Wet-Weather Monitoring Report
Second Quarter 2023
Gadsden, Alabama Urbanized Area
Phase II Small MS4s
NPDES General Permit ALR040000
S&ME Project No. 22820261

PREPARED FOR:

Gadsden-Etowah MS4 Steering Committee

PREPARED BY:

S&ME, Inc.
360D Quality Circle NW, Ste 450
Huntsville, AL 35806

June 29, 2023

Table of Contents

1.0 Introduction 1
1.1 NPDES Permit 1
1.2 Water Quality Concerns 1
1.3 Monitoring Program 2
2.0 Rainfall Data 2
3.0 Monitoring Event 3
3.1 Monitoring Locations 3
3.2 Sampling Procedures 4
3.3 Field Documentation 4
3.4 Quality Assurance / Quality Control 5
3.4.1 Sample Containers and Preservation 5
3.4.2 Quality Assurance 5
3.4.3 Sample Shipment 5
4.0 Analytical Results 6
5.0 Recordkeeping 6
6.0 Certification of the Monitoring Report 7
7.0 Acknowledgement 7
8.0 Closing 7

List of Tables

Table 1-1 Permit Numbers and Responsible Officials 1
Table 2-1 May 23, 2023 Qualifying Rain Event Measurements 2
Table 3-1 Monitoring Point Coordinates 3
Table 3-2 Sample Containers and Preservation 5
Table 5-1 Storm Water Steering Committee 6

Appendices

Appendix I – Figures
Appendix II – Tables
Appendix III – Laboratory Reports

1.0 Introduction

S&ME, Inc. has prepared this Monitoring Report for the seven entities comprising the Gadsden-Etowah MS4 in general accordance with S&ME Proposal No. 22820261, dated October 25, 2022.

1.1 NPDES Permit

The Storm Water Phase II Final Rule issued by the United States Environmental Protection Agency (USEPA) in 1999 requires nationwide coverage of all operators of small MS4s located within the boundaries of an "urbanized area" as defined by the latest decennial Census. Based on the results of the 2010 census, the Bureau of the Census designated portions of the City of Attalla, City of Gadsden, City of Glencoe, City of Hokes Bluff, City of Rainbow City, City of Southside, and unincorporated Etowah County as the *Gadsden, Alabama Urbanized Area*. A map outlining the approximate boundary of the *Gadsden, Alabama Urbanized Area* is included as **Figure 1** in **Appendix I**. The regulated small municipal separate storm sewer systems (MS4s) within the urbanized area are collectively referred to as the Gadsden-Etowah MS4.

The Alabama Department of Environmental Management (ADEM) reissued National Pollutant Discharge Elimination System (NPDES) General Permit ALR040000 for discharges from regulated small municipal separate storm sewer systems with an effective date of October 1, 2021. Permit numbers for each entity in the Gadsden-Etowah MS4 are provided in Table 1-1.

Table 1-1 Permit Numbers and Responsible Officials

Entity	Permit Number	Name
City of Attalla	ALR040052	Larry Means, Mayor
City of Gadsden	ALR040053	Craig Ford, Mayor
City of Glencoe	ALR040054	Chris Hare, Mayor
City of Hokes Bluff	ALR040055	Scott Reeves, Mayor
City of Rainbow City	ALR040056	Joe Taylor, Mayor
City of Southside	ALR040057	Dana Snyder, Mayor
Etowah County	ALR040009	Craig Inzer, Jr., Commission President

1.2 Water Quality Concerns

Section 303(d) of the Clean Water Act (CWA), as amended by the Water Quality Act of 1987, and EPA's Water Quality Planning and Management Regulations (40 CFR 130) require states to identify waterbodies not in compliance with the water quality standards applicable to their designated use classifications. Section 303(d) then requires that total maximum daily loads (TMDLs) be determined for all pollutants causing violation of applicable water quality standards in each identified segment.

Neely Henry Lake is the primary receiving water for the Gadsden-Etowah MS4. In 1996, the ADEM identified five of the six reservoirs on the Coosa River within the State of Alabama's borders as being impaired, including Neely Henry Lake. In 2008, the EPA approved TMDLs for Neely Henry Lake related to Nutrients (Total Phosphorous), pH, and Dissolved Oxygen. **The Gadsden-Etowah MS4 is required to achieve a 30% reduction in Total Phosphorus loading.**

1.3 Monitoring Program

Part III.B of the NPDES General Permit requires that the Permittee develop and implement a Storm Water Management Program Plan (SWMPP). Part IV.D of the NPDES General Permit requires that the SWMPP include monitoring provisions to document that the waste load allocations prescribed in the TMDL are being achieved. The seven entities comprising the Gadsden-Etowah MS4 have chosen to develop and implement a joint monitoring program.

