



April 30, 2018

Mr. Ed Buzzelli  
Hanover County Public Schools  
Operations  
200 Berkley Street  
Ashland, VA 23005

Subject: Lead in Drinking Water Sampling Results – Resampling Event  
Beaverdam Elementary School

Dear Ed,

EEE Consulting Inc. (3e) sampled eighteen (18) high priority drinking water sources at the Beaverdam Elementary School located at 15485 Beaverdam School Road in Beaverdam, Virginia on October 31, 2017. High priority drinking water sources tested included the water main entering the building, drinking water fountains/coolers and bubbler drinking fountains. Three samples collected from the drinking water sources contained lead concentrations above the Action Limit of 20 parts per billion (ppb) of lead recommended by the EPA Revised Technical Guidance, “3Ts for Reducing Lead in Drinking Water in Schools”. Samples collected from remaining drinking water sources at Beaverdam Elementary School contained lead concentrations below the Action Limit. Sample results depicted in **red font** contained concentrations above the Action Limit of 20 ppb lead.

**Elevated Lead Results – October 31, 2017:**

Sample ID	Location	Lead Result
BES-DF-03	Oasis Drinking Fountain in Gym	166 ppb
BES-DF-11	Bubbler fountain in Room 124	40.6 ppb
BES-DF-14	Bubbler fountain in Room 121	27.4 ppb

3e recommended these sources be resampled with an initial draw sample (denoted as A) followed by a 30-second flush sample (denoted as B) to determine whether lead is being contributed from the unit or the internal plumbing of the building. These units were taken out of service until follow-up testing was completed on February 2, 2018.

**Resample Results - February 2, 2018:**

Sample ID	Location	Lead Result
BES-DF-03A	Oasis Drinking Fountain in Gym	1.62 ppb
BES-DF-03B	Oasis Drinking Fountain in Gym	<1.0 ppb
BES-DF-11A	Bubbler fountain in Room 124	934 ppb
BES-DF-11B	Bubbler fountain in Room 124	26.2 ppb
BES-DF-14A	Bubbler fountain in Room 121	55.7 ppb
BES-DF-14B	Bubbler fountain in Room 121	1.71 ppb

The resample results for Sample BES-DF-11 and the initial resample for Sample BES-DF-14 were above the EPA Action Limit of 20 ppb; however, the resample collected after the 30-second flush for BES-DF-14 was reported below the Action Limit. 3e determined that the higher concentration of the first draw sample (BES-DF-11A) and the elevated concentration of the second draw sample (HCES-DF-11B) are likely due to leaching of lead into the water as it sits in the bubbler and bubbler valves. In addition, 3e determined that the elevated concentration of the first draw

sample (BES-DF-14A) and acceptable concentration in the second draw sample (BES-DF-14B) is likely due to leaching of lead into the water as it sits in the bubbler, but not in the bubbler valves. Documentation for the resamples is included on the attached field sampling documentation form and sample location sites are represented on the attached building diagram.

In lieu of lead contamination being localized and limited to two (2) units, **3e** recommends replacing these sources with new fountains, as it may be the most practical solution. The EPA worked with the plumbing industry and National Sanitation Foundation (NSF) International to develop an industry standard that is designed to minimize the amounts of lead being leached from these products. Hanover County Public Schools should ensure that any replacement fountains be in compliance with NSF Standard 61, Section 9 before purchasing or installing a new endpoint device.

We appreciate this opportunity to provide our environmental consulting services on this project and look forward to continued services. Please feel free to contact me at (804) 442-3330 ext. 225 with any questions.

