Appendix A

Water Quality Testing Results

Appendix A – Part 1

Well Quality Data Summary Table

	Patricia Ct	Park Ridge Well B	Park Ridge Well A	Manchester Farms Well D	Manchester Farms Well B
Output (gpd)*	7000	8000	7000	6000	39000
Max Flow Rate (gpm)	20	31	38	6	78
TSS (mg/L)	6.1	<5.0	<5.0	<5.0	<5.0
TDS (mg/L)	184	238	260	199	175
Turbidity (NTU)	21.8	0.33	9.98	4.77	<0.30
Bicarbonate (mg/L)	28	73	58	20	14
Hardness (mg/L CaCO3)	75	52	129	81	61
Alkalinity (mg/L CaCO3)	28	73	58	20	14
Chloride (mg/L)	48.4	60	69.5	40.2	61
Nitrate (mg/L as N)	4.52	3.45	2.67	4.92	4.16
Sulfate (mg/L)	6.12	11.9	28.2	2.17	4.81
Silica, Dissolved (mg/L)	4.64	4.19	3.46	7.64	3.87
Ammonia, NH3-N (mg/L)	0.044	0.03	0.059	0.024	0.037
Temperature (degrees C)	13.7	15.6	11.3	15.2	15.7
TOC (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
Calcium (mg/L)	13	9.8	24	21	12
Magnesium (mg/L)	10	4.8	7.1	7.8	7.4
Iron (mg/L)	2.1	<0.05	0.71	0.43	<0.05
Manganese (mg/L)	0.25	0.0095	0.066	0.016	0.012
Sodium (mg/L)	22	55	28	6.5	27
Sulfide (mg/L)				<2.0	
PFOA (ppt)	8.45	2.3	11	4.6	4.52
PFOS (ppt)	6.04	1.94	9.5	2.6	1.86
Hazard Index	0.4563	0.3267	0.322	0.282	0.3683
GenX/HFPO (ppt)	<1.0	<1.0			<1.0
PFBS (ppt)	34.9	3.37	8.1	8.7	14.4
PFNA (ppt)	<1.5	<1.5	0.96	ND	<1.5
PFHxS (ppt)	1.7	<1.0	2	2.5	<1.0
PFHxA (ppt)	5.56	1.93	5.9	2.6	3.11
PFHpA (ppt)	3.31	1.12	3.8	1.6	2.42

*average daily use

Appendix A – Part 2

Historical PFAS Testing Results

Park Ridge Well A

State of Maryland
Department of Health
Laboratories Administration
Division of Environmental Sciences
ORGANICS ANALYTICAL LABORATORY
1770 Ashland Avenue, Baltimore, Maryland 21205
Robert Myers, Ph.D., Director

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Certificate # 3525.02

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MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Lab No.: E21001591005 Method: EPA 537.1 - PFAS

Date Received: 12/15/2020 Date Collected: 12/15/2020
Field ID: 006-0006-TP13 Submitted By: Lowman Date Analyzed: 12/19/2020

Contaminant	RL	MCL	Result
1-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.0		ND
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.0		ND
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.0		ND
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.0		ND
N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	2.5		ND
N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	3.0		ND
Perfluorobutanesulfonic acid (PFBS)	1.0		4.71
Perfluorodecanoic acid (PFDA)	1.0		ND
Perfluorododecanoic acid (PFDoA)	2.0		ND
Perfluoroheptanoic acid (PFHpA)	2.0		3.05
Perfluorohexanesulfonic acid (PFHxS)	1.0		1.59
Perfluorohexanoic acid (PFHxA)	1.0		4.69
Perfluorononanoic acid (PFNA)	2.0		ND
Perfluorooctanesulfonic acid (PFOS)	2.0		6.53
Perfluorooctanoic acid (PFOA)	1.0		8.20
Perfluorotetradecanoic acid (PFTDA)	1.0		ND
Perfluorotridecanoic acid (PFTrDA)	2.0		ND
Perfluoroundecanoic acid (PFUnDA)	1.0		ND

= 479 index

Comments:

Approved by: Sadia Nuseen Approval date: 12/30/2020

*All results are in parts per trillion ppt); ND = Less than the reporting level; na = not applicable; e = estimated value. Samples are tested as received.

MF well D

Manchester Farms – well D

State of Maryland
Department of Health
Laboratories Administration
Division of Environmental Sciences
ORGANICS ANALYTICAL LABORATORY
1770 Ashland Avenue, Baltimore, Maryland 21205
Robert Myers, Ph.D., Director

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Certificate # 3525.02

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MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Lab No.: E21001591007 Method: EPA 537.1 - PFAS

Date Received: 12/15/2020 Date Collected: 12/15/2020
Field ID: 006-0006-TP10 Submitted By: Lowman Date Analyzed: 12/19/2020

Contaminant	RL	MCL	Result
1-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.0		ND
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.0		ND
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.0		ND
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.0		ND
N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	2.5		ND
N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	3.0		ND
Perfluorobutanesulfonic acid (PFBS)	1.0		8.67
Perfluorodecanoic acid (PFDA)	1.0		ND
Perfluorododecanoic acid (PFDoA)	2.0		ND
Perfluoroheptanoic acid (PFHpA)	2.0		2.13
Perfluorohexanesulfonic acid (PFHxS)	1.0		ND
Perfluorohexanoic acid (PFHxA)	1.0		2.57
Perfluorononanoic acid (PFNA)	2.0		ND
Perfluorooctanesulfonic acid (PFOS)	2.0		ND
Perfluorooctanoic acid (PFOA)	1.0		3.90
Perfluorotetradecanoic acid (PFTDA)	1.0		ND
Perfluorotridecanoic acid (PFTrDA)	2.0		ND
Perfluoroundecanoic acid (PFUnDA)	1.0		ND

.0043 index

.3154

Comments:

Approved by: Sadia Nuruzzaman Approval date: 12/30/2020

All results are in parts per trillion ppt); ND = Less than the reporting level; na = not applicable; e = estimated value. Samples are tested as received.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) ANALYTICAL RESULTS
TOWN OF MANCHESTER
MD006-0006

