



N O R T H E R N  
**Analytical Services, LLC.**  
ENVIRONMENTAL CONSULTANTS

November 14, 2018

Project No: 180316

Tim Harris  
Benton Harbor Charter School Academy  
455 Riverview Drive  
Benton Harbor, Michigan 49022

Re: Water Testing  
Benton Harbor Charter Academy

Dear Mr. Harris:

Please find the enclosed laboratory results from water samples Northern Analytical Services, LLC. (NAS) collected at the site. Samples were collected to determine the levels of the lead and copper present in drinking water at each of the fixtures tested. Testing was limited to those fixtures that tested above the detection limit in previous testing. Testing was performed as part of an annual inspection of your building.

Samples were collected on October 9, 2018 by Juston Rehkopf, a State of Michigan accredited Lead Based Paint Inspector (P05558) of NAS. Samples were collected by filling a single 250 milliliter container, pre-treated by the laboratory with acid, at each faucet/drinking fountain and delivering them to the laboratory for analysis. Sample collection was conducted in the morning prior to the water being used by occupants as a "first draw" sample. NAS did not flush or otherwise run each faucet or fountain prior to sample collection; to our knowledge each faucet and fountain sat dormant for at least 6 hours prior to sample collection.

Once delivered to the laboratory (Pace Analytical), samples were analyzed for the presence of copper and lead in accordance with US EPA method 200.8. A copy of the laboratory report is attached.

According to the US EPA's Lead and Copper rule, which applies to schools and child care facilities that meet the definition of a public water system, the practical quantitation limit (PQL) for lead is 0.005 micrograms of lead per liter of water (mg/L) and 0.050 mg/L for copper. The PQL is the concentration of lead or copper that can be reliably measured within specified limits during routine laboratory operating conditions using approved methods. The action level is the concentration of lead or copper in potable water which determines whether a system may be required to install corrosion control treatment, collect water quality parameter samples, collect source water samples, replace lead service lines, and /or deliver public education about lead. The action level for lead is 0.015 mg/L and 1.3 mg/L for copper.

Essentially the PQL is the limit of detection and the Action Level is the level at which steps should be taken in order to minimize or eliminate exposure to lead or copper. Actions to be taken when the action level is exceeded include the following:

- Public education-provide information to building occupants about the water quality.
- Water quality parameter (WQP) monitoring-establish a routine monitoring program.
- Source water monitoring and source water treatment if necessary.
- Corrosion control treatment (CCT).

Choice Schools Associates  
Benton Harbor Charter Academy  
Water Quality Testing  
Project No. 180316  
November 14, 2018

The following is a summary of our findings by fixture:

BH-25 (Woman's Bathroom Sink by Copy Room)

Sample Date	Copper Concentration (mg/L)	Lead Concentration (mg/L)
9/26/17	0.38*	0.0014
10/9/18	0.19*	0.0020

BH-27 (North Sink in Kitchen)

Sample Date	Copper Concentration (mg/L)	Lead Concentration (mg/L)
9/26/17	0.28*	0.0042
10/9/18	0.22*	0.0022

BH-37 (Rm 156 Kitchen Sink)

Sample Date	Copper Concentration (mg/L)	Lead Concentration (mg/L)
9/26/17	0.13*	0.0018
10/9/18	0.090*	ND

\* exceeds the PQL for lead or copper.

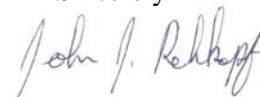
\*\*exceeds the action level for lead or copper.

Based on the attached results, NAS recommends the following actions:

- Immediately post the public education poster found in appendix A of the Lead and Copper Rule near each faucet/fountain that exceeded the PQL for lead and distribute a copy of this information in pamphlet form to all building occupants.
- Immediately take the faucets/fountains described in samples TO-5 and TO-21 off line. Flush each of these units (allow water to run for at least 5 minutes) and re-test no sooner than 8 hours after flushing.
- Test the water source to determine the level of lead and copper present; copper levels appear to be elevated in most of the fixtures tested which suggests the water source may be responsible.
- Consider replacing these units if the re-test results exceed the PQL level.
- Consider the installation of point source (faucet/drinking fountain) water filtration for lead.
- Consider the replacement of all water pipes and fixtures as a permanent solution.
- Re-test all fixtures at least annually and following any major changes to the system.

