



**Rose & Westra**  
A Division of GZA

GEOTECHNICAL  
ENVIRONMENTAL  
ECOLOGICAL  
WATER  
CONSTRUCTION  
MANAGEMENT

4328 Three Mile Road NW  
Suite 200  
Grand Rapids, MI 49534  
T: 616.791.7100  
F: 616.791.9263  
[www.rosewestra.com](http://www.rosewestra.com)  
[www.gza.com](http://www.gza.com)



**Sent via email: [bfinos@heritageacademies.com](mailto:bfinos@heritageacademies.com)**

July 21, 2016

File No. 16.0062323.00 Task 0010 (0063.03936.9)

Mr. Brian Finos  
Manager of Facilities  
Charter Development Company  
3850 Broadmoor SE, Suite 201  
Grand Rapids, Michigan 49512

Re: Environmental Assessment – Drinking Water Quality Report  
Warrendale Charter Academy  
19400 Sawyer Road, Detroit, Michigan

Dear Mr. Finos:

Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA) is pleased to present this drinking water quality report with results from the recent sampling and testing for the Warrendale Charter Academy campus (Warrendale Campus) located at 19400 Sawyer Road, Detroit, Michigan. Two structures are used on the Warrendale Campus and are identified as the Main School Building and Activities Building (the Buildings). This work was requested due a concern about possible lead contaminates being present in the drinking water supplied to the Buildings. The water piping system to the Buildings and the water within the systems are maintained/supplied by the City of Detroit Water Department.

In summary, none of the tests conducted identified lead, iron, or copper exceeding the maximum contaminant levels (MCLs) or the Secondary MCLs established by the U. S. Environmental Protection Agency (U.S. EPA) for residential drinking water consumption, except for iron in the samples collected from the older drinking fountain station located in the lobby of the Activities Building. The exceedances are for the Secondary MCL for taste and color, which are not considered to be a health risk only an aesthetic consideration.

### **Background**

The Warrendale Campus occupies two separate structures on the Sawyer Road campus. The Main School Building is a two-story structure constructed in several phases prior to the 1950s; and the Activities Building is a single-story structure constructed in one phase prior to 1950. Since 2002, the Buildings have been leased from the Archdiocese of Detroit. Some limited renovation work to the drinking water system has been completed in the Main School Building. No changes to the drinking water system have been completed within the Activities Building. The water piping systems that supply the Buildings and the water within the systems are maintained/supplied by the City of Detroit Water Department.

Access for sampling to the Main School Building is allowed at any time by Warrendale Charter Academy. Access for sampling to the Activities Building is limited from 9 am Monday to 5 pm Friday by the adjoining Catholic Church on behalf of the Archdiocese of Detroit.



## **Drinking Water Sampling**

On May 22, 2016, Rose & Westra, Inc. (R&W) staff collected water samples from five water fixtures in the Main School Building. The fixtures sampled consisted of a drinking water fountain station (DFS) located next to Girl's student restroom (Room 162) [DFS-162], DFS located in south entry stairwell (Stairwell 170) [DFS-170], DFS located next to the Boy's student restroom (Room 262) [DFS-262], DFS located next to the Girl's student restroom (Room 263) [DFS-263], and sink tap in the food prep room (Room 184) [FP-184]. The locations have been illustrated on Figures 1 and 2 (Attachment 1). The sampling method used for the drinking water sample collection is known as first draw sampling, with a second sample collected from each location following a flush of the fixture. The first draw method required R&W staff to access the sampling location and flush the fixture to be sampled for a 30-minute period. Flushing the sampling locations was completed at 5:33 pm on May 21, 2016. Once the 30-minute flushing period was completed, R&W allowed each sample location to rest for a minimum of 6 hours. Each sample location was taped off to prevent use. The first draw water sample collection began at 9:29 am on May 22, 2016; thereby allowing for a nearly 16-hour rest period. Once the first draw sample was collected from the sample locations, the fixtures remained on for a 5-minute flush before the flushed sample was collected. Access to the Activities Building was not allowed during this sampling event.

The first draw sample from each sample location has been identified in the sample name. The first draw samples are identified as DFS-162-FD, DFS-170-FD, DFS-262-FD, DFS-263-FD, and FP-184-FD. These water sample locations have been illustrated on Figures 1 and 2 (Attachment 1).

The flushed sample from each sample location has also been identified in the sample name. The flushed samples are identified as DFS-162-FL, DFS-170-FL, DFS-262-FL, DFS-263-FL, and FP-184-FL. These water sample locations have been illustrated on Figures 1 and 2 (Attachment 1).