Analyte	WTP PARK RIDGE WELLS #13*	WTP14 HALLIE HILL2 WELL 14&15 WL23 WL 24*	HIGH SCHOOL PLANT**	WTP 2 HOLLAND DRIVE WELL**	WTP 4 BACHMAN ROAD WELL**	WTP 7 PATRICIA COURT**	WTP 8 CROSSROADS OVERLOOK**
11Cl-PF3OUdS	ND	ND	ND	ND	ND	ND	ND
ADONA	ND	ND	ND	ND	ND	ND	ND
9Cl-PF3ONS	ND	ND	ND	ND	ND	ND	ND
HFPO-DA	ND	ND	ND	ND	ND	ND	ND
N-EtFOSAA	ND	ND	ND	ND	ND	ND	ND
N-MeFOSAA	ND	ND	ND	ND	ND	ND	ND
PFBS	4.71	ND	ND	4.30	3.23	21.29	2.06
PFDA	ND	ND	ND	ND	ND	ND	ND
PFDoA	ND	ND	ND	ND	ND	ND	ND
PFHpA	3.05	ND	ND	ND	ND	2.79	ND
PFHxS	1.59	ND	ND	1.65	ND	1.48	2.47
PFHxA	4.69	ND	1.41	2.09	1.93	4.51	1.35
PFNA	ND	ND	ND	ND	ND	ND	ND
PFOS	6.53	ND	ND	ND	ND	5.83	ND
PFOA	8.20	ND	1.18	1.90	2.51	7.87	2.87
PFTA	ND	ND	ND	ND	ND	ND	ND
PFTrDA	ND	ND	ND	ND	ND	ND	ND
PFUnDA	ND	ND	ND	ND	ND	ND	ND
Total PFOA/PFOS	14.73	ND	1.18	1.90	2.51	13.70	2.87

All samples consist of finished water.
All results are in parts per trillion (ppt).
*Finished water samples collected on December 15th, 2020
** Finished water samples collected on December 14th, 2020

Analyte	WTP 9 CROSSROAD OVERLOOK 2**	WTP 10 MANCHESTER FARMS – WELL*	Hallie Hill WTP**	FERRIER ROAD - 3 WELLS*
11Cl-PF3OUdS	ND	ND	ND	ND
ADONA	ND	ND	ND	ND
9Cl-PF3ONS	ND	ND	ND	ND
HFPO-DA	ND	ND	ND	ND
N-EtFOSAA	ND	ND	ND	ND
N-MeFOSAA	ND	ND	ND	ND
PFBS	4.54	8.67	1.40	ND
PFDA	ND	ND	ND	ND
PFDoA	ND	ND	ND	ND
PFHpA	ND	2.13	ND	ND
PFHxS	ND	ND	ND	ND
PFHxA	1.51	2.57	1.97	ND
PFNA	ND	ND	ND	ND
PFOS	ND	ND	ND	ND
PFOA	1.65	3.90	1.62	ND
PFTA	ND	ND	ND	ND
PFTrDA	ND	ND	ND	ND
PFUnDA	ND	ND	ND	ND
Total PFOA/PFOS	1.65	3.90	1.62	ND

All samples consist of finished water.
All results are in parts per trillion (ppt).
*Finished water samples collected on December 15th, 2020
** Finished water samples collected on December 14th. 2020

Rock Ridge

Maryland
DEPARTMENT OF HEALTH

State of Maryland
Department of Health
LABORATORIES ADMINISTRATION
1770 Ashland Avenue
Baltimore, MD 21205
Robert Myers, Ph.D., Director

well - (13)

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Division of Environmental Sciences
CHEMICAL EMERGENCY PREPAREDNESS AND RESPONSE LABORATORY

Certificate of Analysis

FINAL REPORT

MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Field ID: 006-0006-TP13
Submitted By: Shawn Lowman
Date Collected: 08/17/2022
Information in this section was not generated by the laboratory

Lab No: PF2300002703
Date Recieved: 08/17/2022

Date Analyzed: 08/30/2022

Analyte	Method	RL	MCL	Result*	Uncertainty	Units
PFBS	EPA 537.1*	1.0		3.37	± 22.7 %	ppt
PFHxA	EPA 537.1*	1.0		1.93	± 26.6 %	ppt
PFHpA	EPA 537.1*	1.0		1.12	± 25.5%	ppt
HFPO-DA	EPA 537.1*	1.0		<1.0	± 20.2%	ppt
PFHxS	EPA 537.1*	1.0		<1.0	± 20.9%	ppt
PFOA	EPA 537.1*	1.0		2.30	± 28.8%	ppt
PFNA	EPA 537.1*	1.5		<1.5	± 23.5%	ppt
PFOS	EPA 537.1*	1.0		1.94	± 21.0%	ppt
PFTDA	EPA 537.1*	1.0		<1.0	± 31.4%	ppt
PFTrDA	EPA 537.1*	1.0		<1.0	± 26.4%	ppt
PFDOA	EPA 537.1*	1.0		<1.0	± 29.0%	ppt
PFDA	EPA 537.1*	1.0		<1.0	± 25.4%	ppt
PFUnDA	EPA 537.1*	1.0		<1.0	± 31.8%	ppt
N-MeFOSAA	EPA 537.1*	1.0		<1.0	± 23.3%	ppt
N-EtFOSAA	EPA 537.1*	1.0		<1.0	± 27.3%	ppt
ADONA	EPA 537.1*	1.5		<1.5	± 30.7%	ppt
9Cl-PF3ONS	EPA 537.1*	1.0		<1.0	± 26.1%	ppt
11Cl-PF3OUdS	EPA 537.1*	1.0		<1.0	± 27.5%	ppt

0.3627 combined

Approved by: Sadia Mureen

Approval date: 09/08/2022

Samples are tested as received. Results relate only to the items tested.

*All results are in parts per trillion (ppt); ND = Less than reporting level; na = not applicable

Methods marked with an asterisk (*) are included in our A2LA scope of accreditation.

