



March 13, 2020

Cedar Hill Mobile Home Park
1435 Cherry Vale Drive
Sumter, SC 29154

Dear Resident:

South Carolina Department of Health and Environmental Control (SC DHEC) recently conducted an inspection and water sampling on the two water wells in Cedar Hill Mobile Home Park (MHP).

In this packet you will find:

1. **Sanitary Survey Inspection Report:** A Sanitary Survey is an onsite review and inspection of an entire water system, including the water source, facilities, equipment, operation and maintenance. The overall rating for this inspection was **Satisfactory**.
2. **Sampling Results:** The Department conducted both compliance sampling and non-compliance sampling. Compliance sampling results are compared to Maximum Contaminant Levels (MCLs), which are standards set by U.S. EPA for drinking water. Non-compliance sampling results do not have a standard and are not regulated by U.S. EPA or SC DHEC.

All compliance sampling results for Cedar Hill MHP are in compliance with MCLs and meet all regulated drinking water standards.

Sampling for PFOA and PFOS, which is non-compliance sampling, and thus not regulated, was found to be above the EPA's Lifetime Health Advisory (LHA) of 70 parts per trillion (ppt). When both PFOA and PFOS are found in drinking water, the combined concentrations of PFOA and PFOS should be compared to the 70 ppt LHA. **Please Note: Advisories are non-enforceable and non-regulatory.**

Cedar Hill MHP PFOA and PFOS Results	February 12, 2020	February 21, 2020
Well 2 - PFOA	81 ppt**	83 ppt**
Well 2 - PFOS	48 ppt	53 ppt
Well 3 - PFOA	79 ppt**	170 ppt**
Well 3 - PFOS	53 ppt	55 ppt

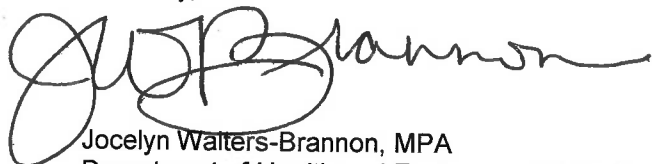
The highest cumulative levels found for PFOA and PFOS are included in the table.

** Indicates sample result above EPA LHA

3. **Info Sheet on Per – and Polyfluoroalkyl Substance (PFAS):** This information is included for you so you can learn more about these substances as you make decisions about your drinking water.

If you have any questions about the information included here, please contact myself (contact info below) or the SC DHEC Regional Office in Sumter at (803) 778-6548. If you have questions for Shaw Air Force Base please contact Ben Roope at (843) 963-4020 or at benjamin.roope.2@us.af.mil

Sincerely,

A handwritten signature in black ink, appearing to read "Jocelyn Walters-Brannon". The signature is fluid and cursive, with the first name "Jocelyn" being more prominent and stylized.

Jocelyn Walters-Brannon, MPA
Department of Health and Environmental Control
Public Participation Coordinator, Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201
Desk: 803.898.4096
walterjy@dhec.sc.gov



March 2, 2020

Mr. Jesse E. McLeod
480 E. Liberty St.
Sumter, SC 29513

Re: Cedar Hill MHP
(DHEC # 4360010)

Dear Mr. McLeod:

The Sanitary Survey that was conducted March 2, 2020 on the water system that serves Cedar Hill Mobile Home Park is enclosed. Thanks to Mark Wrigley for his assistance and cooperation during the inspection.

The Cedar Hill Mobile Home Park system is a Community (Type C) system. Two wells provide water for a total of 48 residential connections that serve a population of 123. The water from the wells is not treated. There is a total of 810 gallons of storage provided by 9 bladder tanks.

When evaluated according to the standards of the State Primary Drinking Water Regulations (SPDWR), the Cedar Hill Mobile Home Park water system is rated "Satisfactory". Please note the survey finding below:

- Seal around the bottom of the plate and the well casing of Well #3 to provide an extra measure of protection to the wellhead. Please have this item corrected within one week of receipt of this letter.

Please e-mail brownpr@dhec.sc.gov or call (843) 661-4825 if you have any questions.

Sincerely,

Paula R. Brown
BEHS Pee Dee - Florence

Cc: Leigh Plummer, Director, BEHS Pee Dee – Florence & Sumter
Keith Lane, Office Manager, BEHS Pee Dee - Sumter
Bureau of Water
File



Info Sheet

South Carolina Department of Health and Environmental Control • www.scdhec.gov

Per- and Polyfluoroalkyl Substances (PFAS)

What are per- and polyfluoroalkyl substances (PFAS)?

Per- and polyfluoroalkyl substances (PFAS) are a large group of man-made chemicals that have been used worldwide in consumer products and in some industrial applications. They've been in use in the United States since the 1940s. PFAS chemicals are used to make products that resist heat, oil, stains, grease and water. The two most commonly produced and most studied PFAS chemicals are **perfluorooctanoic acid (PFOA)** and **perfluorooctane sulfonic acid (PFOS)**.

PFAS chemicals:

- Do not occur naturally yet are widespread in the environment because of their broad uses
- Are found in people, wildlife and fish world-wide
- Are stable and do not break down easily in the environment (they are persistent)
- Can build up in biological tissues (people, wildlife, fish) over time if exposure continues (they bioaccumulate)

Are PFAS chemicals harmful?

Human health effects from PFAS exposure are not completely understood. Studies have shown that long-term (lifetime) exposure to some PFAS chemicals may affect developmental stages (growth, learning, behavior) of infants and older children, lower a woman's chance of getting pregnant, disrupt the body's hormones, increase cholesterol, and may increase cancer risk. In 2016, the U.S. Environmental Protection Agency (EPA) issued a Lifetime Health Advisory for PFOA and PFOS in drinking water.

What is a Lifetime Health Advisory?

A Lifetime Health Advisory (LHA) is just that - an advisory. The LHA was established based on epidemiological studies. These studies indicate that exposure to PFOA and PFOS (the two most common PFAS chemicals) over certain levels may result in adverse health effects. The LHA for PFOA and/or PFOS is 70 parts per trillion (ppt). This LHA is protective of everyone, including

How can I be exposed to PFAS?

