Findings and Conclusions from Eden Estates Water Sampling and Testing
June 30, 2016

At the request of residents from the King George County Eden Estates subdivision, the King George County Service Authority (KGCSA) contracted with Mid-Atlantic Labs, Inc., Port Royal, VA, to obtain and test public water samples from six locations within Eden Estates on June 14, 2016. The Mid-Atlantic technician, a Certified Sample Technician for the state of Virginia, drew the samples. Service Authority technicians were present to assist, but at no time did they touch the sample containers, documentation, or affect the chain of custody of the samples.

Samples were obtained from two sites above the Eden Estates swimming pool, one at the pool, and three below the pool (hydraulically speaking, based on relative elevations and the direction of flow in the service line). Table 1 provides the street addresses where samples were taken. The Mid-Atlantic Laboratory technician tested each sample on-site for pH (measure of acidity) and chlorine. At the request of Eden Estates residents, all of the samples underwent further testing for copper, lead, coliform bacteria, nitrate & nitrite, sodium, iron, manganese, hardness, alkalinity, and total dissolved solids (TDS). In addition, at the suggestion of the KGCSA General Manager, one site above the pool and three sites below the pool were also tested for color, conductivity, corrosive index or Langilier Saturation Index (a measure of a solution's ability to dissolve or deposit calcium carbonate), and turbidity (a measure of clarity).

Results from the laboratory testing were received on June 28, 2016, and KGCSA staff completed subsequent analysis and data compilation on June 29, 2016. Overall results, which were shared and concurred with by the county's Virginia Department of Health (VDH) representative, indicate that the water is fully compliant with all applicable Safe Drinking Water Act (SDWA) primary drinking water (DW) standards and is perfectly safe for consumption.

Table 1 provides a comprehensive summary of laboratory results, while Attachment 1 comprises copies of the actual laboratory analysis reports from which the summary data has been drawn. Regarding Table 1:

- The first column lists the contaminants that were assessed at the laboratory for each of the six sample collection sites.
- The second column lists the maximum contaminant level (MCL) or maximum contaminant level goal (MCLG) as stated in the applicable SDWA standard.
- The third column indicates the applicable standard, which are primary, secondary, or none (i.e., no standard exists for the stated parameters).
- The remaining columns provide the actual test results for each of the six test sites. In most instances, test results are shown in milligrams per liter (mg/l), which is equivalent to parts per million (ppm). Results in green indicate concentrations below the stated MCL/MCLG, while results in red indicate concentrations above the stated MCL/MCLG.

Primary Drinking Water Standards[1]: All six samples tested were found to be in full compliance with primary drinking water (DW) standards for chlorine, copper, lead, combined nitrate/nitrite,

[1] The National Primary Drinking Water Regulations (NPDWRs or primary standards) are legally enforceable standards that apply to public water systems. Primary standards protect public health by limiting the levels of contaminants permissible in drinking water.

total coliform, and Escherichia coli (e-coli), which is one of several types of bacteria that normally inhabit the intestine of humans and animals. In particular, concentrations of these elements at all six sites were found to be absent, below detection levels, or at levels of only a fraction of a part per billion, which is such a minute concentration as to be insignificant.

Secondary Drinking Water Standards[2]: All six samples tested were found to be in full compliance with secondary DW standards for manganese, pH, and total dissolved solids (TDS). Sites 2-5 were found to be in full compliance with secondary DW standards for iron. Sites 1 and 6 exceeded the secondary DW standard for iron. The reason for this finding at Site 1 is inconclusive, but at Site 6 it is most likely due to it being located at the end of the water service line. Although elevated, these concentrations do not impact overall water quality and corrective actions are not required or needed.

Tested Parameters With No Standard: Samples were tested for alkalinity, calcium, hardness, sodium, and temperature because the results can serve as indicators to help pinpoint the cause(s) of problems detected within the system. No standards currently exist for these parameters. Test results indicate the water lacks calcium and hardness, which in turn can affect corrosivity.