Each entity's SWMPP requires implementation of the wet-weather monitoring program as detailed in the *Gadsden-Etowah MS4 Wet-Weather Monitoring Program*, dated April 2022 (hereafter referred to as the 2022 Monitoring Program). The intent of the proposed monitoring program is to evaluate the effectiveness of the City's BMPs in achieving the required phosphorous reduction as established in the TMDL and to generally evaluate overall water quality. The Gadsden-Etowah Steering Committee is responsible for implementation of the Gadsden-Etowah Wet Weather Monitoring Program.

2.0 Rainfall Data

The largest loading of phosphorous to the Coosa River from the Gadsden-Etowah MS4 is expected to occur during runoff events; therefore, the 2022 Monitoring Program requires that monitoring be conducted within 72 hours of a qualifying rain event of 0.75 inch, as measured at three rain gauges within the MS4 located a minimum of three miles apart.

On May 23, 2023, a qualifying rain event was observed at five weather stations located in the vicinity of the urbanized area. The locations of the weather stations are identified on **Figure 2** in **Appendix I**.

Table 2-1 May 23, 2023 Qualifying Rain Event Measurements

Gauge Name	Location	Latitude	Longitude	Precipitation
KALATTAL14	Attalla, AL	34.047°	-85.969°	2.19 in
KALGADSD107	Gadsden, AL	33.993°	-85.806°	0.99 in
KALASHVI19	Ashville, AL	33.86°	-86.12°	1.20 in
KALASHVI18	Ashville, AL	33.88°	-86.11°	0.79 in

Gauge Name	Location	Latitude	Longitude	Precipitation
KALGADSD3	Gadsden, AL	34.06°	-85.99°	0.75 in

3.0 Monitoring Event

On May 24 and 25, 2023, S&ME personnel mobilized to conduct storm water monitoring for the second quarter of 2023 in general accordance with Section 3 of the *Gadsden-Etowah MS4 Wet-Weather Monitoring Program*, dated April 2022.

3.1 Monitoring Locations

The primary monitoring locations selected for determining compliance of the Gadsden-Etowah MS4 with the 2008 phosphorous TMDL are identified on **Figure 3** in **Appendix I**. Coordinates for each point are listed in Table 3-1.

Table 3-1 Monitoring Point Coordinates

Outfall ID	Latitude	Longitude	Access	Waterbody Evaluated
AT 5	34.006446°	-86.069061°	LAND	Big Wills Creek / Little Wills Creek
GD 8	33.999535°	-86.024463°	LAND	Black Creek
RC 2	33.967683°	-86.039476°	LAND	Horton Creek
SS 13	33.891352°	-86.049229°	LAND	Neely Henry Lake
SS 14	33.885921°	-86.030683°	LAND	U.T. to Neely Henry Lake
GD 12	33.952567°	-86.003495°	LAND	U.T. to Neely Henry Lake
GD 6	34.015350°	-85.995617°	LAND	Town Creek
CO 15	33.972280°	-85.965354°	LAND	U.T. to Neely Henry Lake
SME 7	34.006225°	-86.111277°	LAND	Big Wills Creek
SME 9	34.002807°	-85.871879°	LAND	U.T. to Neely Henry Lake
SME 10	33.985669°	-85.878605°	LAND	U.T. to Big Cove Creek (exiting Hokes Bluff)
HB 3	34.002129°	-85.882808°	BOAT	U.T. to Neely Henry Lake
SME 4	34.001667°	-85.883342°	BOAT	Coosa River channel at north end of MS4
GD 5	34.014324°	-85.924013°	BOAT	Big Cove Creek / Little Cove Creek
SME 3	34.009698°	-85.956230°	BOAT	Coal Creek
GD 7	34.008361°	-85.999777°	BOAT	Storm sewer outfall to Coosa River
GD 9	33.989718°	-85.998472°	BOAT	U.T. to Coosa River (East Gadsden)
SME 1	33.990184°	-86.004048°	BOAT	Big Wills Creek / Black Creek
SS 5	33.941329°	-86.021569°	BOAT	U.T. to Coosa River
SME 5	33.940514°	-86.029885°	BOAT	Coosa River channel at center of MS4

Outfall ID	Latitude	Longitude	Access	Waterbody Evaluated
SME 6	33.852125°	-86.049695°	BOAT	Confluence of Greens Creek and Coosa River
RC 14	33.905786°	-86.111656°	BOAT	Rook Creek / Dry Creek

Following evaluation of the monitoring program for the Annual Reports in May of 2020, monitoring points CO 14, SME 3, and GD 3 were removed from the monitoring program and monitoring points SME 4, SME 5, SME 6, SME 7, and SME 8 were added. The changes to the monitoring program were implemented beginning with the 2020 fourth quarter sampling event. Monitoring point SME 3 was reinstated as part of the monitoring program beginning with the 2021 third quarter sampling event.

