



DATE: November 19, 2019

TO: Community Public Water Supply Owner/Operator

FROM: Community Public Water Supply Unit, Drinking Water Protection Section

SUBJECT: UCMR 4 Results for Your Public Water System

Fourth Unregulated Contaminant Monitoring Rule (UCMR 4) Purpose and Background

Attached are drinking water sampling results for your community public water system. The Minnesota Department of Health (MDH) collected these samples as part of the Fourth Unregulated Contaminant Monitoring Rule (UCMR 4). The purpose of UCMR is to collect data from across the country on contaminants that may be present in drinking water. The U.S. Environmental Protection Agency (EPA) uses this data to decide if the contaminants are found often enough and at levels high enough to need regulations in the future.

The UCMR 4 contaminants are unregulated and do not have enforceable federal standards. MDH does not use these results to determine if your system complies with regulations. These results must be kept in your files for a minimum of ten years.

UCMR 4 Sampling Results

Manganese was detected in the samples at a level of 367 and 82.7 micrograms per liter, or ug/L.¹ Scientists' understanding of manganese and health is developing. MDH has set a health-based guidance value for manganese of 100 ug/L for formula-fed infants and infants that drink tap water. For children over one year old and adults, MDH supports the EPA Health Advisory of 300 µg/L.

Manganese occurs naturally in rocks and soil across Minnesota and is commonly found in Minnesota ground and surface water. People need some manganese to stay healthy, but too much can be harmful to the nervous system.

Your system's manganese level is higher than the health-based guidance values. Children and adults who drink water with high levels of manganese for a long time may have problems with memory, attention, and motor skills. Infants may develop learning and behavior problems if they drink water with too much manganese in it.

No other contaminants were detected in these samples.

¹ One microgram per liter is the same as one part per billion (ppb).

Next Steps

You must report all UCMR 4 sampling detections to your customers in the next year's Consumer Confidence Report (CCR). MDH will include UCMR 4 detections in the CCR template we provide to you.

Based on the level of manganese in your water, we suggest working with MDH to explore options for informing your customers and possibly taking action to address manganese.

For More Information

Topic	Resources for more information
Manganese and drinking water	Manganese and Drinking Water (https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/mninfosheet.pdf)
Health-based guidance value for manganese	Human Health-Based Water Guidance Table (https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html)
Health questions about manganese	Sarah Fossen-Johnson, Health Risk Assessment Unit, 651-201-4080
More information about UCMR 4	MDH: Fourth Unregulated Contaminant Monitoring Rule (https://www.health.state.mn.us/communities/environment/water/com/ucmr4.html) EPA: Fourth Unregulated Contaminant Monitoring Rule (https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule)
All other questions	Lucas Martin, Community Public Water Supply Unit, 651-201-4144

Enclosure

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

NELAC NARRATIVE PAGE

Client: Minnesota Department of Health

Report #: 467759NP

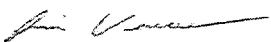
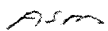
Eurofins Eaton Analytical, LLC is a NELAP accredited laboratory. All reported results meet the requirements of the NELAC standards, unless otherwise noted.

EEA contact person: Jim Vernon

NELAP requires complete reporting of deviations from method requirements, regardless of the suspected impact on the data. Quality control failures not reported within the report summary are noted here.

There were no quality control failures.

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		10/26/2019
Authorized Signature	Title	Date

Page 1 of 1



Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Minnesota Department of Health

Report: 467759

Attn: Lucas Martin
625 North Robert St.
St. Paul, MN 55155

Priority: Standard Written

Status: Final

Lab ID Code: IN00035

PWS ID: MN1020023

PWS Facility ID: 00015

Sampling Point ID: D01

Sample Event Code: SE1

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4448832	D01 - 7509 Lake Drive	552.3	10/08/19 11:45	Client	10/09/19 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Authorized Signature