## **Analytical Testing**

Water samples collected by R&W on May 22, 2016 were placed in clean 1,000-ml sample containers (supplied by the lab), labeled, cooled, and stored for transportation. The samples were handled and transported to Prein & Newhof Environmental Laboratory, Inc. (Prein & Newhof Laboratory; Grand Rapids, Michigan) under chain-of-custody records using U.S. EPA and Michigan Department of Environmental Quality (MDEQ) recommended methods. The water samples were tested for copper, iron, and lead. A copy of the laboratory report has been included in Attachment 2. The Prein & Newhof Laboratory has MDEQ Drinking Water Certification for testing water samples.

## **Evaluation of Testing Results**

All lead results were reported as below the method detection limit (MDL) of <0.003 mg/L. These results are also below the MCL of 0.015 mg/L.

Trace copper levels were reported in most water samples collected. The reported copper concentrations ranged from <0.010 mg/l to 0.020 mg/L. All sample results were below the MCL for copper of 1.3 mg/L.

Trace iron levels were reported in all water samples collected. The iron concentrations ranged from 0.031 mg/L to 0.318 mg/L. The Secondary MCL for iron is 0.300 mg/L for taste and color. One sample (DFS-170-FL) exceeded the Secondary MCL of 0.300 mg/L. The first draw sample collected at DFS-170 was reported as 0.031 mg/L, which is below the Secondary MCL.



Based on the exceedance, R&W/GZA requested the lab re-analyze the sample. The lab's second result was 0.320 mg/L, which also exceeded the Secondary MCL for iron. The second response to the elevated result was to resample and retest DFS-170-FL.

### **Resampling and Testing of Drinking Fountain Station 170 and Activities Building Fixtures**

On June 13, 2016, R&W/GZA staff returned to the Warrendale Campus to conduct the pre-sampling flush of sample location DFS-170 (Main School Building), and additional locations in the Activities Building (access provided). R&W/GZA conducted the pre-sampling flush of DFS-170 located in the south entry stairwell of the Main School Building and the two sample locations in the Activities Building during this event. The locations in the Activities Building are identified as the DFS in the main lobby of the building (entry A102) [DFS-A102] and the DFS located in Hallway A126 adjoining the Gymnasium [DFS-A126]. Both DFS are constructed of white ceramic and appear to be original to the building construction. R&W/GZA was later informed students do not use these DFS in the Activities Building, but rather bring water bottles from the Main School Building for use in the Activities Building.

The three fixtures were flushed for a 30-minute period. Flushing the sample location was completed at 6:57 pm on June 13, 2016. Once the 30-minute flushing period was completed, R&W/GZA allowed the sample locations to rest for a minimum of 6 hours. The sample locations were taped off to prevent use. The first draw water sample collection began at 5:21 am on June 14, 2016; thereby allowing for a nearly 10-hour rest period. Once the first draw sample was collected from the sample location, the fixture remained on for a 5-minute flush before the flushed sample was collected. The sample locations are illustrated on Figures 3 and 4 (Attachment 3).

Water samples collected by R&W/GZA on June 14, 2016 were placed in clean 1,000-ml sample containers (supplied by the lab), labeled, cooled, and stored for transportation. The samples were handled and transported to Prein & Newhof Laboratory under chain-of-custody records using U.S. EPA and MDEQ recommended methods. The water samples were tested for copper, iron, and lead. A copy of the laboratory report has been included in Attachment 4.

The lead results were reported as below the MDL of <0.003 mg/L during this event, except for the first draw samples from the two DFSs sampled in the Activities Building. These results are reported as 0.004 mg/L in DFS-A102-FD and 0.006 in DFS-A126-FD. However, all results are below the MCL of 0.015 mg/L.

Trace copper levels were reported in all water samples collected during this event. The reported copper concentrations are 0.031 mg/L and 0.309 mg/L. All sample results are below the MCL of 1.300 mg/L for copper.

Trace iron levels were reported in all water samples collected during this event. The iron concentrations ranged from 0.034 mg/L to 0.540 mg/L. The Secondary MCL for iron is 0.300 mg/L for taste and color. Two samples (DFS-A102-FD and DFS-A102-FL) exceeded the Secondary MCL of 0.300 mg/L. Since it has been reported to R&W/GZA the students and staff do not use the two DFSs located in the Activities Building and the Secondary MCL for iron is not health-based rather an aesthetic criteria, no additional sampling or testing is recommended at this time.



## Conclusions

Based on the water sampling and chemical analyses, none of the tests conducted identified lead, iron, or copper exceeding the MCLs or Secondary MCLs established by the U. S. EPA for residential drinking water consumption, except for iron in the samples collected from the older drinking fountain station located in the lobby of the Activities Building. The exceedances are for the Secondary MCL for taste and color, which are not considered to be a health risk only an aesthetic consideration. Since these DFSs are not used by students or staff, no further sampling or testing is recommended.

If you have any questions regarding the information or data presented in this letter, please contact our staff.