Following evaluation of the monitoring program for the 2022 SWMPPs and Wet-Weather Monitoring Program, monitoring points SME 2 and SME 8 were removed from the monitoring program and monitoring points SME 9 and SME 10 were added. The changes to the monitoring program were implemented beginning with the 2022 second quarter sampling event.

3.2 Sampling Procedures

Samples accessible by land were obtained using a stainless-steel bucket. Samples accessible by boat were obtained using a horizontal Van Dorn sampler. The bucket and Van Dorn sampler were decontaminated prior to use and in between samples.

3.3 Field Documentation

The following observations were documented in the field at each monitoring location:

- Monitoring point ID
- Date and time
- Person conducting the sampling
- Equipment used
- Depth of sample collection
- Weather conditions
- Waterbody conditions

The following parameters were measured in the field at the time of sample collection:

- Turbidity
- pH
- Dissolved Oxygen (DO)
- Temperature

Field parameters were measured using a YSI Pro DSS Multi-Probe Meter.

The recorded field observations are included on **Table B.1** in **Appendix II**. The recorded field parameters are included on **Table B.2** in **Appendix II**.

3.4 Quality Assurance / Quality Control

The following handling procedures were employed in general accordance with EPA and ADEM guidance.

3.4.1 Sample Containers and Preservation

The samples were collected in new laboratory-provided containers containing analyte-appropriate preservatives as listed in Table 3-2.

Table 3-2 Sample Containers and Preservation

Parameter	Container	Preservative	Hold Time
Total Suspended Solids (TSS)	HDPE - 1 L	NONE	7 days
Total Phosphorous	HDPE - 250 mL	H_2SO_4	28 days
Orthophosphate	AMB - 100 mL	NONE	48 hours
Nitrate-Nitrite	HDPE - 250 mL	H_2SO_4	28 days
Total Kjeldahl Nitrogen (TKN)	HDPE - 250 mL	H_2SO_4	28 days

Prior to filling, sample containers were labeled with the following information in waterproof ink:

- Project number
- Sample location
- Collection date and time
- Preservative
- Analysis to be performed

3.4.2 Quality Assurance

Three duplicate samples were submitted to the laboratory. One duplicate sample of monitoring point AT 5 was collected by the land team during the sampling event and labeled as SME 12. One duplicate sample of monitoring point SME 7 was collected by the land team during the sampling event and labeled as SME 13. One duplicate sample of monitoring point SME 4 was collected by the boat team during the sampling event and labeled as SME 11.

3.4.3 Sample Shipment

After filling, the sample containers were sealed and immediately placed on ice in a protective container for shipment to the analytical laboratory. A Chain of Custody form was completed and accompanied the samples from the field to the laboratory. A copy of the Chain of Custody is included in **Appendix III**.

4.0 Analytical Results

The laboratory analytical results for the May 24-25, 2023, quarterly monitoring event are included on **Table B.2** in **Appendix II**. Historical monitoring data is included in Appendix II as **Tables B.3 to B.28**. The laboratory reports and Chain of Custody are included in **Appendix III**.

5.0 Recordkeeping

Each quarterly monitoring report will be incorporated into the Annual Report submitted by each entity. Monitoring reports will be retained by each entity for a minimum of 3 years.

The Storm Water Steering Committee is responsible for the coordination and implementation of the Storm Water Management Plan. Current membership of the Storm Water Steering Committee is as follows:

Table 5-1 Storm Water Steering Committee

Entity	Contact	Phone No.	Email
City of Gadsden	Heath Williamson	256-549-4520	hwilliamson@cityofgadsden.com
City of Gadsden	Keener Morrow	256-549-4524	kmorrow@cityofgadsden.com
City of Attalla	Jason Nicholson	256-441-9200	jnicholson@attallacity.org
City of Rainbow City	Joel Garmon	256-413-1230	jgarmon@rbcalabama.com
City of Southside	Judd Rich	256-442-9775 Ext. 103	juddrich@cityofsouthside.com
City of Glencoe	Todd Means	256-492-1424	toddmeans@cityofglencoe.org
City of Hokes Bluff	Lisa Lowman	256-492-2414	hbcity@cityofhokesbluff.net
Etowah County	Robert Nail	256-549-5358	rnail@etowahcounty.org

One copy of this Monitoring Report has been provided to each member of the Storm Water Steering Committee.