Title

10/26/2019

Date

Client Name: Minnesota Department of Health

Report #: 467759

Client Name: Minnesota Department of Health

Report #: 467759

Sampling Point ID: D01

PWS ID: MN1020023

UCMR Result Summary								
Analyte ID #	Analyte	Method	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
2455	Bromochloroacetic acid	552.3	0.300	0.685	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
9535	Bromodichloroacetic acid	552.3	0.500	0.706	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
9339	Chlorodibromoacetic acid	552.3	0.300	< 0.300	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
2454	Dibromoacetic acid	552.3	0.300	< 0.300	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
2451	Dichloroacetic acid	552.3	0.200	1.49	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
2453	Monobromoacetic acid	552.3	0.300	< 0.300	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
2450	Monochloroacetic acid	552.3	2.00	< 2.00	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
9639	Tribromoacetic acid	552.3	2.00	< 2.00	ug/L	10/16/19 08:59	10/18/19 00:37	4448832
2452	Trichloroacetic acid	552.3	0.500	1.01	ug/L	10/16/19 08:59	10/18/19 00:37	4448832

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.



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Laboratory Report

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Report: 467759

Attn: Lucas Martin
625 North Robert St.
St. Paul, MN 55155

Priority: Standard Written

Status: Final

Lab ID Code: IN00035

PWS ID: MN1020023

PWS Facility ID: 00015

Sampling Point ID: D02

Sample Event Code: SE1

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4448833	D02 - 295 Apollo Drive	552.3	10/08/19 11:55	Client	10/09/19 09:30

Report Summary

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Title

10/26/2019

Date

Client Name: Minnesota Department of Health

Report #: 467759

Client Name: Minnesota Department of Health

Report #: 467759

Sampling Point ID: D02

PWS ID: MN1020023

UCMR Result Summary								
Analyte ID #	Analyte	Method	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
2455	Bromochloroacetic acid	552.3	0.300	0.417	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
9535	Bromodichloroacetic acid	552.3	0.500	< 0.500	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
9339	Chlorodibromoacetic acid	552.3	0.300	< 0.300	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
2454	Dibromoacetic acid	552.3	0.300	< 0.300	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
2451	Dichloroacetic acid	552.3	0.200	0.582	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
2453	Monobromoacetic acid	552.3	0.300	< 0.300	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
2450	Monochloroacetic acid	552.3	2.00	< 2.00	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
9639	Tribromoacetic acid	552.3	2.00	< 2.00	ug/L	10/16/19 08:59	10/18/19 02:25	4448833
2452	Trichloroacetic acid	552.3	0.500	0.903	ug/L	10/16/19 08:59	10/18/19 02:25	4448833

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Laboratory Report

Client: Minnesota Department of Health

Report: 467759

Attn: Lucas Martin
625 North Robert St.
St. Paul, MN 55155

Priority: Standard Written

Status: Final

Lab ID Code: IN00035

PWS ID: MN1020023

PWS Facility ID: 00008

Sampling Point ID: E03

Sample Event Code: SE1

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4448834	E03-Well 3 Entry Point	200.8	10/08/19 11:25	Client	10/09/19 09:30
4448835	E03-Well 3 Entry Point	525.3	10/08/19 11:25	Client	10/09/19 09:30
4448836	E03-Well 3 Entry Point	530	10/08/19 11:25	Client	10/09/19 09:30
4448837	E03-Well 3 Entry Point	541	10/08/19 11:25	Client	10/09/19 09:30

