

2017 Water Quality Report

TABLE I - FILTERED WATER QUALITY DATA (Regulated)

Data presented in this table are from the most recent testing performed in accordance with Federal and State regulations.

Parameters	Unit	MCL	MCLG	MCL Violation Y/N	Your Water Level	Range of Detected Levels	Date Most Recent Testing Completed (a)	Source
Barium	mg/L	2	2	N	<0.400		1/17	Erosion of natural deposits; discharge of drilling wastes; discharge from metal from refineries
Copper	mg/L	AL-1.3	1.3	N	0.061	<0.05–0.1 1	9/17	Corrosion of household plumbing systems; erosion of natural deposits leaching from wood preservatives
Fluoride	mg/L	4	4	N	0.643	0.11– 0.835	12/17	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum deposits
Lead	ug/L	AL-15	0	N	0.001(a)	0.001– 0.004	9/17	Corrosion of household plumbing systems; erosion of natural deposits
Nitrate	mg/L	10	10	N	<1.0		2/17	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total Asbestos	MFL	7	7	N	<0.2	N/A	6/11	Decay of asbestos cement water mains; erosion of natural deposits

(a) Lead and Copper action levels are exceeded if the concentrations in more than 10% of tap water samples collected during any monitoring period are greater than the MCL Action Levels shown in the table above. -

TABLE II - FILTERED WATER QUALITY DATA (Non-Regulated)

Parameters	Unit	Your Water Detected Levels	SDWR	MCLG	Source
Alkalinity	mg/L	22.8	NS	NS	Erosion of natural deposits, water treatment processes
Hardness	mg/L	31.2	NS	NS	Presence of mineral deposits most commonly calcium and magnesium
Iron	mg/L	<0.20	0.3	NS	Erosion of natural deposits
Manganese	mg/L	<0.20	0.05	NS	Erosion of natural deposits
pH	pH units	7.7	7.0 – 8.65	NS	Measurement of acid or base neutralizing capacities of water
Sodium	mg/L	16.5	NS	NS	Erosion of natural deposits, chemical use in water treatment
Sulfate	mg/L	29.0	250	NS	Erosion of natural deposits, decay or organic matter

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TABLE III – VOC CONTAMINANTS (Non-Regulated)*

Parameters	Unit	Your Water Detected Levels	Range of Detected Level	Sample Date
Chloroform	ug/L	11.16	6.00 – 22.13	11/17
Bromodichloromethane	ug/L	12.59	7.25 – 19.63	11/17
Bromoform	ug/L	9.67	1.50 – 16.38	11/17
Chlorodibromomethane	ug/L	15.22	2.75 – 27.88	11/17

* These compounds are associated with chlorine disinfection.

TABLE IV - 1,4-DIOXANE (Unregulated)

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determine the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Sample Dates 2016	P.O. Hoffer WTF Point of Entry (ug/L)
1/11/16	1.20
2/24/16	1.60
3/16/16	1.20
4/13/16	1.20
5/11/16	2.60
6/14/16	2.00
7/20/16	1.90
8/23/16	0.64
9/20/16	1.40
10/26/16	0.72
11/28/16	1.40
12/27/16	1.10

Sample Dates 2017	P.O. Hoffer WTF Point of Entry (ug/L)
1/26/17	3.80
2/22/17	4.20
3/16/17	2.30
4/5/17	1.40
5/3/17	0.75
6/20/17	1.90
7/13/17	0.72
8/15/17	0.41
9/19/17	2.80
10/12/17	2.40
11/14/17	2.40
12/11/17	3.60

PWC meets or surpasses all the standard requirements annually. While 1,4-Dioxane has been detected in the Cape Fear River as well as other areas in our region, state and nation, the Environmental Protection Agency (EPA) currently has no standards for 1,4-Dioxane and has not yet issued regulated safe limits. If the EPA believed 1,4 Dioxane was an immediate threat, a directive would have been issued. Since 1,4-Dioxane cannot be removed through our traditional water treatment process, we have partnered with other communities to research and identify its sources to reduce or eliminate it so there will be no long-term exposure to our customers. You can find additional information on our website: www.faypwc.com/the-facts-about-1-4-dioxane/

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TABLE V – TURBIDITY (a)

Parameters	Unit	MCL	Your Water	Average	Range	MCLG Violation	Source
Turbidity	NTU	95% of samples <0.30	100% <0.3 NTU	0.06	0.03 - 0.23	N	Soil runoff

(a) Turbidity is a measure of the cloudiness of the water. PWC monitors it because it is a good indicator of the effectiveness of PWC's filtration system.