Very truly yours,

Rose & Westra, a Division of GZA GeoEnvironmental, Inc.

A blue ink signature of William J. Bosze, P.E.

William J. Bosze, P.E.  
Senior Consultant

A blue ink signature of Bryan L. Rose, P.E.

Bryan L. Rose, P.E.  
Consultant Reviewer

wjb/jac

### Attachments:

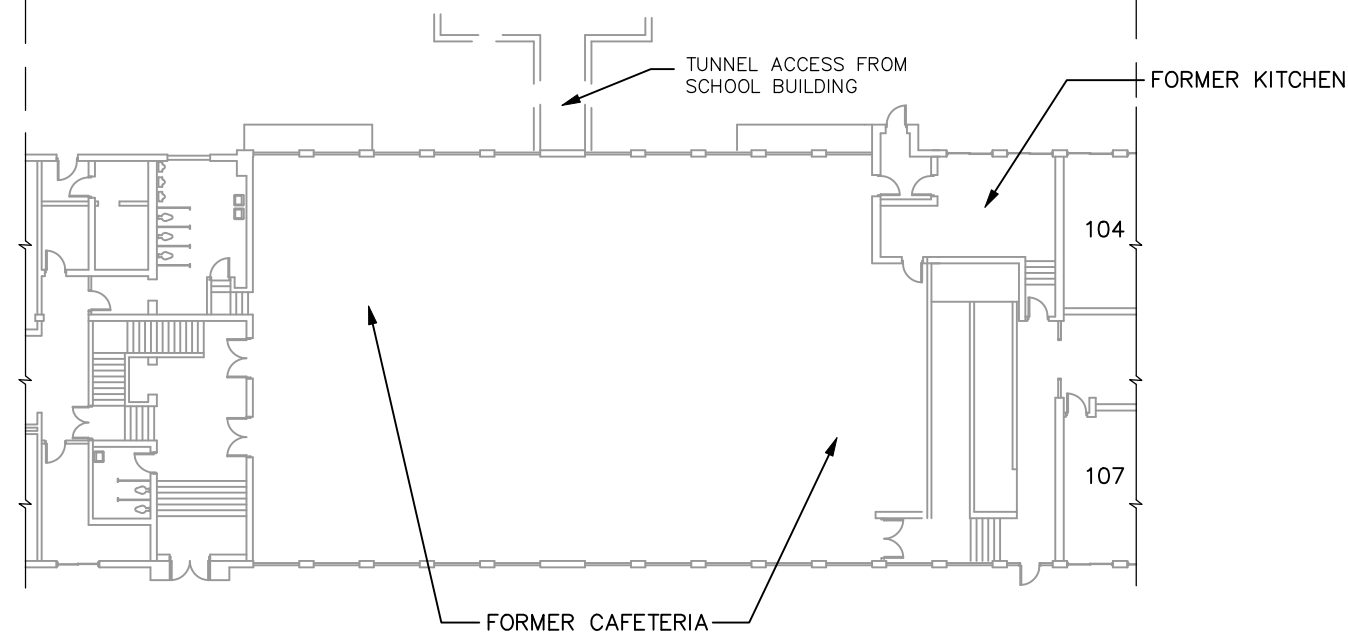
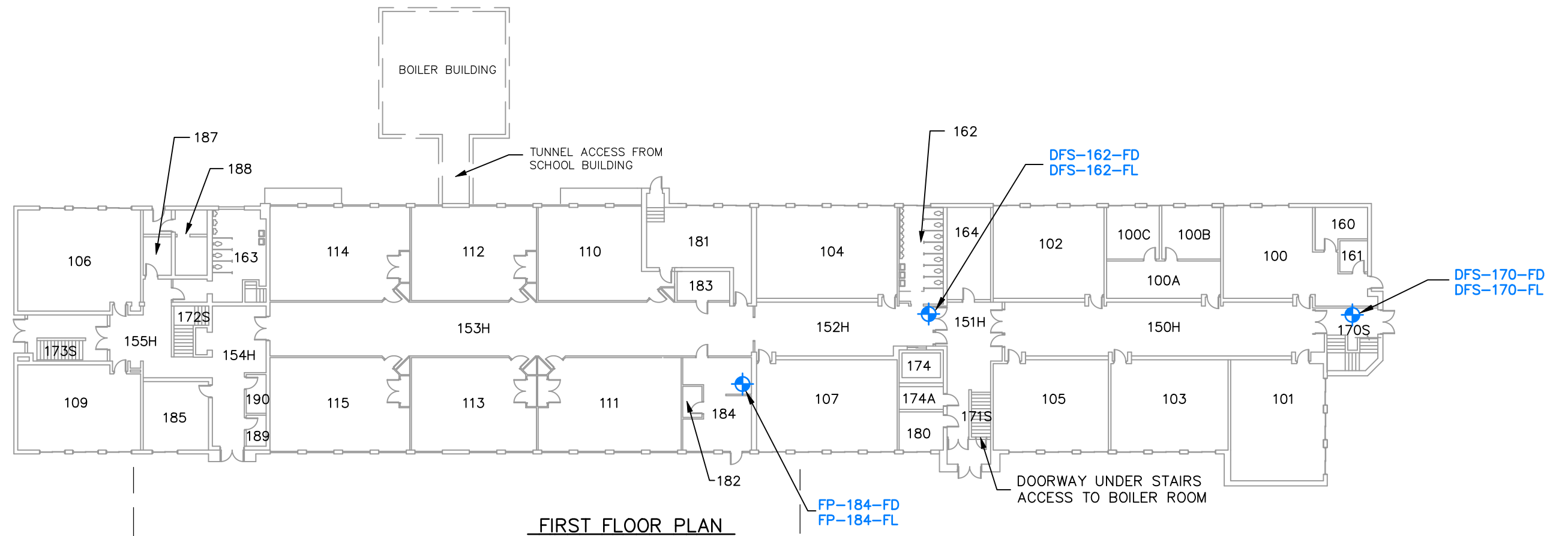
- Attachment 1: Figure 1 – First Floor Plan – Sample Locations – May 22, 2016  
Figure 2 – Second Floor Plan – Sample Locations – May 22, 2016
- Attachment 2: Prein & Newhof Laboratory Report – May 25, 2016
- Attachment 3: Figure 3 – First Floor Plan – Sample Locations – June 14, 2016  
Figure 4 – Activities Building Floor Plan – Sample Locations – June 14, 2016
- Attachment 4: Prein & Newhof Laboratory Report – June 22, 2016