Contact information for Questions: Telephone: (443) 681-3853 Fax: (443) 681-4507

State of Maryland
Department of Health
LABORATORIES ADMINISTRATION
1770 Ashland Avenue
Baltimore, MD 21205
Robert Myers, Ph.D., Director

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DEPARTMENT OF HEALTH

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FINAL REPORT

Folder No:	PF23000027	Date/Time Logged:	08/17/2022 13:52
Sample ID:	PF2300002703	Temperature Control:	1.0
Date Received in Lab:	08/17/2022	Sample Condition:	Acceptable
Sample Received By:		Received Under Chain of Custody (COC)?	No

MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Field ID:	006-0006-TP13	Field ID:	006-0006-TP13
		Submitted By:	Shawn Lowman
		Date Collected:	08/17/2022
Field ID:	006-0006-TP13	Collected By:	Shawn Lowman
County:	Carroll	County Code:	06
Plant:	0006	Submitter Code:	Water Quality Monitoring Program (52)
Sample Station:	TP13	Reason For Testing:	
Site Name:	Manchester Park Ridge	Data Category Code:	
Sample Source:	POE Tap	Regulation Supported:	SDWA
Location:	Washington Way, Manchester	Federal Project:	Safe Drinking Water Act (SDWA) (S)
Sample Preserved By:	Trizma	Sample Type:	
Sample pH:	6.8	System Type:	
Free Chlorine:	2.5	Source Descriptor:	
Total Chlorine:	2.5		
Comment:	Well B running at time of sample	Collector Phone:	(410) 294-7884
		Collection Date/Time:	08/17/2022 08:40

Analysis Requested
DW PFAS - 537.1

Information in this section was not generated by the laboratory

Approved by: Sadia Mureen Approval date: 09/08/2022

Samples are tested as received. Results relate only to the items tested.

*All results are in parts per trillion (ppt); ND = Less than reporting level; na = not applicable

Methods marked with an asterisk (*) are included in our A2LA scope of accreditation.

Contact information for Questions: Telephone: (443) 681-3853 Fax: (443) 681-4507

Maryland
DEPARTMENT OF HEALTH

State of Maryland
Department of Health
LABORATORIES ADMINISTRATION
1770 Ashland Avenue
Baltimore, MD 21205
Robert Myers, Ph.D., Director

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FINAL REPORT

MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Field ID: 006-0006-TP07
Submitted By: Shawn Lowman
Date Collected: 08/17/2022
Information in this section was not generated by the laboratory

Lab No: PF2300002704
Date Recieved: 08/17/2022
Date Analyzed: 08/30/2022

Analyte	Method	RL	MCL	Result*	Uncertainty	Units
PFBS	EPA 537.1*	1.0		34.9	± 22.7 %	ppt
PFHxA	EPA 537.1*	1.0		5.56	± 26.6 %	ppt
PFHpA	EPA 537.1*	1.0		3.31	± 25.5%	ppt
HFPO-DA	EPA 537.1*	1.0		<1.0	± 20.2%	ppt
PFHxS	EPA 537.1*	1.0		1.70	± 20.9%	ppt
PFOA	EPA 537.1*	1.0		8.45	± 28.8%	ppt
PFNA	EPA 537.1*	1.5		<1.5	± 23.5%	ppt
PFOS	EPA 537.1*	1.0		6.04	± 21.0%	ppt
PFTDA	EPA 537.1*	1.0		<1.0	± 31.4%	ppt
PFTrDA	EPA 537.1*	1.0		<1.0	± 26.4%	ppt
PFDOA	EPA 537.1*	1.0		<1.0	± 29.0%	ppt
PFDA	EPA 537.1*	1.0		<1.0	± 25.4%	ppt
PFUnDA	EPA 537.1*	1.0		<1.0	± 31.8%	ppt
N-MeFOSAA	EPA 537.1*	1.0		<1.0	± 23.3%	ppt
N-EtFOSAA	EPA 537.1*	1.0		<1.0	± 27.3%	ppt
ADONA	EPA 537.1*	1.5		<1.5	± 30.7%	ppt
9Cl-PF3ONS	EPA 537.1*	1.0		<1.0	± 26.1%	ppt
11Cl-PF3OUdS	EPA 537.1*	1.0		<1.0	± 27.5%	ppt

* 4563 combined.

Approved by: Sadia Munsee
Approval date: 09/08/2022

Samples are tested as received. Results relate only to the items tested.

*All results are in parts per trillion (ppt); ND = Less than reporting level; na = not applicable

Methods marked with an asterisk (*) are included in our A2LA scope of accreditation.

Contact information for Questions: Telephone: (443) 681-3853 Fax: (443) 681-4507

State of Maryland
Department of Health
LABORATORIES ADMINISTRATION
1770 Ashland Avenue
Baltimore, MD 21205
Robert Myers, Ph.D., Director

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Division of Environmental Sciences
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FINAL REPORT

Folder No:	PF23000027	Date/Time Logged:	08/17/2022 13:52
Sample ID:	PF2300002704	Temperature Control:	1.0
Date Received in Lab:	08/17/2022	Sample Condition:	Acceptable
Sample Received By:		Received Under Chain of Custody (COC)?	No

MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Field ID:	006-0006-TP07	Field ID:	006-0006-TP07
		Submitted By:	Shawn Lowman
		Date Collected:	08/17/2022
Field ID:	006-0006-TP07	Collected By:	Shawn Lowman
County:	Carroll	County Code:	06
Plant:	0006	Submitter Code:	Water Quality Monitoring Program (52)
Sample Station:	TP07	Reason For Testing:	
Site Name:	Manchester WTP 7	Data Category Code:	
Sample Source:	POE Tap	Regulation Supported:	SDWA
Location:	Patricia Court, Manchester	Federal Project:	Safe Drinking Water Act (SDWA) (S)
Sample Preserved By:	Trizma	Sample Type:	
Sample pH:	6.5	System Type:	
Free Chlorine:	1.9	Source Descriptor:	
Total Chlorine:	1.9		
Comment:		Collector Phone:	(410) 294-7884
		Collection Date/Time:	08/17/2022 09:00

Analysis Requested
DW PFAS - 537.1

Information in this section was not generated by the laboratory

Approved by: Sadia Mureen Approval date: 09/08/2022

Samples are tested as received. Results relate only to the items tested.

*All results are in parts per trillion (ppt); ND = Less than reporting level; na = not applicable

Methods marked with an asterisk (*) are included in our A2LA scope of accreditation.