6.0 Certification of the Monitoring Report

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Signature of Responsible Official	Date
Print Name and Title	MS4 Entity

7.0 Acknowledgement

When performing this scope of services, S&ME observed the degree of care and skill generally exercised by other consultants undertaking similar studies at the same time, under similar circumstances and conditions, and in the same geographic area.

8.0 Closing

S&ME sincerely appreciates the opportunity to provide watershed monitoring services for the Gadsden-Etowah MS4. Should questions remain or if additional information is required, please do not hesitate to contact the undersigned.

S&ME, Inc.

Nathanael A. Wade

Nathanael A. Wade, E.I.
Staff Professional

Deborah J. Jones

Deborah J. Jones, P.E.
Senior Engineer

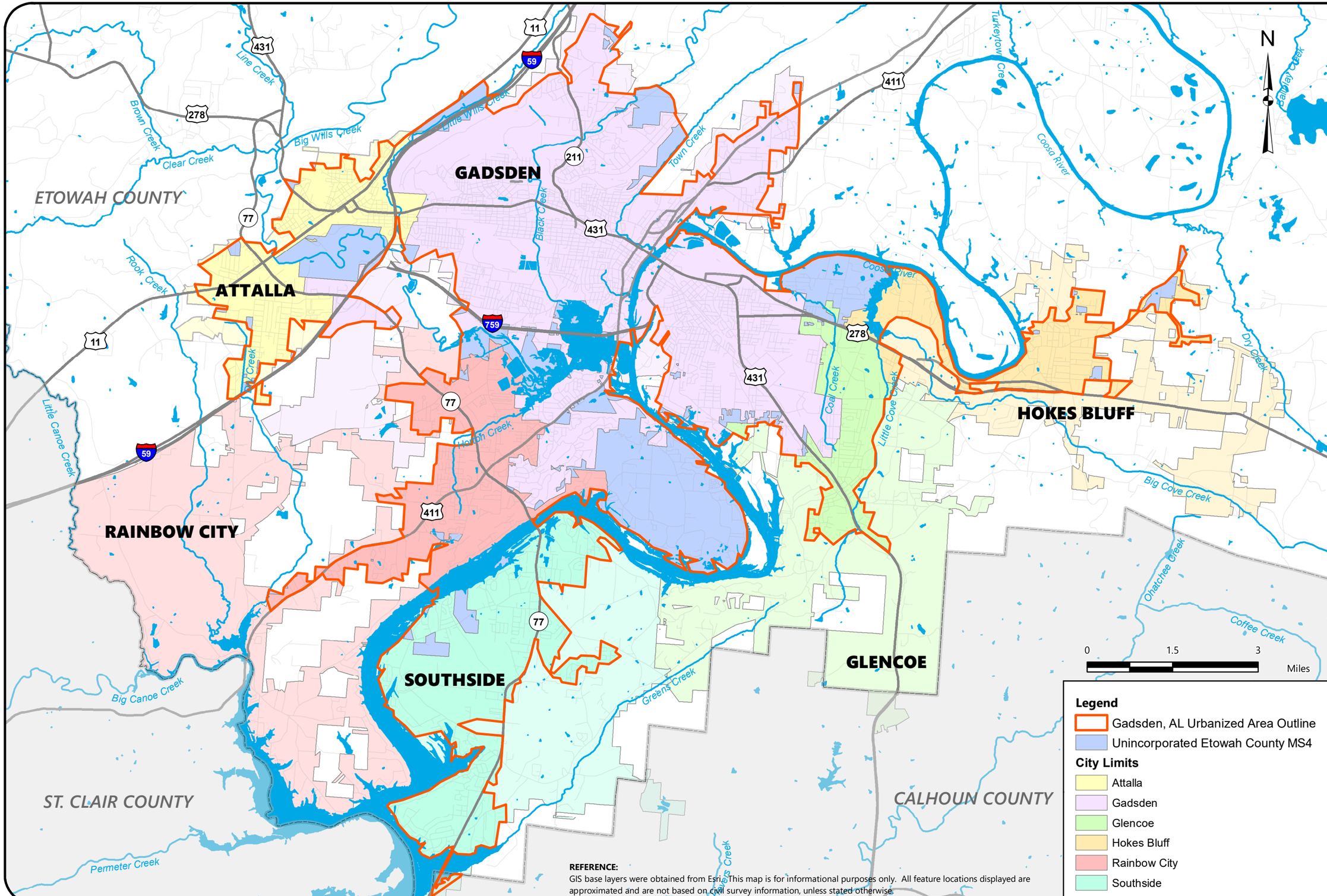
Appendices

Appendix I – Figures

Figure 1 – Gadsden, Alabama Urbanized Area

Figure 2 – Rain Gauge Locations

Figure 3 – MS4 Monitoring Locations



REFERENCE:
GIS base layers were obtained from Esri. This map is for informational purposes only. All feature locations displayed are approximated and are not based on civil survey information, unless stated otherwise.