## **ATTACHMENT 1**

**Figure 1 – First Floor Plan – Sample Locations – May 22, 2016**

**Figure 2 – Second Floor Plan – Sample Locations – May 22, 2016**

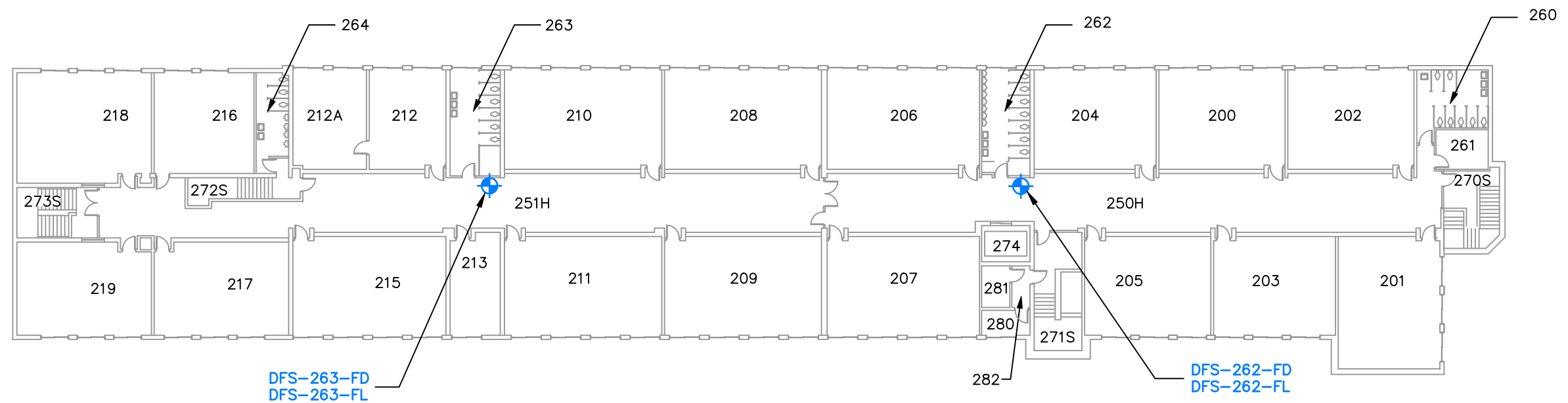


**LEGEND**

= WATER SAMPLE LOCATION

SCALE: 1" = 30'

FIRST FLOOR PLAN - SAMPLE LOCATIONS 5/22/16			
 NORTH ORIENTATION	 <b>ROSE &amp; WESTRA, INC.</b> ENVIRONMENTAL CONSULTANTS Grand Rapids, Michigan	<b>NATIONAL HERITAGE ACADEMY</b> WARRENDALE ACADEMY 19400 SAWYER ROAD, DETROIT, MICHIGAN <b>DRINKING WATER TESTING</b>	
		PROJECT NO. 0063.03936.9 <b>1</b>	FIGURE NO.
CREATED BY: KJB	APPROVED BY: WJB	DATE: 5/25/16	FILE NAME: 039369_WARREND_DWT



# LEGEND

 = WATER SAMPLE LOCATION

SCALE: 1" = 30'  
0' 30'



**NATIONAL HERITAGE ACADEMY**  
WARRENDALE ACADEMY  
19400 SAWYER ROAD, DETROIT, MICHIGAN  
**DRINKING WATER TESTING**

PROJECT NO.  
0063.03936.9

**2**

FIGURE NO.