Contact information for Questions: Telephone: (443) 681-3853 Fax: (443) 681-4507

M Farms

Maryland
DEPARTMENT OF HEALTH

State of Maryland
Department of Health
LABORATORIES ADMINISTRATION
1770 Ashland Avenue
Baltimore, MD 21205
Robert Myers, Ph.D., Director

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Well - B

Division of Environmental Sciences
CHEMICAL EMERGENCY PREPAREDNESS AND RESPONSE LABORATORY

Certificate of Analysis

FINAL REPORT

MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Field ID: 006-0006-TP10
Submitted By: Shawn Lowman
Date Collected: 08/17/2022
Information in this section was not generated by the laboratory

Lab No: PF2300002705
Date Recieved: 08/17/2022

Date Analyzed: 08/30/2022

Analyte	Method	RL	MCL	Result*	Uncertainty	Units
PFBS	EPA 537.1*	1.0		14.4	± 22.7 %	ppt
PFHxA	EPA 537.1*	1.0		3.11	± 26.6 %	ppt
PFHpA	EPA 537.1*	1.0		2.42	± 25.5%	ppt
HFPO-DA	EPA 537.1*	1.0		<1.0	± 20.2%	ppt
PFHxS	EPA 537.1*	1.0		<1.0	± 20.9%	ppt
PFOA	EPA 537.1*	1.0		4.52	± 28.8%	ppt
PFNA	EPA 537.1*	1.5		<1.5	± 23.5%	ppt
PFOS	EPA 537.1*	1.0		1.86	± 21.0%	ppt
PFTDA	EPA 537.1*	1.0		<1.0	± 31.4%	ppt
PFTrDA	EPA 537.1*	1.0		<1.0	± 26.4%	ppt
PFDOA	EPA 537.1*	1.0		<1.0	± 29.0%	ppt
PFDA	EPA 537.1*	1.0		<1.0	± 25.4%	ppt
PFUnDA	EPA 537.1*	1.0		<1.0	± 31.8%	ppt
N-MeFOSAA	EPA 537.1*	1.0		<1.0	± 23.3%	ppt
N-EtFOSAA	EPA 537.1*	1.0		<1.0	± 27.3%	ppt
ADONA	EPA 537.1*	1.5		<1.5	± 30.7%	ppt
9Cl-PF3ONS	EPA 537.1*	1.0		<1.0	± 26.1%	ppt
11Cl-PF3OUdS	EPA 537.1*	1.0		<1.0	± 27.5%	ppt

≈ 3 6 8 3 11 combined

Approved by: Sadia Mureen

Approval date: 09/08/2022

Samples are tested as received. Results relate only to the items tested.

*All results are in parts per trillion (ppt); ND = Less than reporting level; na = not applicable

Methods marked with an asterisk (*) are included in our A2LA scope of accreditation.

Contact information for Questions: Telephone: (443) 681-3853 Fax: (443) 681-4507

State of Maryland
Department of Health
LABORATORIES ADMINISTRATION
1770 Ashland Avenue
Baltimore, MD 21205
Robert Myers, Ph.D., Director

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FINAL REPORT

Folder No:	PF23000027	Date/Time Logged:	08/17/2022 13:52
Sample ID:	PF2300002705	Temperature Control:	1.0
Date Received in Lab:	08/17/2022	Sample Condition:	Acceptable
Sample Received By:		Received Under Chain of Custody (COC)?	No

MDE WATER QUAL MONITORING PROG
416 CHINQUAPIN ROUND ROAD
ANNAPOLIS, MD 21401

Field ID:	006-0006-TP10	Collected By:	Shawn Lowman
County:	Carroll	County Code:	06
Plant:	0006	Submitter Code:	Water Quality Monitoring Program (52)
Sample Station:	TP10	Reason For Testing:	
Site Name:	Manchester WTP 10	Data Category Code:	
Sample Source:	POE Tap	Regulation Supported:	SDWA
Location:	Footbridge Drive, Manchester	Federal Project:	Safe Drinking Water Act (SDWA) (S)
Sample Preserved By:	Trizma	Sample Type:	
Sample pH:	6.8	System Type:	
Free Chlorine:	1.5	Source Descriptor:	
Total Chlorine:	1.5		
Comment:	Well B running at time of sample	Collector Phone:	(410) 294-7884
		Collection Date/Time:	08/17/2022 09:30

Analysis Requested
DW PFAS - 537.1

Information in this section was not generated by the laboratory

Approved by: Sadia Muneer Approval date: 09/08/2022

Samples are tested as received. Results relate only to the items tested.

*All results are in parts per trillion (ppt); ND = Less than reporting level; na = not applicable

Methods marked with an asterisk (*) are included in our A2LA scope of accreditation.

Contact information for Questions: Telephone: (443) 681-3853 Fax: (443) 681-4507

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Road • Westminster, MD 21158 • MD State Certification #133
410-848-1014 • 410-876-4554

PFAS EPA 537.1 WATER ANALYSIS REPORT

LAB ID #	160799

			Requested by	Town of Manchester
Reference:	Manchester Farms Well D		Source:	Well
Location:	Foot Bridge Road		Well #:	Not Available
	Manchester, MD 21102		Site:	Finished Water Tap
Date/Time Collected:	8/14/2023	1013	Treatment:	Chlorination/Neutralization
Date/Time Received:	8/14/2023	1355	pH:	7.3
Collected by:	J. Yeager	0819JY	Chlorine:	Free: 1.93 Total: 2.03

CONTAMINANT	Result (ng/L)	Reporting Limit (ng/L)
Perfluorobutanesulfonic acid (PFBS)	8.7	1.9
Perfluorohexanoic acid (PFHxA)	2.6	1.9
Perfluorohexanesulfonic acid (PFHxS)	2.5	1.9
Perfluoroheptanoic acid (PFHpA)	1.6 *J	1.9
Perfluorooctanoic acid (PFOA)	4.6	1.9
Perfluorooctanesulfonic acid (PFOS)	2.6	1.9
Perfluorononanoic acid (PFNA)	ND	1.9
Perfluorodecanoic acid (PFDA)	ND	1.9
N-EtFOSAA (NEtFOSAA)	ND	1.9
Perfluoroundecanoic acid (PFUnA)	ND	1.9
N-MeFOSAA (NMeFOSAA)	ND	1.9
Perfluorododecanoic acid (PFDoA)	ND	1.9
Perfluorotridecanoic acid (PFTrDA)	ND	1.9
Perfluorotetradecanoic acid (PFTA)	ND	1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9
11Cl-PF3OUdS (F53B Major)	ND	1.9
9Cl-PF3ONS (F53B Minor)	ND	1.9
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9

NOTES:

1) ND: None Detected
2) ng/L: nanograms per liter (parts per trillion)
3) Subcontracted to Reference Laboratory; Date Analyzed: 8/29/2023
4) *J = Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

Reason for Test: SDWA (MD0060006-TP 10 Well D)

Date Reported: 9/11/2023

Reviewed By: Brad Dutton

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.
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PFAS EPA 537.1 WATER ANALYSIS REPORT