Additional KGCSA Requested Testing: The KGCSA General Manager added color, corrosivity, conductivity, and turbidity to the list of test parameters because the results can also serve as indicators to help pinpoint the cause(s) of problems detected within the system. Secondary DW standards exist for color, turbidity, and corrosivity. Only Sites 1, 3, 4 and 6 were tested for these parameters.

Regarding color, only Site 6 exceeded the secondary DW standard. As above, this is most likely due to it being located at the end of the water service line. KGCSA technicians will address this by periodically flushing the water line at the meter, a process they began on the day of sampling.

Regarding turbidity, only Site 6 exceeded the secondary DW standard. As above, this is most likely due to it being located at the end of the water service line. As with color, KGCSA technicians will address this by periodically flushing the water line at the meter.

Regarding corrosivity, all sites tested showed moderate corrosivity, which typically results in a recommendation for some sort of treatment since the goal is for the water to be "non-corrosive". All samples tested reflected negative values. This is because the water has no calcium or hardness. From one perspective this is good, because there will be little to no formation of undesirable deposits inside the distribution lines.

[2] National Secondary Drinking Water Regulations (NSDWRs) are non-mandatory water quality standards for 15 contaminants. EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They are established only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not health threatening at the SMCL. Public water systems test for them on a voluntary basis. EPA indicates that if these contaminants are present in your water at levels above these standards, the contaminants may cause the water to appear cloudy or colored, or to taste or smell bad. This may cause people to stop using water from a public water system even though the water is actually safe to drink.

Moderate corrosivity can sometimes present problems in metal pipes; however, results need to be assessed in conjunction with related indicators. Specifically, if samples had tested with high levels of lead and copper, that result, paired with moderate corrosivity, would indicate the need for some sort of corrective action but that is not the case here. In this case, levels of copper and lead were barely detectable. These facts, taken together, suggest that corrective action is not needed, and that the water is perfectly safe with respect to this parameter.

Corrosivity can impact household plumbing under certain circumstances. However, since copper and lead concentrations in our water are extremely low, it is not likely that would happen. In addition, the VDH administers a separate drinking water surveillance program that requires the KGCSA to draw samples from inside a number of homes for testing. VDH determines which homes will be sampled, not the KGCSA. Over the last 20+ years, there have been no instances of high levels of copper, lead, or other water quality issues or concerns that would indicate the need for additional treatment of our water for corrosivity, either by the KGCSA or the homeowners.

Conclusions:

The results of water sampling at Eden Estates shows that drinking water supplied by the KGCSA is safe and fully compliant with all applicable SDWA primary and secondary standards (except iron) that were requested for testing by Eden Estates residents. While iron concentrations in samples taken at Sites 1 and 6 were elevated, these concentrations do not impact overall water quality and corrective actions are not required or needed.

Findings and Conclusions from Eden Estates Water Sampling and Testing
June 30, 2016