The most common exposure route is from swallowing food or water that contains PFAS. PFAS have been commonly used in the manufacturing of:

- nonstick cookware
- food packaging (ex: microwave popcorn bags, fast food wrappers, sliced cheese wrappers, pizza boxes)
- stain-resistant carpets and fabrics and water-resistant clothing
- paints, varnishes and sealants
- cosmetics
- dental floss
- fire-fighting foams

Exposure to PFAS chemicals via touching, contact with the skin, and inhalation are lesser human health concerns at this time.

pregnant and nursing women, young children and the elderly. Currently, the EPA has not set health advisory levels for the other PFAS chemicals.

A LHA is not a primary drinking water standard (also called a Maximum Contaminant Level, or MCL) under the Safe Drinking Water Act. **A LHA is not an enforceable regulatory standard.** Currently, EPA is evaluating whether an enforceable MCL for PFOA, PFOS or any other PFAS chemical should be developed.

How do PFAS chemicals get into drinking water?

PFAS chemicals can get into drinking water when products containing them are used or spilled onto the ground or into lakes and rivers. PFAS move easily through the ground, getting into groundwater that is used for some water supplies or for private drinking water wells. When spilled into lakes or rivers used as sources of drinking water, they can get into drinking water supplies. PFAS in the air can also end up in rivers and lakes used for drinking water.

What is DHEC doing about PFAS chemicals?

DHEC has developed a strategy for addressing PFAS chemicals in drinking water. DHEC's PFAS in Drinking Water strategy focuses on community water systems and on private wells that are located in areas that are potentially impacted by PFAS contamination. Sampling and analyses will begin in early 2020.

DHEC will also develop a strategy regarding PFAS in ambient surface waters (lakes, rivers, streams), including the assessment of fish tissue quality as a protective public health measure for fish consumption by our residents. The ambient water strategy is expected to be completed by mid-2020.

How can I reduce my exposure to PFAS?

Ingestion (swallowing) of food or water containing PFAS is the most common route of exposure. Because PFAS are present in so many different consumer products and throughout our environment, exposure to PFAS cannot be eliminated. However, some steps can be taken to reduce your exposure:

- Read consumer product labels and avoid using products with PFAS.
- Use an alternative or treated water source for drinking, food preparation, brushing teeth or preparing infant formula if your drinking water contains more than 70 ppt of total PFOA and PFOS.
 - Activated carbon filtration or reverse osmosis membranes effectively reduce PFOA and PFAS in drinking water.

Water with a PFAS level greater than the LHA can be used for bathing, showering, washing clothes and cleaning.

For more information, visit DHEC's webpage at www.scdhec.gov/PFAS or other resources below.

U.S. Environmental Protection Agency

- Basic Information about PFAS: www.epa.gov/pfas
- Drinking Water PFOA and PFAS Lifetime Health Advisory: www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos
- Technical Fact Sheet – PFOS and PFOA: www.epa.gov/sites/production/files/2017-12/documents/ffrrofactsheet_contaminants_pfos_pfoa_11-20-17_508_0.pdf

U.S. Agency for Toxic Substances and Disease Registry

- Frequently Asked Questions: www.atsdr.cdc.gov/pfas/

PFAS by LC/MS/MS

Client: SC DHEC	Laboratory ID: VA16090-005
Description: G43196 well 1 Name of well sampled	Matrix: Aqueous
Date Sampled: 01/16/2020 1232 Date and time sample was taken	
Date Received: 01/16/2020	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	01/20/2020 2216	MMM	01/19/2020 1249	42255
2	537.1	537.1	20	01/21/2020 1521	MMM	01/19/2020 1249	42255

Parameter	List of chemicals analyzed	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.7	0.34	ng/L	1
	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.7	0.42	ng/L	1
	Perfluoro-1-butane sulfonic acid (PFBS)	376-73-5	537.1	33	J	34	6.7	ng/L	2
	Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	360		34	6.7	ng/L	2
	Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.7	0.67	ng/L	1
	Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.7	0.34	ng/L	1
	Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	44		34	6.7	ng/L	2
	Perfluoro-n-hexanoic acid (PFHxA)	307-24-1	537.1	200		34	6.7	ng/L	2
	Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	8.2		1.7	0.67	ng/L	1
	Perfluoro-n-octanoic acid (PFOA)	336-67-1	537.1	65		34	6.7	ng/L	2
	Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.7	0.34	ng/L	1
	Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		1.7	0.42	ng/L	1
	Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.7	0.67	ng/L	1
	Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	170		34	6.7	ng/L	2

Surrogate	Q	Run 1		Run 2	
		% Recovery	Acceptance Limits	% Recovery	Acceptance Limits
13C2_PFHxA		83	70-130	99	70-130
13C3-HFPO-DA		100	50-150	103	50-150
13C6_PFDA		106	70-130	104	70-130
d5-EtFOSAA		94	70-130	92	70-130

nanogram per liter = part per trillion (ppt)

The U.S. EPA has established a Lifetime Health Advisory (LHA) for PFOA and PFOS. When both PFOA and PFOS are found in drinking water, the combined concentrations of PFOA and PFOS should be compared to the LHA, which is 70 parts per trillion (ppt).

For example, 65+170 = 235 ppt, which is above the LHA.

LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
 ND = Not detected at or above the DL N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% J = Estimated result < LOQ and ≥ DL
 H = Out of holding time W = Reported on wet weight basis

Cedar Hill Mobile Home Park (MHP)

Public Water System

SC4360010

Two Active Groundwater Wells Service the MHP

Well 1 (G43191) – Well has been out of service since 2005

Well 2 (G43190) – Located next to pump house

Well 3 (G43372) – Near fire department

Well 2 (G43190) – Located next to pump house



South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report

Station Code: 4360010-G43190
Location Description: CEDAR HILL MHP
Matrix: WATER

Sample Type: CR
Additional Info:

Laboratory Sample Number: AE45003
Program Charge: DWT
Collected By: MCFADDIN H
Date of Collection: 02/25/2020
Time of Collection: 11:38

Laboratory Sample Number: AE45003

	Analyte	Result	Units	Method Reference
Nitrate Nitrite	Nitrate Nitrite	0.94	mg/L	LACHAT 10107041C
Nitrite	Nitrite	<0.020	mg/L	LACHAT 10107051A

Sample Comments:



**South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report**

Station Code: 4360010-G43190
 Location Description: CEDAR HILL MHP
 Matrix: WATER

Laboratory Sample Number: AE45004
 Program Charge: DWT
 Collected By: MCFADDIN H
 Date of Collection: 02/25/2020
 Time of Collection: 11:38

Sample Type: CR
 Additional Info:

Laboratory Sample Number: AE45004

Analyte	Result	Units	Method Reference
Aluminum in Water	0.052	mg/L	EPA 200.7
Antimony by graphite furnace	<0.0030	mg/L	EPA 200.9
Arsenic by graphite furnace	<0.0050	mg/L	EPA 200.9
Barium in Water	<0.050	mg/L	EPA 200.7
Benzo(a)pyrene	<0.000020	mg/L	EPA 550.1
Beryllium in Water	<0.0010	mg/L	EPA 200.7
Cadmium by graphite furnace	<0.00010	mg/L	EPA 200.9
Calcium in Water	0.50	mg/L	EPA 200.7
Carbamate Pesticides			
Carbaryl	<0.00050	mg/L	EPA 531.1
Carbofuran	<0.00090	mg/L	EPA 531.1
Aldicarb	<0.00050	mg/L	EPA 531.1
3-Hydroxycarbofuran	<0.00050	mg/L	EPA 531.1
Methomyl	<0.00050	mg/L	EPA 531.1
Oxamyl	<0.0020	mg/L	EPA 531.1
Aldicarb sulfone	<0.00050	mg/L	EPA 531.1
Aldicarb sulfoxide	<0.00050	mg/L	EPA 531.1
Chlorinated Acid Herbicides and Dalapon			
Picloram	<0.000040	mg/L	EPA 515.3
Dinoseb	<0.000080	mg/L	EPA 515.3
PCP	<0.000010	mg/L	EPA 515.3
2,4-D	<0.00010	mg/L	EPA 515.3
Dicamba	<0.000040	mg/L	EPA 515.3
2,4,5-TP	<0.000040	mg/L	EPA 515.3
Dalapon	<0.0010	mg/L	EPA 515.3
Chromium in Water	<0.0050	mg/L	EPA 200.7
Copper in Water	<0.010	mg/L	EPA 200.7
Diquat	<0.00088	mg/L	EPA 549.2
Drinking Water Volatile Organics			
Benzene	<0.000500	mg/L	EPA 524.2
Carbon tetrachloride	<0.000500	mg/L	EPA 524.2
1,1-Dichloropropene	<0.000500	mg/L	EPA 524.2
1,1,1-Trichloroethane	<0.000500	mg/L	EPA 524.2
cis-1,2-Dichloroethene	<0.000500	mg/L	EPA 524.2
trans-1,3-Dichloropropene	<0.000500	mg/L	EPA 524.2
1,2-Dichloroethane	<0.000500	mg/L	EPA 524.2