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Title

10/26/2019

Date

Client Name: Minnesota Department of Health

Report #: 467759

Client Name: Minnesota Department of Health

Report #: 467759

Sampling Point ID: E03

PWS ID: MN1020023

UCMR Result Summary								
Analyte ID #	Analyte	Method	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
1053	Germanium	200.8	0.300	< 0.300	ug/L	10/21/19 11:15	10/23/19 14:08	4448834
1032	Manganese	200.8	0.400	367	ug/L	10/21/19 11:15	10/23/19 14:08	4448834
2115	alpha-Hexachlorocyclohexane	525.3	0.0100	< 0.0100	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2057	Chlorpyrifos	525.3	0.0300	< 0.0300	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2116	Dimethipin	525.3	0.200	< 0.200	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
7570	Ethoprop	525.3	0.0300	< 0.0300	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2117	Oxyfluorfen	525.3	0.0500	< 0.0500	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2118	Profenofos	525.3	0.300	< 0.300	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2119	Tebuconazole	525.3	0.200	< 0.200	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2114	Permethrin, cis & trans	525.3	0.0400	< 0.0400	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2120	Tribufos	525.3	0.0700	< 0.0700	ug/L	10/14/19 08:46	10/15/19 23:15	4448835
2433	Butylated hydroxyanisole	530	0.0300	< 0.0300	ug/L	10/15/19 08:50	10/16/19 00:50	4448836
2434	o-Toluidine	530	0.00700	< 0.00700	ug/L	10/15/19 08:50	10/16/19 00:50	4448836
3435	Quinoline	530	0.0200	< 0.0200	ug/L	10/15/19 08:50	10/16/19 00:50	4448836
2084	1-Butanol	541	2.00	< 2.00	ug/L	10/17/19 10:30	10/20/19 02:16	4448837
2431	2-Methoxyethanol	541	0.400	< 0.400	ug/L	10/17/19 10:30	10/20/19 02:16	4448837
2432	2-Propen-1-ol	541	0.500	< 0.500	ug/L	10/17/19 10:30	10/20/19 02:16	4448837

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Laboratory Report

Client: Minnesota Department of Health

Report: 467759

Attn: Lucas Martin
625 North Robert St.
St. Paul, MN 55155

Priority: Standard Written

Status: Final

Lab ID Code: IN00035

PWS ID: MN1020023

PWS Facility ID: 00004

Sampling Point ID: S03

Sample Event Code: SE1

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4448838	S03-Well 3	300.0	10/08/19 11:15	Client	10/09/19 09:30
4448839	S03-Well 3	5310 C	10/08/19 11:15	Client	10/09/19 09:30

Report Summary

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Client Name: Minnesota Department of Health
Report #: 467759

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

Client Name: Minnesota Department of Health

Report #: 467759

Sampling Point ID: S03

PWS ID: MN1020023

UCMR Result Summary								
Analyte ID #	Analyte	Method	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
1004	Bromide	300.0	20.0	22.8	ug/L	—	10/16/19 12:46	4448838
2920	Total Organic Carbon (TOC)	5310 C	1000	1100	ug/L	—	10/18/19 00:47	4448839

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.



Eaton Analytical

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Order # 381327

Batch # 467

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Shaded area for EEA use only

UCMR 4 CHAIN OF CUSTODY RECORD

Page 1 of 1

CLIENT NAME:
Minnesota Department of Health

SAMPLER (Print name)
Brian Nove

*PWS ID #
MN1020023

STATE of sample origin
MN

Check if this is a resample ☐
Check if requires upload to EPA database ☐

PO #:

If samples are not shipped the same day as collection then the temperature (the samples were held at must be recorded here(°C):

Bill To:

PWS NAME:

Lino Lakes

Example: MN1234567

*Sampling Event

Lino Lakes

Sampling Event #

Preservative Checks

OF CONTAINERS

LAB Number

COLLECTION

*SAMPLE POINT ID: (per EPA Requirement)-20 characters max

*FACILITY ID: (per EPA Requirement)-5 characters max

*Sampling Point Type Code

Test Name UCMR4-

Temperature Upon Lab Receipt °C

pH accept- table? y

Residual Chlorine (P/A)

DATE TIME AM PM

7509 Lake Drive

00015

DS

552.3 HAAs

0.2

NA

A

DATE TIME AM PM

295 Apollo Drive

00015

DS

552.3 HAAs

0.6

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T: 1.800.332.4345
F: 1.574.233.8207

Order # 381327
Batch # _____

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Shaded area for EEA use only

CLIENT NAME:
Minnesota Department of Health

PO #:
Bill To:

SAMPLER (Print name)

Beigun Nova

*PWS ID #

MN1020023

Example: IN1234567
if samples are not shipped the same day as collection then the temperature
the samples were held at must be recorded here(°C):

PWS NAME:

Lino Lakes

UCMR 4 CHAIN OF CUSTODY RECORD

Page ____ of ____

Check if this is a resample ☐
Check if requires upload to EPA database ☐
we must have info for fields indicated with * for upload

STATE of sample origin
MN

OF CONTAINERS

*Sampling Event

Sampling Event # _____

Test Name UCMR4-

*Sampling Point Type Code

*SAMPLE POINT ID: (per EPA Requirement)-20 characters max

COLLECTION

DATE

TIME

AM

PM

LAB Number

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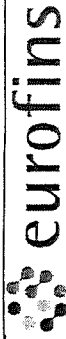
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CLIENT NAME:
Minnesota Department of Health

PO #:

Bill To:

UCMR 4 CHAIN OF CUSTODY RECORD

Page ____ of ____

SAMPLER (Print name) <u>Brian Noma</u>		*PWS ID # MN1020023 Example: IN1234567	STATE of sample origin MN	Check if this is a resample ☐ Check if requires upload to EPA database ☐ We must have info for fields indicated with * for upload
---	--	---	------------------------------	---

PWS NAME:

Lino Lakes

COLLECTION		*FACILITY ID: (per EPA Requirement)-5 characters max		*Sampling Point Type Code	Test Name UCMR4-	Temperature Upon Lab Receipt °C	Preservative Checks	
LAB Number	DATE	TIME	AM	PM				

LAB Number	DATE	TIME	AM	PM	*SAMPLE POINT ID: (per EPA Requirement)-20 characters max	*FACILITY ID: (per EPA Requirement)-5 characters max	*Sampling Point Type Code	Test Name UCMR4-	Temperature Upon Lab Receipt °C	pH accep- table? v	Residual Chlorine (P/A)	# OF CONTAINERS
1 4448838	10/8/16	11:15	X		S03-Well 3	00004	SR	Bromide	0.2	NA	NA	1
2 839	10/8/16	11:15	X		S03-Well 3	00004	SR	5310C Total Organic Carbon	1.6	✓	NA	3
3												
4												
5												
6												
7												
8												
9												
10												
11												

RELINQUISHED BY: (Signature) <u>Brian Noma</u>	DATE 10/8/16	TIME 11:55	AM	PM	RECEIVED BY: (Signature)	DATE	TIME	AM	PM	LAB COMMENTS
RELINQUISHED BY: (Signature)	DATE	TIME	AM	PM	RECEIVED BY: (Signature)	DATE	TIME	AM	PM	
RELINQUISHED BY: (Signature)	DATE	TIME	AM	PM	RECEIVED FOR LABORATORY BY: <u>Signature</u>	DATE 10/19/16	TIME 0930	AM	PM	CONDITIONS UPON RECEIPT: Isop: Wet Blue Check if received on day of collection: ☐ Samples received within 48 hours of collection must be received at a temperature of ≤ 10°C. Samples received past 48 hours of collection are only valid if received at ≤ 6°C, verified and documented that the samples were refrigerated between collection and shipment. Temperature requirements apply to all methods EXCEPT 200.8 and 300.0.

UCMR4 acceptance criteria for Receiving Checks:
200.8 pH < 2
525.3 pH ≤ 4
530 pH about 7 (6-8)
Must be absent of residual chlorine (free): 625.3, 630, 641, 544, 545, 546, and 552.3.

KEY	See Metal Samples Preservation Log PG Present A Absent	UCMR4 acceptance criteria for Receiving Checks: 200.8 pH < 2 525.3 pH ≤ 4 530 pH about 7 (6-8) Must be absent of residual chlorine (free): 625.3, 630, 641, 544, 545, 546, and 552.3.	*Sampling Point Type Code: SR = source water taken from plant intake; untreated water entering the water treatment plant EP = entry point to the distribution system DS = distribution system sample
-----	--	---	---

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

NELAC NARRATIVE PAGE

Client: Minnesota Department of Health

Report #: 467836NP

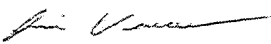
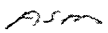
Eurofins Eaton Analytical, LLC is a NELAP accredited laboratory. All reported results meet the requirements of the NELAC standards, unless otherwise noted.