CREATED BY: KJB APPROVED BY: WJB DATE: 5/25/16 FILE NAME: 039369\_WARREND\_DWT

## SECOND FLOOR PLAN - SAMPLE LOCATIONS 5/22/16



## **ATTACHMENT 2**

**Prein & Newhof Laboratory Report – May 25, 2016**



**Customer Name:** Rose & Westra, Inc.  
4328 3 Mile Rd NW  
Grand Rapids, MI 49544

**Contact Name:** Rose & Westra, Inc.  
4328 3 Mile Rd NW  
Grand Rapids, MI 49544

**Project:** 0063.03936.9

**Project No:** 2160001

**Lab Order:** 1605691

**Matrix:** DRINKING WATER  
**Sampled By:** W. Bosze

**Lab ID:** 1605691-001A  
**Client Sample ID:** FP-184-FD

**Collection Date:** 5/22/2016 9:29 am  
**Received Date:** 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.319	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.040	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

**Lab ID:** 1605691-002A  
**Client Sample ID:** FP-184-FL

**Collection Date:** 5/22/2016 9:34 am  
**Received Date:** 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.020	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.091	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

**Lab ID:** 1605691-003A  
**Client Sample ID:** DFS-162-FD

**Collection Date:** 5/22/2016 9:36 am  
**Received Date:** 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.084	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.193	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

**Lab ID:** 1605691-004A  
**Client Sample ID:** DFS-162-FL

**Collection Date:** 5/22/2016 9:41 am  
**Received Date:** 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	< 0.010	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.176	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

**Lab ID:** 1605691-005A  
**Client Sample ID:** DFS-170-FD

**Collection Date:** 5/22/2016 9:44 am  
**Received Date:** 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.362	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.031	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

Project: 0063.03936.9

Project No: 2160001

Lab Order: 1605691

Matrix: DRINKING WATER

Sampled By: W. Bosze

Lab ID: 1605691-006A  
Client Sample ID: DFS-170-FL

Collection Date: 5/22/2016 9:49 am  
Received Date: 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.024	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.318	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

Lab ID: 1605691-007A  
Client Sample ID: DFS-262-FD

Collection Date: 5/22/2016 9:53 am  
Received Date: 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.044	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.043	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

Lab ID: 1605691-008A  
Client Sample ID: DFS-262-FL

Collection Date: 5/22/2016 9:58 am  
Received Date: 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	< 0.010	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.052	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

Lab ID: 1605691-009A  
Client Sample ID: DFS-263-FD

Collection Date: 5/22/2016 10:01 am  
Received Date: 5/23/2016 9:45 am

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.033	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.046	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

Lab ID: 1605691-010A  
Client Sample ID: DFS-263-FL

Collection Date: 5/22/2016 10:06 am  
Received Date: 5/23/2016 9:45 am

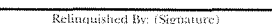

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.033	mg/L	0.010	1.3	SB	5/24/2016	EPA 200.7
Iron	0.044	mg/L	0.006		SB	5/24/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	5/24/2016	SM3113B

