diaznon	20	1	1	01/21	<1.0	no	
Dicamba	120	1	1	01/21	<1.0	no	
2,4 Dichlorophenol	900	1	1	01/21	<0.5	no	
DDT + Metapolites	30	1	1	01/21	<3.0	no	

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2,4 - Dichlorophenexy acid (2,4 -D)	IMAC=100	1	1	01/21	<1.0	no	
Diclofop-methyl	9	1	1	01/21	<0.9	no	
Dimethoate	IMAC=20	1	1	01/21	<2.5	no	
Dinoseb	10	1	1	01/21	<1.0	no	
Diquat	70	1	1	01/21	<7.0	no	
Diuron	150	1	1	01/21	<10.0	no	
Glyphosate	IMAC=280	1	1	01/21	<10.0	no	
Heprachlor + Heptachlor epoxide	3	1	1	01/21	<0.3	no	
Lindane	4	1	1	01/21	<0.4	no	
Malathion	190	1	1	01/21	<5.0	no	
Pesticides & PCB (ug/L)	**MAC or IMAC**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Methoxychlor	900	1	1	01/21	<90.0	no	
Metolachlor	IMAC=50	1	1	01/21	<0.5	no	
Metribuzin	80	1	1	01/21	<5.0	no	
Paraquat	IMAC=10	1	1	01/21	<1.0	no	
Parathion	50	1	1	01/21	<1.0	no	
Pentachlorophenol	60	1	1	01/21	<0.5	no	
Phorate	IMAC=2	1	1	01/21	<0.5	no	
Picloram	IMAC=190	1	1	01/21	<5.0	no	
Polychlorinated Biphenyls	IMAC=3	1	1	01/21	<0.3	no	
Prometryne	IMAC=1	1	1	01/21	<0.25	no	
Simazine	IMAC=10	1	1	01/21	<1.0	no	
Temephos	IMAC=280	1	1	01/21	<10	no	
Terbufos	IMAC=1	1	1	01/21	<0.7	no	
2,3,4,6 Tetrachlorophenol	100	1	1	01/21	<0.5	no	
Triallate	230	1	1	01/21	<1.0	no	
2,4,6-Trichlorophenol	5	1	1	01/21	<0.5	no	
2,4,5 - trichlorophenoxy acedic acid	IMAC=280	1	1	01/21	<1.0	no	
Trifluralin	45	1	1	01/21	<1.0	no	
Additional Parameters Non-Health Related (mg/L)	**AO or OG**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Colour	5	1	1	01/28	2	no	
pH	6.8-8.5	1	1	01/28	7.84	no	
Alkalinity	30-500	1	1	01/28	205	no	
Total Hardness	80-100	1	1	01/28	326	yes	Limits are set as an operational guideline
Sulphate	500	1	1	01/28	137	no	
Conductivity	---	1	1	01/28	707	no	
Chloride	250	1	1	01/28	29	no	
Free Ammonia	---	1	1	01/28	<0.02	no	
Total Kjeldahl Nitrogen	---	1	1	01/28	0.1	no	
Dissolved Organic Carbon	5	1	1	01/28	1.9	no	
Sodium	200	1	1	01/28	26	no	

Iron	0.3	1	1	01/28	0..45	yes	
Aluminium	0.1	1	1	01/28	<0.05	no	
Manganese	0.05	1	1	01/28	0.04	no	
Ammonia + Ammonium N		1	1	01/28	<0.02	no	
Total Organic Carbon		1	1	01/28	2.1	no	
Copper	1	1	1	01/28	<0.001	no	
Calcium	---	1	1	01/28	86	no	
Magnesium	---	1	1	01/28	27	no	

Questions & Answers

Q. What is an Accredited Laboratory?

A. Accredited labs must have undergone an on-site assessment and performance review of their methods by the Canadian Association of Environmental and Analytical Laboratories. The Standards Council of Canada grants accreditation to the lab based on the recommendation of the CAEAL. The accreditation requirements are repeated every two years.

Q. What had to be done to meet the new regulations?

A. The Moose Creek Water Treatment Plant was following the Ontario Drinking Water Objectives (ODWO) before they became law, so little change was required to meet the new regulations. Our chlorine residual in the water leaving the plant was raised to slightly to achieve the (0.20 mg/L free chlorine) required level in the distribution system, and some changes were required in the way results are reported. This report to the public is also the result of the new regulations.

Q. What parameters did you test for?

A. Microbiological parameters, volatile organic, inorganic and pesticides & PCBs have been tested. The results are included in this report.

Q. Sometimes my water looks rusty or coloured. Why is that, and what should I do about it?

A. This is quite often caused when the tanks in older water heaters start to decay. If the colour is seen only in your hot water, this may be the problem. If the colour is also noticed in your cold water it could be coming from the water main. Various maintenance procedures in the distribution system - such as fire hydrant and valve maintenance, or main break repairs - require flushing of the water mains. Flushing can cause small particles of sediment to break off adding colour to the water. Please note that there is no health risk associated with this problem. This is usually only temporary, and opening your taps for a while to flush out your service line (the pipe from the water main to your house) should take care of the problem. Let the water run until the colour disappears.

Caduceon Enterprises Inc.

Environmental Laboratory

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220000057**
Project: Moose Creek WTP
Date Sampled: January 2, 2002
Date Received: January 3, 2002
Date Printed: January 07, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Paul Adams	Dist. SPS
Total Chlorine	mg/L	0.05				2.50	0.80	0.90
Free Chlorine	mg/L	0.05				2.30	0.70	0.80
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	absent	4	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

Caduceon Enterprises Inc. Environmental Laboratory
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

Caduceon Enterprises Inc.
Environmental Laboratory

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220000172**
Project: Moose Creek WTP
Date Sampled: January 7, 2002
Date Received: January 8, 2002
Date Printed: January 10, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Tower	Dist. Mall
Total Chlorine	mg/L	0.05				2.50	1.30	1.40
Free Chlorine	mg/L	0.05				2.30	1.20	1.30
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	4	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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K0C 1H0

Attention: **Dave Markell**

Report: **220000388**
Project: Moose creek WTP
Date Sampled: January 14, 2002
Date Received: January 15, 2002
Date Printed: January 17, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Blair Const.	Dist. 2041 Valley
Total Chlorine	mg/L	0.05				2.50	2.00	1.00
Free Chlorine	mg/L	0.05				2.30	1.80	0.90
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	20	absent	2	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220000613**
Project: Moose Creek WTP
Date Sampled: January 21, 2002
Date Received: January 22, 2002
Date Printed: January 25, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. SPS	Dist. Mall
Total Chlorine	mg/L	0.05				2.20	1.60	2.10
Free Chlorine	mg/L	0.05				2.00	1.40	2.00
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	2	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Environmental Laboratory

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220000787**
Project: Moose Creek WTP
Date Sampled: January 28, 2002
Date Received: January 29, 2002
Date Printed: January 31, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Paul Adam	Dist. 2041 Valley
Total Chlorine	mg/L	0.05				2.50	1.80	1.20
Free Chlorine	mg/L	0.05				2.30	1.70	1.20
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	10	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2200719
Date: 2002-01-25
Date Submitted: 2002-01-22

Project: Moose Creek Wells Quarterly Chemicals

P.O. Number:
Matrix: Supply Water

		LAB ID:	167007			
		Sample Date:	2002-01-21			
		Sample ID:	Treated MCW 04			
PARAMETER	**UNITS**	**MDL**				
BTEX / 624 / PURGEABLE HYDROCARBONS						
Benzene	ug/L	0.5	<0.5			
Toluene	ug/L	0.5	<0.5			
Ethylbenzene	ug/L	0.5	<0.5			
m/p-xylene	ug/L	1.0	<1.0			
o-xylene	ug/L	0.5	<0.5			
Bromodichloromethane	ug/L	0.3	17.5			
Bromoform	ug/L	0.4	<0.4			
Carbon Tetrachloride	ug/L	0.9	<0.9			
Chlorobenzene	ug/L	0.2	<0.2			
Chloroform	ug/L	0.5	47.6			
Dibromochloromethane	ug/L	0.3	9.6			
1,2-dichlorobenzene	ug/L	0.4	<0.4			
1,4-dichlorobenzene	ug/L	0.4	<0.4			
1,2-dichloroethane	ug/L	0.7	<0.7			
1,1-dichloroethylene	ug/L	0.5	<0.5			
Dichloromethane	ug/L	4.0	<4.0			
Tetrachloroethylene	ug/L	0.3	<0.3			
Trichloroethylene	ug/L	0.3	<0.3			
Vinyl Chloride	ug/L	0.5	<0.5			
TOTALS						
Trihalomethanes (total)	ug/L	2.0	74.7			
Xylene; total	ug/L	2.0	<2.0			
BTEX / 624 Surrogate Recoveries						
Toluene-d8	%		96			
1,2-dichloroethane-d4	%		106			
4-bromofluorobenzene	%		110			

MDL = Method Detection Limit INC = Incomplete

Comment:

APPROVAL:

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2200719
Date: 2002-01-29
Date Submitted: 2002-01-22

Project: Moose Creek Wells - Qrtly

P.O. Number:
Matrix: Supply Water

		LAB ID:	167007				
		Sample Date:	2002-01-21				
		Sample ID:	Treated MCW-04				
PARAMETER	**UNITS**	**MDL**	TREATEDWATER				
N-NO2	mg/L	0.10	<0.10 ✓				
N-NO3	mg/L	0.10	<0.10 ✓	Dave			

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

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608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: Moose Creek Well Supply

ATT: Mr. Blair Henderson

Report Number: 2200719
Date: 2002-03-12
Date Submitted: 2002-01-22

Project: Moose Creek Wells Quarterly Chemicals
Sample Matrix: Supply Water

		LAB ID:	167007			
		Sample Date:	2002-01-21			
		Sample ID:	Treated MCW 04			
PARAMETER	**UNITS**	**MDL**				
PESTICIDES & PCB's						
Alachlor	mg/L	0.0005	<0.0005			
Aldicarb	mg/L	0.0050	<0.0050			
Aldrin + Dieldrin	mg/L	0.00007	<0.00007			
Atrazine	mg/L	0.001	<0.001			
Azinphos-methyl	mg/L	0.002	<0.002			
Bendiocarb	mg/L	0.0020	<0.0020			
Bromoxynil	mg/L	0.0005	<0.0005			
Carbaryl	mg/L	0.0050	<0.0050			
Carbofuran	mg/L	0.0050	<0.0050			
Chlordane (Total)	mg/L	0.0007	<0.0007			
Chloropyrifos	mg/L	0.0010	<0.0010			
Cyanazine	mg/L	0.0010	<0.0010			
Diazinon	mg/L	0.0010	<0.0010			
Dicamba	mg/L	0.0010	<0.0010			
Diquat	mg/L	0.0070	<0.0070			
2,4-Dichlorophenol	mg/L	0.0005	<0.0005			
DDT	mg/L	0.0030	<0.0030			
2,4-D	mg/L	0.0010	<0.0010			
Diclofop-methyl	mg/L	0.0009	<0.0009			
Dimethoate	mg/L	0.0025	<0.0025			
Dinoseb	mg/L	0.0010	<0.0010			
Diuron	mg/L	0.010	<0.010			
Glyphosate	mg/L	0.010	<0.010			
Heptachlor + Hept. Epoxide	mg/L	0.0003	<0.0003			
Lindane (Total)	mg/L	0.0004	<0.0004			
Malathion	mg/L	0.0050	<0.0050			
Methoxychlor	mg/L	0.0900	<0.0900			
Metolachlor	mg/L	0.0005	<0.0005			

ND = Not Detected (< MDL) MDL = Method Detection Limit

Comment:

APPROVAL: _____

146 Colonnade Road, Unit 8, Nepean, Ontario K2E 7Y1 Tel:(613)727-5692 Fax:(613)727-5222

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: Moose Creek Well Supply

ATT: Mr. Blair Henderson

Report Number: 2200719
Date: 2002-03-12
Date Submitted: 2002-01-22

Project: Moose Creek Wells Quarterly Chemicals
Sample Matrix: Supply Water

			LAB ID:	167007			
			Sample Date:	2002-01-21			
			Sample ID:	Treated MCW 04			
PARAMETER	**UNITS**	**MDL**					
Metribuzin	mg/L	0.005	<0.005				
Paraquat	mg/L	0.0010	<0.0010				
Parathion	mg/L	0.0010	<0.0010				
Pentachlorophenol	mg/L	0.0005	<0.0005				
Phorate	mg/L	0.0005	<0.0005				
Picloram	mg/L	0.0050	<0.0050				
PCB's (total)	mg/L	0.0003	<0.0003				
Prometryne	mg/L	0.00025	<0.00025				
Simazine	mg/L	0.0010	<0.0010				
[illegible]mephos	mg/L	0.010	<0.010				
[illegible]bufos	mg/L	0.0007	<0.0007				
2,3,4,6-Tetrachlorophenol	mg/L	0.0005	<0.0005				
Triallate	mg/L	0.0010	<0.0010				
2,4,6-Trichlorophenol	mg/L	0.0005	<0.0005				
Trifluralin	mg/L	0.0010	<0.0010				
2,4,5-T	mg/L	0.0010	<0.0010				

ND = Not Detected (< MDL) MDL = Method Detection Limit

Comment:

APPROVAL: _____

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ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2201011
Date: 2002-02-07
Date Submitted: 2002-01-29

Project: Moose Creek Wells Qtly

P.O. Number:
Matrix: Supply Water

	LAB ID:	167761	167762	167763		
	Sample Date:	2002-01-28	2002-01-28	2002-01-28		
	Sample ID:	Raw MCW-01	Raw MCW-02	Raw MCW-03		
PARAMETER	**UNITS**	**MDL**	RAW WATER	RAW WATER	RAW WATER		
Alkalinity as CaCO3	mg/L	5	226	212	201		
Al	mg/L	0.05	0.06	<0.05	<0.05		
Ca	mg/L	1	109	98	83		
Cl	mg/L	1	23	14	32		
Conductivity	uS/cm	5	721	672	724		
Colour	TCU	2	6	4	4		
Cu	mg/L	0.001	<0.001	<0.001	<0.001		
DOC	mg/L	0.5	2.6	1.7	1.4		
Fe	mg/L	0.01	0.49	0.26	0.27		
Hardness as CaCO3	mg/L	1	367	352	347		
[redacted]	mg/L	1	23	26	34		
Mn	mg/L	0.01	0.09	0.04	0.03		
N-NH3	mg/L	0.02	0.10	0.27	0.38		
N-NH3 (unionized)	mg/L	0.02	<0.02	<0.02	<0.02		
N-NO2	mg/L	0.10	<0.10	<0.10	<0.10		
N-NO3	mg/L	0.10	<0.10	<0.10	<0.10		
pH			7.88	8.08	7.98		
Na	mg/L	2	16	14	25		
SO4	mg/L	1	133	141	148		
Total Kjeldahl Nitrogen	mg/L	0.05	0.36	0.53	0.65		
TOC	mg/L	0.5	3.6	2.0	1.8		

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

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608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2201009
Date: 2002-02-08
Date Submitted: 2002-01-29