Table 1. Summary Results of Water Sample Testing

Test Parameter	Drinking Water Standard	Applicable	Results ByTest Location					
	MCL/MCLG	Standard	Site #1	Site #2	Site #3	Site #4	Site #5	Site #6
Chlorine (field test)	4 mg/l	Primary	0.31	0.36	0.41	0.34	0.94	0.87
Coliforms, Total	Zero	Primary	Absent	Absent	Absent	Absent	Absent	Absent
Copper, Free	1.3 mg/l	Primary	BDL	0.03	BDL	BDL	BDL	BDL
E. Coli	Zero	Primary	Absent	Absent	Absent	Absent	Absent	Absent
Lead	Zero (action level 0.015)	Primary	0.0007	0.0005	0.0003	0.0004	0.0006	0.0014
Nitrate/Nitrite, Combined	10 mg/l	Primary	BDL	BDL	BDL	BDL	BDL	BDL
Iron	0.3 mg/l	Secondary**	0.6	0.22	0.17	0.12	0.12	1.13
Manganese	0.05 mg/l	Secondary**	0.023	BDL	BDL	BDL	BDL	0.025
pH (field test)	6.5-8.5	Secondary**	7.35	7.36	7.22	7.54	7.37	7.09
Total Dissolved Solids (TDS)	500 mg/l	Secondary**	200	198	195	205	208	200
Alkalinity, Total, mg/l	None	None	120	124	126	128	128	120
Calcium, mg/l	None	None	ND	NT	ND	ND	NT	ND
Hardness, Total as Calcium Carbonate, mg/l	None	None	ND	ND	ND	ND	ND	ND
Sodium, mg/l	None	None	60.6	69.7	56.3	63	63.7	63
Temperature, Centigrade (field test)	None	None	22.5	22	24.2	23.1	25.6	23.5
Additional KGCSA Requested Testing								
Color*	15 color units	Secondary**	14	NT	12	10	NT	37.5
Corrosivity*	Non-corrosive	Secondary**	-3.61	NT	-3.7	-3.39	NT	-3.86
Conductivity at 25 CUMHOS/CM*	None	None	264	NT	281	276	NT	282
Turbidity (state regulated)	Not to exceed 5 NTU	Secondary**	3.33	NT	2.77	2.34	NT	6.37

Site #1 - 11170 Dahlgren Road
Site #2 - 11125 Poplar Drive
Site #3 - 8361 Cedar Lane (Eden Estates Pool)
Site #4 - 8421 Cedar Lane
Site #5 - Dixie Lane, End of Cul-de Sac
Site #6 - Cedar Lane, End of Street

NT - Not tested
NTU - Nephelometric turbidity units
BDL - Below detection limit
ND - None detected

**National Secondary Drinking Water Regulations (NSDWRs) are non-mandatory water quality standards for 15 contaminants. EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They are established only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not health threatening at the SMCL. Public water systems only need to test for them on a voluntary basis. EPA believes that if these contaminants are present in your water at levels above these standards, the contaminants may cause the water to appear cloudy or colored, or to taste or smell bad. This may cause a great number of people to stop using water from their public water system even though the water is actually safe to drink.

Attachment 1. Final Analysis Reports from Mid-Atlantic Lab, Inc.

MID-ATLANTIC LABORATORIES, INC.

224 Main St., Suite 1, Port Royal, Virginia 22535

Report Date: June 27, 2016

Certificate of Analysis

Structure Set Name	Certifying Agency	Lab ID#	Sample ID	Public System Name/Address:	Date/Time Sampled:	Date Received in Lab:
sample	STATE	00215	(Lab Project #): 13861	King George County	6/13/2016 1416	6/13/2016
		Contract Lab ID#:	**Final Report**	9207 Kings Hwy.		
		460160		King George, VA 22485		
				Sample Location:	**Sampler Name:**	
				Site # 1 - 11170 Dahlgren Rd.	John Storke	