GADSDEN, AL URBANIZED AREA

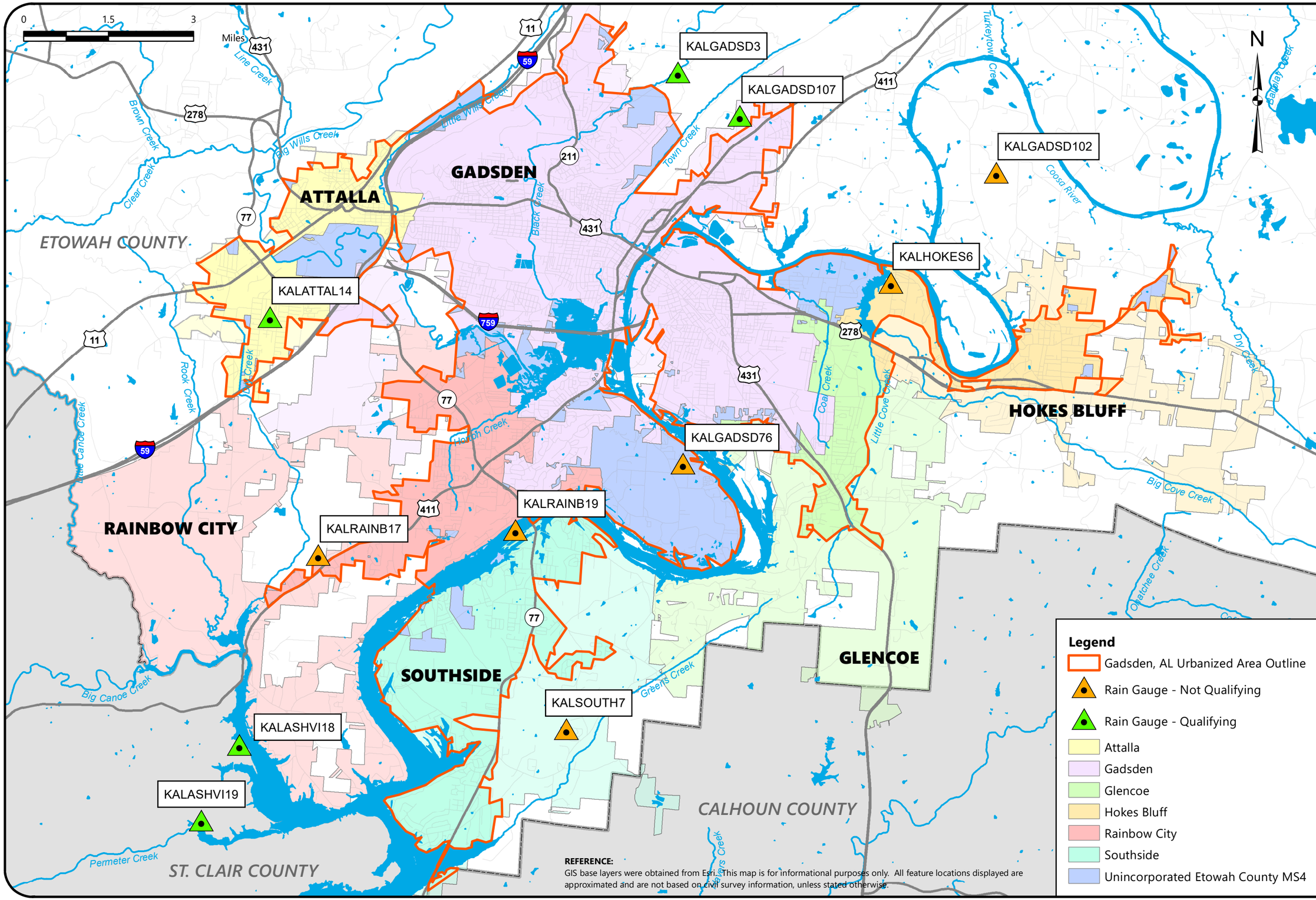
GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM
NPDES GENERAL PERMIT ALR040009