Drinking Water Volatile Organics	Bromochloromethane	<0.000500	mg/L	EPA 524.2	
	n-Butylbenzene	<0.000500	mg/L	EPA 524.2	
	1,2,4-Trichlorobenzene	<0.000500	mg/L	EPA 524.2	
	Hexachlorobutadiene	<0.000500	mg/L	EPA 524.2	
	Napthalene	<0.000500	mg/L	EPA 524.2	
	1,2,3-Trichlorobenzene	<0.000500	mg/L	EPA 524.2	
	Methyl tert-Butyl Ether	<0.000500	mg/L	EPA 524.2	
	1,1,1,2-Tetrachloroethane	<0.000500	mg/L	EPA 524.2	
	Bromobenzene	<0.000500	mg/L	EPA 524.2	
	1,1-Dichloroethane	<0.000500	mg/L	EPA 524.2	
	1,3-Dichloropropane	<0.000500	mg/L	EPA 524.2	
	Tetrachloroethene	<0.000500	mg/L	EPA 524.2	
	1,3,5-Trimethylbenzene	<0.000500	mg/L	EPA 524.2	
	2,2-Dichloropropane	<0.000500	mg/L	EPA 524.2	
	tert-Butylbenzene	<0.000500	mg/L	EPA 524.2	
	1,2,4-Trimethylbenzene	<0.000500	mg/L	EPA 524.2	
	sec-Butylbenzene	<0.000500	mg/L	EPA 524.2	
	1,3-Dichlorobenzene	<0.000500	mg/L	EPA 524.2	
	p-Isopropyltoluene	<0.000500	mg/L	EPA 524.2	
	trans-1,2-Dichloroethene	<0.000500	mg/L	EPA 524.2	
	1,2-Dichlorobenzene	<0.000500	mg/L	EPA 524.2	
	4-Chlorotoluene	<0.000500	mg/L	EPA 524.2	
	1,1,1,2-Tetrachloroethane	<0.000500	mg/L	EPA 524.2	
	Isopropylbenzene	<0.000500	mg/L	EPA 524.2	
	Styrene	<0.000500	mg/L	EPA 524.2	
	o-Xylene	<0.000500	mg/L	EPA 524.2	
	m,p-Xylenes	<0.00100	mg/L	EPA 524.2	
	Chlorobenzene	<0.000500	mg/L	EPA 524.2	
	Ethylbenzene	<0.000500	mg/L	EPA 524.2	
	1,4-Dichlorobenzene	<0.000500	mg/L	EPA 524.2	
	Bromomethane	<0.000500	mg/L	EPA 524.2	
	Methylene chloride	<0.000500	mg/L	EPA 524.2	
	Toluene	<0.000500	mg/L	EPA 524.2	
	cis-1,3-Dichloropropene	<0.000500	mg/L	EPA 524.2	
	Dibromomethane	<0.000500	mg/L	EPA 524.2	
	1,1,2-Trichloroethane	<0.000500	mg/L	EPA 524.2	
	1,2-Dichloropropane	<0.000500	mg/L	EPA 524.2	
	1,1-Dichloroethylene	<0.000500	mg/L	EPA 524.2	
	Trichlorofluoromethane	<0.000500	mg/L	EPA 524.2	
	Chloroethane	<0.000500	mg/L	EPA 524.2	
	Vinyl Chloride	<0.000500	mg/L	EPA 524.2	
	Chloromethane	<0.000500	mg/L	EPA 524.2	
	Dichlorodifluoromethane	<0.000500	mg/L	EPA 524.2	
	1,2,3-Trichloropropane	<0.000500	mg/L	EPA 524.2	
	n-Propylbenzene	<0.000500	mg/L	EPA 524.2	
	2-Chlorotoluene	<0.000500	mg/L	EPA 524.2	
	Trichloroethylene	<0.000500	mg/L	EPA 524.2	
	EDB/DBCP	DBCP	<0.000020	mg/L	EPA 504.1
		EDB	<0.000020	mg/L	EPA 504.1
	Fluoride	Fluoride	<0.10	mg/L	LACHAT 10109122A
	Glyphosate	Glyphosate	<0.0060	mg/L	EPA 547
	Hardness	Hardness	3.3	mg/L	EPA 200.7
	Iron in Water	Iron in Water	<0.020	mg/L	EPA 200.7
	Lead in drinking water	Lead in drinking water	<0.0020	mg/L	EPA 200.9
Magnesium in Water	Magnesium in Water	0.51	mg/L	EPA 200.7	
Manganese in Water	Manganese in Water	<0.010	mg/L	EPA 200.7	
Mercury in Water	Mercury in Water	<0.00020	mg/L	SM3112 B 22nd Ed	
Nickel in Water	Nickel in Water	<0.020	mg/L	EPA 200.7	
PCBs and Toxaphene	PCB 1248	<0.00010	mg/L	EPA 508	
	Toxaphene	<0.0010	mg/L	EPA 508	
	PCB 1254	<0.00010	mg/L	EPA 508	
	PCB 1242	<0.00010	mg/L	EPA 508	
	PCB 1232	<0.00010	mg/L	EPA 508	
	PCB 1221	<0.00010	mg/L	EPA 508	
	PCB 1016	<0.00010	mg/L	EPA 508	
	PCB 1260	<0.00010	mg/L	EPA 508	
Pesticides/Semi-Volatiles	Aldrin	<0.00010	mg/L	EPA 525.2	
	Alachlor	<0.00040	mg/L	EPA 525.2	
	Di (2-ethylhexyl) adipate	<0.00060	mg/L	EPA 525.2	
	Endrin	<0.00022	mg/L	EPA 525.2	
	Dieldrin	<0.00010	mg/L	EPA 525.2	
	Technical chlordane	<0.00040	mg/L	EPA 525.2	

Pesticides/Semi-Volatiles	Butachlor	<0.00010	mg/L	EPA 525.2
	Di (2-ethylhexyl) phthalate	<0.00060	mg/L	EPA 525.2
	Heptachlor epoxide	<0.00010	mg/L	EPA 525.2
	Methoxychlor	<0.0080	mg/L	EPA 525.2
	Metolachlor	<0.00010	mg/L	EPA 525.2
	Heptachlor	<0.000080	mg/L	EPA 525.2
	Propachlor	<0.00010	mg/L	EPA 525.2
	Hexachlorobenzene	<0.00020	mg/L	EPA 525.2
	Simazine	<0.00015	mg/L	EPA 525.2
	Atrazine	<0.00022	mg/L	EPA 525.2
	Lindane	<0.00010	mg/L	EPA 525.2
	Metribuzin	<0.00020	mg/L	EPA 525.2
	Hexachlorocyclopentadiene	<0.00022	mg/L	EPA 525.2
	Selenium by graphite furnace	Selenium by graphite furnace	<0.0020	mg/L
Silver in Water	Silver in Water	<0.030	mg/L	EPA 200.7
Sodium in Water	Sodium in Water	1.7	mg/L	EPA 200.7
Thallium by graphite furnace	Thallium by graphite furnace	<0.00050	mg/L	EPA 200.9
Zinc in Water	Zinc in Water	<0.010	mg/L	EPA 200.7

Sample Comments:



South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report

Station Code: 4360010-G43190
Location Description: CEDAR HILL MHP
Matrix: WATER

Laboratory Sample Number: AE45006
Program Charge: WSP
Collected By: MCFADDIN H
Date of Collection: 02/25/2020
Time of Collection: 11:38

Sample Type:
Additional Info:

Laboratory Sample Number: AE45006

	Analyte	Result	Units	Method Reference
Alkalinity	Alkalinity	1.0	mg/L of CaCO ₃	SM 2320B
Ammonia	Ammonia	<0.050*	mg/L	LACHAT 10107065J
Apparent Color	Apparent Color	<5	CU	SM 2120B COLOR
Chloride	Chloride	1.8	mg/L	LACHAT 10117071B
Sulfate, Ion Chromatograph	Sulfate, Ion Chromatograph	<5.0	mg/L	EPA 300.1
Total Dissolved Solids	Total Dissolved Solids	34	mg/L	SM 2540C
Total Organic Carbon	Total Organic Carbon	<1.0	mg/L	SM 5310B
Total Phosphorus in Water	Total Phosphorus in Water	<0.020*	mg/L	LACHAT 10115011E
Total Solids	Total Solids	25*	mg/L	SM 2540B
Turbidity	Turbidity	<0.5	NTU	EPA 180.1

Sample Comments: *NH₃-W, TP-W and TS are non-regulatory parameters and are for informational purposes only, not for compliance.