Prein&Newhof

wjbosze@crosenstra.com

Page 1 of 1

Air	A
Drinking Water	D
Groundwater	W
Soil	S
Sludge	L
Oil	O
Other	X

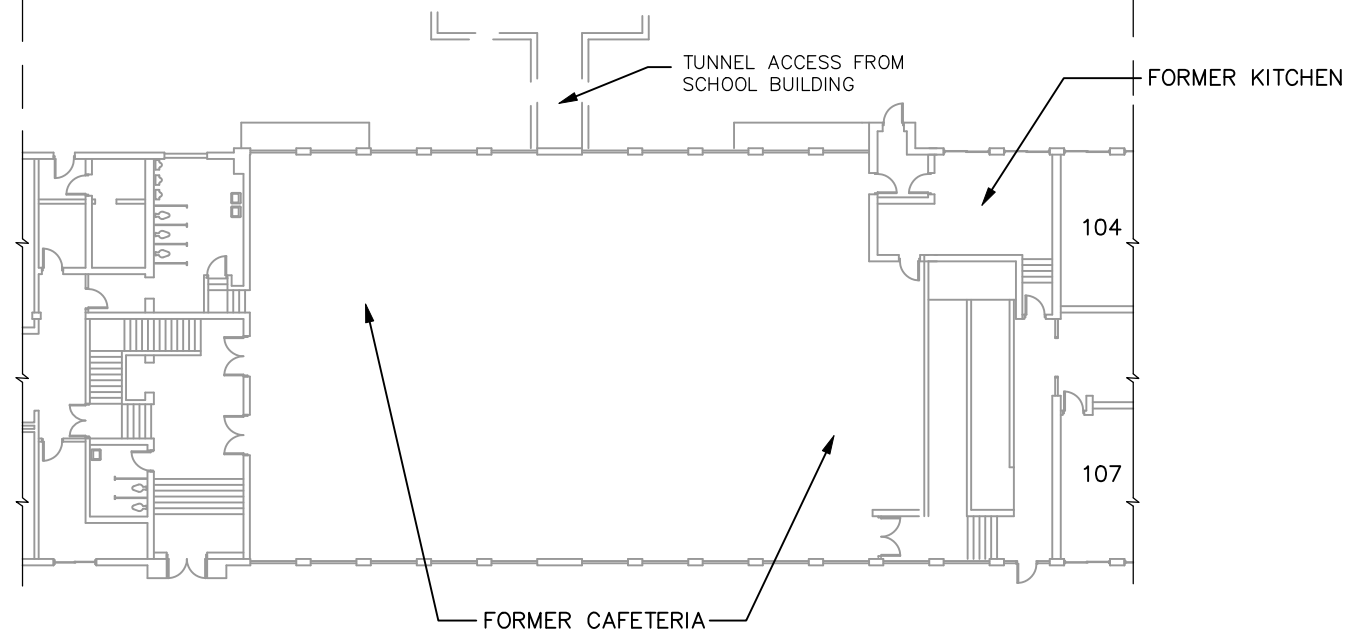
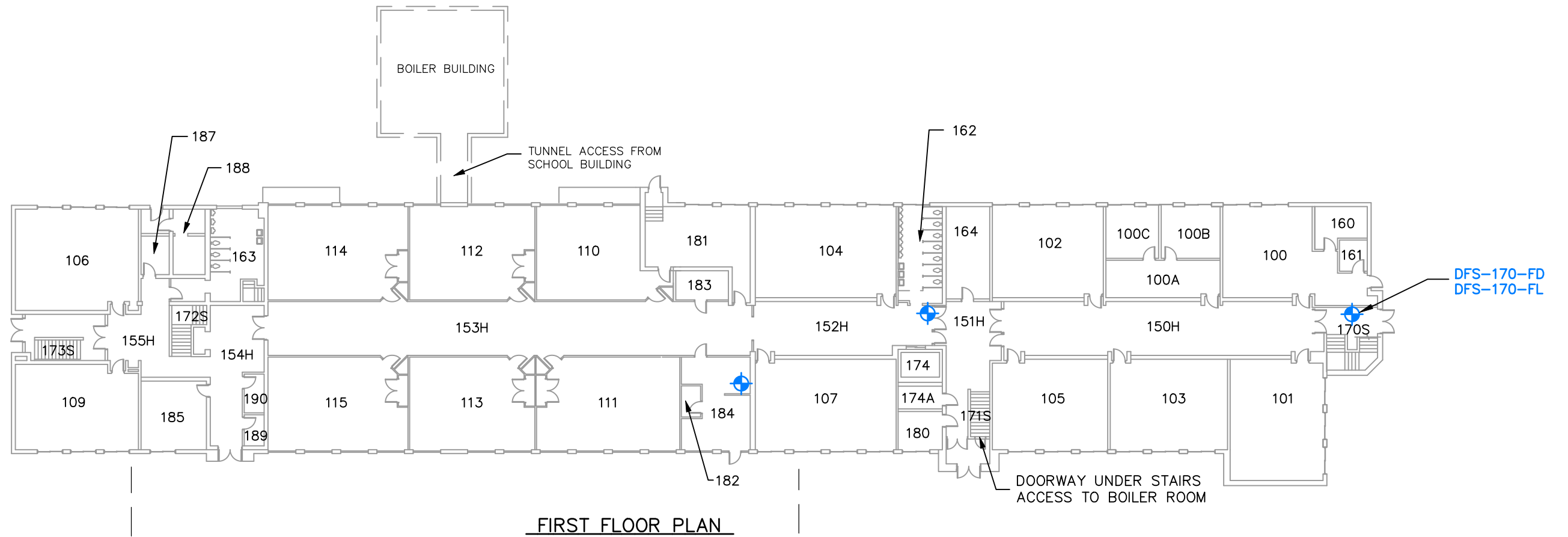
Relinquished By: (Signature) 	Date 5/23/16	Time	Received By: (Signature)	Date	Time	Relinquished By: (Signature)	Date	Time	Received By: (Signature)	Date	Time
Relinquished By: (Signature)	Date	Time	Received By: (Signature)	Date	Time	Method of Shipment:			Bill of Lading:		
Received for Laboratory By: 	Date 5/23/16	Time 094	Data Package Relinquished By:	Date	Time	Data Received By:	Date	Time	No. 31743		