NAS appreciates the opportunity to provide these services and looks forward to assisting you with any re-testing needed. Please do not hesitate to contact me with any questions.

Sincerely



John J. Rehkopf  
President

October 19, 2018

John Rehkopf  
Northern Analytical Services  
14870 225th Avenue  
Big Rapids, MI 49307

RE: Project: Benton Harbor  
Pace Project No.: 4618842

Dear John Rehkopf:

Enclosed are the analytical results for sample(s) received by the laboratory on October 10, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melanie Booms  
melanie.booms@pacelabs.com  
(616)975-4500  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## CERTIFICATIONS

Project: Benton Harbor  
Pace Project No.: 4618842

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### Grand Rapids Certification ID's

5560 Corporate Exchange Ct SE, Grand Rapids, MI 49512  
Minnesota Department of Health, Certificate #1385941  
Arkansas Department of Environmental Quality, Certificate #18-046-0  
Georgia Environmental Protection Division, Stipulation  
Illinois Environmental Protection Agency, Certificate #004325  
Michigan Department of Environmental Quality, Laboratory #0034

New York State Department of Health, Serial #57971 and 57972  
North Carolina Division of Water Resources, Certificate #659  
Virginia Department of General Services, Certificate #9780  
Wisconsin Department of Natural Resources, Laboratory #999472650  
U.S. Department of Agriculture Permit to Receive Soil, Permit #P330-17-00278

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Benton Harbor  
Pace Project No.: 4618842

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4618842001	BH 25	Drinking Water	10/09/18 11:30	10/10/18 12:36
4618842002	BH 27	Drinking Water	10/09/18 11:28	10/10/18 12:36
4618842003	BH 37	Drinking Water	10/09/18 11:33	10/10/18 12:36

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### SAMPLE ANALYTE COUNT

Project: Benton Harbor

Pace Project No.: 4618842

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Lab ID	Sample ID	Method	Analysts	Analytes Reported
4618842001	BH 25	EPA 200.8	KLV	2
4618842002	BH 27	EPA 200.8	KLV	2
4618842003	BH 37	EPA 200.8	KLV	2

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## ANALYTICAL RESULTS

Project: Benton Harbor

Pace Project No.: 4618842

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**Sample: BH 25**      **Lab ID: 4618842001**      Collected: 10/09/18 11:30      Received: 10/10/18 12:36      Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS Drinking Water</b>		Analytical Method: EPA 200.8							
Copper	<b>0.19</b>	mg/L	0.0010		1		10/19/18 11:53	7440-50-8	
Lead	<b>0.0020</b>	mg/L	0.0010		1		10/19/18 11:53	7439-92-1	

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## ANALYTICAL RESULTS

Project: Benton Harbor

Pace Project No.: 4618842

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**Sample: BH 27**                      **Lab ID: 4618842002**      Collected: 10/09/18 11:28      Received: 10/10/18 12:36      Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS Drinking Water</b>		Analytical Method: EPA 200.8							
Copper	<b>0.22</b>	mg/L	0.0010		1		10/19/18 11:57	7440-50-8	
Lead	<b>0.0022</b>	mg/L	0.0010		1		10/19/18 11:57	7439-92-1	

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## ANALYTICAL RESULTS

Project: Benton Harbor

Pace Project No.: 4618842

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**Sample: BH 37**      **Lab ID: 4618842003**      Collected: 10/09/18 11:33      Received: 10/10/18 12:36      Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS Drinking Water</b>		Analytical Method: EPA 200.8							
Copper	<b>0.090</b>	mg/L	0.0010		1		10/19/18 11:58	7440-50-8	
Lead	ND	mg/L	0.0010		1		10/19/18 11:58	7439-92-1	

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### QUALITY CONTROL DATA

Project: Benton Harbor  
Pace Project No.: 4618842

QC Batch: 36241 Analysis Method: EPA 200.8  
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep  
Associated Lab Samples: 4618842001, 4618842002, 4618842003

METHOD BLANK: 146304 Matrix: Water  
Associated Lab Samples: 4618842001, 4618842002, 4618842003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	mg/L	ND	0.0010	10/19/18 11:42	
Lead	mg/L	ND	0.0010	10/19/18 11:42	

LABORATORY CONTROL SAMPLE: 146305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	.02	0.020	98	85-115	
Lead	mg/L	.02	0.019	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 146306 146307