South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report

Station Code: 4360010
Location Description: CEDAR HILL MHP
Matrix: WATER

Sample Type: SPOR
Additional Info: Well #2 G43190

Laboratory Sample Number: AE45030
Program Charge: DWT
Collected By: MCFADDIN H
Date of Collection: 02/25/2020
Time of Collection: 11:38

Laboratory Sample Number: AE45030

	Analyte	Result	Units	Method Reference
Ecoli in Drinking Water	Ecoli in Drinking Water	ABSENT		SM 9223B
Total Coliform - DST	Total Coliform - DST	ABSENT		SM 9223B

Sample Comments:

PFAS by LC/MS/MS

Client: SC DHEC

Laboratory ID: VB12049-003

Description: G43190a - well 2

Matrix: Aqueous

Date Sampled: 02/12/2020 1015

Date Received: 02/12/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/14/2020 1253	SES	02/13/2020 1246	44829
2	537.1	537.1	5	02/17/2020 1504	SES	02/13/2020 1246	44829

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.9	0.37	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.9	0.47	ng/L	1
Perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	13		1.9	0.37	ng/L	1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	160		9.4	1.9	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.9	0.75	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.9	0.37	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	12		1.9	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	57		9.4	1.9	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	0.80	J	1.9	0.75	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	81		9.4	1.9	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.9	0.37	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		1.9	0.47	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.9	0.75	ng/L	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	48		9.4	1.9	ng/L	2

Surrogate	Run 1 Acceptance		Run 2 Acceptance		
	Q	% Recovery	Q	% Recovery	
13C2_PFHxA		90	70-130	109	70-130
13C3-HFPO-DA		91	70-130	99	70-130
13C6_PFDA		105	70-130	108	70-130
d5-EtFOSAA		84	70-130	97	70-130

LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
 ND = Not detected at or above the DL N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% J = Estimated result < LOQ and ≥ DL
 H = Out of holding time W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: SC DHEC

Laboratory ID: VB12049-004

Description: G43190b - well 2

Matrix: Aqueous

Date Sampled: 02/12/2020 1015

Date Received: 02/12/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/14/2020 1303	SES	02/13/2020 1246	44829
2	537.1	537.1	5	02/17/2020 1515	SES	02/13/2020 1246	44829

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
nonylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.8	0.36	ng/L	1
methoxyperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.8	0.45	ng/L	1
perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	14		1.8	0.36	ng/L	1
perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	150		9.0	1.8	ng/L	2
perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.8	0.72	ng/L	1
perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.8	0.36	ng/L	1
perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	11		1.8	0.36	ng/L	1
perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	53		9.0	1.8	ng/L	2
perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	0.83	J	1.8	0.72	ng/L	1
perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	76		9.0	1.8	ng/L	2
perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.8	0.36	ng/L	1
perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		1.8	0.45	ng/L	1
perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.8	0.72	ng/L	1
perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	47		9.0	1.8	ng/L	2

Surrogate	Run 1			Run 2		
	Q	% Recovery	Acceptance Limits	Q	% Recovery	Acceptance Limits
13C2_PFHxA		90	70-130		101	70-130
13C3-HFPO-DA		92	70-130		95	70-130
13C6_PFDA		112	70-130		99	70-130
15-EtFOSAA		85	70-130		86	70-130

.LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
 ND = Not detected at or above the DL N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% J = Estimated result < LOQ and ≥ DL
 H = Out of holding time W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: SC DHEC

Laboratory ID: VB21023-001

Description: G 43190 A Well 2

Matrix: Aqueous

Date Sampled: 02/21/2020 1045

Date Received: 02/21/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/24/2020 2057	MMM	02/24/2020 1114	45860
2	537.1	537.1	5	02/25/2020 1745	MMM	02/24/2020 1114	45860

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.8	0.37	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.8	0.46	ng/L	1
Perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	14		1.8	0.37	ng/L	1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	160		9.2	1.8	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.8	0.73	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.8	0.37	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	11		1.8	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	55		9.2	1.8	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	0.80	J	1.8	0.73	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	80		9.2	1.8	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.8	0.37	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		1.8	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.8	0.73	ng/L	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	53		9.2	1.8	ng/L	2

Surrogate	Run 1			Run 2		
	Q	% Recovery	Acceptance Limits	Q	% Recovery	Acceptance Limits
13C2_PFHxA		88	70-130		101	70-130
13C3-HFPO-DA		91	70-130		103	70-130
13C6_PFDA		88	70-130		80	70-130
d5-EtFOSAA		92	70-130		86	70-130

LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
 ND = Not detected at or above the DL N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% J = Estimated result < LOQ and ≥ DL
 H = Out of holding time W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: SC DHEC

Laboratory ID: VB21023-002

Description: G 43190 B Well 2

Matrix: Aqueous

Date Sampled: 02/21/2020 1055

Date Received: 02/21/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/24/2020 2107	MMM	02/24/2020 1114	45860
2	537.1	537.1	5	02/25/2020 1755	MMM	02/24/2020 1114	45860

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.9	0.38	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.9	0.47	ng/L	1
Perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	15		1.9	0.38	ng/L	1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	160		9.4	1.9	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.9	0.75	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.9	0.38	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	11		1.9	0.38	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	54		9.4	1.9	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	0.87	J	1.9	0.75	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	83		9.4	1.9	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.9	0.38	ng/L	1
Perfluoro-n-tridecanoic acid (PFTTrDA)	72629-94-8	537.1	ND		1.9	0.47	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.9	0.75	ng/L	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	53		9.4	1.9	ng/L	2

Surrogate	Run 1			Run 2		
	Q	% Recovery	Acceptance Limits	Q	% Recovery	Acceptance Limits
13C2_PFHxA		92	70-130		103	70-130
13C3-HFPO-DA		88	70-130		110	70-130
13C6_PFDA		88	70-130		85	70-130
d5-EtFOSAA		96	70-130		89	70-130

LOQ = Limit of Quantitation
 ND = Not detected at or above the DL
 H = Out of holding time
 B = Detected in the method blank
 N = Recovery is out of criteria
 W = Reported on wet weight basis
 E = Quantitation of compound exceeded the calibration range
 P = The RPD between two GC columns exceeds 40%
 DL = Detection Limit
 J = Estimated result < LOQ and ≥ DL