### **ATTACHMENT 3**

**Figure 3 – First Floor Plan – Sample Locations – June 14, 2016**

**Figure 4 – Second Floor Plan – Sample Locations – June 14, 2016**



LEGEND

= WATER SAMPLE LOCATION

SCALE: 1" = 30'

0' 30'



**ROSE & WESTRA, INC.**  
ENVIRONMENTAL CONSULTANTS  
Grand Rapids, Michigan

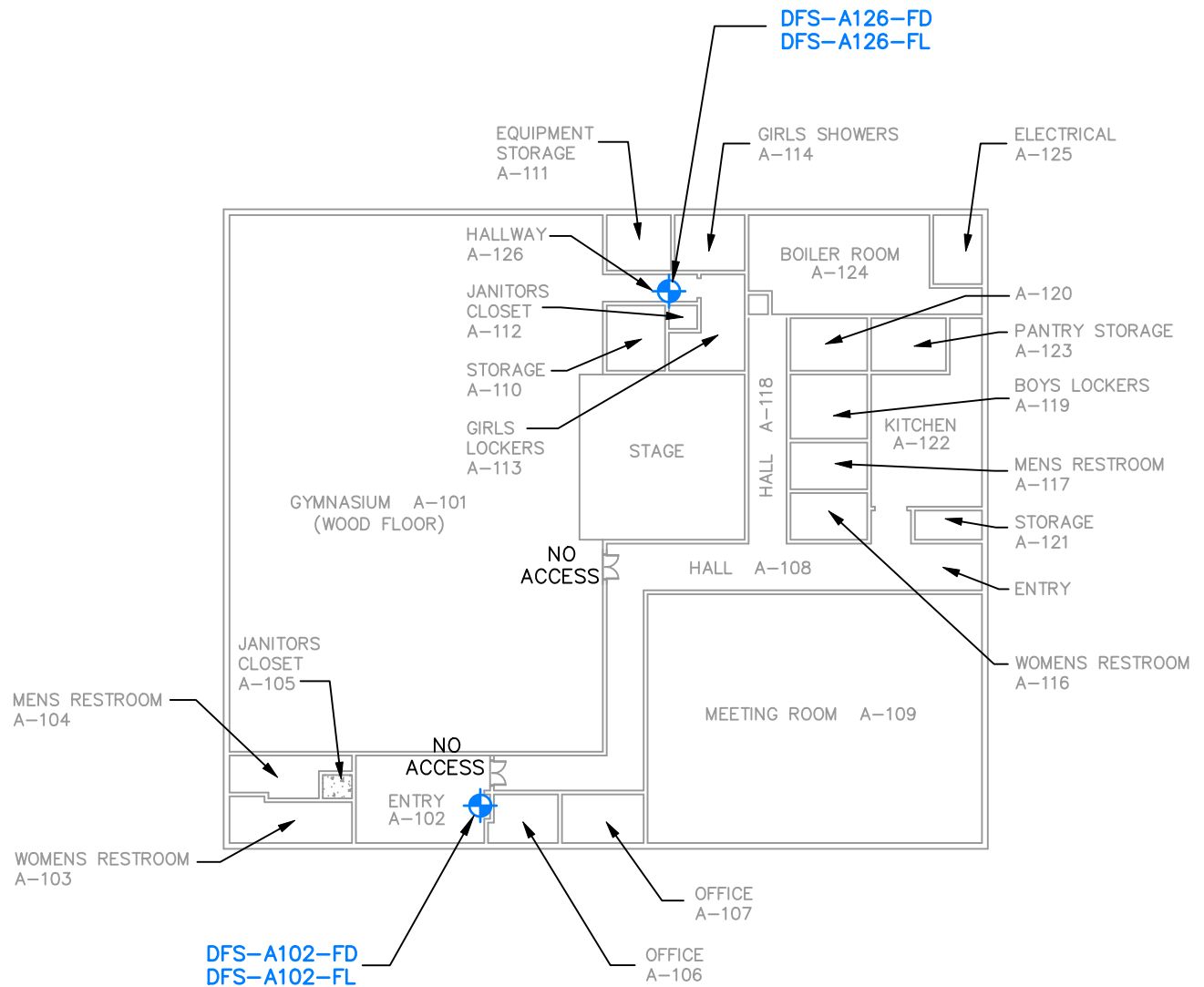
CREATED BY: KJB APPROVED BY: WJB DATE: 7/21/16 FILE NAME: 039369\_WARREND\_DWT

**NATIONAL HERITAGE ACADEMY**  
WARRENDALE ACADEMY  
19400 SAWYER ROAD, DETROIT, MICHIGAN  
DRINKING WATER TESTING

PROJECT NO.  
0063.03936.9

**3**

FIGURE NO.