Project: Moose Creek Wells Qtly

P.O. Number:
Matrix: Supply Water

		LAB ID:	167759				
		Sample Date:	2002-01-28				
		Sample ID:	Treated MCW-04				
PARAMETER	**UNITS**	**MDL**	TREATEDWATER				
Alkalinity as CaCO3	mg/L	5	205				
Al	mg/L	0.05	<0.05				
Ca	mg/L	1	86				
Cl	mg/L	1	29				
Conductivity	uS/cm	5	707				
Colour	TCU	2	2				
Cu	mg/L	0.001	<0.001				
DOC	mg/L	0.5	1.9				
F	mg/L	0.10	0.23				
Fe	mg/L	0.01	0.45				
H[redacted]ess as CaCO3	mg/L	1	326				
Mg	mg/L	1	27				
Mn	mg/L	0.01	0.04				
N-NH3	mg/L	0.02	<0.02				
N-NH3 (unionized)	mg/L	0.02	<0.02				
pH			7.84				
Na	mg/L	2	26				
SO4	mg/L	1	137				
Total Kjeldahl Nitrogen	mg/L	0.05	0.10				
TOC	mg/L	0.5	2.1				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL:

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2200721
Date: 2002-01-25
Date Submitted: 2002-01-22

Project: Moose Creek System

P.O. Number:
Matrix: Supply Water

			LAB ID: 167009				
			Sample Date: 2002-01-21				
			Sample ID: MCW-System SPS#1				
PARAMETER	**UNITS**	**MDL**					
BTEX / 624 / PURGEABLE HYDROCARBONS							
Bromodichloromethane	ug/L	0.3	13.7				
Bromoform	ug/L	0.4	<0.4				
Chloroform	ug/L	0.5	33.9				
Dibromochloromethane	ug/L	0.3	4.5				
TOTALS							
Trihalomethanes (total)	ug/L	2.0	52.1 ✓	Dave			
BTEX / 624 Surrogate Recoveries							
Toluene-d8	%		101				

MDL = Method Detection Limit INC = Incomplete

Comment:

APPROVAL:

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2200721
Date: 2002-01-29
Date Submitted: 2002-01-22

Project: Moose Creek System

P.O. Number:
Matrix: Supply Water

		LAB ID:	167009				
		Sample Date:	2002-01-21				
		Sample ID:	MCW-System SPS#1				
PARAMETER	**UNITS**	**MDL**	TREATEDWATER				
Pb	mg/L	0.001	<0.001				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL:

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Caduceon Enterprises Inc.
Environmental Laboratory

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220000966**
Project: Mosse Creek WTP
Date Sampled: February 4, 2002
Date Received: February 5, 2002
Date Printed: February 07, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. SPS	Dist. Mall
Total Chlorine	mg/L	0.05				2.30	1.60	2.00
Free Chlorine	mg/L	0.05				2.00	1.50	1.80
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

Caduceon Enterprises Inc. Environmental Laboratory
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

Caduceon Enterprises Inc.

Environmental Laboratory

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220001204**
Project: Moose Creek WTP
Date Sampled: February 11, 2002
Date Received: February 12, 2002
Date Printed: February 14, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Blair Const.	Dist. 2041 Valley
Total Chlorine	mg/L	0.05				2.50	2.30	1.30
Free Chlorine	mg/L	0.05				2.20	2.20	1.20
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

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Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220001421**
Project: Moose Creek WTP
Date Sampled: February 18, 2002
Date Received: February 19, 2002
Date Printed: February 21, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Water Tower	Dist. Paul Adam
Total Chlorine	mg/L	0.05				2.30	1.80	1.50
Free Chlorine	mg/L	0.05				1.90	1.70	1.20
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	2	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220001626**
Project: Moose Creek WTP
Date Sampled: February 25, 2002
Date Received: February 26, 2002
Date Printed: February 28, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Post Office	Dist. 35 Sineor Lane
Total Chlorine	mg/L	0.05				2.50	1.70	1.10
Free Chlorine	mg/L	0.05				2.30	1.40	1.00
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Michael Ziebell, General Manager

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2201834
Date: 2002-02-20
Date Submitted: 2002-02-14

Project: Moose Creek Wells

P.O. Number:
Matrix: Supply Water

		LAB ID:	169945				
		Sample Date:	2002-02-13				
		Sample ID:	MCW-04				
PARAMETER	**UNITS**	**MDL**	TREATEDWATER				
Na	mg/L	2	27				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

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Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220001903**
Project: Moose Creek WTP
Date Sampled: March 4, 2002
Date Received: March 5, 2002
Date Printed: March 07, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. 2041 Valley	Dist. Mall
Total Chlorine	mg/L	0.05				2.50	1.50	1.30
Free Chlorine	mg/L	0.05				1.80	1.50	1.20
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Michael Ziebell, General Manager

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Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220002209**
Project: Moose Creek WTP
Date Sampled: March 11, 2002
Date Received: March 12, 2002
Date Printed: March 14, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. SPS	Dist. Water Tower
Total Chlorine	mg/L	0.05				2.30	1.60	1.60
Free Chlorine	mg/L	0.05				2.00	1.50	1.40
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220002451**
Project: Moose Creek WTP
Date Sampled: March 18, 2002
Date Received: March 19, 2002
Date Printed: March 21, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Mall	Dist. 10241 Valley N
Total Chlorine	mg/L	0.05				2.60	1.60	1.50
Free Chlorine	mg/L	0.05				2.30	1.40	1.20
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Michael Ziebell, General Manager

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Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220002712**
Project: Moose Creek WTP
Date Sampled: March 25, 2002
Date Received: March 26, 2002
Date Printed: April 01, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Tower	Dist. 2041 Valley
Total Chlorine	mg/L	0.05				2.20	1.50	1.30
Free Chlorine	mg/L	0.05				1.90	1.30	1.10
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	absent	40	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Michael Ziebell, General Manager

QUARTERLY REPORT ON DRINKING WATER QUALITY

April - June 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Moose Creek Drinking Water Quality

Ontario Drinking Water Protection Regulations

The Ontario Clean Water Agency, as the contract operator of the Moose Creek Water Treatment Facility on behalf of the Township of North Stormont, is pleased to present the 2002 Second Quarter Report on drinking water quality. This report has been prepared in response to legislative changes brought about by "Operation Clean Water", an initiative of Ontario's Ministry of the Environment to ensure high quality drinking water for the residents of Ontario. The new regulations put into law what was formerly the Ontario Drinking Water Objectives (ODWO), and sets requirements for public waterworks with regard to sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

Further information on the Ontario Drinking Water Regulations can be found on the Ministry of the Environment web site at www.ene.gov.on.ca

Where to contact us for information

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Web site at www.ocwa.com

Client Services Representative: John Kingsbury
Phone : (613) 774-3663
E-mail Address: jkingsbury@ocwa.com

Operations Manager: Blair Henderson
Phone: (613) 448-3098
E-mail Address: bhenderson@ocwa.com

You may also contact the Township of North Stormont directly by contacting Rheal Charbonneau, Clerk-Treasurer, Tel. (613) 984-2821 or e-mail address: admin@northstormont.on.ca

Free copies of this report are available at the Township office or their website @ www.townshipofnorthstormont.on.ca

INSIDE THIS REPORT

QUARTERLY REPORT ON DRINKING WATER QUALITY

April - June 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Introduction

We are proud to report that for the period April to June 2002, your water conformed to the Ontario Drinking Water Standards as set out in Ontario Regulation 459/00. The Ontario Clean Water Agency (OCWA) is dedicated to maximizing public health and safety through efficient and reliable operation of your water facility and distribution system.

Plant Description and Treatment Processes

Facility Name:	Moose Creek WTP & Distribution System
Total Design Capacity	896 cubic meters/day
Raw Water Source	Groundwater
Disinfection Method	Sodium Hypochlorite
Municipal Location	Municipal Office, 2 Victoria Street, Berwick, Ontario
Service Area	Village of Moose Creek
Service Population	400

Operational Description:

Raw water source: Three drilled wells located southwest of the water pumping station.

Low Lift Pumps: Three low lift pumps lift the water from the wells to the main pumping station. There is one header that directs the water to the Chlorine Contact Chamber. At this point, Sodium Hypochlorite is added to the raw water for disinfection.

Reservoir: From the Chlorine Contact Chamber the treated water enters a 75 cubic meter underground reservoir.

High Lift Pumps: Two high lift pumps, one duty and one standby, move the treated water from the reservoir into the distribution system and elevated tank.

Elevated Tank: There is approximately 622 cubic meters of water in the elevated water tower located on County Road 15.

Distribution System: There are approximately 400 persons supplied with water from the Moose Creek Water Treatment System.

QUARTERLY REPORT ON DRINKING WATER QUALITY

April - June 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Quality Control & Compliance With Provincial Regulations

This plant provides multiple barriers against bacteriological contamination. Bacteriological testing is carried out on raw water, treated water and distribution samples on a regular frequency. On-line analysers for chlorine residuals and turbidity ensures daily monitoring of water leaving the plant. Chlorine levels in the distribution system are also checked on a regular basis. More specialized testing occurs monthly and quarterly and includes Volatile Organics, Inorganics, Pesticides and PCB's.

OCWA uses internal compliance auditing techniques by teams from within the organization. OCWA operates the Moose Creek Water Treatment Facility in accordance with provincial regulations. Here is how we do it:

- Use of Accredited Labs. Analytical tests to monitor your water quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods.

- Operation by Licensed Operators. Your water treatment plant is operated and maintained by the Ontario Clean Water Agency's competent and licensed staff. The mandatory licensing program for operators of drinking water facilities is regulated under the *Ontario Water Resources Act (OWRA)* Regulation 435/93. Licensing means that an individual meets the education and experience requirements and has successfully passed the certificate exam.

- Sampling and Analytical requirements. OCWA follows a sampling and analysis schedule required by *OWRA* Regulation 459/00, the Ontario Drinking Water Standards. More information on sampling and analysis including results are available in this report and from your municipal office.

- Adherence to Ministry Guidelines and Procedures. To ensure the protection of the health and operational excellence, the OCWA adheres to the guidelines and procedures developed by the Ministry of the Environment and the Ministry of Health.

Did We Exceed the Standards?

During the second quarter, 1 sample from the plant treated water was found to exceed the Ontario Drinking Water Standards as set out in Ontario Regulation 459/00. On June 17, 2002 the plant treated water Total Coliform result was overgrown. As a result we actively undertook the following remedial actions:

Immediately notified the Ministry of Environment and the Ministry of Health as per the Ontario Drinking Water Standards. Ensured a minimum chlorine residual in the distribution of greater then 0.2 mg/L. Subsequent re-sampling indicated no adverse results.

QUARTERLY REPORT ON DRINKING WATER QUALITY

April - June 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

With respect to Operational Parameters, turbidity exceedances were reported as per Regulation 459/00 on 45 separate occasions. These samples are taken continuously in-house by online equipment and the turbidity exceedance spikes are believed to be caused primarily by air entrained in the water during start-up of vertical turbine hi-lift pumps, and/or a buildup of iron sediment in the sample lines. During these spikes, the system was being adequately disinfected; therefore, reducing any risks that may be associated with the high turbidity.

Definitions & Terms

m^3 - Cubic Meter, $1m^3 = 1000$ litres
TCU - True Colour Units
$CaCO_3$ - Calcium Carbonate
mg - milligram
mg/L - milligrams per litre
ug/L - micrograms per litre
ng/L - nanograms per litre
NTU - Nephelometric Turbidity Units
MAC - Maximum Acceptable Concentration
IMAC - Interim Maximum Acceptable Concentration
Coliform Bacteria - a group of commonly occurring rod shaped bacteria. Their presence in a water sample is indicative of inadequate filtration and/or disinfection.
Fecal Coliform Bacteria - refers to a subgroup of coliform bacteria present in the digestive system of warm blooded animals and humans.
Heterotrophic Plate Count - a method of measuring bacterial content in water samples. Also known as Standard Plate Count.
Organic Parameter - a group of chemical compounds containing carbon.
Inorganic Parameter - a group of chemical compounds not containing carbon.
Raw Water - Surface or ground water available as a source of drinking water that has not received any treatment.

Required Testing

The Ontario Drinking Water Regulations and Certificates of Approval (C of A) set sampling requirements for the plant. All other sampling conforms to the Drinking Water Protection Regulation schedule for sampling and analysis. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases can pick up substances resulting from the presence of animals or from human activity. Your water is extensively tested for the presence of dozens of compounds. The results of all analytical tests are available at your municipal office. The following table lists all compounds analyzed.

QUARTERLY REPORT ON DRINKING WATER QUALITY

April - June 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Moose Creek Water Quality Test Results

Microbiological Parameters	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d)	Range	Exceedence?	Typical Source of Contaminant
Total Coliform (counts/100ml)	0	45	1	04/01-06/30	overgrown	yes	Indicate possible presence of coliform
Escherichia Coliform (counts/100ml)	0	45	0	04/01-06/30	n/a	no	Definite indicator of fecal contamination
Fecal Coliform (counts/100ml)	0	45	0	04/01-06/30	n/a	no	Indicator of sewage contamination
Heterotrophic Plate Count (counts/100ml)	500	34	6	04/01-06/30	2-80	no	Indicator of deteriorating water quality if greater than 500
Parameters related to Microbiological Quality	**MAC or IMAC**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Turbidity (NTU)	1	Continuous	Continuous	04/01-06/30	0.44->5.0	yes	Turbidity is a measure of particles in water
Free Chlorine – Plant Effluent (mg/l)	-	Continuous	Continuous	04/01-06/30	0.7-2.65	no	Chlorine added for Disinfection
Free Chlorine-Distribution (mg/l min 0.05 & max. 4.0)	-	Grab samples weekly	Weekly	04/01-06/30	0.8-2.2	no	Objective is 0.20 mg/l in the Distribution System (min. 0.05 mg/l required)
Inorganic Parameters (mg/l)	**MAC or IMAC**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d/y)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Lead - Distribution	0.01	1	1	01/21/02	<0.001	no	Leached from lead solder or brass plumbing fixtures
Nitrate	10	1	1	04/11/02	<0.1	no	Natural component of water
Nitrite	1	1	1	04/11/02	<0.1	no	
Arsenic	IMAC= 0.025	1	1	09/19/00	<0.001	no	
Barium	1	1	1	09/19/00	0.24	no	
Boron	IMAC= 5.0	1	1	09/19/00	0.06	no	
Cadmium	0.005	1	1	09/19/00	<0.0001	no	
Chromium (Total)	0.05	1	1	09/19/00	<0.01	no	
Copper	1	1	1	01/21/02	<0.001	no	
Iron	0.3	1	1	01/21/02	0.45	yes	Comments below
Lead	0.01	1	1	09/19/00	<0.001	no	
Manganese	0.05	1	1	01/21/02	0.04	no	
Mercury	0.001	1	1	09/19/00	<0.0001	no	
Selenium	0.01	1	1	09/19/00	<0.001	no	
Uranium	0.1	1	1	09/19/00	<0.001	no	
Sodium	200	1	1	01/28/02-02/13/02	26-27	no	
Fluoride	2.4	3	3	01/28/02	0.23	no	

Comment: Iron may be present in groundwater as a result of mineral deposits and chemically reducing underground conditions. The aesthetic objective for Iron, set by appearance effects in drinking water is 0.3 mg/L. Excessive Iron levels in drinking water supplies may impart a brownish color to laundered goods, plumbing fixtures and the water

itself; it may produce a bitter, astringent taste in water and beverages; the precipitation of iron can also promote growth of iron bacteria in water mains and service pipes. The Moose Creek Water Pumping Station has no design features for the removal of Iron.