SCALE:
1:100,000

DATE:
02/18/2022

PROJECT NUMBER
22820261

FIGURE NO.
1

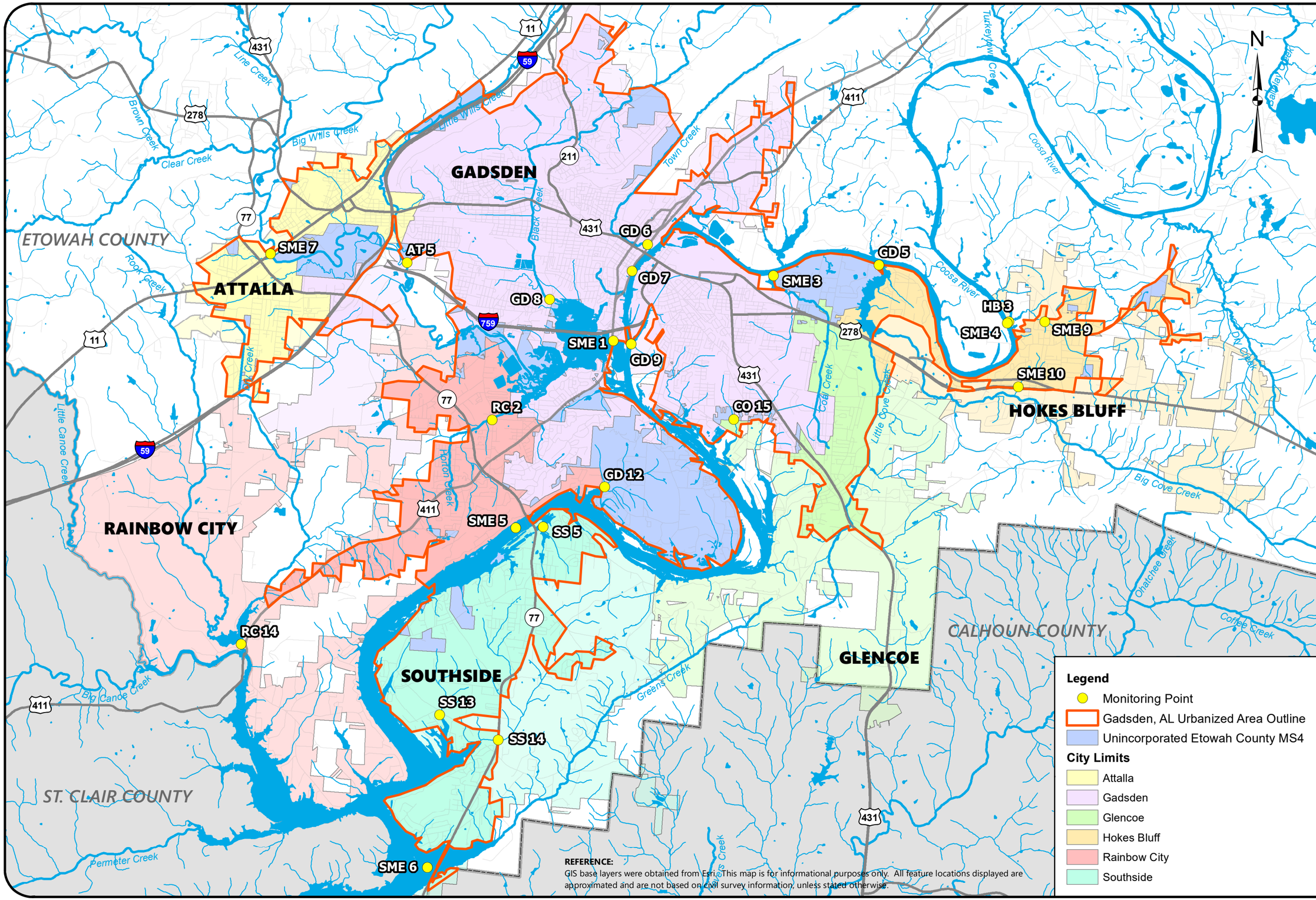


REFERENCE:
GIS base layers were obtained from Esri. This map is for informational purposes only. All feature locations displayed are approximated and are not based on civil survey information, unless stated otherwise.

MAY 23, 2023 RAIN EVENT

GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM
NPDES GENERAL PERMIT ALR040009

SCALE:	1:100,000
DATE:	06/06/2023
PROJECT NUMBER	22820261
FIGURE NO.	2



WET-WEATHER MONITORING LOCATIONS

GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM
NPDES GENERAL PERMIT ALR040009