## LEGEND

 = WATER SAMPLE LOCATION

SCALE: 1" = 30'



## ACTIVITY BUILDING FLOOR PLAN - SAMPLE LOCATIONS 6/14/16



NORTH  
ORIENTATION



**ROSE & WESTRA, INC.**  
ENVIRONMENTAL CONSULTANTS  
Grand Rapids, Michigan

CREATED BY: KJB

APPROVED BY: WJB

DATE: 7/21/16

FILE NAME: 039369\_WARREND\_DWT

## NATIONAL HERITAGE ACADEMY

WARRENDALE ACADEMY  
19400 SAWYER ROAD, DETROIT, MICHIGAN  
DRINKING WATER TESTING

PROJECT NO.  
0063.03436.9

**4**

FIGURE NO.



## **ATTACHMENT 4**

**Prein & Newhof Laboratory Report – June 22, 2016**

**Customer Name:** Rose & Westra, Inc./GZA  
4328 3 Mile Rd NW  
Grand Rapids, MI 49544

**Contact Name:** Rose & Westra, Inc./GZA  
4328 3 Mile Rd NW  
Grand Rapids, MI 49544

**Project:** 0063.03936.9

**Project No:** 2160001

**Lab Order:** 1606526

**Matrix:** DRINKING WATER  
**Sampled By:** W. Bosze

**Lab ID:** 1606526-001A  
**Client Sample ID:** DFS-170-FD

**Collection Date:** 6/14/2016 5:21 am  
**Received Date:** 6/14/2016 1:00 pm

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.309	mg/L	0.010	1.3	SB	6/21/2016	EPA 200.7
Iron	0.034	mg/L	0.006		SB	6/20/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	6/17/2016	SM3113B

**Lab ID:** 1606526-002A  
**Client Sample ID:** DFS-170-FL

**Collection Date:** 6/14/2016 5:26 am  
**Received Date:** 6/14/2016 1:00 pm

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.031	mg/L	0.010	1.3	SB	6/21/2016	EPA 200.7
Iron	0.219	mg/L	0.006		SB	6/20/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	6/17/2016	SM3113B

**Lab ID:** 1606526-003A  
**Client Sample ID:** DFS-A102-FD

**Collection Date:** 6/14/2016 5:35 am  
**Received Date:** 6/14/2016 1:00 pm

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.156	mg/L	0.010	1.3	SB	6/21/2016	EPA 200.7
Iron	0.540	mg/L	0.006		SB	6/20/2016	EPA 200.7
Lead	0.004	mg/L	0.003	0.015	SB	6/17/2016	SM3113B

**Lab ID:** 1606526-004A  
**Client Sample ID:** DFS-A102-FL

**Collection Date:** 6/14/2016 5:40 am  
**Received Date:** 6/14/2016 1:00 pm

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.090	mg/L	0.010	1.3	SB	6/21/2016	EPA 200.7
Iron	0.420	mg/L	0.006		SB	6/20/2016	EPA 200.7
Lead	< 0.003	mg/L	0.003	0.015	SB	6/17/2016	SM3113B

**Lab ID:** 1606526-005A  
**Client Sample ID:** DFS-A126-FD

**Collection Date:** 6/14/2016 5:38 am  
**Received Date:** 6/14/2016 1:00 pm

Analyses	Result	Units	RPT Limit	M.C.L.	Analyst	Date Analyzed	Method #
Copper	0.202	mg/L	0.010	1.3	SB	6/21/2016	EPA 200.7
Iron	0.084	mg/L	0.006		SB	6/20/2016	EPA 200.7
Lead	0.006	mg/L	0.003	0.015	SB	6/17/2016	SM3113B



**Project:** 0063.03936.9

**Project No:** 2160001

**Lab Order:** 1606526

**Matrix:** DRINKING WATER

**Sampled By:** W. Bosze

**Lab ID:** 1606526-006A

**Collection Date:** 6/14/2016 5:43 am

**Client Sample ID:** DFS-A126-FL

**Received Date:** 6/14/2016 1:00 pm

Analyses	Result	Units	RPT Limit	M.C.L.	Date		Method #
					Analyst	Analyzed	
Copper	<b>0.067</b>	mg/L	0.010	1.3	SB	6/21/2016	EPA 200.7
Iron	<b>0.050</b>	mg/L	0.006		SB	6/20/2016	EPA 200.7
Lead	<b>&lt; 0.003</b>	mg/L	0.003	0.015	SB	6/17/2016	SM3113B

Prein&Newhof

No. 31883