Sample Category	Classification Code	Classification Description	Analyte	Analyte Code	Analyte Method	Results	Units	DL/LOQ	Analyzed	Analyst
GE	NIT	Nitrate + Nitrite (Combined)	NITRATE-NITRITE	1038	HACH TNTPlus 835/836 Method 10206	BDL	mg/L	0.046	6/22/2016	KS
GE	INO	Inorganics	HARDNESS, TOTAL (AS CACO3)	1915	SM2340B	ND	mg/L	10.0	6/23/2016	VVK
GE	INO	Inorganics	COLOR	1905	SM2120B-2011	14	pt/co	1	6/15/2016	KS
GE	INO	Inorganics	TDS	1930	SM 2540 C	200	mg/L	5.00	6/20/2016	RPR
GE	INO	Inorganics	ALKALINITY, TOTAL	1927	SM2320B	120	mg/L	10.0	6/27/2016	DHC
GE	MET	Metals	IRON	1028	EPA 200.7	0.600 *	mg/L	0.100	6/23/2016	VVK
GE	MET	Metals	MANGANESE	1032	SM3111B-2011	0.023	mg/L	0.009	6/17/2016	KS
GE	INO	Inorganics	CONDUCTIVITY@25CUMHOS/CM	1064	SM2510B-2011	264	umhos/cm	1	6/17/2016	SS
GE	INO	Inorganics	TURBIDITY	100	SM2130B-2011	3.33	NTU	0.004	6/15/2016	KS
GE	INO	Inorganics	CORROSIVITY	1910	Calc.	-3.61**	mg/L	-	6/27/2016	RK
PB	LC	Lead & Copper	COPPER, FREE	1022	SM3111B-2011	BDL	mg/L	0.02	6/17/2016	KS
PB	LC	Lead & Copper	LEAD	1030	EPA 200.9	0.0007	mg/L	0.0002	6/21/2016	KS
			Total Coliforms		SM 9223B-2011	Absent			6/13-14/16	RK
			E.coli		SM 9223B-2011	Absent			6/13-14/16	RK
GE	CAL	Metals	CALCIUM	1016	EPA 200.7	ND	mg/L	1.00	6/23/2016	VVK
GE	MET	Metals	SODIUM	1052	SM3111B-2011	60.60	mg/L	0.300	6/17/2016	KS
Field Analysis Results:										
pH					SM4500H+-2011	7.35	SU	--	6/13/2016	JS
Temperature					SM2550B-2011	22.5	°C	--	6/13/2016	JS
Chlorine					SM4500-CL F-2011	0.31	mg/L	1	6/13/2016	JS

* Exceeds the Regulatory Limit or Maximum Contamination Limit

** Moderate Corrosion - Treatment Recommended

BDL = Below Detection Limit

LOQ = Limit of Quantitation

mg/L = milligrams per Liter (equivalent to: parts per million)

DL = Detection Limit

SU = Standard Unit

umho/cm = micromhos per centimeter

pt/co = platinum/cobalt units

NTU = nephelometric turbidity units

Reviewed by:

For Sylvia C. Storke, Laboratory Director

Mid-Atlantic Labs Inc. VA 00215 WV 9426 M MD 215 NC 51704 Certified Analysts

MID-ATLANTIC LABORATORIES, INC.

224 Main St., Suite 1, Port Royal, Virginia 22535

Report Date: June 27, 2016

Certificate of Analysis

Structure Set Name	Certifying Agency	Lab ID#	Sample ID			Date/Time Sampled:		Date Received in Lab:	
sample	STATE	00215	(Lab Project #): 13861	Public System Name/Address:		6/13/2016	1439	6/13/2016	
		Contract Lab ID#:	Final Report	King George County					
		460160		9207 Kings Hwy.					
				King George, VA 22485					
				Sample Location:		Sampler Name:			
				Site # 2 - 11125 Poplar		John Storke			

Sample Category	Classification Code	Classification Description	Analyte	Analyte Code	Analyte Method	Results	Units	DL/LOQ	Analyzed	Analyst
GE	NIT	Nitrate + Nitrite (Combined)	NITRATE-NITRITE	1038	HACH TNTPlus 835/836 Method 10206	BDL	mg/L	0.046	6/22/2016	KS
GE	INO	Inorganics	HARDNESS, TOTAL (AS CACO3)	1915	SM2340B	ND	mg/L	10.0	6/23/2016	VVK
GE	INO	Inorganics	TDS	1930	SM 2540C	198	mg/L	5.00	6/20/2016	RPR
GE	INO	Inorganics	ALKALINITY, TOTAL	1927	SM2320B	124	mg/L	10.0	6/27/2016	DHC
GE	MET	Metals	IRON	1028	EPA 200.7	0.220	mg/L	0.100	6/23/2016	VVK
GE	MET	Metals	MANGANESE	1032	SM3111B-2011	BDL	mg/L	0.009	6/17/2016	KS
PB	LC	Lead & Copper	COPPER, FREE	1022	SM3111B-2011	0.03	mg/L	0.02	6/17/2016	KS
PB	LC	Lead & Copper	LEAD	1030	EPA 200.9	0.0005	mg/L	0.0002	6/21/2016	KS
			Total Coliforms		SM 9223B-2011	Absent			6/13-14/16	RK
			E.coli		SM 9223B-2011	Absent			6/13-14/16	RK
GE	MET	Metals	SODIUM	1052	SM3111B-2011	69.70	mg/L	0.300	6/17/2016	KS
Field Analysis Results:										
pH					SM4500H+-2011	7.36	SU	--	6/13/2016	JS
Temperature					SM2550B-2011	22.0	°C	--	6/13/2016	JS
Chlorine					SM4500-CL F-2011	0.36	mg/L	1	6/13/2016	JS