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Well 3 (G43372) – Near fire department



South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report

Station Code: 4360010-G43372
Location Description: CEDAR HILL MHP
Matrix: WATER

Sample Type: CR
Additional Info:

Laboratory Sample Number: AE44999
Program Charge: DWT
Collected By: MCFADDIN H
Date of Collection: 02/25/2020
Time of Collection: 11:14

Laboratory Sample Number: AE44999

	Analyte	Result	Units	Method Reference
Nitrate Nitrite	Nitrate Nitrite	0.99	mg/L	LCHAT 10107041C
Nitrite	Nitrite	<0.020	mg/L	LCHAT 10107051A

Sample Comments:



**South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report**

Station Code: 4360010-G43372
 Location Description: CEDAR HILL MHP
 Matrix: WATER

Laboratory Sample Number: AE45000
 Program Charge: DWT
 Collected By: MCFADDIN H
 Date of Collection: 02/25/2020
 Time of Collection: 11:14

Sample Type: CR
 Additional Info:

Laboratory Sample Number: AE45000

Analyte	Result	Units	Method Reference		
Aluminum in Water	0.067	mg/L	EPA 200.7		
Antimony by graphite furnace	<0.0030	mg/L	EPA 200.9		
Arsenic by graphite furnace	<0.0050	mg/L	EPA 200.9		
Barium in Water	<0.050	mg/L	EPA 200.7		
Benzo(a)pyrene	<0.000020	mg/L	EPA 550.1		
Beryllium in Water	<0.0010	mg/L	EPA 200.7		
Cadmium by graphite furnace	<0.00010	mg/L	EPA 200.9		
Calcium in Water	0.60	mg/L	EPA 200.7		
Carbamate Pesticides	Aldicarb	<0.00050	mg/L	EPA 531.1	
	Carbaryl	<0.00050	mg/L	EPA 531.1	
	Aldicarb-sulfoxide	<0.00050	mg/L	EPA 531.1	
	Aldicarb-sulfone	<0.00050	mg/L	EPA 531.1	
	Oxamyl	<0.0020	mg/L	EPA 531.1	
	3-Hydroxycarbofuran	<0.00050	mg/L	EPA 531.1	
	Carbofuran	<0.00090	mg/L	EPA 531.1	
	Methomyl	<0.00050	mg/L	EPA 531.1	
	Chlorinated Acid Herbicides and Dalapon	Picloram	<0.000040	mg/L	EPA 515.3
		Dicamba	<0.000040	mg/L	EPA 515.3
Dalapon		<0.0010	mg/L	EPA 515.3	
Dinoseb		<0.000080	mg/L	EPA 515.3	
2,4,5-TP		<0.000040	mg/L	EPA 515.3	
PCP		<0.000010	mg/L	EPA 515.3	
2,4-D		<0.00010	mg/L	EPA 515.3	
Chromium in Water		<0.0050	mg/L	EPA 200.7	
Copper in Water	<0.010	mg/L	EPA 200.7		
Diquat	<0.00088	mg/L	EPA 549.2		
Drinking Water Volatile Organics	1,3,5-Trimethylbenzene	<0.000500	mg/L	EPA 524.2	
	4-Chlorotoluene	<0.000500	mg/L	EPA 524.2	
	Napthalene	<0.000500	mg/L	EPA 524.2	
	p-Isopropyltoluene	<0.000500	mg/L	EPA 524.2	
	tert-Butylbenzene	<0.000500	mg/L	EPA 524.2	
	1,2,4-Trimethylbenzene	<0.000500	mg/L	EPA 524.2	
sec-Butylbenzene	<0.000500	mg/L	EPA 524.2		