Volatile Organics (ug/l)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedence?	Typical Source of Contaminant
Trihalomethanes - Plant	100	2	2	04/11/02	53.6	no	
Trihalomethanes - Dist.	100	2	2	04/11/02	62.7	no	
Benzene	5	1	1	04/11/02	<0.5	no	
Carbon Tetrachloride	5	1	1	04/11/02	<0.9	no	
Dichloromethane	50	1	1	04/11/02	<4	no	
1,2 - Dichlorobenzene	200	1	1	04/11/02	<0.4	no	
1, 4 - Dichlorobenzene	5	1	1	04/11/02	<0.4	no	
1,2 - Dichloroethane	IMAC=5	1	1	04/11/02	<0.7	no	
1,1 - Dichloroethylene	14	1	1	04/11/02	<0.5	no	
Ethylbenzene	24	1	1	04/11/02	<0.5	no	
Monochlorobenzene	80	1	1	04/11/02	<0.2	no	
Tetrachloroethylene	30	1	1	04/11/02	<0.3	no	
Toluene	24	1	1	04/11/02	<0.5	no	
Trichloroethlyene	50	1	1	04/11/02	<0.3	no	
Vinyl chloride	2	1	1	04/11/02	<0.5	no	
Xylene	300	2	2	04/11/02	<2.0	no	
Bromodichloromethane	n/a	1	1	04/11/02	15.2	no	
Bromoform	n/a	1	1	04/11/02	<0.4	no	
Chloroform	n/a	1	1	04/11/02	34.3	no	
Dibromochloromethane	n/a	1	1	04/11/02	4.1	no	

Pesticides & PCB (ug/L)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedence?	Typical Source of Contaminant
Alachlor	IMAC=5	1	1	04/11/02	<0.5	no	
Aldicarb	9	1	1	04/11/02	<5.0	no	
Aldrin+Dieldrin	0.7	1	1	04/11/02	<0.7	no	
Atrazine	IMAC=5	1	1	04/11/02	<1.0	no	
Azinphos-methyl	20	1	1	04/11/02	<2.0	no	
Bendiocarb	40	1	1	04/11/02	<2.0	no	
Bromoxynil	IMAC=5	1	1	04/11/02	<0.5	no	
Carbaryl	90	1	1	04/11/02	<5.0	no	
Carbofuran	90	1	1	04/11/02	<5.0	no	
Chlordane	7	1	1	04/11/02	<0.7	no	
Chorpyrifus	90	1	1	04/11/02	<1.0	no	
Cyanazine	IMAC=10	1	1	04/11/02	<1.0	no	
Diaznon	20	1	1	04/11/02	<1.0	no	
Dicamba	120	1	1	04/11/02	<1.0	no	
2,4 Dichlorophenol	900	1	1	04/11/02	<0.5	no	
DDT + Metapolites	30	1	1	04/11/02	<3.0	no	
2,4 - Dichlorophenexy acid (2,4 -D)	IMAC=100	1	1	04/11/02	<1.0	no	
Diclofop-methyl	9	1	1	04/11/02	<0.9	no	
Dimethoate	IMAC=20	1	1	04/11/02	<2.5	no	
Dinoseb	10	1	1	04/11/02	<1.0	no	
Diquat	70	1	1	04/11/02	<7.0	no	

QUARTERLY REPORT ON DRINKING WATER QUALITY

April - June 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Diuron	150	1	1	04/11/02	<10.0	no	
Glyphosate	IMAC=280	1	1	04/11/02	<10.0	no	
Heprachlor + Heptachlor epoxide	3	1	1	04/11/02	<0.3	no	
Pesticides & PCB (ug/L)	**MAC or IMAC**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d/y)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Lindane	4	1	1	04/11/02	<0.4	no	
Malathion	190	1	1	04/11/02	<5.0	no	
Methoxychlor	900	1	1	04/11/02	<90.0	no	
Metolachlor	IMAC=50	1	1	04/11/02	<0.5	no	
Metribuzin	80	1	1	04/11/02	<5.0	no	
Paraquat	IMAC=10	1	1	04/11/02	<1.0	no	
Parathion	50	1	1	04/11/02	<1.0	no	
Pentachlorophenol	60	1	1	04/11/02	<0.5	no	
Phorate	IMAC=2	1	1	04/11/02	<0.5	no	
Picloram	IMAC=190	1	1	04/11/02	<5.0	no	
Polychlorinated Biphenyls	IMAC=3	1	1	04/11/02	<0.3	no	
Prometryne	IMAC=1	1	1	04/11/02	<0.25	no	
Simazine	IMAC=10	1	1	04/11/02	<1.0	no	
Temephos	IMAC=280	1	1	04/11/02	<10	no	
Terbufos	IMAC=1	1	1	04/11/02	<0.7	no	
2,3,4,6 Tetrachlorophenol	100	1	1	04/11/02	<0.5	no	
Triallate	230	1	1	04/11/02	<1.0	no	
2,4,6-Trichlorophenol	5	1	1	04/11/02	<0.5	no	
2,4,5 - trichlorophenoxy acedic acid	IMAC=280	1	1	04/11/02	<1.0	no	
Trifluralin	45	1	1	04/11/02	<1.0	no	
Additional Parameters Non-Health Related (mg/L)	**AO or OG**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d/y)**	**Range**	**Exceedence?**	**Typical Source of Contaminant**
Colour	5	1	1	01/28/02	2	no	
pH	6.8-8.5	1	1	01/28/02	7.84	no	
Alkalinity	30-500	1	1	01/28/02	205	no	
Total Hardness	80-100	1	1	01/28/02	326	yes	Limits are set as an operational guideline
Sulphate	500	1	1	01/28/02	137	no	
Conductivity	---	1	1	01/28/02	707	no	
Chloride	250	1	1	01/28/02	29	no	
Free Ammonia	---	1	1	01/28/02	<0.02	no	
Total Kjeldahl Nitrogen	---	1	1	01/28/02	0.1	no	
Dissolved Organic Carbon	5	1	1	01/28/02	1.9	no	
Sodium	200	1	1	01/28/02	26	no	
Iron	0.3	1	1	01/28/02	0.45	yes	
Aluminium	0.1	1	1	01/28/02	<0.05	no	
Manganese	0.05	1	1	01/28/02	0.04	no	
Ammonia + Ammonium N		1	1	01/28/02	<0.02	no	
Total Organic Carbon		1	1	01/28/02	2.1	no	
Copper	1	1	1	01/28/02	<0.001	no	
Calcium	---	1	1	01/28/02	86	no	
Magnesium	---	1	1	01/28/02	27	no	

Questions & Answers

Q. What is an Accredited Laboratory?

A. Accredited labs must have undergone an on-site assessment and performance review of their methods by the Canadian Association of Environmental and Analytical Laboratories. The Standards Council of Canada grants accreditation to the lab based on the recommendation of the CAEAL. The accreditation requirements are repeated every two years.

Q. What had to be done to meet the new regulations?

A. The Moose Creek Water Treatment Plant was following the Ontario Drinking Water Objectives (ODWO) before they became law, so little change was required to meet the new regulations. Our chlorine residual in the water leaving the plant was raised to slightly to achieve the (0.20 mg/L free chlorine) required level in the distribution system, and some changes were required in the way results are reported. This report to the public is also the result of the new regulations.

Q. What parameters did you test for?

A. Microbiological parameters, volatile organic, inorganic and pesticides & PCBs have been tested. The results are included in this report.

Q. Sometimes my water looks rusty or coloured. Why is that, and what should I do about it?

A. This is quite often caused when the tanks in older water heaters start to decay. If the colour is seen only in your hot water, this may be the problem. If the colour is also noticed in your cold water it could be coming from the water main. Various maintenance procedures in the distribution system - such as fire hydrant and valve maintenance, or main break repairs - require flushing of the water mains. Flushing can cause small particles of sediment to break off adding colour to the water. Please note that there is no health risk associated with this problem. This is usually only temporary, and opening your taps for a while to flush out your service line (the pipe from the water main to your house) should take care of the problem. Let the water run until the colour disappears.

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220002970**
Project: Moose Creek WTP
Date Sampled: April 2, 2002
Date Received: April 3, 2002
Date Printed: April 05, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Paul Adam	Dist. Water Tower
Total Chlorine	mg/L	0.05				2.30	1.00	1.40
Free Chlorine	mg/L	0.05				2.10	0.80	1.30
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	4	absent	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220003202**
Project: Moose Creek WTP
Date Sampled: April 8, 2002
Date Received: April 9, 2002
Date Printed: April 11, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification					
			Well #1 Raw	Well #2 Raw	Well #3 Raw	Treated Water	Dist. Simeon Lane	Dist. Post Office
Total Chlorine	mg/L	0.05				1.90	1.20	1.00
Free Chlorine	mg/L	0.05				1.60	1.00	0.80
E. coli	/100mL	1	absent	absent	absent	absent	absent	absent
Fecal Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent
HPC	/mL	2	absent	absent	2	absent	absent	absent
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent	absent

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Michael Ziebell, General Manager

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Certificate of Analysis

Client:
Ontario Clean Water Agency
Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220003481**
Project: Moose Creek WTP
Date Sampled: April 15, 2002
Date Received: April 16, 2002
Date Printed: April 18, 2002
Matrix: Drinking Water

Parameter	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	0.05	2	1	0.05
Sample ID					
Well #1 Raw	absent		absent	absent	
Well #2 Raw	absent		absent	absent	
Well #3 Raw	absent		absent	absent	
Treated Water	absent	1.80	10	absent	2.00
Dist. 2041 Valley	absent	0.80	absent	absent	0.90
Dist. Fire Hall	absent	1.40	8	absent	1.70

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
[redacted]ario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220003771**
Project: Moose Creek WTP
Date Sampled: April 22, 2002
Date Received: April 23, 2002
Date Printed: April 25, 2002
Matrix: Drinking Water

Parameter	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	0.05	2	1	0.05
Sample ID					
Well #1 Raw	absent		absent	absent	
Well #2 Raw	absent		absent	absent	
Well #3 Raw	absent		absent	absent	
Treated Water	absent	1.90	absent	absent	2.20
[redacted]ist. Water Tower	absent	0.90	80	absent	1.10
Dist. SPS	absent	0.90	absent	absent	1.10

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
[redacted]tario Clean Water Agency
[redacted] Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220004026**
Project: Moose Creek WTP
Date Sampled: April 29, 2002
Date Received: April 30, 2002
Date Printed: May 02, 2002
Matrix: Drinking Water

Parameter	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	0.05	2	1	0.05
Sample ID					
Well #1 Raw	absent			absent	
Well #2 Raw	absent			absent	
Well #3 Raw	absent			absent	
Treated Water	absent	1.60	absent	absent	1.90
[redacted]ist. Sewage Plant	absent	0.80	absent	absent	1.00
Dist. Post Office	absent	1.10		absent	1.40

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2204305
Date: 2002-04-17
Date Submitted: 2002-04-12

Project: Moose Creek - Quarterly Chem

P.O. Number:
Matrix: Supply Water

		LAB ID:	176594				
		Sample Date:	2002-04-11				
		Sample ID:	MCW-04				
PARAMETER	**UNITS**	**MDL**					
BTEX / 624 / PURGEABLE HYDROCARBONS							
Bromodichloromethane	ug/L	0.3	16.7				
Bromoform	ug/L	0.4	<0.4				
Chloroform	ug/L	0.5	40.8				
Dibromochloromethane	ug/L	0.3	5.2				
TOTALS							
Trihalomethanes (total)	ug/L	2.0	62.7				
BTEX / 624 Surrogate Recoveries							
Toluene-d8	%		98				

MDL = Method Detection Limit INC = Incomplete

Comment:

APPROVAL:

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2204292
Date: 2002-04-19
Date Submitted: 2002-04-12

Project: Moose Creek-Quarterly

P.O. Number:
Matrix: Supply Water

		LAB ID:	176577				
		Sample Date:	2002-04-11				
		Sample ID:	MCW-04 Treated				
PARAMETER	**UNITS**	**MDL**	TREATEDWATER				
N-NO2	mg/L	0.10	<0.10				
N-NO3	mg/L	0.10	<0.10				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2204292
Date: 2002-04-17
Date Submitted: 2002-04-12

Project: Moose Creek - Quarterly Chem

P.O. Number:

Matrix: Supply Water

		LAB ID:	176577				
		Sample Date:	2002-04-11				
		Sample ID:	MCW-04 Treated				
PARAMETER	**UNITS**	**MDL**					
BTEX / 624 / PURGEABLE HYDROCARBONS							
Benzene	ug/L	0.5	<0.5				
Toluene	ug/L	0.5	<0.5				
Ethylbenzene	ug/L	0.5	<0.5				
m/p-xylene	ug/L	1.0	<1.0				
o-xylene	ug/L	0.5	<0.5				
Bromodichloromethane	ug/L	0.3	15.2				
Bromoform	ug/L	0.4	<0.4				
Carbon Tetrachloride	ug/L	0.9	<0.9				
Monochlorobenzene	ug/L	0.2	<0.2				
Chloroform	ug/L	0.5	34.3				
Dibromochloromethane	ug/L	0.3	4.1				
1,2-dichlorobenzene	ug/L	0.4	<0.4				
1,4-dichlorobenzene	ug/L	0.4	<0.4				
1,2-dichloroethane	ug/L	0.7	<0.7				
1,1-dichloroethylene	ug/L	0.5	<0.5				
Dichloromethane	ug/L	4.0	<4.0				
Tetrachloroethylene	ug/L	0.3	<0.3				
Trichloroethylene	ug/L	0.3	<0.3				
Vinyl Chloride	ug/L	0.5	<0.5				
TOTALS							
Trihalomethanes (total)	ug/L	2.0	53.6				
Xylene; total	ug/L	2.0	<2.0				
BTEX / 624 Surrogate Recoveries							
Toluene-d8	%		98				
1,2-dichloroethane-d4	%		85				
4-bromofluorobenzene	%		102				

MDL = Method Detection Limit INC = Incomplete

Comment:

APPROVAL:

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: Moose Creek Well Supply

ATT: Mr. Blair Henderson

Report Number: 2204292
Date: 2002-06-10
Date Submitted: 2002-04-12

Project: Moose Creek - Quarterly

Sample Matrix: Supply Water

		LAB ID:	176577			
		Sample Date:	2002-04-11			
		Sample ID:	MCW-04 Treated			
PARAMETER	**UNITS**	**MDL**				
PESTICIDES & PCB's						
Alachlor	mg/L	0.0005	<0.0005			
Aldicarb	mg/L	0.0050	<0.0050			
Aldrin + Dieldrin	mg/L	0.00007	<0.00007			
Atrazine	mg/L	0.001	<0.001			
Azinphos-methyl	mg/L	0.002	<0.002			
Bendiocarb	mg/L	0.0020	<0.0020			
Bromoxynil	mg/L	0.0005	<0.0005			
Carbaryl	mg/L	0.0050	<0.0050			
Carbofuran	mg/L	0.0050	<0.0050			
Chlordane (Total)	mg/L	0.0007	<0.0007			
Chloropyrifos	mg/L	0.0010	<0.0010			
Cyanazine	mg/L	0.0010	<0.0010			
Diazinon	mg/L	0.0010	<0.0010			
Dicamba	mg/L	0.0010	<0.0010			
Diquat	mg/L	0.0070	<0.0070			
2,4-Dichlorophenol	mg/L	0.0005	<0.0005			
DDT	mg/L	0.0030	<0.0030			
2,4-D	mg/L	0.0010	<0.0010			
Diclofop-methyl	mg/L	0.0009	<0.0009			
Dimethoate	mg/L	0.0025	<0.0025			
Dinoseb	mg/L	0.0010	<0.0010			
Diuron	mg/L	0.010	<0.010			
Glyphosate	mg/L	0.010	<0.010			
Heptachlor + Hept. Epoxide	mg/L	0.0003	<0.0003			
Lindane (Total)	mg/L	0.0004	<0.0004			
Malathion	mg/L	0.0050	<0.0050			
Methoxychlor	mg/L	0.0900	<0.0900			
Metolachlor	mg/L	0.0005	<0.0005			