LAB ID #	160803

			Requested by	Town of Manchester
Reference:	Park Ridge Well A		Source:	Well
Location:	Washington Way		Well #:	CL-94-3593
	Manchester, MD 21102		Site:	Finished Water Tap
Date/Time Collected:	8/14/2023	1044	Treatment:	Chlorination/Neutralization
Date/Time Received:	8/14/2023	1355	pH:	6.7
Collected by:	J. Yeager	0819JY	Chlorine:	Free: 1.67 Total: 1.71

CONTAMINANT	Result (ng/L)	Reporting Limit (ng/L)
Perfluorobutanesulfonic acid (PFBS)	8.1	1.8
Perfluorohexanoic acid (PFHxA)	5.9	1.8
Perfluorohexanesulfonic acid (PFHxS)	2.0	1.8
Perfluoroheptanoic acid (PFHpA)	3.8	1.8
Perfluorooctanoic acid (PFOA)	11	1.8
Perfluorooctanesulfonic acid (PFOS)	9.5	1.8
Perfluorononanoic acid (PFNA)	0.96 *J	1.8
Perfluorodecanoic acid (PFDA)	ND	1.8
N-EtFOSAA (NEtFOSAA)	ND	1.8
Perfluoroundecanoic acid (PFUnA)	ND	1.8
N-MeFOSAA (NMeFOSAA)	ND	1.8
Perfluorododecanoic acid (PFDoA)	ND	1.8
Perfluorotridecanoic acid (PFTrDA)	ND	1.8
Perfluorotetradecanoic acid (PFTA)	ND	1.8
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8
11Cl-PF3OUdS (F53B Major)	ND	1.8
9Cl-PF3ONS (F53B Minor)	ND	1.8
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8

NOTES:

1) ND: None Detected
2) ng/L: nanograms per liter (parts per trillion)
3) Subcontracted to Reference Laboratory; Date Analyzed: 8/25/2023
4) *J = Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

Reason for Test: SDWA (MD0060006-TP 13 Well A)

Date Reported: 9/11/2023 Reviewed By: Brad Dutton

Appendix A – Part 3

Additional Well Background Characteristics Testing

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratorv ID #:	164333	Account #:	2910
Reference:	Patricia Court Well	Client:	Town of Manchester
Location:	Patricia Court	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1230	Site:	Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	5.8
Collected By:	J. Yeager 0819JY	Well #:	CL-73-8745

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Solids, Total Suspended	6.1	mg/L	----	SM 2540D	2/14/2024 / 1155 / KDR
Solids, Total Dissolved	184	mg/L	500*	SM 2540C	2/14/2024 / 1730 / CRS
Turbidity	21.8	NTU	<10	SM2130B	2/13/2024 / 0930 / KDR
Bicarbonate	28	mg/L	----	SM2320 B.	2/19/2024 / 1015 / CRS
Hardness	75	mg/L CaCO3	***	SM 2340 C.	2/13/2024 / 1245 / CJM
Alkalinity	28	mg/L CaCO3	----	SM2320 B	2/15/2024 / 1415 / CJM
Chloride.	48.4	mg/L	250*	EPA 300.0	2/12/2024 / 1825 / CS/KR
Nitrate.	4.52	mg/L (as N)	10	EPA 300.0	2/12/2024 / 1825 / CS/KR
Sulfate.	6.12	mg/L	250*	EPA 300.0	2/12/2024 / 1825 / CS/KR
Silica, Dissolved	4.64	mg/L	----	Hach 8186	2/16/2024 / 0830 / CRS
Ammonia, NH3-N	0.044	mg/L	----	Hach 10205	2/14/2024 / 1600 / CRS
Temperature	13.7	degrees Celsius	----	170.1	2/12/2024 / 1230 / JY

NOTES:

1. ***Hardness Range: Soft 0-75; Moderately Hard 75-150; Hard 150-300; Very Hard >300 mg CaCO3/L = milligrams of Calcium Carbonate per Liter
2. *SMCL = Secondary Maximum Contaminant Level
3. mg/L = milligrams per liter (also, parts per million)
4. mg/L CaCO3: mg/L = milligrams per liter (also, parts per million) as calcium carbonate
5. NTU = Nephelometric Turbidity Units
6. pH, temperature & chlorine level tested on site
7. Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
8. ND:None Detected

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164337		Account #:	2910
Reference:	Patricia Court Well		Client:	Town of Manchester
Location:	Patricia Court		Requested By:	Delbert Green
	Manchester, MD 21102		Source:	Well Water
Date/ Time Collected:	2/12/2024	1230	Site:	Raw Water Tap
Date/Time Rec'd:	2/12/2024	1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND	Total: ND	pH:	5.8
Collected By:	J. Yeager	0819JY	Well #:	CL-73-8745

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Total Organic Carbon (TOC)	<1.0	mg/L	----	SM22 5310B	2/26/2024 / 1523 / PACE

NOTES:

1 mg/L = milligrams per liter (also, parts per million)
2 Sub-contracted to Reference Lab #208
3 TOC Detection Limit: 1.0 mg/L
4 ND:None Detected
5 pH & Chlorine level tested on site
6 Visual well check: Sealed, vented cap

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164341	Account #:	2910
Reference:	Patricia Court Well	Client:	Town of Manchester
Location:	Patricia Court Manchester, MD 21102	Requested By:	Delbert Green
		Source:	Well Water
Date/ Time Collected:	2/12/2024 1230	Site:	Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	5.8
Collected By:	J. Yeager 0819JY	Well #:	CL-73-8745

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Calcium	13	mg/L	----	EPA 6020B	2/19/2024 / 1410 / MBC
Magnesium	10	mg/L	----	EPA 6020B	2/19/2024 / 1410 / MBC
Iron	2.1	mg/L	0.3*	EPA 6020B	2/19/2024 / 1410 / MBC
Manganese	0.25	mg/L	0.05*	EPA 6020B	2/19/2024 / 1410 / MBC
Sodium	22	mg/L	----	EPA 6020B	2/19/2024 / 1410 / MBC

NOTES:

1. *SMCL = Secondary Maximum Contaminant Level
2. Iron & Magnesium Detection Limit: 0.05 mg/L; Calcium Detection Limit: 0.1 mg/L
3. mg/L = milligrams per liter (also, parts per million)
4. Sodium Detection Limit: 0.5 mg/L; Manganese Detetion Limit: 0.005
5. ND:None Detected
6. pH & Chlorine level tested on site
7. Sub-contracted to Reference Lab #320