BDL = Below Detection Limit
LOQ = Limit of Quantitation
mg/L = milligrams per Liter (equivalent to: parts per million)
DL = Detection Limit
SU = Standard Unit

Reviewed by:

For Sylvia C. Storke, Laboratory Director

Mid-Atlantic Labs Inc. VA 00215 WV 9426 M MD 215 NC 51704 Certified Analysts

MID-ATLANTIC LABORATORIES, INC.

224 Main St., Suite 1, Port Royal, Virginia 22535

Report Date: June 27, 2016

Certificate of Analysis

Structure Set Name	Certifying Agency	Lab ID#	Sample ID
sample	STATE	00215	(Lab Project #): 13861
		Contract Lab ID#:	**Final Report**
		460160	

Public System Name/Address:
King George County
9207 Kings Hwy.
King George, VA 22485

Sample Location:
Site # 3 8361 Cedar Ln. (Eden Estates Pool)

Date/Time Sampled: 6/13/2016 1500

Sampler Name:
John Storke

Date Received in Lab: 6/13/2016

Sample Category	Classification Code	Classification Description	Analyte	Analyte Code	Analyte Method	Results	Units	DL/LOQ	Analyzed	Analyst
GE	NIT	Nitrate + Nitrite (Combined)	NITRATE-NITRITE	1038	HACH TNTPlus 835/836 Method 10206	BDL	mg/L	0.046	6/22/2016	KS
GE	INO	Inorganics	HARDNESS, TOTAL (AS CACO3)	1915	SM2340B	ND	mg/L	10.0	6/23/2016	VVK
GE	INO	Inorganics	COLOR	1905	SM2120B-2011	12	pt/co	1	6/15/2016	KS
GE	INO	Inorganics	TDS	1930	SM2540C	195	mg/L	5.00	6/20/2016	RPR
GE	INO	Inorganics	ALKALINITY, TOTAL	1927	SM2320B	126	mg/L	10.0	6/27/2016	DHC
GE	MET	Metals	IRON	1028	EPA 200.7	0.170	mg/L	0.100	6/23/2016	VVK
GE	MET	Metals	MANGANESE	1032	SM3111B-2011	BDL	mg/L	0.009	6/17/2016	KS
GE	INO	Inorganics	CONDUCTIVITY@25CUMHOS/CM	1064	SM2510B-2011	281	umhos/cm	1	6/17/2016	SS
GE	INO	Inorganics	TURBIDITY	100	SM2130B-2011	2.77	NTU	0.004	6/15/2016	KS
GE	INO	Inorganics	CORROSIVITY	1910	Calc.	-3.70**	mg/L	-	6/27/2016	RK
PB	LC	Lead & Copper	COPPER, FREE	1022	SM3111B-2011	BDL	mg/L	0.02	6/17/2016	KS
PB	LC	Lead & Copper	LEAD	1030	EPA 200.9	0.0003	mg/L	0.0002	6/21/2016	KS
			Total Coliforms		SM 9223B-2011	Absent			6/13-14/16	RK
			E.coli		SM 9223B-2011	Absent			6/13-14/16	RK
GE	CAL	Metals	CALCIUM	1016		ND	mg/L	1.00	6/23/2016	VVK
GE	MET	Metals	SODIUM	1052	SM3111B-2011	56.30	mg/L	0.300	6/17/2016	KS
Field Analysis Results:										
pH					SM4500H+-2011	7.22	SU	--	6/13/2016	JS
Temperature					SM2550B-2011	24.2	°C	--	6/13/2016	JS
Chlorine					SM4500-CL F-2011	0.41	mg/L	1	6/13/2016	JS