ND = Not Detected (< MDL) MDL = Method Detection Limit

Comment:

APPROVAL: _____

146 Colonnade Road, Unit 8, Nepean, Ontario K2E 7Y1 Tel:(613)727-5692 Fax:(613)727-5222

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: Moose Creek Well Supply

ATT: Mr. Blair Henderson

Report Number: 2204292
Date: 2002-06-10
Date Submitted: 2002-04-12

Project: Moose Creek - Quarterly

Sample Matrix: Supply Water

	LAB ID:	176577				
	Sample Date:	2002-04-11				
	Sample ID:	MCW-04 Treated				
PARAMETER	**UNITS**	**MDL**				
Metribuzin	mg/L	0.005	<0.005			
Paraquat	mg/L	0.0010	<0.0010			
Parathion	mg/L	0.0010	<0.0010			
Pentachlorophenol	mg/L	0.0005	<0.0005			
Phorate	mg/L	0.0005	<0.0005			
Picloram	mg/L	0.0050	<0.0050			
PCB's (total)	mg/L	0.0003	<0.0003			
Prometryne	mg/L	0.00025	<0.00025			
Simazine	mg/L	0.0010	<0.0010			
[illegible]mephos	mg/L	0.010	<0.010			
[illegible]rbufos	mg/L	0.0007	<0.0007			
2,3,4,6-Tetrachlorophenol	mg/L	0.0005	<0.0005			
Triallate	mg/L	0.0010	<0.0010			
2,4,6-Trichlorophenol	mg/L	0.0005	<0.0005			
Trifluralin	mg/L	0.0010	<0.0010			
2,4,5-T	mg/L	0.0010	<0.0010			

ND = Not Detected (< MDL)

MDL = Method Detection Limit

Comment:

APPROVAL: _____

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Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
tario Clean Water Agency
3 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220004301**
Project: Moose Creek WTP
Date Sampled: May 6, 2002
Date Received: May 7, 2002
Date Printed: May 09, 2002
Matrix: Drinking Water

Parameter	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	0.05	2	1	0.05
Sample ID					
Well #1 Raw	absent			absent	
Well #2 Raw	absent			absent	
Well #3 Raw	absent			absent	
Treated Water	absent	2.00	absent	absent	2.30
Dist. Sewage Pumping Station	absent	1.20	absent	absent	1.50
Dist. Moose Creek Mall	absent	1.60		absent	2.10

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

FOR Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
[redacted]tario Clean Water Agency
[redacted] Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220004587**
Project: Moose Creek WTP
Date Sampled: May 13, 2002
Date Received: May 13, 2002
Date Printed: May 15, 2002
Matrix: Drinking Water

Parameter	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	0.05	2	1	0.05
Sample ID					
Well #1 Raw	absent			absent	
Well #2 Raw	absent			absent	
Well #3 Raw	absent			absent	
Treated Water	absent	2.00	absent	absent	2.30
[redacted]ist. Post Office	absent	1.20	absent	absent	1.60
Dist. 2041 Valley	absent	1.10		absent	1.40

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220004902**
Project: Moose Creek WTP
Date Sampled: May 21, 2002
Date Received: May 22, 2002
Date Printed: July 11, 2002
Matrix: Drinking Water

Parameter	E. coli	Free Cl2	HPC	TC
Unit	/100mL	mg/L	/mL	/100mL
MDL	1	0.05	2	1
Sample ID				
Well #2 Raw	absent			absent
Well #3 Raw	absent			absent
Treated Water	absent	2.20	2	absent
Dist. SPS	absent	1.00		absent
Dist. Moose Creek Mall	absent	2.00	absent	absent

This is a correction certificate and superceds all previous reports of this number.

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
3 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220005178**
Project: Moose Creek WTP
Date Sampled: May 27, 2002
Date Received: May 28, 2002
Date Printed: May 30, 2002
Matrix: Drinking Water

Parameter	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	0.05	2	1	0.05
Sample ID					
Well #2 Raw	absent			absent	
Well #3 Raw	absent			absent	
Treated Water	absent	2.10	2	absent	2.40
Dist. Medical Center	absent	1.20	absent	absent	1.50
Dist. Post Office	absent	1.80		absent	2.20

Caduceon Environmental Laboratories
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Tel: (613)526-0123, Fax: (613)526-1244

K Pilon
For Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:

Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220005454**
Project: Moose Creek WTP
Date Sampled: June 3, 2002
Date Received: June 4, 2002
Date Printed: June 06, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	1	absent			absent	
Well #3 Raw	1	absent			1	
Treated Water		absent	1.90	absent	absent	2.30
Dist. Water Tower		absent	1.00	absent	absent	1.40
Dist. 2041 Valley St. (N)		absent	1.20		absent	1.50

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220005915**
Project: Moose Creek WTP
Date Sampled: June 11, 2002
Date Received: June 12, 2002
Date Printed: June 14, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	Dist. Medical Center	Dist. Post Office
Total Chlorine	mg/L	0.05			2.00	1.10	1.60
Free Chlorine	mg/L	0.05			1.60	0.90	1.30
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	absent	
Background bacteria	/100mL	1	absent	absent			
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220006128**
Project: Moose Creek WTP
Date Sampled: June 17, 2002
Date Received: June 18, 2002
Date Printed: June 20, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	Dist. Sewage Pumping Station	Dist. Moose Creek Mall
Total Chlorine	mg/L	0.05			2.00	0.90	1.10
Free Chlorine	mg/L	0.05			1.60	0.70	0.90
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	absent	
Background bacteria	/100mL	1	absent	absent			
Total Coliforms	/100mL	1	absent	absent	OG	absent	absent

OG - Overgrown

Caduceon Environmental Laboratories
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FOR Micheal Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
[O]ntario Clean Water Agency
[3] Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220006292**
Project: Moose Creek WTP
Date Sampled: June 19, 2002
Date Received: June 20, 2002
Date Printed: June 24, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification		
			Treated Water Special	Post Office Special	M C Mall Special
Total Chlorine	mg/L	0.05	2.30	1.90	1.40
Free Chlorine	mg/L	0.05	2.00	1.70	1.10
E. coli	/100mL	1	absent	absent	absent
Heterotrophic Plate Count	/mL	2	absent	absent	
Total Coliforms	/100mL	1	absent	absent	absent

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
3 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220006349**
Project: Moose Creek WTP
Date Sampled: June 20, 2002
Date Received: June 21, 2002
Date Printed: June 24, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification		
			Treated Water Special	Post Office Special	M C Mail Special
Total Chlorine	mg/L	0.05	2.10	1.60	1.40
Free Chlorine	mg/L	0.05	1.80	1.30	1.10
E. coli	/100mL	1	absent	absent	absent
Heterotrophic Plate Count	/mL	2	absent	absent	
Total Coliforms	/100mL	1	absent	absent	absent

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:

Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220006429**
Project: Moose Creek WTP
Date Sampled: June 24, 2002
Date Received: June 25, 2002
Date Printed: June 27, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2	4	absent			absent	
Well #3	absent	absent			absent	
Treated Water		absent	1.70	absent	absent	2.20
Dist. Sewage Pumping Station		absent	0.80	2	absent	1.00
Dist. 2041 Valley St. North		absent	0.80		absent	0.90

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Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

QUARTERLY REPORT ON DRINKING WATER QUALITY

July-September 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Moose Creek Drinking Water Quality

Ontario Drinking Water Protection Regulations

The Ontario Clean Water Agency, as the contract operator of the Moose Creek Water Treatment Facility on behalf of the Township of North Stormont, is pleased to present the 2002 Third Quarter Report on drinking water quality. This report has been prepared in response to legislative changes brought about by "Operation Clean Water", an initiative of Ontario's Ministry of the Environment to ensure high quality drinking water for the residents of Ontario. The new regulations put into law what was formerly the Ontario Drinking Water Objectives (ODWO), and sets requirements for public waterworks with regard to sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

Further information on the Ontario Drinking Water Regulations can be found on the Ministry of the Environment web site at www.ene.gov.on.ca

Where to contact us for information

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Web site at www.ocwa.com

Client Services Representative: John Kingsbury
Phone : (613) 774-3663
E-mail Address: jkingsbury@ocwa.com

Operations Manager: Blair Henderson
Phone: (613) 448-3098
E-mail Address: bhenderson@ocwa.com

You may also contact the Township of North Stormont directly by contacting Rheal Charbonneau, Clerk-Treasurer, Tel. (613) 984-2821 or
e-mail address: admin@northstormont.on.ca

Free copies of this report are available at the Township office or their website @ www.townshipofnorthstormont.on.ca

INSIDE THIS REPORT

QUARTERLY REPORT ON DRINKING WATER QUALITY

July-September 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Introduction

We are proud to report that for the period July to September 2002, your water conformed to the Ontario Drinking Water Standards as set out in Ontario Regulation 459/00. The Ontario Clean Water Agency (OCWA) is dedicated to maximizing public health and safety through efficient and reliable operation of your water facility and distribution system.

Plant Description and Treatment Processes

Facility Name:	Moose Creek WTP & Distribution System
Total Design Capacity	896 cubic meters/day
Raw Water Source	Groundwater
Disinfection Method	Sodium Hypochlorite
Municipal Location	Municipal Office, 2 Victoria Street, Berwick, Ontario
Service Area	Village of Moose Creek
Service Population	400

Operational Description:

Raw water source: Three drilled wells located southwest of the water pumping station.

Low Lift Pumps: Three low lift pumps lift the water from the wells to the main pumping station. There is one header that directs the water to the Chlorine Contact Chamber. At this point, Sodium Hypochlorite is added to the raw water for disinfection.

Reservoir: From the Chlorine Contact Chamber the treated water enters a 75 cubic meter underground reservoir.

High Lift Pumps: Two high lift pumps, one duty and one standby, move the treated water from the reservoir into the distribution system and elevated tank.

Elevated Tank: There is approximately 622 cubic meters of water in the elevated water tower located on County Road 15.

Distribution System: There are approximately 400 persons supplied with water from the Moose Creek Water Treatment System.

Quality Control & Compliance With Provincial Regulations

This plant provides multiple barriers against bacteriological contamination. Bacteriological testing is carried out on raw water, treated water and distribution samples on a regular frequency. On-line analysers for chlorine residuals and turbidity ensures daily monitoring of water leaving the plant. Chlorine levels in the distribution system are also checked on a regular basis. More specialized testing occurs monthly and quarterly and includes Volatile Organics, Inorganics, Pesticides and PCB's.

OCWA uses internal compliance auditing techniques by teams from within the organization. OCWA operates the Moose Creek Water Treatment Facility in accordance with provincial regulations. Here is how we do it:

- Use of Accredited Labs. Analytical tests to monitor your water quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods.

- Operation by Licensed Operators. Your water treatment plant is operated and maintained by the Ontario Clean Water Agency's competent and licensed staff. The mandatory licensing program for operators of drinking water facilities is regulated under the *Ontario Water Resources Act (OWRA)* Regulation 435/93. Licensing means that an individual meets the education and experience requirements and has successfully passed the certificate exam.

- Sampling and Analytical requirements. OCWA follows a sampling and analysis schedule required by *OWRA* Regulation 459/00, the Ontario Drinking Water Standards. More information on sampling and analysis including results are available in this report and from your municipal office.

- Adherence to Ministry Guidelines and Procedures. To ensure the protection of the health and operational excellence, the OCWA adheres to the guidelines and procedures developed by the Ministry of the Environment and the Ministry of Health.

Did We Exceed the Standards?

With respect to Operational Parameters, turbidity exceedences were reported as per Regulation 459/00 on 11 separate occasions. These samples are taken continuously in-house by online equipment and the spikes are believed to be caused primarily by air entrained in the water during start-up of vertical turbine hi-lift pumps, and/or a buildup of iron sediment in the sample lines. During these spikes, the system was being adequately disinfected; therefore, reducing any risks that may be associated with the high turbidity.

QUARTERLY REPORT ON DRINKING WATER QUALITY

July-September 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Definitions & Terms

m^3 - Cubic Meter, $1m^3 = 1000$ litres
TCU - True Colour Units
$CaCO_3$ - Calcium Carbonate
mg - milligram
mg/L - milligrams per litre
ug/L - micrograms per litre
ng/L - nanograms per litre
NTU - Nephelometric Turbidity Units
MAC - Maximum Acceptable Concentration
IMAC - Interim Maximum Acceptable Concentration
Coliform Bacteria - a group of commonly occurring rod shaped bacteria. Their presence in a water sample is indicative of inadequate filtration and/or disinfection.
Fecal Coliform Bacteria - refers to a subgroup of coliform bacteria present in the digestive system of warm blooded animals and humans.
Heterotrophic Plate Count - a method of measuring bacterial content in water samples. Also known as Standard Plate Count.
Organic Parameter - a group of chemical compounds containing carbon.
Inorganic Parameter - a group of chemical compounds not containing carbon.
Raw Water - Surface or ground water available as a source of drinking water that has not received any treatment.

Required Testing

The Ontario Drinking Water Regulations and Certificates of Approval (C of A) set sampling requirements for the plant. All other sampling conforms to the Drinking Water Protection Regulation schedule for sampling and analysis. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases can pick up substances resulting from the presence of animals or from human activity. Your water is extensively tested for the presence of dozens of compounds. The results of all analytical tests are available at your municipal office. The following table lists all compounds analyzed.

Moose Creek Water Quality Test Results

Microbiological Parameters	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d)	Range	Exceedence?	Typical Source of Contaminant
Total Coliform (counts/100ml)	0	42	0	07/01-09/30	n/a	no	Indicate possible presence of coliform
Escherichia Coliform (counts/100ml)	0	42	0	07/01-09/30	n/a	no	Definite indicator of fecal contamination
Heterotrophic Plate Count (counts/100ml)	500	28	10	07/01-09/30	2-30	no	Indicator of deteriorating water quality if greater than 500

QUARTERLY REPORT ON DRINKING WATER QUALITY

July-September 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Parameters related to Microbiological Quality	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d)	Range	Exceedence?	Typical Source of Contaminant
Turbidity (NTU)	1	Continuous	Continuous	07/01-09/30	0.42- >.5.0	yes	Turbidity is a measure of particles in water
Free Chlorine – Plant Effluent (mg/l)	-	Continuous	Continuous	07/01-09/30	1.3-2.5	no	Chlorine added for Disinfection
Free Chlorine- Distribution (mg/l min 0.05 & max. 4.0)	-	Grab samples weekly	Weekly	07/01-09/30	0.5-2.1	no	Objective is 0.20 mg/l in the Distribution System (min. 0.05 mg/l required)
Inorganic Parameters (mg/l)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedence?	Typical Source of Contaminant
Lead - Distribution	0.01	1	1	01/21/02	<0.001	no	Leached from lead solder or brass plumbing fixtures
Nitrate	10	1	1	08/08/02	<0.1	no	Natural component of water
Nitrite	1	1	1	08/08/02	<0.1	no	
Arsenic	IMAC= 0.025	1	1	09/19/00	<0.001	no	
Barium	1	1	1	09/19/00	0.24	no	
Boron	IMAC= 5.0	1	1	09/19/00	0.06	no	
Cadmium	0.005	1	1	09/19/00	<0.0001	no	
Chromium (Total)	0.05	1	1	09/19/00	<0.01	no	
Copper	1	1	1	01/21/02	<0.001	no	
Iron	0.3	1	1	01/21/02	0.45	yes	Comments below
Lead	0.01	1	1	09/19/00	<0.001	no	
Manganese	0.05	1	1	01/21/02	0.04	no	
Mercury	0.001	1	1	09/19/00	<0.0001	no	
Selenium	0.01	1	1	09/19/00	<0.001	no	
Uranium	0.1	1	1	09/19/00	<0.001	no	
Sodium	200	1	1	01/28/02- 02/13/02	26-27	no	
Fluoride	2.4	3	3	08/08/02	0.15	no	

Comment: Iron may be present in groundwater as a result of mineral deposits and chemically reducing underground conditions. The aesthetic objective for Iron, set by appearance effects in drinking water is 0.3 mg/L. Excessive Iron levels in drinking water supplies may impart a brownish color to laundered goods, plumbing fixtures and the water itself; it may produce a bitter, astringent taste in water and beverages; the precipitation of iron can also promote growth of iron bacteria in water mains and service pipes. The Moose Creek Water Pumping Station has no design features for the removal of Iron.