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratorv ID #:	164335	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1140	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	5.5
Collected By:	J. Yeager 0819JY	Well #:	N/A

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Solids, Total Suspended	<5.0	mg/L	----	SM 2540D	2/14/2024 / 1155 / KDR
Solids, Total Dissolved	238	mg/L	500*	SM 2540C	2/14/2024 / 1730 / CRS
Turbidity	0.33	NTU	<10	SM2130B	2/13/2024 / 0930 / KDR
Bicarbonate	73	mg/L	----	SM2320 B.	2/19/2024 / 1015 / CRS
Hardness	52	mg/L CaCO3	***	SM 2340 C.	2/13/2024 / 1245 / CJM
Alkalinity	73	mg/L CaCO3	----	SM2320 B	2/15/2024 / 1415 / CJM
Chloride.	60.0	mg/L	250*	EPA 300.0	2/12/2024 / 2016 / CS/KR
Nitrate.	3.45	mg/L (as N)	10	EPA 300.0	2/12/2024 / 2016 / CS/KR
Sulfate.	11.9	mg/L	250*	EPA 300.0	2/12/2024 / 2016 / CS/KR
Silica, Dissolved	4.19	mg/L	----	Hach 8186	2/16/2024 / 0830 / CRS
Ammonia, NH3-N	0.030	mg/L	----	Hach 10205	2/14/2024 / 1600 / CRS
Temperature	15.6	degrees Celsius	----	170.1	2/12/2024 / 1140 / JY

NOTES:

1. ***Hardness Range: Soft 0-75; Moderately Hard 75-150; Hard 150-300; Very Hard >300 mg CaCO3/L = milligrams of Calcium Carbonate per Liter
2. *SMCL = Secondary Maximum Contaminant Level
3. mg/L = milligrams per liter (also, parts per million)
4. mg/L CaCO3: mg/L = milligrams per liter (also, parts per million) as calcium carbonate
5. NTU = Nephelometric Turbidity Units
6. pH, temperature & chlorine level tested on site
7. Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
8. ND = None Detected; N/A: Not Available

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164339	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1140	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	5.5
Collected By:	J. Yeager 0819JY	Well #:	N/A

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Total Organic Carbon (TOC)	<1.0	mg/L	----	SM22 5310B	2/26/2024 / 1806 / PACE

NOTES:

1. mg/L = milligrams per liter (also, parts per million)
2. TOC Detection Limit: 1.0 mg/L
3. ND = None Detected; N/A: Not Available
4. pH & Chlorine level tested on site
5. Subcontracted to Reference Lab #208

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratorv ID #:	164343	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1140	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	5.5
Collected By:	J. Yeager 0819JY	Well #:	N/A

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Calcium	9.8	mg/L	----	EPA 6020B	2/19/2024 / 1417 / MBC
Magnesium	4.8	mg/L	----	EPA 6020B	2/19/2024 / 1417 / MBC
Iron	ND	mg/L	0.3*	EPA 6020B	2/19/2024 / 1417 / MBC
Manganese	0.0095	mg/L	0.05*	EPA 6020B	2/19/2024 / 1417 / MBC
Sodium	55	mg/L	----	EPA 6020B	2/19/2024 / 1417 / MBC

NOTES:

1. *SMCL = Secondary Maximum Contaminant Level
2. Iron & Magnesium Detection Limit: 0.05 mg/L; Calcium Detection Limit: 0.1 mg/L
3. mg/L = milligrams per liter (also, parts per million)
4. Sodium Detection Limit: 0.5 mg/L; Manganese Detection Limit: 0.005
5. ND = None Detected; N/A: Not Available
6. pH & Chlorine level tested on site
7. Subcontracted to Reference Lab #320

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164713	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/28/2024 1016	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/28/2024 1308	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.5
Collected By:	J. Yeager 0819JY	Well #:	N/A

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Sulfide	<2.0	mg/L	----	SM22 4500-S2F	3/6/2024 / 1626 / PACE

NOTES:

1 mg/L = milligrams per liter (also, parts per million)
2 Sub-contracted to Reference Lab #208
3 Sulfide Detection Limit: 2.0 mg/L
4 ND = None Detected; N/A: Not Available
5 pH & Chlorine level tested on site
6 Visual well check: Sealed, vented cap

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164334	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1210	Site:	Well A: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	7.3
Collected By:	J. Yeager 0819JY	Well #:	CL-94-3593

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Solids, Total Suspended	<5.0	mg/L	----	SM 2540D	2/14/2024 / 1155 / KDR
Solids, Total Dissolved	260	mg/L	500*	SM 2540C	2/14/2024 / 1730 / CRS
Turbidity	9.98	NTU	<10	SM2130B	2/13/2024 / 0930 / KDR
Bicarbonate	58	mg/L	----	SM2320 B.	2/19/2024 / 1015 / CRS
Hardness	129	mg/L CaCO3	***	SM 2340 C.	2/13/2024 / 1245 / CJM
Alkalinity	58	mg/L CaCO3	----	SM2320 B	2/15/2024 / 1415 / CJM
Chloride.	69.5	mg/L	250*	EPA 300.0	2/12/2024 / 1853 / CS/KR
Nitrate.	2.67	mg/L (as N)	10	EPA 300.0	2/12/2024 / 1853 / CS/KR
Sulfate.	28.2	mg/L	250*	EPA 300.0	2/12/2024 / 1853 / CS/KR
Silica, Dissolved	3.46	mg/L	----	Hach 8186	2/16/2024 / 0830 / CRS
Ammonia, NH3-N	0.059	mg/L	----	Hach 10205	2/14/2024 / 1600 / CRS
Temperature	11.3	degrees Celsius	----	170.1	2/12/2024 / 1210 / JY

NOTES:

1. ***Hardness Range: Soft 0-75; Moderately Hard 75-150; Hard 150-300; Very Hard >300 mg CaCO3/L = milligrams of Calcium Carbonate per Liter
2. *SMCL = Secondary Maximum Contaminant Level
3. mg/L = milligrams per liter (also, parts per million)
4. mg/L CaCO3: mg/L = milligrams per liter (also, parts per million) as calcium carbonate
5. NTU = Nephelometric Turbidity Units
6. pH, temperature & chlorine level tested on site
7. Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
8. ND:None Detected