**TABLE VI – MICROBIOLOGICAL CONTAMINANTS
PWC Surface Water Distribution**

Parameters	MCL Violation Y/N	Your Water	MCLG	MCL	Source
Total Coliform Bacteria	N/A	N/A	N/A	TT(a)(b)	Naturally present in the environment
Fecal Coliform or E. coli	N	0	0	Routine and repeat samples are total coliform-positive and either is E. coli-positive or system fails to take repeat samples following E. coli-positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli <i>Note:</i> If either an original routine sample and/or its repeat samples(s) are E. coli positive, a Tier 1 violation exists.	Human and animal fecal waste

(a) If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.

(b) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. In April of 2017, PWC found total coliform along a short section of unused 8-inch PVC pipe along Skibo Rd. We immediately isolated that section of pipe, and as required under the Revised Total Coliform Rule conducted a **Level 1 Assessment**. The results of this Level 1 Assessment showed a bio-film buildup on the interior of this section of 8-inch pipe. PWC's corrective-action following the Level 1 Assessment was to replace that section of pipe. We have had no coliform-positive results in this area since the 8-inch PVC pipe was replaced. During year 2017, the Public Works Commission was only required to complete this

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one Level 1 Assessment. As stated above, PWC completed the assessment and immediately implemented the corrective actions identified in the Assessment.

TABLE VII – LEAD AND COPPER CONTAMINANTS

Contaminant (units)	Sample Date**	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (mg/L) (90 th percentile)	6/17	0.061	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ug/L) (90 th percentile)	6/17	0.001	0	0	AL=.015	Corrosion of household plumbing systems, erosion of natural deposits

**If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Public Works Commission is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791), or at <http://www.epa.gov/safewater/lead>.*

***Contaminants tested every three years.*

TABLE VIII – DISINFECTION BY-PRODUCTS PRECURSORS CONTAMINANTS

Contaminant (units)	Sample Date	MCL/TT Violation Y/N	Your Water	Range Low-High	MCLG	MCL	Compliance Method	Likely Source of Contamination
Total Organic Carbon (ppm) (TOC) – RAW	Monthly	N	N/A	3.0-6.80	N/A	TT	N/A	Naturally present in the environment
TOC Removal Ratio (TOC) – TREATED	Monthly	N	1.61	1.0-2.30	N/A	TT	Alt 4 (SUVA \leq 2.0 L/mg-min)	Naturally present in the environment

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TABLE IX – STAGE 2 DISINFECTION BYPRODUCT COMPLIANCE
Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range Low-High	MCLG	MCL	Likely Source of Contamination
<i>TTHM (ppb)</i>			50		N/A	80	Byproduct of drinking water disinfection
Location B01	2017	N		24-74	N/A	80	
Location B02	2017	N	(Location	25-72	N/A	80	
Location B03	2017	N	Code: B07 –	17-66	N/A	80	
Location B04	2017	N	Golfview Rd.)	26-72	N/A	80	
Location B05	2017	N		29-67	N/A	80	
Location B06	2017	N		25-53	N/A	80	
Location B07	2017	N		28-70	N/A	80	
Location B08	2017	N		22-67	N/A	80	
<i>HAA5 (ppb)</i>			30		N/A	60	Byproduct of drinking water disinfection
Location B01	2017	N	(Location	14-26	N/A	60	
Location B02	2017	N	Code: B06 -	13-31	N/A	60	
Location B03	2017	N	Grip Dr.)	15-31	N/A	60	
Location B04	2017	N		15-29	N/A	60	
Location B05	2017	N	(Location	13-32	N/A	60	
Location B06	2017	N	Code: B05 -	13-34	N/A	60	
Location B07	2017	N	Blackwell St.)	15-28	N/A	60	
Location B08	2017	N		15-28	N/A	60	

TABLE X – DISINFECTANT RESIDUALS SUMMARY

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low-High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)*	2017	N	1.59	0.40 – 2.30	4	4	Water additive used to control microbes

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Chloramines (ppm)	2017	N	2.77	1.00 - 3.70	4	4	Water additive used to control microbes
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**Chlorine disinfection is used only during the month of March each year.*

TABLE XI- RADIOLOGICAL CONTAMINANTS

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low - High	MCLG	MCL	Likely Source of Contamination
Gross Alpha (pCi/L)	11-2016	N	3.40	N/A	0	15	Erosion of natural deposits
Gross Beta (pCi/L)	11-2016	N	4.60	N/A	0	50*	Decay of natural and man-made deposits
Radium 226 (pCi/L)	11-2016	N	<1.0	N/A	0	3	Erosion of natural deposits
Radium 228 (pCi/L)	11-2016	N	<1.0	N/A	0	2	Erosion of natural deposits
Uranium 226 (pCi/L)	11-2016	N	<.2.0	N/A	0	20.1	Erosion of natural deposits

**Note: The MCL for beta/photon emitters is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.*

CRYPTOSPORIDIUM

PWC monitored for Cryptosporidium in the Cape Fear River and Glenville Lake during 2017. The highest concentration was 0.09 oocysts/liter in February 2017, from the Cape Fear River. Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.