BDL = Below Detection Limit
mg/L = milligrams per Liter (equivalent to: parts per million)
DL = Detection Limit
umho/cm = micromhos per centimeter
pt/co = platinum/cobalt units
LOQ = Limit of Quantitation
SU = Standard Unit
NTU = nephelometric turbidity units
** Moderate Corrosion - Treatment Recommended

Reviewed by:

For Sylvia C. Storke, Laboratory Director

Mid-Atlantic Labs Inc.
VA 00215
WV 9426 M
MD 215
NC 51704
Certified Analysis

MID-ATLANTIC LABORATORIES, INC.

224 Main St., Suite 1, Port Royal, Virginia 22535

Report Date: June 27, 2016

Certificate of Analysis

Structure Set Name	Certifying Agency	Lab ID#	Sample ID			Date/Time Sampled:		Date Received in Lab:
sample	STATE	00215	(Lab Project #): 13861	**Public System Name/Address:**		6/13/2016	1515	6/13/2016
		Contract Lab ID#:	**Final Report**	King George County				
		460160		9207 Kings Hwy.				
				King George, VA 22485				
				Sample Location:		**Sampler Name:**		
				Site # 4 - 8421 Cedar Ln.		John Storke		

Sample Category	Classification Code	Classification Description	Analyte	Analyte Code	Analyte Method	Results	Units	DL/LOQ	Analyzed	Analyst
GE	NIT	Nitrate + Nitrite (Combined)	NITRATE-NITRITE	1038	HACH TNTPlus 835/836 Method 10206	BDL	mg/L	0.046	6/22/2016	KS
GE	INO	Inorganics	HARDNESS, TOTAL (AS CACO3)	1915	SM2340B	ND	mg/L	10.0	6/23/2016	VVK
GE	INO	Inorganics	COLOR	1905	SM2120B-2011	10	pt/co	1	6/15/2016	KS
GE	INO	Inorganics	TDS	1930	SM2540C	205	mg/L	5.00	6/20/2016	RPR
GE	INO	Inorganics	ALKALINITY, TOTAL	1927	SM2320B	128	mg/L	10.0	6/27/2016	DHC
GE	MET	Metals	IRON	1028	EPA 200.7	0.120	mg/L	0.100	6/23/2016	VVK
GE	MET	Metals	MANGANESE	1032	SM3111B-2011	BDL	mg/L	0.009	6/17/2016	KS
GE	INO	Inorganics	CONDUCTIVITY@25CUMHOS/CM	1064	SM2510B-2011	276	umhos/cm	1	6/17/2016	SS
GE	INO	Inorganics	TURBIDITY	100	SM2130B-2011	2.34	NTU	0.004	6/15/2016	KS
GE	INO	Inorganics	CORROSIVITY	1910	Calc.	-3.39**	mg/L	-	6/27/2016	RK
PB	LC	Lead & Copper	COPPER, FREE	1022	SM3111B-2011	BDL	mg/L	0.02	6/17/2016	KS
PB	LC	Lead & Copper	LEAD	1030	EPA 200.9	0.0004	mg/L	0.0002	6/21/2016	KS
			Total Coliforms		SM 9223B-2011	Absent			6/13-14/16	RK
			E.coli		SM 9223B-2011	Absent			6/13-14/16	RK
GE	CAL	Metals	CALCIUM	1016		ND	mg/L	1.00	6/23/2016	VVK
GE	MET	Metals	SODIUM	1052	SM3111B-2011	63.0	mg/L	0.300	6/17/2016	KS
Field Analysis Results:										
pH					SM4500H+-2011	7.54	SU	--	6/13/2016	JS
Temperature					SM2550B-2011	23.1	°C	--	6/13/2016	JS
Chlorine					SM4500-CL F-2011	0.34	mg/L	1	6/13/2016	JS