SCALE:
1:100,000

DATE:
03/23/2022

PROJECT NUMBER
22820261

FIGURE NO.
3

Appendix II – Tables

Table B.1 – Field Observations

Table B.2 – Analytical Data

Tables B.3 to B.28 – Historical Analytical Data

TABLE B.1 - FIELD OBSERVATIONS

GADSDEN-ETOWAH MS4 MONITORING

MONITORING POINT ID	DATE	TIME	DEPTH (FT)	PERSONNEL	WEATHER CONDITIONS	WATERBODY CONDITIONS
SME 7	5/24/2023	10:38	-2'	PC/EK	Sunny	Fast Flowing
CO 15	5/24/2023	11:00	-2'	PC/EK	Sunny	Smooth
SME 9	5/24/2023	11:25	-2'	PC/EK	Sunny	Smooth
SME 10	5/24/2023	11:35	-2'	PC/EK	Sunny	Smooth
GD 6	5/24/2023	11:55	-2'	PC/EK	Sunny	Smooth
SS 13	5/24/2023	12:20	-2'	PC/EK	Sunny	Smooth
SS 14	5/24/2023	12:25	-2'	PC/EK	Sunny	Smooth
GD 12	5/24/2023	12:45	-2'	PC/EK	Sunny	Smooth
RC 2	5/24/2023	13:00	-2'	PC/EK	Sunny	Smooth
GD 8	5/24/2023	13:20	-2'	PC/EK	Sunny	Smooth
AT 5	5/24/2023	13:45	-2'	PC/EK	Sunny	Fast Flowing
HB 3	5/25/2023	10:40	-5'	NW	Cloudy	Smooth
SME 4	5/25/2023	10:45	-5'	NW	Cloudy	Smooth
GD 5	5/25/2023	11:05	-5'	NW	Cloudy	Smooth
SME 3	5/25/2023	11:15	-5'	NW	Cloudy	Smooth
GD 7	5/25/2023	11:25	-5'	NW	Cloudy	Smooth
GD 9	5/25/2023	11:35	-5'	NW	Cloudy	Smooth
SME 1	5/25/2023	11:40	-5'	NW	Cloudy	Smooth
SS 5	5/25/2023	12:25	-5'	NW	Cloudy	Smooth
SME 5	5/25/2023	12:35	-5'	NW	Cloudy	Smooth
SME 6	5/25/2023	13:25	-5'	NW	Cloudy	Rough
RC 14	5/25/2023	13:05	-5'	NW	Cloudy	Smooth

TABLE B.2 - ANALYTICAL DATA

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 7	5/24/2023	**38.5**	7.92	8.86	18.6	21.0	0.474	0.749	0.206	0.143
CO 15	5/24/2023	24.0	7.57	9.11	20.6	15.6	0.477	0.121	0.0461	0.0240
SME 9	5/24/2023	16.3	8.07	**11.59**	21.0	**59.0**	0.660	<0.0500	<0.0350	<0.0140
SME 10	5/24/2023	13.4	7.42	7.50	15.5	15.0	0.349	0.143	0.0371	<0.0140
GD 6	5/24/2023	3.8	8.01	9.09	24.6	7.47	0.468	0.101	0.0666	<0.0140
SS 13	5/24/2023	5.2	7.28	8.44	21.7	3.73	0.903	0.358	0.0655	<0.0140
SS 14	5/24/2023	4.6	7.65	9.57	21.3	4.40	0.506	0.528	0.102	0.0440
GD 12	5/24/2023	4.3	7.73	9.20	20.5	4.60	0.357	0.293	0.0372	0.0440
RC 2	5/24/2023	16.0	7.56	8.31	20.5	22.8	0.542	0.142	0.0469	<0.0140
GD 8	5/24/2023	14.7	8.35	8.19	21.1	10.3	0.516	0.253	0.0462	<0.0140
AT 5	5/24/2023	14.4	7.80	8.94	20.0	20.0	0.331	0.697	0.182	0.127
SME 12	5/24/2023	DUPLICATE OF AT 5				19.6	0.375	0.700	0.204	0.126
SME 13	5/24/2023	DUPLICATE OF SME 7				25.8	**0.999**	**0.752**	**0.225**	**0.160**
HB 3	5/25/2023	14.0	7.92	8.75	24.1	21.7	0.502	0.0574	0.0588	<0.0140
SME 4	5/25/2023	3.4	8.33	9.53	24.6	6.71	0.513	<0.0500	<0.0350	<0.0140
GD 5	5/25/2023	5.1	8.15	9.33	24.3	10.0	0.528	0.0534	0.0462	0.0250
SME 3	5/25/2023	7.6	7.51	7.99	24.0	11.0	0.515	<0.0500	0.0569	<0.0140
GD 7	5/25/2023	4.5	8.04	9.24	24.6	9.60	0.447	0.0646	0.0386	0.0270
GD 9	5/25/2023	5.9	8.02	9.61	24.9	12.4	0.492	<0.0500	0.0537	0.0160
SME 1	5/25/2023	6.6	**8.38**	10.64	24.5	10.6	0.694	<0.0500	0.0961	0.0430
SS 5	5/25/2023	7.0	8.19	10.03	25.5	9.80	0.638	<0.0500	0.0486	0.0670
SME 5	5/25/2023	7.1	8.06	9.41	25.4	11.4	0.564	0.155	0.0593	<0.0140
SME 6	5/25/2023	6.7	8.00	9.79	25.2	10.0	0.580	0.0655	0.0424	<0.0140
RC 14	5/25/2023	16.0	7.41	8.75	**26.4**	17.2	0.945	<0.0500	0.0850	<0.0140
SME 11	5/25/2023	DUPLICATE OF SME 4				6.40	0.464	<0.0500	0.0536	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled (Dry)