Volatile Organics (ug/l)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedence?	Typical Source of Contaminant
Trihalomethanes - Plant	100	2	2	08/08/02	38.1	no	
Trihalomethanes - Dist.	100	2	2	08/08/02	55.5	no	
Benzene	5	1	1	08/08/02	<0.5	no	
Carbon Tetrachloride	5	1	1	08/08/02	<0.9	no	
Dichloromethane	50	1	1	08/08/02	<4	no	
1,2 - Dichlorobenzene	200	1	1	08/08/02	<0.4	no	
1, 4 - Dichlorobenzene	5	1	1	08/08/02	<0.4	no	
1,2 - Dichloroethane	IMAC= 5	1	1	08/08/02	<0.7	no	
1,1 - Dichloroethylene	14	1	1	08/08/02	<0.5	no	
Ethylbenzene	24	1	1	08/08/02	<0.5	no	

QUARTERLY REPORT ON DRINKING WATER QUALITY

July-September 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Volatile Organics (ug/l)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedance?	Typical Source of Contaminant
Monochlorobenzene	80	1	1	08/08/02	<0.2	no	
Tetrachloroethylene	30	1	1	08/08/02	<0.3	no	
Toluene	24	1	1	08/08/02	<0.5	no	
Trichloroethlyene	50	1	1	08/08/02	<0.3	no	
Vinyl chloride	2	1	1	08/08/02	<0.5	no	
Xylene	300	2	2	08/08/02	<2.0	no	
Bromodichloromethane	n/a	1	1	08/08/02	10.2	no	
Bromoform	n/a	1	1	08/08/02	<0.4	no	
Chloroform	n/a	1	1	08/08/02	24.9	no	
Dibromochloromethane	n/a	1	1	08/08/02	3.0	no	

Pesticides & PCB (ug/L)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedance?	Typical Source of Contaminant
Alachlor	IMAC=5	1	1	08/08/02	<0.5	no	
Aldicarb	9	1	1	08/08/02	<5.0	no	
Aldrin+Dieldrin	0.7	1	1	08/08/02	<0.012	no	
Atrazine	IMAC=5	1	1	08/08/02	<0.5	no	
Azinphos-methyl	20	1	1	08/08/02	<2.0	no	
Bendiocarb	40	1	1	08/08/02	<2.0	no	
Bromoxynil	IMAC=5	1	1	08/08/02	<0.5	no	
Carbaryl	90	1	1	08/08/02	<5.0	no	
Carbofuran	90	1	1	08/08/02	<5.0	no	
Chlordane	7	1	1	08/08/02	<0.012	no	
Chorpyrifus	90	1	1	08/08/02	<1.0	no	
Cyanazine	IMAC=10	1	1	08/08/02	<1.0	no	
Diaznon	20	1	1	08/08/02	<1.0	no	
Dicamba	120	1	1	08/08/02	<1.0	no	
2,4 Dichlorophenol	900	1	1	08/08/02	<0.5	no	
DDT + Metabolites	30	1	1	08/08/02	<3.0	no	
2,4 - Dichlorophenexy acid (2,4 -D)	IMAC=100	1	1	08/08/02	<1.0	no	
Diclofop-methyl	9	1	1	08/08/02	<0.9	no	
Dimethoate	IMAC=20	1	1	08/08/02	<2.5	no	
Dinoseb	10	1	1	08/08/02	<1.0	no	
Diquat	70	1	1	08/08/02	<7.0	no	
Diuron	150	1	1	08/08/02	<10.0	no	
Glyphosate	IMAC=280	1	1	08/08/02	<10.0	no	
Heprachlor + Heptachlor epoxide	3	1	1	08/08/02	<0.012	no	
Lindane	4	1	1	08/08/02	<0.006	no	
Malathion	190	1	1	08/08/02	<5.0	no	
Methoxychlor	900	1	1	08/08/02	<0.024	no	
Metolachlor	IMAC=50	1	1	08/08/02	<0.5	no	
Metribuzin	80	1	1	08/08/02	<5.0	no	
Paraquat	IMAC=10	1	1	08/08/02	<1.0	no	
Parathion	50	1	1	08/08/02	<1.0	no	
Pentachlorophenol	60	1	1	08/08/02	<0.5	no	
Phorate	IMAC=2	1	1	08/08/02	<0.5	no	
Picloram	IMAC=190	1	1	08/08/02	<5.0	no	
Polychlorinated Biphenyls	IMAC=3	1	1	08/08/02	<0.05	no	
Prometryne	IMAC=1	1	1	08/08/02	<0.25	no	

QUARTERLY REPORT ON DRINKING WATER QUALITY

July-September 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Pesticides & PCB (ug/L)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedance?	Typical Source of Contaminant
Simazine	IMAC=10	1	1	08/08/02	<1.0	no	
Temephos	IMAC=280	1	1	08/08/02	<10	no	
Terbufos	IMAC=1	1	1	08/08/02	<0.7	no	
2,3,4,6 Tetrachlorophenol	100	1	1	08/08/02	<0.5	no	
Triallate	230	1	1	08/08/02	<1.0	no	
2,4,6-Trichlorophenol	5	1	1	08/08/02	<0.5	no	
2,4,5 - trichlorophenoxy acedic acid	IMAC=280	1	1	08/08/02	<1.0	no	
Trifluralin	45	1	1	08/08/02	<1.0	no	
Additional Parameters Non-Health Related (mg/L)	**AO or OG**	**# of Samples**	**# of Detectable Results**	**Sampling Dates (m/d/y)**	**Range**	**Exceedance?**	**Typical Source of Contaminant**
Colour	5	1	1	01/28/02	2	no	
pH	6.8-8.5	1	1	01/28/02	7.84	no	
Alkalinity	30-500	1	1	01/28/02	205	no	
Total Hardness	80-100	1	1	01/28/02	326	yes	Limits are set as an operational guideline
Sulphate	500	1	1	01/28/02	137	no	
Conductivity	---	1	1	01/28/02	707	no	
Chloride	250	1	1	01/28/02	29	no	
Free Ammonia	---	1	1	01/28/02	<0.02	no	
Total Kjeldahl Nitrogen	---	1	1	01/28/02	0.1	no	
Dissolved Organic Carbon	5	1	1	01/28/02	1.9	no	
Sodium	200	1	1	01/28/02	26	no	
Iron	0.3	1	1	01/28/02	0.45	yes	
Aluminium	0.1	1	1	01/28/02	<0.05	no	
Manganese	0.05	1	1	01/28/02	0.04	no	
Ammonia + Ammonium N		1	1	01/28/02	<0.02	no	
Total Organic Carbon		1	1	01/28/02	2.1	no	
Copper	1	1	1	01/28/02	<0.001	no	
Calcium	---	1	1	01/28/02	86	no	
Magnesium	---	1	1	01/28/02	27	no	

Questions & Answers

Q. What is an Accredited Laboratory?

A. Accredited labs must have undergone an on-site assessment and performance review of their methods by the Canadian Association of Environmental and Analytical Laboratories. The Standards Council of Canada grants accreditation to the lab based on the recommendation of the CAEAL. The accreditation requirements are repeated every two years.

Q. What had to be done to meet the new regulations?

A. The Moose Creek Water Treatment Plant was following the Ontario Drinking Water Objectives (ODWO) before they became law, so little change was required to meet the new regulations. Our chlorine residual in the water leaving the plant was raised to slightly to achieve the (0.20 mg/L free chlorine) required level in the distribution system, and some changes were required in the way results are reported. This report to the public is also the result of the new regulations.

Q. What parameters did you test for?

A. Microbiological parameters, volatile organic, inorganic and pesticides & PCBs have been tested. The results are included in this report.

Q. Sometimes my water looks rusty or coloured. Why is that, and what should I do about it?

A. This is quite often caused when the tanks in older water heaters start to decay. If the colour is seen only in your hot water, this may be the problem. If the colour is also noticed in your cold water it could be coming from the water main. Various maintenance procedures in the distribution system - such as fire hydrant and valve maintenance, or main break repairs - require flushing of the water mains. Flushing can cause small particles of sediment to break off adding colour to the water. Please note that there is no health risk associated with this problem. This is usually only temporary, and opening your taps for a while to flush out your service line (the pipe from the water main to your house) should take care of the problem. Let the water run until the colour disappears.

MOOSE CREEK WATER REQUIRED SAMPLES

JULY, AUGUST, SEPTEMBER 2002

Chemical Parameters

				Date Samples Collected	Initials	Date Results Received	Initials
Table B & D		Treated	✓				
NO2&NO3		Treated	✓				
System THM	annual	Treated	✓				
Flouride	annual	Treated	✓				

Bacti Parameters

Raw			
Well#1	E.Coli	Total Coli.	Background
Well#2	E.Coli	Total Coli.	Background
Well#3	E.Coli	Total Coli.	Background
Treated			
	E.Coli	Total Coli.	HPC
System			
2 Sites	E.Coli	Total Coli.	HPC 25%

JULY 1	Bacti's	✓					
JULY 8	Bacti's	✓					
JULY 15	Bacti's	✓					
JULY 22	Bacti's	✓					
JULY 29	Bacti's	✓					
AUG. 5	Bacti's	✓					
AUG. 12	Bacti's	✓					
AUG. 19	Bacti's	✓					
AUG. 26	Bacti's	✓					
SEPT. 2	Bacti's	✓					
SEPT. 9	Bacti's	✓					
SEPT. 16	Bacti's	✓					
SEPT. 23	Bacti's	✓					
SEPT. 30	Bacti's						

Flouride Treated Water (Annual)
Lead Distribution System (Annual)
Table C Treated Water (Jan. 2003)
Sodium Treated Water (Jan. 2007)

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220006763**
Project: Moose Creek WTP
Date Sampled: July 2, 2002
Date Received: July 3, 2002
Date Printed: July 05, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	Dist. Water Tower	Dist. Mall
Total Chlorine	mg/L	0.05			2.00	0.90	1.20
Free Chlorine	mg/L	0.05			1.60	0.60	1.00
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	absent	
Background bacteria	/100mL	1	3	absent			
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent

Caduceon Environmental Laboratories
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Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220007058**
Project: Moose Creek WTP
Date Sampled: July 8, 2002
Date Received: July 9, 2002
Date Printed: July 11, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	>200	1			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.80	absent	absent	2.20
Dist. SPS		absent	0.60	absent	absent	0.80
Dist. Post Office		absent	1.20		absent	1.50

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220007320**
Project: Moose Creek WTP
Date Sampled: July 15, 2002
Date Received: July 16, 2002
Date Printed: July 18, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	3	absent			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.90	absent	absent	2.30
Dist. Moose Creek Mall		absent	1.40	absent	absent	1.80
Dist. Paul Adams House		absent	0.90		absent	1.00

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analy

Client:

Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220007579**
Project: Moose Creek WTP
Date Sampled: July 22, 2002
Date Received: July 23, 2002
Date Printed: July 25, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	14	absent			absent	
Well #3 Raw	41	absent			40	
Treated Water		absent	1.78	absent	absent	2.18
Dist. Tower		absent	1.50	absent	absent	1.90
Dist. 2041 Valley St. N		absent	0.72		absent	0.95

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

K. Pi

For Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:

Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220007816**
Project: Moose CreeK WTP
Date Sampled: July 29, 2002
Date Received: July 30, 2002
Date Printed: August 01, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	71	absent			absent	
Well #3 Raw	5	absent			4	
Treated Water		absent	1.70	absent	absent	2.20
Dist. SPS		absent	0.80	absent	absent	1.10
Dist. Moose Creek Mall		absent	0.90		absent	1.20

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

For Michael Ziebell, General Manager

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2210850
Date: 2002-08-19
Date Submitted: 2002-08-09

Project: Moose Creek Wells

P.O. Number:
Matrix: Supply Water

		LAB ID:	198038				
		Sample Date:	2002-08-08				
		Sample ID:	MCW-04				
PARAMETER	**UNITS**	**MDL**	TREATEDWATER				
F	mg/L	0.10	0.15				
N-NO2	mg/L	0.10	<0.10				
N-NO3	mg/L	0.10	<0.10				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2210850
Date: 2002-08-16
Date Submitted: 2002-08-09

Project: Moose Creek Wells

P.O. Number:
Matrix: Supply Water

	LAB ID:				
	Sample Date:				
	Sample ID:				
PARAMETER	**UNITS**	**MDL**	198038		
BTEX / 624 / PURGEABLE HYDROCARBONS			2002-08-08		
Benzene	ug/L	0.5	<0.5		
Toluene	ug/L	0.5	<0.5		
Ethylbenzene	ug/L	0.5	<0.5		
m/p-xylene	ug/L	1.0	<1.0		
o-xylene	ug/L	0.5	<0.5		
Bromodichloromethane	ug/L	0.3	10.2		
Bromoform	ug/L	0.4	<0.4		
Carbon Tetrachloride	ug/L	0.9	<0.9		
Monochlorobenzene	ug/L	0.2	<0.2		
Chloroform	ug/L	0.5	24.9		
Dibromochloromethane	ug/L	0.3	3.0		
1,2-dichlorobenzene	ug/L	0.4	<0.4		
1,4-dichlorobenzene	ug/L	0.4	<0.4		
1,2-dichloroethane	ug/L	0.7	<0.7		
1,1-dichloroethylene	ug/L	0.5	<0.5		
Dichloromethane	ug/L	4.0	<4.0		
Tetrachloroethylene	ug/L	0.3	<0.3		
Trichloroethylene	ug/L	0.3	<0.3		
Vinyl Chloride	ug/L	0.5	<0.5		
TOTALS					
Trihalomethanes (total)	ug/L	2.0	38.1		
Xylene; total	ug/L	2.0	<2.0		
BTEX / 624 Surrogate Recoveries					
Toluene-d8	%		97		
1,2-dichloroethane-d4	%		101		
4-bromofluorobenzene	%		101		

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2210850
Date: 2002-08-29
Date Submitted: 2002-08-09