EEA contact person: Jim Vernon

NELAP requires complete reporting of deviations from method requirements, regardless of the suspected impact on the data. Quality control failures not reported within the report summary are noted here.

There were no quality control failures.

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		10/26/2019
Authorized Signature	Title	Date

Page 1 of 1



Eaton Analytical

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Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Minnesota Department of Health

Report: 467836

Attn: Lucas Martin
625 North Robert St.
St. Paul, MN 55155

Priority: Standard Written

Status: Final

Lab ID Code: IN00035

PWS Facility ID: 00009

PWS ID: MN1020023

Sampling Point ID: E04

Sample Event Code: SE1

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4449483	E04-Well 4 Entry Point	200.8	10/08/19 10:50	Client	10/09/19 09:30
4449484	E04-Well 4 Entry Point	525.3	10/08/19 10:50	Client	10/09/19 09:30
4449485	E04-Well 4 Entry Point	530	10/08/19 10:50	Client	10/09/19 09:30
4449486	E04-Well 4 Entry Point	541	10/08/19 10:50	Client	10/09/19 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Asm

Authorized Signature

Title

10/26/2019

Date

Client Name: Minnesota Department of Health

Report #: 467836

Client Name: Minnesota Department of Health

Report #: 467836

Sampling Point ID: E04

PWS ID: MN1020023

UCMR Result Summary								
Analyte ID #	Analyte	Method	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
1053	Germanium	200.8	0.300	< 0.300	ug/L	10/21/19 11:15	10/23/19 14:37	4449483
1032	Manganese	200.8	0.400	82.7	ug/L	10/21/19 11:15	10/23/19 14:37	4449483
2115	alpha-Hexachlorocyclohexane	525.3	0.0100	< 0.0100	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2057	Chlorpyrifos	525.3	0.0300	< 0.0300	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2116	Dimethipin	525.3	0.200	< 0.200	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
7570	Ethoprop	525.3	0.0300	< 0.0300	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2117	Oxyfluorfen	525.3	0.0500	< 0.0500	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2118	Profenofos	525.3	0.300	< 0.300	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2119	Tebuconazole	525.3	0.200	< 0.200	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2114	Permethrin, cis & trans	525.3	0.0400	< 0.0400	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2120	Tribufos	525.3	0.0700	< 0.0700	ug/L	10/14/19 08:46	10/16/19 02:56	4449484
2433	Butylated hydroxyanisole	530	0.0300	< 0.0300	ug/L	10/15/19 08:50	10/16/19 05:34	4449485
2434	o-Toluidine	530	0.00700	< 0.00700	ug/L	10/15/19 08:50	10/16/19 05:34	4449485
3435	Quinoline	530	0.0200	< 0.0200	ug/L	10/15/19 08:50	10/16/19 05:34	4449485
2084	1-Butanol	541	2.00	< 2.00	ug/L	10/17/19 10:30	10/20/19 05:21	4449486
2431	2-Methoxyethanol	541	0.400	< 0.400	ug/L	10/17/19 10:30	10/20/19 05:21	4449486
2432	2-Propen-1-ol	541	0.500	< 0.500	ug/L	10/17/19 10:30	10/20/19 05:21	4449486

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.



Eaton Analytical

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Laboratory Report

Client: Minnesota Department of Health

Report: 467836

Attn: Lucas Martin
625 North Robert St.
St. Paul, MN 55155

Priority: Standard Written

Status: Final

Lab ID Code: IN00035

PWS Facility ID: 00005

PWS ID: MN1020023

Sampling Point ID: S04

Sample Event Code: SE1

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4449487	S04-Well 4	300.0	10/08/19 10:55	Client	10/09/19 09:30
4449488	S04-Well 4	5310 C	10/08/19 10:55	Client	10/09/19 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Authorized Signature

Title

10/26/2019

Date

Client Name: Minnesota Department of Health

Report #: 467836

Client Name: Minnesota Department of Health

Report #: 467836

Sampling Point ID: S04

PWS ID: MN1020023

UCMR Result Summary								
Analyte ID #	Analyte	Method	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
1004	Bromide	300.0	20.0	< 20.0	ug/L	—	10/21/19 23:58	4449487
2920	Total Organic Carbon (TOC)	5310 C	1000	< 1000	ug/L	—	10/18/19 00:27	4449488

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.