Drinking Water Volatile Organics

	1,3-Dichlorobenzene	<0.000500	mg/L	EPA 524.2
	1,4-Dichlorobenzene	<0.000500	mg/L	EPA 524.2
	1,2-Dichlorobenzene	<0.000500	mg/L	EPA 524.2
	n-Butylbenzene	<0.000500	mg/L	EPA 524.2
	Hexachlorobutadiene	<0.000500	mg/L	EPA 524.2
	1,2,3-Trichlorobenzene	<0.000500	mg/L	EPA 524.2
	Methyl tert-Butyl Ether	<0.000500	mg/L	EPA 524.2
	2-Chlorotoluene	<0.000500	mg/L	EPA 524.2
	m,p-Xylenes	<0.00100	mg/L	EPA 524.2
	1,2,4-Trichlorobenzene	<0.000500	mg/L	EPA 524.2
	Methylene chloride	<0.000500	mg/L	EPA 524.2
	Styrene	<0.000500	mg/L	EPA 524.2
	1,1-Dichloropropene	<0.000500	mg/L	EPA 524.2
	1,1,1-Trichloroethane	<0.000500	mg/L	EPA 524.2
	Bromochloromethane	<0.000500	mg/L	EPA 524.2
	cis-1,2-Dichloroethene	<0.000500	mg/L	EPA 524.2
	2,2-Dichloropropane	<0.000500	mg/L	EPA 524.2
	Benzene	<0.000500	mg/L	EPA 524.2
	trans-1,2-Dichloroethene	<0.000500	mg/L	EPA 524.2
	1,2-Dichloroethane	<0.000500	mg/L	EPA 524.2
	1,1-Dichloroethylene	<0.000500	mg/L	EPA 524.2
	Trichlorofluoromethane	<0.000500	mg/L	EPA 524.2
	Chloroethane	<0.000500	mg/L	EPA 524.2
	Bromomethane	<0.000500	mg/L	EPA 524.2
	Vinyl Chloride	<0.000500	mg/L	EPA 524.2
	Chloromethane	<0.000500	mg/L	EPA 524.2
	Dichlorodifluoromethane	<0.000500	mg/L	EPA 524.2
	1,1-Dichloroethane	<0.000500	mg/L	EPA 524.2
	Tetrachloroethene	<0.000500	mg/L	EPA 524.2
	1,2,3-Trichloropropane	<0.000500	mg/L	EPA 524.2
	1,1,2,2-Tetrachloroethane	<0.000500	mg/L	EPA 524.2
	o-Xylene	<0.000500	mg/L	EPA 524.2
	Bromobenzene	<0.000500	mg/L	EPA 524.2
	Ethylbenzene	<0.000500	mg/L	EPA 524.2
	1,1,1,2-Tetrachloroethane	<0.000500	mg/L	EPA 524.2
	Carbon tetrachloride	<0.000500	mg/L	EPA 524.2
	1,3-Dichloropropane	<0.000500	mg/L	EPA 524.2
	n-Propylbenzene	<0.000500	mg/L	EPA 524.2
	1,1,2-Trichloroethane	<0.000500	mg/L	EPA 524.2
	trans-1,3-Dichloropropene	<0.000500	mg/L	EPA 524.2
	Toluene	<0.000500	mg/L	EPA 524.2
	cis-1,3-Dichloropropene	<0.000500	mg/L	EPA 524.2
	Dibromomethane	<0.000500	mg/L	EPA 524.2
	1,2-Dichloropropane	<0.000500	mg/L	EPA 524.2
	Trichloroethylene	<0.000500	mg/L	EPA 524.2
	Chlorobenzene	<0.000500	mg/L	EPA 524.2
	Isopropylbenzene	<0.000500	mg/L	EPA 524.2
EDB/DBCP	EDB	<0.000020	mg/L	EPA 504.1
	DBCP	<0.000020	mg/L	EPA 504.1
Fluoride	Fluoride	<0.10	mg/L	LACHAT 10109122A
Glyphosate	Glyphosate	<0.0060	mg/L	EPA 547
Hardness	Hardness	3.4	mg/L	EPA 200.7
Iron in Water	Iron in Water	<0.020	mg/L	EPA 200.7
Lead in drinking water	Lead in drinking water	<0.0020	mg/L	EPA 200.9
Magnesium in Water	Magnesium in Water	0.46	mg/L	EPA 200.7
Manganese in Water	Manganese in Water	<0.010	mg/L	EPA 200.7
Mercury in Water	Mercury in Water	<0.00020	mg/L	SM3112 B 22nd Ed
Nickel in Water	Nickel in Water	<0.020	mg/L	EPA 200.7
PCBs and Toxaphene	PCB 1242	<0.00010	mg/L	EPA 508
	PCB 1016	<0.00010	mg/L	EPA 508
	PCB 1221	<0.00010	mg/L	EPA 508
	PCB 1232	<0.00010	mg/L	EPA 508
	PCB 1248	<0.00010	mg/L	EPA 508
	PCB 1254	<0.00010	mg/L	EPA 508
	Toxaphene	<0.0010	mg/L	EPA 508
	PCB 1260	<0.00010	mg/L	EPA 508
Pesticides/Semi-Volatiles	Methoxychlor	<0.0080	mg/L	EPA 525.2
	Hexachlorocyclopentadiene	<0.00022	mg/L	EPA 525.2
	Technical chlordane	<0.00040	mg/L	EPA 525.2
	Heptachlor epoxide	<0.00010	mg/L	EPA 525.2
	Di (2-ethylhexyl) phthalate	<0.00060	mg/L	EPA 525.2
	Metribuzin	<0.00020	mg/L	EPA 525.2

Pesticides/Semi-Volatiles	Propachlor	<0.00010	mg/L	EPA 525.2
	Hexachlorobenzene	<0.00020	mg/L	EPA 525.2
	Simazine	<0.00015	mg/L	EPA 525.2
	Dieldrin	<0.00010	mg/L	EPA 525.2
	Lindane	<0.00010	mg/L	EPA 525.2
	Di (2-ethylhexyl) adipate	<0.00060	mg/L	EPA 525.2
	Alachlor	<0.00040	mg/L	EPA 525.2
	Heptachlor	<0.000080	mg/L	EPA 525.2
	Metolachlor	<0.00010	mg/L	EPA 525.2
	Aldrin	<0.00010	mg/L	EPA 525.2
	Butachlor	<0.00010	mg/L	EPA 525.2
	Endrin	<0.00022	mg/L	EPA 525.2
	Atrazine	<0.00022	mg/L	EPA 525.2
Selenium by graphite furnace	Selenium by graphite furnace	<0.0020	mg/L	EPA 200.9
Silver in Water	Silver in Water	<0.030	mg/L	EPA 200.7
Sodium in Water	Sodium in Water	1.8	mg/L	EPA 200.7
Thallium by graphite furnace	Thallium by graphite furnace	<0.00050	mg/L	EPA 200.9
Zinc in Water	Zinc in Water	<0.010	mg/L	EPA 200.7

Sample Comments:



South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report

Station Code: 4360010-G43372
Location Description: CEDAR HILL MHP
Matrix: WATER

Laboratory Sample Number: AE45002
Program Charge: WSP
Collected By: MCFADDIN H
Date of Collection: 02/25/2020
Time of Collection: 11:14

Sample Type:
Additional Info:

Laboratory Sample Number: AE45002

	Analyte	Result	Units	Method Reference
Alkalinity	Alkalinity	1.0	mg/L of CaCO ₃	SM 2320B
Ammonia	Ammonia	<0.050*	mg/L	LACHAT 10107085J
Apparent Color	Apparent Color	<5	CU	SM 2120B COLOR
Chloride	Chloride	2.2	mg/L	LACHAT 10117071B
Sulfate, Ion Chromatograph	Sulfate, Ion Chromatograph	<5.0	mg/L	EPA 300.1
Total Dissolved Solids	Total Dissolved Solids	35	mg/L	SM 2540C
Total Organic Carbon	Total Organic Carbon	<1.0	mg/L	SM 5310B
Total Phosphorus in Water	Total Phosphorus in Water	<0.020*	mg/L	LACHAT 10115011E
Total Solids	Total Solids	30*	mg/L	SM 2540B
Turbidity	Turbidity	<0.5	NTU	EPA 180.1

Sample Comments: *NH₃-W, TP-W and TS are non-regulatory parameters
and are for informational purposes only, not for compliance.