SU = Standard Unit

NTU = nephelometric turbidity units

** Moderate Corrosion - Treatment Recommended

BDL = Below Detection Limit

LOQ = Limit of Quantitation

mg/L = milligrams per Liter (equivalent to: parts per million)

umho/cm = micromhos per centimeter

DL = Detection Limit

pt/co = platinum/cobalt units

Reviewed by:

For Sylvia C. Storke, Laboratory Director

Mid-Atlantic Labs Inc. VA 00215 WV 9426 M MD 215 NC 51704 Certified Analysis

MID-ATLANTIC LABORATORIES, INC.

224 Main St., Suite 1, Port Royal, Virginia 22535

Report Date: June 27, 2016

Certificate of Analysis

Structure Set Name	Certifying Agency	Lab ID#	Sample ID
sample	STATE	00215	(Lab Project #): 13861
		Contract Lab ID#:	**Final Report**
		460160	

Public System Name/Address:
King George County
9207 Kings Hwy.
King George, VA 22485

Sample Location:
Site # 5 - Dixie Ln. End of Cul-de-sac

Date/Time Sampled: 6/13/2016 1332

Date Received in Lab: 6/13/2016

Sampler Name: John Storke

Sample Category	Classification Code	Classification Description	Analyte	Analyte Code	Analyte Method	Results	Units	DL/LOQ	Analyzed	Analyst
GE	NIT	Nitrate + Nitrite (Combined)	NITRATE-NITRITE	1038	HACH TNTPlus 835/836 Method 10206	BDL	mg/L	0.046	6/22/2016	KS
GE	INO	Inorganics	HARDNESS, TOTAL (AS CACO3)	1915	SM2340B	ND	mg/L	10.0	6/23/2016	VVK
GE	INO	Inorganics	TDS	1930	SM2540C	208	mg/L	5.00	6/20/2016	RPR
GE	INO	Inorganics	ALKALINITY, TOTAL	1927	SM2320B	128	mg/L	10.0	6/27/2016	VVK
GE	MET	Metals	IRON	1028	EPA 200.7	0.120	mg/L	0.100	6/23/2016	VVK
GE	MET	Metals	MANGANESE	1032	SM3111B-2011	BDL	mg/L	0.009	6/17/2016	KS
PB	LC	Lead & Copper	COPPER, FREE	1022	SM3111B-2011	BDL	mg/L	0.02	6/17/2016	KS
PB	LC	Lead & Copper	LEAD	1030	EPA 200.9	0.0006	mg/L	0.0002	6/21/2016	KS
			Total Coliforms		SM 9223B-2011	Absent			6/13-14/16	RK
			E.coli		SM 9223B-2011	Absent			6/13-14/16	RK
GE	MET	Metals	SODIUM	1052	SM3111B-2011	63.70	mg/L	0.300	6/17/2016	KS
Field Analysis Results:										
pH					SM4500H+-2011	7.37	SU	--	6/13/2016	JS
Temperature					SM2550B-2011	25.6	°C	--	6/13/2016	JS
Chlorine					SM4500-CL F-2011	0.94	mg/L	1	6/13/2016	JS

BDL = Below Detection Limit
mg/L = milligrams per Liter (equivalent to: parts per million)
DL = Detection Limit
SU = Standard Unit
LOQ = Limit of Quantitation

Reviewed by:

For Sylvia C. Storke, Laboratory Director

Mid-Atlantic Labs Inc. VA 00215 WV 9426 M MD 215 NC 51704 Certified Analysis

MID-ATLANTIC LABORATORIES, INC.