Project: Moose Creek Wells

Sample Matrix: Supply Water

	LAB ID:				
	Sample Date:	198038			
	Sample ID:	8/8/02			
		MCW-04			

PARAMETER	UNITS	MDL				
PESTICIDES & PCB's						
Alachlor	ug/L	0.5	<0.5			
Aldicarb	ug/L	5	<5			
Aldrin	ug/L	0.006	<0.006			
Aldrin + Dieldrin	ug/L	0.012	<0.012			
Atrazine	ug/L	0.5	<0.5			
Desethyl-atrazine	ug/L	0.5	<0.5			
Atrazine+Desethyl-atrazine	ug/L	1	<1			
Azinphos-methyl	ug/L	2	<2			
[illegible]diocarb	ug/L	2	<2			
[illegible]moxynil	ug/L	0.5	<0.5			
Carbaryl	ug/L	5	<5			
Carbofuran	ug/L	5	<5			
Chlordane (Total)	ug/L	0.012	<0.012			
a-Chlorodane	ug/L	0.006	<0.006			
g-Chlorodane	ug/L	0.006	<0.006			
Oxychlorodane	ug/L	0.006	<0.006			
Chloropyrifos	ug/L	1	<1			
Cyanazine	ug/L	1	<1			
Diazinon	ug/L	1	<1			
Dicamba	ug/L	1	<1			
Dieldrin	ug/L	0.006	<0.006			
Diquat	ug/L	7	<7			
2,4-Dichlorophenol	ug/L	0.5	<0.5			
DDT + Metabolites	ug/L	0.024	<0.024			
o,p'-DDT	ug/L	0.006	<0.006			
p,p'-DDT	ug/L	0.006	<0.006			
2,4-D	ug/L	1	<1			
p,p'-DDE	ug/L	0.006	<0.006			

NOTE: mg/L=1000xug/L

MDL = Method Detection Limit

Comment:

APPROVAL:

146 Colonnade Road, Unit 8, Nepean, Ontario K2E 7Y1 Tel:(613)727-5692 Fax:(613)727-5222

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2210850
Date: 2002-08-29
Date Submitted: 2002-08-09

Project: Moose Creek Wells

Sample Matrix: Supply Water

		LAB ID:	198038			
		Sample Date:	8/8/02			
		Sample ID:	MCW-04			
PARAMETER	**UNITS**	**MDL**				
p,p'-DDD	ug/L	0.006	<0.006			
Diclofop-methyl	ug/L	0.9	<0.9			
Dimethoate	ug/L	2.5	<2.5			
Dinoseb	ug/L	1	<1			
Diuron	ug/L	10	<10			
Glyphosate	ug/L	10	<10			
Heptachlor	ug/L	0.006	<0.006			
Heptachlor epoxide	ug/L	0.006	<0.006			
Heptachlor + Hept. Epoxide	ug/L	0.012	<0.012			
[illegible]lane	ug/L	0.006	<0.006			
[illegible]athion	ug/L	5	<5			
Methoxychlor	ug/L	0.024	<0.024			
Metolachlor	ug/L	0.5	<0.5			
Metribuzin	ug/L	5	<5			
Paraquat	ug/L	1	<1			
Parathion	ug/L	1	<1			
Pentachlorophenol	ug/L	0.5	<0.5			
Phorate	ug/L	0.5	<0.5			
Picloram	ug/L	5	<5			
PCB's (total)	ug/L	0.05	<0.05			
Prometryne	ug/L	0.25	<0.25			
Simazine	ug/L	1	<1			
Temephos	ug/L	10	<10			
Terbufos	ug/L	0.7	<0.7			
2,3,4,6-Tetrachlorophenol	ug/L	0.5	<0.5			
Triallate	ug/L	1	<1			
2,4,6-Trichlorophenol	ug/L	0.5	<0.5			
Trifluralin	ug/L	1	<1			
2,4,5-T	ug/L	1	<1			

NOTE: mg/L=1000xug/L

MDL = Method Detection Limit

Comment:

APPROVAL:

146 Colonnade Road, Unit 8, Nepean, Ontario K2E 7Y1 Tel:(613)727-5692 Fax:(613)727-5222

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2210857
Date: 2002-08-16
Date Submitted: 2002-08-09
Project:
P.O. Number:
Matrix: Supply Water

		LAB ID:	198045				
		Sample Date:	2002-08-08				
		Sample ID:	MCW System				
PARAMETER	**UNITS**	**MDL**					
BTEX / 624 / PURGEABLE HYDROCARBONS							
Bromodichloromethane	ug/L	0.3	11.9				
Bromoform	ug/L	0.4	<0.4				
Chloroform	ug/L	0.5	40.0				
Dibromochloromethane	ug/L	0.3	3.6				
TOTALS							
Trihalomethanes (total)	ug/L	2.0	55.5				
BTEX / 624 Surrogate Recoveries							
Toluene-d8	%		97				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL:

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1 608 Norris Court, Kingston, ON, K7P 2R9

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
ntario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220008067**
Project: Moose Creek WTP
Date Sampled: August 6, 2002
Date Received: August 7, 2002
Date Printed: August 09, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	58	absent			absent	
Well #3 Raw	178	absent			absent	
Treated Water		absent	1.30	2	absent	1.60
Dist. Water Tower		absent	1.20	4	absent	1.20
Dist. SPS		absent	1.00		absent	1.20

Caduceon Environmental Laboratories
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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220008349**
Project: Moose Creek WTP
Date Sampled: August 12, 2002
Date Received: August 13, 2002
Date Printed: August 15, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Well #2 Raw	Well #3 Raw	Treated Water	Dist. 2041 Valley North	Dist. Moose Creek all
Total Chlorine	mg/L	0.05			2.00	0.70	1.40
Free Chlorine	mg/L	0.05			1.70	0.50	1.20
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	30	
Background bacteria	/100mL	1	4	absent			
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220008617**
Project: Moose Creek WTP
Date Sampled: August 19, 2002
Date Received: August 20, 2002
Date Printed: August 22, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	Dist. M.C. Mall	Dist. Paul Adams
Total Chlorine	mg/L	0.05			2.20	1.60	1.20
Free Chlorine	mg/L	0.05			1.60	1.30	0.90
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			2	2	
Background bacteria	/100mL	1	180	17			
Total Coliforms	/100mL	1	absent	15	absent	absent	absent

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Certificate of Analysis

Client:

[O]ntario Clean Water Agency
[1] Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220008931**
Project: Moose Creek WTP
Date Sampled: August 26, 2002
Date Received: August 27, 2002
Date Printed: August 29, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	2	absent			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.70	absent	absent	2.10
Dist. Post Office		absent	1.20	absent	absent	1.50
Dist. 2041 Valley St. (N)		absent	1.00		absent	1.50

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Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: 220008931
Project: Moose Creek WTP
Date Sampled: August 26, 2002
Date Received: August 27, 2002
Date Printed: August 29, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	2	absent			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.70	absent	absent	2.10
Dist. Post Office		absent	1.20	absent	absent	1.50
Dist. 2041 Valley St. (N)		absent	1.00		absent	1.50

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Certificate of Analysis

Client:
[illegible]ario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220009260**
Project: Moose Creek WTP
Date Sampled: September 3, 2002
Date Received: September 4, 2002
Date Printed: September 06, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	55	absent			1	
Well #3 Raw	2	absent			2	
Treated Water WTP		absent	1.63	absent	absent	1.97
M.C. Tower		absent	1.06	2	absent	1.48
S.P.S.		absent	0.88		absent	1.25

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Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220009538**
Project: Moose Creek WTP
Date Sampled: September 9, 2002
Date Received: September 10, 2002
Date Printed: September 12, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	Dist. Moose Creek Mall	Dist. Valley St. N 2041
Total Chlorine	mg/L	0.05			1.86	1.35	1.14
Free Chlorine	mg/L	0.05			1.51	1.03	0.87
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	absent	
Background bacteria	/100mL	1	1	absent			
Total Coliforms	/100mL	1	1	absent	absent	absent	absent

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Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:

Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220009886**
Project: Moose Creek WTP
Date Sampled: September 16, 2002
Date Received: September 17, 2002
Date Printed: September 19, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	118	absent			2	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	2.05	2	absent	2.35
Dist. Post Office		absent	1.36	2	absent	1.76
Dist. Paul Adams		absent	0.73		absent	0.93

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Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220010231**
Project: Moose Creek WTP
Date Sampled: September 23, 2002
Date Received: September 24, 2002
Date Printed: September 26, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	Dist. Water Tower	Dist. M.C. Mall
Total Chlorine	mg/L	0.05			1.80	1.44	1.22
Free Chlorine	mg/L	0.05			1.53	1.12	0.96
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	absent	
Background bacteria	/100mL	1	absent	absent			
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent

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Michael Ziebell, C[redacted] Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220010463**
Project: Moose Creek WTP
Date Sampled: September 30, 2002
Date Received: October 1, 2002
Date Printed: October 03, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	Dist. Water Tower	Dist. SPS
Total Chlorine	mg/L	0.05			2.20	1.50	1.24
Free Chlorine	mg/L	0.05			1.83	1.25	1.01
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	absent	
Background bacteria	/100mL	1	3	1			
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent

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Michael Ziebell, [redacted]al Manager

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Moose Creek Drinking Water Quality

Ontario Drinking Water Protection Regulations

The Ontario Clean Water Agency, as the contract operator of the Moose Creek Water Treatment Facility on behalf of the Township of North Stormont, is pleased to present the 2002 Fourth Quarter Report on drinking water quality. This report has been prepared in response to legislative changes brought about by "Operation Clean Water", an initiative of Ontario's Ministry of the Environment to ensure high quality drinking water for the residents of Ontario. The new regulations put into law what was formerly the Ontario Drinking Water Objectives (ODWO), and sets requirements for public waterworks with regard to sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

Further information on the Ontario Drinking Water Regulations can be found on the Ministry of the Environment web site at www.ene.gov.on.ca

Where to contact us for information

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Web site at www.ocwa.com

Client Services Representative:
John Kingsbury
Phone : (613) 774-3663
E-mail Address: jkingsbury@ocwa.com

Operations Manager:
Blair Henderson
Phone: (613) 448-3098
E-mail Address: bhenderson@ocwa.com

You may also contact the Township of North Stormont directly.
Rheal Charbonneau, Clerk - Treasurer
Phone: (613) 984-2821
E-mail Address: admin@townshipofnorthstormont.on.ca

Free copies of this report are available at the Township office at 2 Victoria St., Berwick, or their website @ www.townshipofnorthstormont.on.ca

INSIDE THIS REPORT

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Introduction

We are proud to report that for the period October to December 2002, your water conformed to the Ontario Drinking Water Standards as set out in Ontario Regulation 459/00. The Ontario Clean Water Agency (OCWA) is dedicated to maximizing public health and safety through efficient and reliable operation of your water facility and distribution system.

Plant Description and Treatment Processes

Facility Name:	Moose Creek WTP & Distribution System
Total Design Capacity	896 cubic meters/day
Raw Water Source	Groundwater
Disinfection Method	Sodium Hypochlorite
Municipal Location	Municipal office, 2 Victoria Street, Berwick
Service Area	Village of Moose Creek
Service Population	400

Operational Description:

Raw Water Source: Three drilled wells located southwest of the water pumping station.

Low Lift Pumps: Three low lift pumps lift the water from the wells to the main pumping station. There is one header that directs the water to the Chlorine Contact Chamber. At this point, Sodium Hypochlorite is added to the raw water for disinfection.

Reservoir: From the Chlorine Contact Chamber the treated water enters a 75 cubic meter underground reservoir.

High Lift Pumps: Two high lift pumps, one duty and one standby, move the treated water from the reservoir into the distribution system and elevated tank.

Elevated Tank: There is approximately 622 cubic meters of water in the elevated water tower located on County Road 15.

Distribution System: There are approximately 400 persons supplied with water from the Moose Creek Water Treatment System.

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Quality Control & Compliance With Provincial Regulations

This plant provides multiple barriers against bacteriological contamination. Bacteriological testing is carried out on raw water, treated water and distribution samples on a regular frequency. On-line analysers for chlorine residuals and turbidity ensure daily monitoring of water leaving the plant. Chlorine levels in the distribution system are also checked on a regular basis. More specialized testing occurs monthly and quarterly and includes Volatile Organics, Inorganics, Pesticides and PCB's.

OCWA uses internal compliance auditing techniques by teams from within the organization. OCWA operates the Moose Creek Water Treatment Facility in accordance with provincial regulations. Here is how we do it:

- Use of Accredited Labs. Analytical tests to monitor your water quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods.

- Operation by Licensed Operators. Your water treatment plant is operated and maintained by the Ontario Clean Water Agency's competent and licensed staff. The mandatory licensing program for operators of drinking water facilities is regulated under the *Ontario Water Resources Act (OWRA)* Regulation 435/93. Licensing means that an individual meets the education and experience requirements and has successfully passed the certificate exam.

- Sampling and Analytical requirements. OCWA follows a sampling and analysis schedule required by *OWRA* Regulation 459/00, the Ontario Drinking Water Standards. More information on sampling and analysis including results are available in this report and from your municipal office.

- Adherence to Ministry Guidelines and Procedures. To ensure the protection of the health and operational excellence, the OCWA adheres to the guidelines and procedures developed by the Ministry of the Environment and the Ministry of Health.

Annual Compliance Report

The Annual Compliance Report covers the period from January 1, 2002 to December 31, 2002. Copies of the report will be made available for inspection by any member of the public during normal business hours without charge at the Township Office. The Annual Compliance Rport for 2002 will be completed and made available not later than March 31, 2003.

The Compliance Report will include, at a minimum, the following:

- A statement as to compliance with all of the terms and conditions of the certificate and a detailed description of all of the measures taken to ensure compliance with the certificate, including and supporting data or other information;
- In the event of any non-compliance during the reporting period, details of the non-compliance as well as details of how and when any non-compliance was corrected;
- A summary and discussion of the quantity of water supplied during the reporting period compared to the rated capacity specified in the Certificate of Approval, including monthly average and maximum daily flows;
- A summary of records related to flow rate excedences, and a summary of analytical results of sampling required by the certificate, including raw water and in-process parameters as specified in the operations manual in accordance with the Certificate of Approval;
- A summary listing treatment chemicals used, including average dosage rates with special reference to any abnormal usages

Did We Exceed the Standards?

During the fourth quarter of 2002, in the month of October, a treated water sample was found to exceed the Ontario Drinking Water Standards as set out in Ontario Regulation 459/00. On October 7, 2002, treated water exceeded MAC for Total Coliform with a result of 2 per 100/ml. The Ministry of Environment and the Ministry of Health were immediately notified as per the Ontario Drinking Water Standards. Free chlorine residual of the sample at the time of collection was 1.86 mg/L. Subsequent re-sampling as per O. Reg. 459 indicated no adverse results.

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Definitions & Terms

m^3 - Cubic Meter, 1 m^3 = 1000 litres
TCU - True Colour Units
$CaCO_3$ - Calcium Carbonate
mg - milligram
mg/L - milligrams per litre.
ug/L - micrograms per litre.
ng/L - nanograms per litre.
NTU - Nephelometric Turbidity Units.
MAC - Maximum Acceptable Concentration
IMAC - Interim Maximum Acceptable Concentration

Coliform Bacteria - a group of commonly occurring rod shaped bacteria. Their presence in a water sample is indicative of inadequate filtration and/or disinfection.
Fecal Coliform Bacteria - refers to a subgroup of coliform bacteria present in the digestive system of warm blooded animals and humans
Background Count - a method of measuring bacterial content in water samples
Heterotrophic Plate Count - a method of measuring bacterial content in water samples. Also known as Standard Plate Count.
Organic Parameter - a group of chemical compounds containing carbon
Inorganic Parameter - a group of chemical compounds not containing carbon
Raw Water - Surface or ground water available as a source of drinking water that has not received any treatment.