Parameter	Units	4618769001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Copper	mg/L	89.8 ug/L	.02	0.11	.02	0.11	108	93	70-130	3	20	
Lead	mg/L	1.5 ug/L	.02	0.022	.02	0.022	100	102	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 146309 146310

Parameter	Units	4618850002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Copper	mg/L	68.2 ug/L	.02	0.091	.02	0.089	116	103	70-130	3	20	
Lead	mg/L	<0.0010	.02	0.023	.02	0.022	113	107	70-130	5	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: Benton Harbor

Pace Project No.: 4618842

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Benton Harbor

Pace Project No.: 4618842

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<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
4618842001	BH 25	EPA 200.8	36241		
4618842002	BH 27	EPA 200.8	36241		
4618842003	BH 37	EPA 200.8	36241		

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WO#: 4618842



**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section C</b>	
<b>Project Information:</b>	<b>Invoice Information:</b>
Report To: John Rehkopf	Attention:
Copy To:	Company Name:
Purchase Order #:	Address:
Project Name: DWTR Cu & Pb <i>Wentworth Highway</i>	Pace Quote:
Project #: 180316	Pace Project Manager: melanie.booms@pacelabs.com
	Pace Profile #: 479
	<b>Regulatory Agency</b>
	<b>State / Location</b> <i>MA</i>

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST Y/N	Requested Analysis Filtered (Y/N)	TEMP in C	Received on	Sealed	Custody	Cooler	Samples	Intact	
			START DATE	END DATE				Unpreserved	H2SO4										HNO3
1			10/9	11:30	DW		1												
2			10/9	11:28			1												
3			10/9	11:33			1												
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

<b>ADDITIONAL COMMENTS</b>	
<i>Justin Bellcapt 10/10 12:36</i>	
<i>Justin Bellcapt 10/10/19 12:36</i>	
<b>RELINQUISHED BY / AFFILIATION</b>	
<i>Justin Bellcapt</i>	
<b>DATE</b>	
<i>10/10</i>	
<b>TIME</b>	
<i>12:36</i>	
<b>ACCEPTED BY / AFFILIATION</b>	
<i>Justin Bellcapt</i>	
<b>DATE</b>	
<i>10/10/19</i>	
<b>TIME</b>	
<i>12:36</i>	
<b>SAMPLER NAME AND SIGNATURE</b>	
<i>Justin Bellcapt</i>	
<b>PRINT Name of SAMPLER:</b>	
<i>Justin Bellcapt</i>	
<b>SIGNATURE of SAMPLER:</b>	
<i>Justin Bellcapt</i>	
<b>DATE Signed:</b>	
<i>10-10-18</i>	





Sample Conditions Upon Receipt

WO#: 4618842

Date: 10/10/18	Evaluated by: RS	PM: MSB	Due Date: 10/24/18	Pace number
Client: Norton Analytical Services		CLIENT: NORTH ANALYT		
Profile ID:	Project Manager:			
Sample Receiving Non-Conformance Form Required: YES	NO	Rush Turn Around Time Requested: YES	NO	Due Date:
Page	Of	Lab Notified of Rush or Short Holds: YES	NO	

Lab Sample Receipt Checklist:

Samples Received Via:	FEDEX	UPS	CLIENT	PACE COURIER
Custody Seals Present and Intact:	YES	NO	NA	
USDA Regulated Soils:	YES	NO	NA	
Short Holds Present (< 72 Hours):	YES	NO	NA	
Samples Received in Hold:	YES	NO	NA	
Custody Signatures Present:	YES	NO	NA	
Collector Signature Present:	YES	NO	NA	
Samples Received On Ice:	YES	NO	NA	
Type of Ice: WET BLUE DRY NONE				
Packing Material Used:	YES	NO	NA	
IR Gun #: 202 329 402 Temp should be 0-6°C	Cooler Temp Upon Receipt: 13.4 °C			
Temp Blank Received:	YES	NO	NA	
Trip Blank Received: Type: HCL MeOH TSP OTHER	YES	NO	NA	
Bottles Intact:	YES	NO	NA	
Correct Bottles:	YES	NO	NA	
Sufficient Volume:	YES	NO	NA	
Sample pH Acceptable: All containers needing preservation are found to be in compliance with EPA recommendation Exceptions are VOA, coliform, TOC, O & G, HEM, DRO	YES	NO	NA	pH Strip Lot Number: H0739245
VOA Headspace Acceptable (<6mm):	YES	NO	NA	
Comments:				