224 Main St., Suite 1, Port Royal, Virginia 22535

Report Date: June 27, 2016

Certificate of Analysis

Structure Set Name	Certifying Agency	Lab ID#	Sample ID
sample	STATE	00215	(Lab Project #): 13861
		Contract Lab ID#:	**Final Report**
		460160	

Public System Name/Address:
King George County
9207 Kings Hwy.
King George, VA 22485

Sample Location:
Site # 6 - Cedar Ln. End of Street

Date/Time Sampled: 6/13/2016 1548

Date Received in Lab: 6/13/2016

Sampler Name: John Storke

Sample Category	Classification Code	Classification Description	Analyte	Analyte Code	Analyte Method	Results	Units	DL/LOQ	Analyzed	Analyst
GE	NIT	Nitrate + Nitrite (Combined)	NITRATE-NITRITE	1038	HACH TNTPlus 835/836 Method 10206	BDL	mg/L	0.046	6/22/2016	KS
GE	INO	Inorganics	HARDNESS, TOTAL (AS CACO3)	1915	SM2340B	ND	mg/L	10.0	6/23/2016	VVK
GE	INO	Inorganics	COLOR	1905	SM2120B-2011	37.5	pt/co	1	6/15/2016	KS
GE	INO	Inorganics	TDS	1930	SM2540C	200	mg/L	5.00	6/20/2016	RPR
GE	INO	Inorganics	ALKALINITY, TOTAL	1927	SM2320B	120	mg/L	10.0	6/27/2016	DHC
GE	MET	Metals	IRON	1028	EPA 200.7	1.13*	mg/L	0.100	6/23/2016	VVK
GE	MET	Metals	MANGANESE	1032	SM3111B-2011	0.025	mg/L	0.009	6/17/2016	KS
GE	INO	Inorganics	CONDUCTIVITY@25CUMHOS/CM	1064	SM2510B-2011	282	umhos/cm	1	6/17/2016	SS
GE	INO	Inorganics	TURBIDITY	100	SM2130B-2011	6.37	NTU	0.004	6/15/2016	KS
GE	INO	Inorganics	CORROSIVITY	1910	Calc.	-3.86**	mg/L	-	6/27/2016	RK
PB	LC	Lead & Copper	COPPER, FREE	1022	SM3111B-2011	BDL	mg/l	0.02	6/17/2016	KS
PB	LC	Lead & Copper	LEAD	1030	EPA 200.9	0.0014	mg/l	0.0002	6/21/2016	KS
			Total Coliforms		SM 9223B-2011	Absent			6/13-14/16	RK
			E.coli		SM 9223B-2011	Absent			6/13-14/16	RK
GE	CAL	Metals	CALCIUM	1016	EPA 200.7	ND	mg/L	1.00	6/23/2016	VVK
GE	MET	Metals	SODIUM	1052	SM3111B-2011	63.0	mg/L	0.300	6/17/2016	KS
Field Analysis Results:										
pH					SM4500H+-2011	7.09	SU	--	6/13/2016	JS
Temperature					SM2550B-2011	23.5	°C	--	6/13/2016	JS
Chlorine					SM4500-CL F-2011	0.87	mg/L	1	6/13/2016	JS

* Exceeds the Regulatory Limit or Maximum Contamination Limit
** Moderate Corrosion - Treatment Recommended

SU = Standard Unit
pt/co = platinum/cobalt units
BDL = Below Detection Limit
LOQ = Limit of Quantitation
mg/L = milligrams per Liter (equivalent to: parts per million)
NTU = nephelometric turbidity units
DL = Detection Limit
umho/cm = micromhos per centimeter

Reviewed by:

For Sylvia C. Storke, Laboratory Director

Mid-Atlantic Labs Inc.
VA 00215
WV 9426 M
MD 215
NC 51704
Certified Analysts