South Carolina Department of Health and Environmental Control
Analytical & Radiological Environmental
Services Division - Laboratory Report

Station Code: 4360010
Location Description: CEDAR HILL MHP
Matrix: WATER
Sample Type: SPOR
Additional Info: Well #3 G43372

Laboratory Sample Number: AE45031
Program Charge: DWT
Collected By: MCFADDIN H
Date of Collection: 02/25/2020
Time of Collection: 11:14

Laboratory Sample Number: AE45031

	Analyte	Result	Units	Method Reference
Ecoli in Drinking Water	Ecoli in Drinking Water	ABSENT		SM 9223B
Total Coliform - DST	Total Coliform - DST	ABSENT		SM 9223B

Sample Comments:

PFAS by LC/MS/MS

Client: SC DHEC

Laboratory ID: VB12049-001

Description: G4372a - well 3

Matrix: Aqueous

Date Sampled: 02/12/2020 1005

Date Received: 02/12/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/14/2020 1231	SES	02/13/2020 1246	44829
2	537.1	537.1	5	02/17/2020 1443	SES	02/13/2020 1246	44829

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.8	0.37	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.8	0.46	ng/L	1
Perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	14		1.8	0.37	ng/L	1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	160		9.2	1.8	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.8	0.74	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.8	0.37	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	12		1.8	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	58		9.2	1.8	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	0.87	J	1.8	0.74	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	79		9.2	1.8	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.8	0.37	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		1.8	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.8	0.74	ng/L	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	53		9.2	1.8	ng/L	2

Surrogate	Run 1		Acceptance Limits	Run 2		Acceptance Limits
	Q	% Recovery		Q	% Recovery	
13C2_PFHxA		102	70-130		110	70-130
13C3-HFPO-DA		98	70-130		97	70-130
13C6_PFDA		118	70-130		106	70-130
d5-EtFOSAA		93	70-130		86	70-130

LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
 ND = Not detected at or above the DL N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% J = Estimated result < LOQ and ≥ DL
 H = Out of holding time W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: SC DHEC

Laboratory ID: VB12049-002

Description: G4372b - well 3

Matrix: Aqueous

Date Sampled: 02/12/2020 1005

Date Received: 02/12/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/14/2020 1242	SES	02/13/2020 1246	44829
2	537.1	537.1	5	02/17/2020 1454	SES	02/13/2020 1246	44829

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.9	0.38	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.9	0.48	ng/L	1
Perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	14		1.9	0.38	ng/L	1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	160		9.6	1.9	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.9	0.77	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.9	0.38	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	11		1.9	0.38	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	56		9.6	1.9	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	0.87	J	1.9	0.77	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	80		9.6	1.9	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.9	0.38	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		1.9	0.48	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.9	0.77	ng/L	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	52		9.6	1.9	ng/L	2

Surrogate	Run 1		Run 2	
	Q	% Recovery	Q	% Recovery
13C2_PFHxA		94		110
13C3-HFPO-DA		88		99
13C6_PFDA		116		103
d5-EtFOSAA		87		92

LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
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 H = Out of holding time W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: SC DHEC

Laboratory ID: VB21023-003

Description: G 4372 A Well 3

Matrix: Aqueous

Date Sampled: 02/21/2020 1110

Date Received: 02/21/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/24/2020 2118	MMM	02/24/2020 1114	45860
2	537.1	537.1	10	02/25/2020 1806	MMM	02/24/2020 1114	45860

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		2.1	0.41	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		2.1	0.52	ng/L	1
Perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	25		2.1	0.41	ng/L	1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	240		21	4.1	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		2.1	0.83	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		2.1	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	15		2.1	0.41	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	100		21	4.1	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	1.4	J	2.1	0.83	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	170		21	4.1	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		2.1	0.41	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		2.1	0.52	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		2.1	0.83	ng/L	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	51		21	4.1	ng/L	2

Surrogate	Run 1		Acceptance Limits	Run 2		Acceptance Limits
	Q	% Recovery		Q	% Recovery	
13C2_PFHxA		86	70-130		96	70-130
13C3-HFPO-DA		89	70-130		107	70-130
13C6_PFDA		89	70-130		82	70-130
d5-EtFOSAA		86	70-130		86	70-130

LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
 ND = Not detected at or above the DL N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% J = Estimated result < LOQ and ≥ DL
 H = Out of holding time W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: SC DHEC	Laboratory ID: VB21023-004
Description: G 4372 B Well 3	Matrix: Aqueous
Date Sampled: 02/21/2020 1115	
Date Received: 02/21/2020	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	537.1	537.1	1	02/24/2020 2129	MMM	02/24/2020 1114	45860
2	537.1	537.1	10	02/25/2020 1817	MMM	02/24/2020 1114	45860

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	537.1	ND		1.8	0.37	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	537.1	ND		1.8	0.46	ng/L	1
Perfluoro-1-butane sulfonic acid (PFBS)	375-73-5	537.1	25		1.8	0.37	ng/L	1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	537.1	250		18	3.7	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	537.1	ND		1.8	0.74	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	537.1	ND		1.8	0.37	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	537.1	15		1.8	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	537.1	110		18	3.7	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	537.1	1.4	J	1.8	0.74	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	537.1	170		18	3.7	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	537.1	ND		1.8	0.37	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	537.1	ND		1.8	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	537.1	ND		1.8	0.74	ng/L	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	537.1	55		18	3.7	ng/L	2

Surrogate	Run 1 Acceptance		Run 2 Acceptance	
	Q	% Recovery	Q	% Recovery
13C2_PFHxA		89		104
13C3-HFPO-DA		92		104
13C6_PFDA		85		85
d5-EtFOSAA		87		92

LOQ = Limit of Quantitation B = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit
 ND = Not detected at or above the DL N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% J = Estimated result < LOQ and ≥ DL
 H = Out of holding time W = Reported on wet weight basis