Required Testing

The Ontario Drinking Water Regulations and Certificates of Approval (C of A) set sampling requirements for the plant. All other sampling conforms to the Drinking Water Protection Regulation schedule for sampling and analysis. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases can pick up substances resulting from the presence of animals or from human activity. Your water is extensively tested for the presence of dozens of compounds. The results of all analytical tests are available at your municipal office. The following table lists all compounds analyzed.

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Moose Creek Water Quality Test Results

Microbiological Parameters	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates	Range	Exceedence	Typical Source of Contaminant
Total Coliform,Raw (CFU/100mL)	n/a	30	6	10/07 - 12/30 weekly	1-15	n/a	Indicate possible presence of fecal matter
E. Coli, Raw (CFU/100 mL)	n/a	30	0	10/07 - 12/30 weekly	n/a	n/a	Definite indicator of fecal contamination
Background Count, Raw (CFU/100 mL)	n/a	30	12	10/07 - 12/30 weekly	1-85	n/a	Indicator of adverse water quality
Total Coliform, Treated (CFU/100mL)	0	15	1	10/07 - 12/30 weekly	2	no	Indicate possible presence of fecal matter
E. coli, Treated (CFU/100 mL)	0	15	0	10/07 - 12/30 weekly	n/a	no	Definite indicator of fecal contamination
Hetrotrophic Plate Count, Treated (CFU/1 mL)	500	15	4	10/07 - 12/30 weekly	2-20	no	Indicator of adverse water quality
Total Coliform, Dist. (CFU/100mL)	0	28	0	10/07 - 12/30 weekly	n/a	no	Indicate possible presence of fecal matter
E. Coli, Dist. (CFU/100 mL)	0	28	0	10/07 - 12/30 weekly	n/a	no	Definite indicator of fecal contamination
Hetrotrophic Plate Count, Dist. (CFU/1 mL)	500	15	2	10/07 - 12/30 weekly	2	no	Indicator of adverse water quality

Parameters related to Microbiological Quality	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d)	Range	Exceedence	Typical Source of Contaminant
Turbidity (NTU)	1	Continuous	Continuous	10/01-12/31	0.29-0.94	no	Turbidity is a measure of particles in water
Free Chlorine – Plant Effluent (mg/l)	-	Continuous	Continuous	10/01-12/31	1.2-2.3	no	Chlorine added for Disinfection
Free Chlorine-Distribution (mg/l min 0.05 & max. 4.0)	-	Grab samples weekly	Weekly	10/07-12/30	0.52-1.53	no	Objective is 0.20 mg/l in the Distribution System (min. 0.05 mg/l required)

Comments: MAC/IMAC values do not apply to Raw Water results. MOE recommend a level of at least 0.2 mg/l free chlorine residual in system to maintain microbiological quality in system. Adverse water quality occurs when the free chlorine residual is less than 0.05mg/l.

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Inorganic Parameters (mg/l)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedence	Typical Source of Contaminant
Lead - Distribution	0.01	1	1	01/21/02	<0.001	no	Leached from lead solder or brass plumbing fixtures
Nitrate	10	1	1	10/21/02	<0.1	no	Natural component of water
Nitrite	1	1	1	10/21/02	<0.1	no	
Arsenic	IMAC= 0.025	1	1	09/19/00	<0.001	no	
Barium	1	1	1	09/19/00	0.24	no	
Boron	IMAC= 5.0	1	1	09/19/00	0.06	no	
Cadmium	0.005	1	1	09/19/00	<0.0001	no	
Chromium (Total)	0.05	1	1	09/19/00	<0.01	no	
Copper	1	1	1	01/21/02	<0.001	no	
Iron	0.3	1	1	01/21/02	0.45	yes	Comments below
Lead	0.01	1	1	09/19/00	<0.001	no	
Manganese	0.05	1	1	01/21/02	0.04	no	
Mercury	0.001	1	1	09/19/00	<0.0001	no	
Selenium	0.01	1	1	09/19/00	<0.001	no	
Uranium	0.1	1	1	09/19/00	<0.001	no	
Sodium	200	1	1	01/28/02-02/13/02	26-27	no	
Fluoride	2.4	3	3	08/08/02	0.15	no	

Comment: Iron may be present in groundwater as a result of mineral deposits and chemically reducing underground conditions. The aesthetic objective for Iron, set by appearance effects in drinking water is 0.3 mg/L. Excessive Iron levels in drinking water supplies may impart a brownish color to laundered goods, plumbing fixtures and the water itself; it may produce a bitter, astringent taste in water and beverages; the precipitation of iron can also promote growth of iron bacteria in water mains and service pipes. The Moose Creek Water Pumping Station has no design features for the removal of Iron.

Volatile Organics (ug/l)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedence	Typical Source of Contaminant
Trihalomethanes - Plant	100	1	1	10/21/02	51.3	no	
Trihalomethanes - Dist.	100	1	1	10/21/02	73.1	no	
Benzene	5	1	1	10/21/02	<0.5	no	
Carbon Tetrachloride	5	1	1	10/21/02	<0.9	no	
Dichloromethane	50	1	1	10/21/02	<4.0	no	
1,2 - Dichlorobenzene	200	1	1	10/21/02	<0.4	no	
1, 4 - Dichlorobenzene	5	1	1	10/21/02	<0.4	no	
1,2 - Dichloroethane	IMAC= 5	1	1	10/21/02	<0.7	no	
1,1 - Dichloroethylene	14	1	1	10/21/02	<0.5	no	
Ethylbenzene	24	1	1	10/21/02	<0.5	no	
Monochlorobenzene	80	1	1	10/21/02	<0.2	no	
Tetrachloroethylene	30	1	1	10/21/02	<0.3	no	
Toluene	24	1	1	10/21/02	<0.5	no	
Trichloroethlyene	50	1	1	10/21/02	<0.3	no	
Vinyl chloride	2	1	1	10/21/02	<0.5	no	
Xylene	300	1	1	10/21/02	<2.0	no	
Bromodichloromethane	n/a	1	1	10/21/02	15.2	no	

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Volatile Organics (ug/l) (cont'd)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Date (m/d/y)	Range	Exceedence	Typical Source of Contaminant
Bromoform	n/a	1	1	10/21/02	0.5	no	
Chloroform	n/a	1	1	10/21/02	28.3	no	
Dibromochloromethane	n/a	1	1	10/21/02	7.3	no	

Pesticides & PCB (ug/L)	MAC or IMAC	# of Samples	# of Detectable Results	Sampling Date (m/d/y)	Range	Exceedence	Typical Source of Contaminant
Alachlor	IMAC=5	1	1	10/21/02	<0.5	no	
Aldicarb	9	1	1	10/21/02	<5.0	no	
Aldrin+Dieldrin	0.7	1	1	10/21/02	<0.012	no	
Atrazine	IMAC=5	1	1	10/21/02	<0.5	no	
Azinphos-methyl	20	1	1	10/21/02	<2.0	no	
Bendiocarb	40	1	1	10/21/02	<2.0	no	
Bromoxynil	IMAC=5	1	1	10/21/02	<0.5	no	
Carbaryl	90	1	1	10/21/02	<5.0	no	
Carbofuran	90	1	1	10/21/02	<5.0	no	
Chlordane	7	1	1	10/21/02	<0.012	no	
Chorpyrifus	90	1	1	10/21/02	<1.0	no	
Cyanazine	IMAC=10	1	1	10/21/02	<1.0	no	
Diaznon	20	1	1	10/21/02	<1.0	no	
Dicamba	120	1	1	10/21/02	<1.0	no	
2,4 Dichlorophenol	900	1	1	10/21/02	<0.5	no	
DDT + Metabolites	30	1	1	10/21/02	<0.024	no	
2,4 - Dichlorophenexy acid (2,4 -D)	IMAC=100	1	1	10/21/02	<1.0	no	
Diclofop-methyl	9	1	1	10/21/02	<0.9	no	
Dimethoate	IMAC=20	1	1	10/21/02	<2.5	no	
Dinoseb	10	1	1	10/21/02	<1.0	no	
Diquat	70	1	1	10/21/02	<7.0	no	
Diuron	150	1	1	10/21/02	<10.0	no	
Glyphosate	IMAC=280	1	1	10/21/02	<10.0	no	
Heprachlor + Heptachlor epoxide	3	1	1	10/21/02	<0.012	no	
Lindane	4	1	1	10/21/02	<0.006	no	
Malathion	190	1	1	10/21/02	<5.0	no	
Methoxychlor	900	1	1	10/21/02	<0.024	no	
Metolachlor	IMAC=50	1	1	10/21/02	<0.5	no	
Metribuzin	80	1	1	10/21/02	<5.0	no	
Paraquat	IMAC-10	1	1	10/21/02	<1.0	no	
Parathion	50	1	1	10/21/02	<1.0	no	
Pentachlorophenol	60	1	1	10/21/02	<0.5	no	
Phorate	IMAC=2	1	1	10/21/02	<0.5	no	
Picloram	IMAC=190	1	1	10/21/02	<5.0	no	
Polychlorinated Biphenyls	IMAC=3	1	1	10/21/02	<0.05	no	
Prometryne	IMAC=1	1	1	10/21/02	<0.25	no	
Simazine	IMAC=10	1	1	10/21/02	<1.0	no	
Temephos	IMAC=280	1	1	10/21/02	<10	no	
Terbufos	IMAC=1	1	1	10/21/02	<0.7	no	
2,3,4,6 Tetrachlorophenol	100	1	1	10/21/02	<0.5	no	
Triallate	230	1	1	10/21/02	<1.0	no	
2,4,6-Trichlorophenol	5	1	1	10/21/02	<0.5	no	
2,4,5 - trichlorophenoxy acedic acid	IMAC=280	1	1	10/21/02	<1.0	no	
Trifluralin	45	1	1	10/21/02	<1.0	no	

QUARTERLY REPORT ON DRINKING WATER QUALITY

October - December 2002, Moose Creek Water Plant - Serving the Village of Moose Creek

Additional Parameters Non-Health Related (mg/L)	AO or OG?	# of Samples	# of Detectable Results	Sampling Dates (m/d/y)	Range	Exceedance?	Typical Source of Contaminant
Colour	5	1	1	01/28/02	2	no	
pH	6.8-8.5	1	1	01/28/02	7.84	no	
Alkalinity	30-500	1	1	01/28/02	205	no	
Total Hardness	80-100	1	1	01/28/02	326	yes	Limits are set as an operational guideline
Sulphate	500	1	1	01/28/02	137	no	
Conductivity	---	1	1	01/28/02	707	no	
Chloride	250	1	1	01/28/02	29	no	
Free Ammonia	---	1	1	01/28/02	<0.02	no	
Total Kjeldahl Nitrogen	---	1	1	01/28/02	0.1	no	
Dissolved Organic Carbon	5	1	1	01/28/02	1.9	no	
Sodium	200	1	1	01/28/02	26	no	
Iron	0.3	1	1	01/28/02	0.45	yes	
Aluminium	0.1	1	1	01/28/02	<0.05	no	
Manganese	0.05	1	1	01/28/02	0.04	no	
Ammonia + Ammonium N		1	1	01/28/02	<0.02	no	
Total Organic Carbon		1	1	01/28/02	2.1	no	
Copper	1	1	1	01/28/02	<0.001	no	
Calcium	---	1	1	01/28/02	86	no	
Magnesium	---	1	1	01/28/02	27	no	

Questions & Answers

Q. *What is an Accredited Laboratory?*

A. Accredited labs must have undergone an on-site assessment and performance review of their methods by the Canadian Association of Environmental and Analytical Laboratories. The Standards Council of Canada grants accreditation to the lab based on the recommendation of the CAEAL. The accreditation requirements are repeated every two years.

Q. *What had to be done to meet the new regulations?*

A. The Moose Creek Water Treatment Plant was following the Ontario Drinking Water Objectives (ODWO) before they became law, so little change was required to meet the new regulations. Our chlorine residual in the water leaving the plant was raised to slightly to achieve the (0.20 mg/L free chlorine) required level in the distribution system, and some changes were required in the way results are reported. This report to the public is also the result of the new regulations.

Q. *What parameters did you test for?*

A. Microbiological parameters, volatile organic, inorganic and pesticides & PCBs have been tested. The results are included in this report.

Q. *Sometimes my water looks rusty or coloured. Why is that, and what should I do about it?*

A. This is quite often caused when the tanks in older water heaters start to decay. If the colour is seen only in your hot water, this may be the problem. If the colour is also noticed in your cold water it could be coming from the water main. Various maintenance procedures in the distribution system - such as fire hydrant and valve maintenance, or main break repairs - require flushing of the water mains. Flushing can cause small particles of sediment to break off adding colour to the water. Please note that there is no health risk associated with this problem. This is usually only temporary, and opening your taps for a while to flush out your service line (the pipe from the water main to your house) should take care of the problem. Let the water run until the colour disappears.

MOOSE CREEK WATER REQUIRED SAMPLES

OCTOBER,NOVEMBER,DECEMBER 2002

Chemical Parameters

			Date Samples Collected	Initials	Date Results Received	Initials
Table B & D	Well #1	Treated ✓				Dave
NO2&NO3	Well #1	Treated ✓				"
~~Table B & D~~	~~Well#2~~	~~Treated~~				
~~NO2&NO3~~	~~Well#2~~	~~Treated~~				
System THM		Treated ✓				"

Bacti Parameters

Raw			
Well#1	E.Coli	Total Coli.	Background
Well#2	E.Coli	Total Coli.	Background
Well#3	E.Coli	Total Coli.	Background
Treated			
	E.Coli	Total Coli.	HPC
System			
2 Sites	E.Coli	Total Coli.	HPC 25%

Oct.6	Bacti's	✓				
Oct.13	Bacti's	✓				
Oct.20	Bacti's	✓				
Oct.27	Bacti's	✓				
Nov.3	Bacti's					
Nov.10	Bacti's					
Nov.17	Bacti's					
Nov.24	Bacti's					
Dec.1	Bacti's					
Dec.8	Bacti's					
Dec.15	Bacti's					
Dec.22	Bacti's					
Dec.29	Bacti's					

Flouride Treated Water (Annual) ✓
Lead Distribution System (Annual) ✓
Table C Treated Water (Jan. 2003)
Sodium Treated Water (Jan. 2007)

						Dave
						"

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220010890**
Project: Moose Creek WTP
Date Sampled: October 7, 2002
Date Received: October 8, 2002
Date Printed: October 10, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification				
			Well #2 Raw	Well #3 Raw	Treated Water	M.C. Hall	Paul Adams Cons.
Total Chlorine	mg/L	0.05			2.18	1.52	1.16
Free Chlorine	mg/L	0.05			1.86	1.12	0.96
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			absent	absent	
Background bacteria	/100mL	1	absent	2			
Total Coliforms	/100mL	1	absent	absent	2	absent	absent

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220010996**
Project: Moose Creek WTP
Date Sampled: October 9, 2002
Date Received: October 10, 2002
Date Printed: October 15, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification			
			Well #2 Raw	Well #3 Raw	Treated Water	Elevated Tank
Total Chlorine	mg/L	0.05			2.60	1.83
Free Chlorine	mg/L	0.05			2.20	1.53
E. coli	/100mL	1	absent	absent	absent	absent
Heterotrophic Plate Count	/mL	2			absent	absent
Background bacteria	/100mL	1	absent	absent		
Total Coliforms	/100mL	1	absent	absent	absent	absent