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164338	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1210	Site:	Well A: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	7.3
Collected By:	J. Yeager 0819JY	Well #:	CL-94-3593

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Total Organic Carbon (TOC)	<1.0	mg/L	----	SM22 5310B	2/26/2024 / 1659 / PACE

NOTES:

1 mg/L = milligrams per liter (also, parts per million)
2 Sub-contracted to Reference Lab #208
3 TOC Detection Limit: 1.0 mg/L
4 ND:None Detected
5 pH & Chlorine level tested on site
6 Visual well check: Sealed, vented cap

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164342	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1210	Site:	Well A: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	7.3
Collected By:	J. Yeager 0819JY	Well #:	CL-94-3593

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Calcium	24	mg/L	----	EPA 6020B	2/19/2024 / 1414 / MBC
Magnesium	7.1	mg/L	----	EPA 6020B	2/19/2024 / 1414 / MBC
Iron	0.71	mg/L	0.3*	EPA 6020B	2/19/2024 / 1414 / MBC
Manganese	0.066	mg/L	0.05*	EPA 6020B	2/19/2024 / 1414 / MBC
Sodium	28	mg/L	----	EPA 6020B	2/19/2024 / 1414 / MBC

NOTES:

1. *SMCL = Secondary Maximum Contaminant Level
2. Iron & Magnesium Detection Limit: 0.05 mg/L; Calcium Detection Limit: 0.1 mg/L
3. mg/L = milligrams per liter (also, parts per million)
4. Sodium Detection Limit: 0.5 mg/L; Manganese Detetion Limit: 0.005
5. ND:None Detected
6. pH & Chlorine level tested on site
7. Subcontracted to Reference Lab #320

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164712	Account #:	2910
Reference:	Park Ridge Well	Client:	Town of Manchester
Location:	Washington Way	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/28/2024 1040	Site:	Well A: Raw Water Tap
Date/Time Rec'd:	2/28/2024 1308	Treatment:	Prior to Chlorination & Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.9
Collected By:	J. Yeager 0819JY	Well #:	CL-94-3593

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Sulfide	<2.0	mg/L	----	SM22 4500-S2F	3/6/2024 / 1624 / PACE

NOTES:

1 mg/L = milligrams per liter (also, parts per million)
2 Sub-contracted to Reference Lab #208
3 Sulfide Detection Limit: 2.0 mg/L
4 ND:None Detected
5 pH & Chlorine level tested on site
6 Visual well check: Sealed, vented cap

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164715	Account #:	2910
Reference:	Manchester Farm Well	Client:	Town of Manchester
Location:	Foot Bridge Drive Manchester, MD 21102	Requested By:	Delbert Green
		Source:	Well Water
Date/ Time Collected:	2/28/2024 0933	Site:	Well D: Raw Water Tap
Date/Time Rec'd:	2/28/2024 1308	Treatment:	Prior to Chlorination/Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.0
Collected By:	J. Yeager 0819JY	Well #:	N/A

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Solids, Total Suspended	<5.0	mg/L	----	SM 2540D	3/5/2024 / 1300 / KDR
Solids, Total Dissolved	199	mg/L	500*	SM 2540C	2/28/2024 / 1400 / CRS
Turbidity	4.77	NTU	<10	SM2130B	2/28/2024 / 1615 / CRS
Bicarbonate	20	mg/L	----	SM2320 B.	3/1/2024 / 1045 / CJM
Hardness	81	mg/L CaCO3	***	SM 2340 C.	3/1/2024 / 0950 / CJM
Alkalinity	20	mg/L CaCO3	----	SM2320 B	3/1/2024 / 1045 / CJM
Nitrate	4.92	mg/L (as N)	10	Hach 10206	2/28/2024 / 1500 / CRS
Silica, Dissolved	7.64	mg/L	----	Hach 8186	3/7/2024 / 1030 / CRS
Ammonia, NH3-N	0.024	mg/L	----	Hach 10205	2/29/2024 / 1330 / KDR
Temperature	15.2	degrees Celsius	----	170.1	3/28/2024 / 0933 / JY
Chloride.	40.2	mg/L	250*	EPA 300.0	3/1/2024 / 1803 / CS/KR
Sulfate.	2.17	mg/L	250*	EPA 300.0	3/1/2024 / 1803 / CS/KR

NOTES:

1. ***Hardness Range: Soft 0-75; Moderately Hard 75-150; Hard 150-300; Very Hard >300 mg CaCO3/L = milligrams of Calcium Carbonate per Liter
2. *SMCL = Secondary Maximum Contaminant Level
3. mg/L = milligrams per liter (also, parts per million)
4. mg/L CaCO3: mg/L = milligrams per liter (also, parts per million) as calcium carbonate
5. NTU = Nephelometric Turbidity Units
6. pH, temperature & chlorine level tested on site
7. Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
8. ND = None Detected; N/A: Not Available

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164716	Account #:	2910
Reference:	Manchester Farm Well	Client:	Town of Manchester
Location:	Foot Bridge Drive Manchester, MD 21102	Requested By:	Delbert Green
		Source:	Well Water
Date/ Time Collected:	2/28/2024 0933	Site:	Well D: Raw Water Tap
Date/Time Rec'd:	2/28/2024 1308	Treatment:	Prior to Chlorination/Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.0
Collected By:	J. Yeager 0819JY	Well #:	N/A

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Calcium	21	mg/L	----	EPA 200.8	3/4/2024 / 1235 / MBC
Magnesium	7.8	mg/L	----	EPA 200.8	3/4/2024 / 1235 / MBC
Iron	0.43	mg/L	0.3*	EPA 200.8	3/4/2024 / 1235 / MBC
Manganese	0.016	mg/L	0.05*	EPA 200.8	3/4/2024 / 1235 / MBC
Sodium	6.5	mg/L	----	EPA 200.8	3/4/2024 / 1235 / MBC

NOTES:

1. *SMCL = Secondary Maximum Contaminant Level
2. Iron & Magnesium Detection Limit: 0.05 mg/L; Calcium Detection Limit: 0.1 mg/L
3. Manganese Detection Limit: 0.005 mg/L; Sodium Detection Limit: 0.5 mg/L
4. mg/L = milligrams per liter (also, parts per million)
5. ND = None Detected; N/A: Not Available
6. pH & Chlorine level tested on site
7. Subcontracted to Reference Lab #320