Sincerely,



Carroll H. Ellis, III  
Environmental Scientist

Attachments

Sample Recordkeeping Form											
School: Beaverdam Elementary School											
Sample Collector	Sample ID #	Sample Date	Sample Time	Sample Type (1st Draw or Flush)	Outlet Type	Manufacturer/Model	Serial #	Laboratory	Bottle Lot #	Lead Result (ppb)	
1	KM	BES-WM-01	10/31/17	6:41 AM	30 sec	Main		EHS	44081705	10.1	
2	KM	BES-S-01	10/31/17	6:46 AM	Initial	Kitchen Prep Sink		EHS	44081705	10.1	
3	KM	BES-DF-01	10/31/17	6:49 AM	Initial	Drinking Fountain	Elkay ESWA-81	840994269	EHS	44081705	2.79
4	KM	BES-DF-02	10/31/17	6:55 AM	Initial	Drinking Fountain	Elkay ESWA-81	840994267	EHS	44081705	11.1
5	KM	BES-DF-03	10/31/17	7:02 AM	Initial	Drinking Fountain	Oasis PG8AC-D301	1740001647	EHS	44081705	166
6	KM	BES-DF-04	10/31/17	7:07 AM	Initial	Drinking Fountain	Elkay ESWA8-1S	110837118	EHS	44081705	6.34
7	KM	BES-DF-05	10/31/17	7:13 AM	Initial	Drinking Fountain	Elkay EHFS8-1H	110935134	EHS	44081705	1.78
8	KM	BES-DF-06	10/31/17	7:16 AM	Initial	Drinking Fountain	Elkay ESWA8I	840994283	EHS	44081705	2.69
9	KM	BES-DF-07	10/31/17	7:24 AM	Initial	Drinking Fountain	Elkay ESWA8-1H	100414250	EHS	44081705	1.61
10	KM	BES-DF-08	10/31/17	7:30 AM	Initial	Bubbler Fountain		EHS	44081705	2.33	
11	KM	BES-DF-09	10/31/17	7:35 AM	Initial	Drinking Fountain	Elkay	Covered with paint	EHS	44081705	11.8
12	KM	BES-DF-10	10/31/17	7:39 AM	Initial	Drinking Fountain	Elkay	Covered with paint	EHS	44081705	7.56
13	KM	BES-DF-11	10/31/17	7:42 AM	Initial	Bubbler Fountain		EHS	44081705	40.6	
14	KM	BES-DF-12	10/31/17	7:46 AM	Initial	Bubbler Fountain		EHS	44081705	3.4	
15	KM	BES-DF-13	10/31/17	7:49 AM	Initial	Bubbler Fountain		EHS	44081705	10.1	
16	KM	BES-DF-14	10/31/17	7:53 AM	Initial	Bubbler Fountain		EHS	44081705	27.4	
17	KM	BES-DF-15	10/31/17	7:56 AM	Initial	Bubbler Fountain		EHS	44081705	8.34	
18	KM	BES-DF-16	10/31/17	7:59 AM	Initial	Drinking Fountain	Halsey Taylor HAC 8FS-Q	940746615	EHS	44081705	9.86
Resamples											
5	CE	BES-DF-03A	02/02/18	9:12 AM	Initial	Drinking Fountain	Oasis PG8AC-D301	1740001647	EHS		1.62
5	CE	BES-DF-03B	02/02/18	9:13 AM	30 sec	Drinking Fountain	Oasis PG8AC-D301	1740001647	EHS		<1.0
13	CE	BES-DF-11A	02/02/18	9:26 AM	Initial	Bubbler Fountain			EHS		934





Environmental Hazards Services, L.L.C.  
 7469 Whitepine Rd  
 Richmond, VA 23237  
 Telephone: 800.347.4010

## Lead in Drinking Water Analysis Report

Client: **EEE Consulting Inc.**  
 8525 Bell Creek Rd.  
 Mechanicsville, VA 23116

Report Number: 18-02-00427  
 Received Date: 02/02/2018  
 Reported Date: 02/13/2018  
 Sampled By: Carroll H Ellis, III  
 Tech Certification #:

Project/Test Address: Beaverdam Elementary School; Beaverdam, VA 23015

Client Number:  
 48-5796

# Laboratory Results

Fax Number:  
 804-442-3334

Lab Sample Number	Client Sample ID	Collection Date	Collection Location	Concentration ug/L (ppb)	Analysis Date	Narrative ID
18-02-00427-001	BES-DF-03A	02/02/2018	DRINKING FOUNTAIN	1.62	02/07/2018	
18-02-00427-002	BES-DF-03B	02/02/2018	DRINKING FOUNTAIN	<1.00	02/07/2018	
18-02-00427-003	BES-DF-11A	02/02/2018	DRINKING FOUNTAIN	934	02/07/2018	
18-02-00427-004	BES-DF-11B	02/02/2018	DRINKING FOUNTAIN	26.2	02/07/2018	
18-02-00427-005	BES-DF-14A	02/02/2018	DRINKING FOUNTAIN	55.7	02/07/2018	
18-02-00427-006	BES-DF-14B	02/02/2018	DRINKING FOUNTAIN	1.71	02/07/2018	