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
[illegible]ndustrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220010997**
Project: Moose Creek WTP
Date Sampled: October 10, 2002
Date Received: October 10, 2002
Date Printed: October 15, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification			
			Well #2 Raw	Well #3 Raw	Treated Water	Elevated Tank
Total Chlorine	mg/L	0.05			2.40	1.67
Free Chlorine	mg/L	0.05			2.17	1.40
E. coli	/100mL	1	absent	absent	absent	absent
Heterotrophic Plate Count	/mL	2			absent	absent
Background bacteria	/100mL	1	3	2		
Total Coliforms	/100mL	1	absent	2	absent	absent

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Michael Ziebell, General Manager

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Certificate of Analysis

Client:
Ontario Clean Water Agency
Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220011203**
Project: Moose Creek WTP
Date Sampled: October 15, 2002
Date Received: October 16, 2002
Date Printed: October 18, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	1	absent			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.99	20	absent	2.35
Dist. SPS		absent	0.56	2	absent	0.68
Dist. Post Office		absent	1.46		absent	1.79

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Michael Ziebell, General Manager

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Certificate of Analysis

Client:
Ontario Clean Water Agency
Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220011478**
Project: Moose Creek WTP
Date Sampled: October 21, 2002
Date Received: October 22, 2002
Date Printed: October 24, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	2	absent			absent	
Well #3 Raw	85	absent			1	
Treated Water		absent	1.81	2	absent	2.19
Dist. SPS		absent	0.72	absent	absent	0.76
Dist. 2041 Valley St. N		absent	0.64		absent	0.80

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Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
[redacted]ndustrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220011851**
Project: Moose Creek WTP
Date Sampled: October 28, 2002
Date Received: October 29, 2002
Date Printed: October 31, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	absent	absent			absent	
Well #3 Raw	20	absent			9	
Treated Water		absent	1.95	2	absent	2.40
Dist. Elevated Tank		absent	0.98	absent	absent	1.22
Dist. M.C. Mall		absent	1.09		absent	1.41

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Michael Ziebell, General Manager

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2214702
Date: 2002-10-29
Date Submitted: 2002-10-22

Project: Quarterly Chemicals

P.O. Number:
Matrix: Supply Water

		LAB ID:	212543				
		Sample Date:	2002-10-21				
		Sample ID:	MCW-01				
PARAMETER	**UNITS**	**MDL**	TREATEDWATER				
N-NO2	mg/L	0.10	<0.10				
N-NO3	mg/L	0.10	<0.10				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2214702
Date: 2002-10-29
Date Submitted: 2002-10-22

Project: Quarterly Chemicals

P.O. Number:
Matrix: Supply Water

		LAB ID:	212543				
		Sample Date:	2002-10-21				
		Sample ID:	MCW-01				
PARAMETER	**UNITS**	**MDL**	DISTRIBUTION				
N-NO2	mg/L	0.10	<0.10				
N-NO3	mg/L	0.10	<0.10				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1 608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2214702
Date: 2002-10-25
Date Submitted: 2002-10-22

Project: Quarterly Chemicals

P.O. Number:
Matrix: Supply Water

		LAB ID:	212543			
		Sample Date:	2002-10-21			
		Sample ID:	MCW-01			
PARAMETER	**UNITS**	**MDL**				
BTEX / 624 / PURGEABLE HYDROCARBONS						
Benzene	ug/L	0.5	<0.5			
Toluene	ug/L	0.5	<0.5			
Ethylbenzene	ug/L	0.5	<0.5			
m/p-xylene	ug/L	1.0	<1.0			
o-xylene	ug/L	0.5	<0.5			
Bromodichloromethane	ug/L	0.3	15.2			
Bromoform	ug/L	0.4	0.5			
Carbon Tetrachloride	ug/L	0.9	<0.9			
Chlorobenzene	ug/L	0.2	<0.2			
Chloroform	ug/L	0.5	28.3			
Dibromochloromethane	ug/L	0.3	7.3			
1,2-dichlorobenzene	ug/L	0.4	<0.4			
1,4-dichlorobenzene	ug/L	0.4	<0.4			
1,2-dichloroethane	ug/L	0.7	<0.7			
1,1-dichloroethylene	ug/L	0.5	<0.5			
Dichloromethane	ug/L	4.0	<4.0			
Tetrachloroethylene	ug/L	0.3	<0.3			
Trichloroethylene	ug/L	0.3	<0.3			
Vinyl Chloride	ug/L	0.5	<0.5			
TOTALS						
Trihalomethanes (total)	ug/L	2.0	51.3			
Xylene; total	ug/L	2.0	<2.0			
BTEX / 624 Surrogate Recoveries						
Toluene-d8	%		97			
1,2-dichloroethane-d4	%		99			
4-bromofluorobenzene	%		100			

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL:

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2214702
Date: 2002-11-07
Date Submitted: 2002-10-22

Project: Quarterly Chemicals

Sample Matrix: Supply Water

			LAB ID:	212543			
			Sample Date:	2002-10-21			
			Sample ID:	MCW-01			
PARAMETER	**UNITS**	**MDL**					
PESTICIDES & PCB's							
Alachlor	ug/L	0.5	<0.5				
Aldicarb	ug/L	5	<5				
Aldrin	ug/L	0.006	<0.006				
Aldrin + Dieldrin	ug/L	0.012	<0.012				
Atrazine	ug/L	0.5	<0.5				
Desethyl-atrazine	ug/L	0.5	<0.5				
Atrazine+Desethyl-atrazine	ug/L	1	<1				
Azinphos-methyl	ug/L	2	<2				
Bendiocarb	ug/L	2	<2				
Bromoxynil	ug/L	0.5	<0.5				
Carbaryl	ug/L	5	<5				
Carbofuran	ug/L	5	<5				
Chlordane (Total)	ug/L	0.012	<0.012				
a-Chlorodane	ug/L	0.006	<0.006				
g-Chlorodane	ug/L	0.006	<0.006				
Oxychlorodane	ug/L	0.006	<0.006				
Chloropyrifos	ug/L	1	<1				
Cyanazine	ug/L	1	<1				
Diazinon	ug/L	1	<1				
Dicamba	ug/L	1	<1				
Dieldrin	ug/L	0.006	<0.006				
Diquat	ug/L	7	<7				
2,4-Dichlorophenol	ug/L	0.5	<0.5				
DDT + Metabolites	ug/L	0.024	<0.024				
o,p'-DDT	ug/L	0.006	<0.006				
p,p'-DDT	ug/L	0.006	<0.006				
2,4-D	ug/L	1	<1				
p,p'-DDE	ug/L	0.006	<0.006				

NOTE: mg/L (ppm)=1000xug/L (ppb) MDL = Method Detection Limit

Comment:

APPROVAL:

146 Colonnade Road, Unit 8, Nepean, Ontario K2E 7Y1 Tel:(613)727-5692 Fax:(613)727-5222

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2214702
Date: 2002-11-07
Date Submitted: 2002-10-22

Project: Quarterly Chemicals

Sample Matrix: Supply Water

	LAB ID:	212543				
	Sample Date:	2002-10-21				
	Sample ID:	MCW-01				
PARAMETER	**UNITS**	**MDL**				
p,p'-DDD	ug/L	0.006	<0.006			
Diclofop-methyl	ug/L	0.9	<0.9			
Dimethoate	ug/L	2.5	<2.5			
Dinoseb	ug/L	1	<1			
Diuron	ug/L	10	<10			
Glyphosate	ug/L	10	<10			
Heptachlor	ug/L	0.006	<0.006			
Heptachlor epoxide	ug/L	0.006	<0.006			
Heptachlor + Hept. Epoxide	ug/L	0.012	<0.012			
dane	ug/L	0.006	<0.006			
alathion	ug/L	5	<5			
Methoxychlor	ug/L	0.024	<0.024			
Metolachlor	ug/L	0.5	<0.5			
Metribuzin	ug/L	5	<5			
Paraquat	ug/L	1	<1			
Parathion	ug/L	1	<1			
Pentachlorophenol	ug/L	0.5	<0.5			
Phorate	ug/L	0.5	<0.5			
Picloram	ug/L	5	<5			
PCB's (total)	ug/L	0.05	<0.05			
Prometryne	ug/L	0.25	<0.25			
Simazine	ug/L	1	<1			
Temephos	ug/L	10	<10			
Terbufos	ug/L	0.7	<0.7			
2,3,4,6-Tetrachlorophenol	ug/L	0.5	<0.5			
Triallate	ug/L	1	<1			
2,4,6-Trichlorophenol	ug/L	0.5	<0.5			
Trifluralin	ug/L	1	<1			
2,4,5-T	ug/L	1	<1			

NOTE: mg/L (ppm)=1000xug/L (ppb) MDL = Method Detection Limit

Comment:

APPROVAL:

146 Colonnade Road, Unit 8, Nepean, Ontario K2E 7Y1 Tel:(613)727-5692 Fax:(613)727-5222

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2214701
Date: 2002-10-25
Date Submitted: 2002-10-22

Project: Quarterly Chemicals

P.O. Number:
Matrix: Supply Water

		LAB ID:	212542			
		Sample Date:	2002-10-21			
		Sample ID:	MCW-02			
PARAMETER	**UNITS**	**MDL**				
BTEX / 624 / PURGEABLE HYDROCARBONS						
Bromodichloromethane	ug/L	0.3	17.4			
Bromoform	ug/L	0.4	0.4			
Chloroform	ug/L	0.5	47.7			
Dibromochloromethane	ug/L	0.3	7.6			
TOTALS						
Trihalomethanes (total)	ug/L	2.0	73.1			
BTEX / 624 Surrogate Recoveries						
Toluene-d8	%		88			

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: _____

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD.

REPORT OF ANALYSIS

Client: MOOSE CREEK WELL SUPPLY

ATT: Mr. Blair Henderson

Report Number: 2215175
Date: 2002-11-06
Date Submitted: 2002-10-29
Project:
P.O. Number:
Matrix: Supply Water

		LAB ID:	214335				
		Sample Date:	2002-10-28				
		Sample ID:	MCW- Xylene				
PARAMETER	**UNITS**	**MDL**					
TOTALS							
Xylene; total	ug/L	2.0	<2.0				

MDL = Method Detection Limit INC = Incomplete
Comment:

APPROVAL: MW

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1

608 Norris Court, Kingston, ON, K7P 2R9

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220012190**
Project: Moose Creek WTP
Date Sampled: November 4, 2002
Date Received: November 5, 2002
Date Printed: November 07, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	1	absent			absent	
Well #3 Raw	28	absent			15	
Treated Water		absent	1.72	absent	absent	1.99
Dist. Elevated Tank		absent	0.93	absent	absent	1.11
Dist. Post Office		absent	1.09		absent	1.29

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

For Michael Ziebell, General Manager

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
5 Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220012670**
Project: Moose Creek WTP
Date Sampled: November 12, 2002
Date Received: November 13, 2002
Date Printed: November 15, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	absent	absent			absent	
Well #3 Raw	1	absent			1	
Treated Water		absent	1.41	absent	absent	1.77
Dist. S.P.S		absent	0.65	absent	absent	0.75
Dist. 2265 Valley St.		absent	0.52		absent	0.62

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, Ontario, K1V 7P1, Canada
Tel: (613)526-0123, Fax: (613)526-1244

Krystyna Pipin, Laboratory Supervisor

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220012904**
Project: Moose Creek WTP
Date Sampled: November 18, 2002
Date Received: November 19, 2002
Date Printed: November 21, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well # 2 Raw	5	absent			absent	
Well # 3 Raw	2	absent			1	
Treated Water		absent	1.71	absent	absent	2.02
Dist .Elevated Tank		absent	0.73	absent	absent	0.93
Post Office		absent	0.79		absent	0.91

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Krystyna Pipin, Laboratory Supervisor

Caduceon Environmental Laboratories

Division of Caduceon Enterprises Inc.

Certificate of Analysis

Client:
Ontario Clean Water Agency
Industrial Dr.
Chesterville, ON
K0C 1H0

Attention: **Dave Markell**

Report: **220013266**
Project: Moose Creek WTP
Date Sampled: November 25, 2002
Date Received: November 26, 2002
Date Printed: November 28, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Sample Identification			
			Well #2 Raw	Well #3 Raw	Treated Water -16950 McNeil Rd	Dist. SPS
Total Chlorine	**mg/L**	**0.05**			2.07	1.03
Free Chlorine	**mg/L**	**0.05**			1.65	0.87
E. coli	**/100mL**	**1**	**absent**	**absent**	absent	absent
Heterotrophic Plate Count	**/mL**	**2**			absent	absent
Background bacteria	**/100mL**	**1**	**absent**	**absent**		
Total Coliforms	**/100mL**	**1**	**absent**	**absent**	absent	absent

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Attention: **Dave Markell**

Report: **220013595**
Project: Moose Creek WTP
Date Sampled: December 2, 2002
Date Received: December 3, 2002
Date Printed: December 05, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	absent	absent			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.73	absent	absent	2.20
Dist. Elevated Tank		absent	1.16	absent	absent	1.49
Dist. Post Office		absent	0.78		absent	0.98

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Attention: **Dave Markell**

Report: **220013980**
Project: Moose Creek WTP
Date Sampled: December 9, 2002
Date Received: December 10, 2002
Date Printed: December 12, 2002
Matrix: Drinking Water

Parameter	Unit	MDL	Well #2 Raw	Well #3 Raw	Treated Water	Dist. SPS	Dist. Moose Creek Mall
Total Chlorine	mg/L	0.05			2.40	1.06	1.43
Free Chlorine	mg/L	0.05			1.93	0.94	1.16
E. coli	/100mL	1	absent	absent	absent	absent	absent
HPC	/mL	2			2	2	
Background bacteria	/100mL	1	absent	absent			
Total Coliforms	/100mL	1	absent	absent	absent	absent	absent

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Attention: **Dave Markell**

Report: **220014314**
Project: Moose Creek WTP
Date Sampled: December 16, 2002
Date Received: December 17, 2002
Date Printed: December 19, 2002
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	absent	absent			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.86	absent	absent	2.40
Dist. Elevated Tank		absent	1.14	absent	absent	1.36
Dist. 2041 Valley St.		absent	0.57		absent	0.69

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Attention: **Dave Markell**

Report: **220014629**
Project: Moose Creek WTP
Date Sampled: December 23, 2002
Date Received: December 23, 2002
Date Printed: December 27, 2002

Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well #2 Raw	absent	absent			absent	
Well #3 Raw	absent	absent			absent	
Treated Water		absent	1.81	absent	absent	2.18
Dist. Water Tower		absent	1.11	absent	absent	1.43
Dist. Moose Creek Mall		absent	1.39		absent	1.68

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Attention: **Dave Markell**

Report: **220014786**
Project: Moose Creek WTP
Date Sampled: December 30, 2002
Date Received: December 30, 2002
Date Printed: January 02, 2003
Matrix: Drinking Water

Parameter	Background	E. coli	Free Cl2	HPC	TC	Total Cl2
Unit	/100mL	/100mL	mg/L	/mL	/100mL	mg/L
MDL	1	1	0.05	2	1	0.05
Sample ID						
Well # 2 Raw	absent	absent			absent	
Well # 3 Raw	absent	absent			absent	
Treated Water		absent	1.77	absent	absent	2.20
Dist. Moose Creek Mall		absent	1.10	absent	absent	1.40
Dist. Moose Creek Post Office		absent	0.86		absent	1.10

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