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164717	Account #:	2910
Reference:	Manchester Farm Well	Client:	Town of Manchester
Location:	Foot Bridge Drive	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/28/2024 0933	Site:	Well D: Raw Water Tap
Date/Time Rec'd:	2/28/2024 1308	Treatment:	Prior to Chlorination/Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.0
Collected By:	J. Yeager 0819JY	Well #:	N/A

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Total Organic Carbon (TOC)	<1.0	mg/L	----	SM22 5310B	3/7/2024 / 1018 / PACE
Sulfide	<2.0	mg/L	----	SM22 4500-S2F	3/6/2024 / 1632 / PACE

NOTES:

1 mg/L = milligrams per liter (also, parts per million)
2 Sub-contracted to Reference Lab #208
3 Sulfide Detection Limit: 2 mg/L
4 TOC Detection Limit: 1.0 mg/L
5 ND = None Detected; N/A: Not Available
6 pH & Chlorine level tested on site
7 Visual well check: Sealed, vented cap

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164336	Account #:	2910
Reference:	Manchester Farm Well	Client:	Town of Manchester
Location:	Foot Bridge Drive	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1300	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination/ Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.7
Collected By:	J. Yeager 0819JY	Well #:	CL-73-8744

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Solids, Total Suspended	<5.0	mg/L	----	SM 2540D	2/14/2024 / 1155 / KDR
Solids, Total Dissolved	175	mg/L	500*	SM 2540C	2/14/2024 / 1730 / CRS
Turbidity	<0.30	NTU	<10	SM2130B	2/13/2024 / 0930 / KDR
Bicarbonate	14	mg/L	----	SM2320 B.	2/19/2024 / 1015 / CRS
Hardness	61	mg/L CaCO3	***	SM 2340 C.	2/13/2024 / 1245 / CJM
Alkalinity	14	mg/L CaCO3	----	SM2320 B	2/15/2024 / 1415 / CJM
Chloride.	61.0	mg/L	250*	EPA 300.0	2/12/2024 / 2044 / CS/KR
Nitrate.	4.16	mg/L (as N)	10	EPA 300.0	2/12/2024 / 2044 / CS/KR
Sulfate.	4.81	mg/L	250*	EPA 300.0	2/12/2024 / 2044 / CS/KR
Silica, Dissolved	3.87	mg/L	----	Hach 8186	2/16/2024 / 0830 / CRS
Ammonia, NH3-N	0.037	mg/L	----	Hach 10205	2/14/2024 / 1600 / CRS
Temperature	15.7	degrees Celsius	----	170.1	2/12/2024 / 1300 / JY

NOTES:

1. ***Hardness Range: Soft 0-75; Moderately Hard 75-150; Hard 150-300; Very Hard >300 mg CaCO3/L = milligrams of Calcium Carbonate per Liter
2. *SMCL = Secondary Maximum Contaminant Level
3. mg/L = milligrams per liter (also, parts per million)
4. mg/L CaCO3: mg/L = milligrams per liter (also, parts per million) as calcium carbonate
5. NTU = Nephelometric Turbidity Units
6. pH, temperature & chlorine level tested on site
7. Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
8. ND:None Detected

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164340	Account #:	2910
Reference:	Manchester Farm Well	Client:	Town of Manchester
Location:	Foot Bridge Drive	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1300	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination/ Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.7
Collected By:	J. Yeager 0819JY	Well #:	CL-73-8744

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Total Organic Carbon (TOC)	<1.0	mg/L	----	SM22 5310B	2/26/2024 / 1817 / PACE

NOTES:

1 mg/L = milligrams per liter (also, parts per million)
2 Sub-contracted to Reference Lab #208
3 TOC Detection Limit: 1.0 mg/L
4 ND:None Detected
5 pH & Chlorine level tested on site
6 Visual well check: Sealed, vented cap

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164344	Account #:	2910
Reference:	Manchester Farm Well	Client:	Town of Manchester
Location:	Foot Bridge Drive	Requested By:	Delbert Green
	Manchester, MD 21102	Source:	Well Water
Date/ Time Collected:	2/12/2024 1300	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/12/2024 1409	Treatment:	Prior to Chlorination/ Neutralization
Chlorine ppm:	Free: ND Total: ND	pH:	6.7
Collected By:	J. Yeager 0819JY	Well #:	CL-73-8744

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Calcium	12	mg/L	----	EPA 6020B	2/19/2024 / 1420 / MBC
Magnesium	7.4	mg/L	----	EPA 6020B	2/19/2024 / 1420 / MBC
Iron	ND	mg/L	0.3*	EPA 6020B	2/19/2024 / 1420 / MBC
Manganese	0.012	mg/L	0.05*	EPA 6020B	2/19/2024 / 1420 / MBC
Sodium	27	mg/L	----	EPA 6020B	2/19/2024 / 1420 / MBC

NOTES:

1. *SMCL = Secondary Maximum Contaminant Level
2. Iron & Magnesium Detection Limit: 0.05 mg/L; Calcium Detection Limit: 0.1 mg/L
3. mg/L = milligrams per liter (also, parts per million)
4. Sodium Detection Limit: 0.5 mg/L; Manganese Detetion Limit: 0.005
5. ND:None Detected
6. pH & Chlorine level tested on site
7. Subcontracted to Reference Lab #320

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554

REPORT OF ANALYSIS

Laboratory ID #:	164714		Account #:	2910
Reference:	Manchester Farm Well		Client:	Town of Manchester
Location:	Foot Bridge Drive		Requested By:	Delbert Green
	Manchester, MD 21102		Source:	Well Water
Date/ Time Collected:	2/28/2024	1000	Site:	Well B: Raw Water Tap
Date/Time Rec'd:	2/28/2024	1308	Treatment:	Prior to Chlorination/Neutralization
Chlorine ppm:	Free: ND	Total: ND	pH:	5.8
Collected By:	J. Yeager	0819JY	Well #:	CL-73-8744

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Sulfide	<2.0	mg/L	----	SM22 4500-S2F	3/6/2024 / 1629 / PACE

NOTES:

1 mg/L = milligrams per liter (also, parts per million)
2 Sub-contracted to Reference Lab #208
3 Sulfide Detection Limit: 2.0 mg/L
4 ND:None Detected
5 pH & Chlorine level tested on site
6 Visual well check: Sealed, vented cap

Reason for Test : Client's Information

Date Reported: 3/13/2024 Reviewed By: Brad Dutton

MD State Certification # 133