# Environmental Hazards Services, L.L.C

Client Number: 48-5796

Report Number: 18-02-00427

Project/Test Address: Beaverdam Elementary School; Beaverdam, VA 23015

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Lab Sample Number	Client Sample ID	Collection Date	Collection Location	Concentration ug/L (ppb)	Analysis Date	Narrative ID
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Method: SM 3113B-2010  
Analyst: Jennalee Zlotkowski  
Accreditation #: VA 460172

Reviewed By Authorized Signatory: *Melissa Kanode*

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*Missy Kanode*

QA/QC Clerk

Sample Results denoted with a "less than" (<) sign contain less than the reporting limit which is 1 ppb.

The EPA Maximum Contaminant Level for Lead in Drinking Water is 15 ppb. The results herein conform to NELAC standards, where applicable, unless otherwise narrated on this report. Results represent the analysis of samples submitted by the client. Sample location, description, field parameter results, etc., were provided by the client. This report cannot be reproduced, except in full, without written approval from Environmental Hazards Services, L.L.C.

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LEGEND                      ug/L= micrograms per liter                      ppb = parts per billion

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# ENVIRONMENTAL HAZARDS SERVICES, LLC

## Water Chain-of-Custody Form

(For Multi-Sample Projects)

Richmond, VA - Phone: (800) 347-4010 FAX: (804) 275-4907

ONLINE CLIENT PORTAL AVAILABLE FOR ANALYSIS RESULTS AT: [www.leadlab.com](http://www.leadlab.com)

18-02-00427



Due Date:  
03/16/2018  
(Friday)  
AE

SN

Company Name: EEE Consulting Inc Account #: 48-5796

Address: 8525 Bell Creek Rd City/State/Zip: Mechanicsville, VA 23116

Phone: 804-442-3330 Email: csmith@eee-consulting.com Fax: \_\_\_\_\_

Project Name / Collection Address: Beaverdam Elementary School City/State: Beaverdam, VA Zip: 23015  
(Required) (Required)

Age of Property: \_\_\_\_\_ Well Tag # (If Applicable): \_\_\_\_\_ Collected by: Carroll H. Ellis, III Certification #: \_\_\_\_\_

P.O. #: 17-191 Relinquished by: Carroll H. Ellis III Signature: Carroll H. Ellis III Date: 2/2/18

No.	Client Sample ID	Collection Location (Ex: Kitchen Sink)	Collection Date	Collection Time	Metals			Field Parameters		LAB USE
					Lead	Copper	Other	Field pH at time of Collection:	Temp. at time of Collection:	Temp at Time of Receipt:
1	BES-DF-03A	Drinking Fountain	2/2/18	9:12	AM/PM	✓				
2	BES-DF-03B	Drinking Fountain	2/2/18	9:12	AM/PM	✓				
3	BES-DF-11A	Drinking Fountain	2/2/18	9:26	AM/PM	✓				
4	BES-DF-11B	Drinking Fountain	2/2/18	9:26	AM/PM	✓				
5	BES-DF-14A	Drinking Fountain	2/2/18	9:20	AM/PM	✓				
6	BES-DF-14B	Drinking Fountain	2/2/18	9:20	AM/PM	✓				
7			2/2/18		AM/PM	✓				
8			2/2/18		AM/PM	✓				
9			2/2/18		AM/PM	✓				
10			2/2/18		AM/PM	✓				

Received By: J. Abraham

Date: 2/2/18 Time: 4p Temp. Received: \_\_\_\_\_

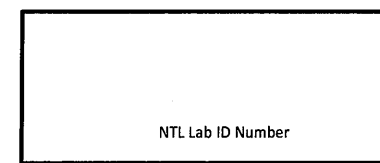
Shipping Tracking #: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_

**PLEASE SEND WATER KIT SAMPLES TO THE FOLLOWING ADDRESS:**

**556 S. Mansfield St.  
Ypsilanti, MI 48197**

*All Samples Except for Lead /Metals Must Be Shipped On Ice Via Overnight Shipping*



NTL Lab ID Number