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UCMR 4 CHAIN OF CUSTODY RECORD

Page ____ of ____

CLIENT NAME: Minnesota Department of Health		SAMPLER (Print name) Brian Noma		*PWS ID # MN1020023	STATE of sample origin MN	Check if this is a resample Check if requires upload to EPA database we must have info for fields indicated with * for upload				
PO #:		If samples are not shipped the same day as collection then the temperature (the samples were held at must be recorded here (°C):								
Bill To:		PWS NAME: Lino Lakes								
LAB Number	COLLECTION			*SAMPLE POINT ID: (per EPA Requirement)-20 characters max	*FACILITY ID: (per EPA Requirement)-5 characters max	*Sampling Point Type Code	Test Name UCMR4-	Temperature Upon Lab Receipt °C	Preservative Checks	
	DATE	TIME	AM PM						pH accept- table? v	Residual Chlorine (P/A)
1 4449483	10/8/19	10:50	X	E04-Well 4 Entry Point	00009	EP	200.8 Metals	0.4	✓	NA
2 484	10/8/19	10:50	X	E04-Well 4 Entry Point	00009	EP	525.3	-0.2	✓	A
3 485	10/8/19	10:50	X	E04-Well 4 Entry Point	00009	EP	530	0.6	✓	A
4 486	10/8/19	10:50	X	E04-Well 4 Entry Point	00009	EP	541	0.8	✓	A
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10										
11										

RELINQUISHED BY: (Signature) *Brian Noma* DATE 10/8/19 TIME 1:53 AM PM

RELINQUISHED BY: (Signature) DATE TIME

RELINQUISHED BY: (Signature) DATE TIME

RECEIVED BY: (Signature) DATE TIME

RECEIVED BY: (Signature) DATE TIME

RECEIVED FOR LABORATORY BY: *Alfonso* DATE 10/9/19 TIME 09:30 AM PM

CONDITIONS UPON RECEIPT: Ice? () Wet? () Blue? () Check if received on day of collection: ()

Samples received within 48 hours of collection must be received at a temperature of ≤ 10°C.

Samples received past 48 hours of collection are only valid if received at ≤ 6°C, verified and documented that the samples were refrigerated between collection and shipment. Temperature requirements apply to all methods EXCEPT 200.8 and 300.0.

NO ICE PRESENT IN SAMPLES

KEY

See Metal Samples Preservation

200.8 pH < 2

525.3 pH ≤ 4

530 pH about 7 (6-8)

Must be absent of residual chlorine (free): 525.3, 530, 541, 544, 545, 546, and 552.3.

UCMR4 acceptance criteria for Receiving Checks:

541 pH < 3

544 pH 6.5-7.5

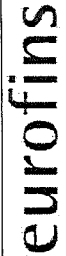
TOC pH < 2

***Sampling Point Type Code:**

SR = source water taken from plant intake; untreated water entering the water treatment plant

EP = entry point to the distribution system

DS = distribution system sample



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Batch # _____

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CLIENT NAME:
Minnesota Department of Health

PO #:
Bill To:

SAMPLER (Print name):
Brian Numa

*PWS ID #
MN1020023
Example: IN1234567

STATE of sample origin
MN

Check if this is a resample ☐
Check if requires upload to EPA database ☐
we must have info for fields indicated with * for upload

UCMR 4 CHAIN OF CUSTODY RECORD

Page ____ of ____

If samples are not shipped the same day as collection then the temperature the samples were held at must be recorded here (°C):

PWS NAME:

Lino Lakes

*Sampling Event

List 1 Additional: SEA1 SEA2
SEA3 SEA4 SEA1 SEA2 SEA3
SEA4

Preservative Checks

pH accept-
table? v

Residual
Chlorine
(P/A)

OF CONTAINERS

LAB Number

COLLECTION

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PM

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