Bold - maximum reading for constituent

NA - not availabe at this time

* - value unknown due to equipment malfuction

TABLE B.3 - HISTORICAL ANALYTICAL DATA - SME 7

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 7	12/17/2020	16.8	8.10	11.01	11.5	19.4	0.541	0.884	<0.100	0.094
SME 7	3/18/2021	111.0	8.93	10.25	18.3	78.2	0.407	0.429	0.270	0.093
SME 7	5/5/2021	8.2	6.06	8.01	18.4	36.4	1.240	1.090	0.244	0.112
SME 7	9/2/2021	*	*	7.91	22.6	77.6	2.490	0.491	0.275	0.179
SME 7	11/23/2021	<1.0	7.78	10.45	12.2	<2.50	<0.250	0.367	0.516	0.472
SME 7	1/10/2022	19.2	7.97	10.98	11.9	34.7	0.805	0.823	0.211	0.140
SME 7	4/7/2022	*	7.10	9.27	18.0	37.2	1.37	0.549	0.264	<0.0300
SME 7	8/3/2022	24.8	8.32	7.69	24.6	31.0	0.844	0.742	0.373	0.314
SME 7	11/16/2022	4.9	7.87	10.30	11.1	3.8	<0.250	0.424	0.528	0.490
SME 7	2/13/2023	34.3	7.12	11.11	11.4	36.2	1.01	0.737	0.115	<0.0300
SME 7	5/24/2023	38.5	7.92	8.86	18.6	21.0	0.474	0.749	0.206	0.143

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.4 - HISTORICAL ANALYTICAL DATA - CO 15

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
CO 15	3/12/2013	32	7.41	8.91	14.40	9.0	0.53	<0.10	<0.100	0.097
CO 15	5/8/2013	27	7.51	8.04	18.10	11.0	0.59	0.10	<0.100	<0.12
CO 15	9/23/2013	13	7.09	4.01	27.18	11.0	0.34	<0.10	<0.100	0.027
CO 15	12/10/2013	42	6.09	11.25	9.83	13.0	0.56	0.18	<0.100	0.068
CO 15	2/6/2014	32	4.22	16.10	6.28	12.0	0.46	0.21	<0.100	<0.025
CO 15	6/26/2014	105	8.16	7.00	25.55	46.0	0.59	<0.100	<0.100	0.140
CO 15	9/30/2014	8	7.88	6.67	23.28	8.6	<0.25	<0.100	<0.100	<0.025
CO 15	11/19/2014	44	7.38	3.68	9.43	12.0	0.32	0.20	<0.100	0.030
CO 15	3/23/2015	56	7.85	9.53	18.50	19.0	0.61	0.14	<0.100	0.067
CO 15	4/22/2015	26	7.62	10.14	21.90	11.0	0.40	0.14	<0.100	<0.025
CO 15	9/30/2015	15	7.68	12.73	22.88	11.8	0.75	<0.100	<0.100	<0.025
CO 15	11/19/2015	50	7.30	19.45	16.98	17.5	0.42	0.24	0.183	0.042
CO 15	3/15/2016	29	7.66	12.39	19.83	12.4	0.78	<0.100	<0.100	<0.025
CO 15	6/29/2016	***	***	***	***	***	***	***	***	***
CO 15	8/9/2016	38	8.03	6.78	29.6	22.0	<0.25	<0.100	<0.100	<0.025
CO 15	12/7/2016	13.6	7.50	9.78	12.1	14.8	0.67	<0.100	<0.100	<0.025
CO 15	3/2/2017	38.2	7.77	8.32	16.0	17.4	0.52	0.15	<0.100	<0.025
CO 15	6/21/2017	6.4	7.56	5.12	26.7	18.3	0.97	<0.100	<0.100	<0.025
CO 15	8/17/2017	21.7	8.29	6.47	30.1	12.4	0.69	<0.100	<0.100	<0.025
CO 15	10/26/2017	10.8	4.43	8.24	13.6	6.4	0.39	<0.100	<0.100	<0.025
CO 15	3/27/2018	14.5	7.87	9.33	12.1	8.0	<0.25	<0.100	<0.100	<0.025
CO 15	6/26/2018	13.8	7.87	7.33	26.5	12.4	0.573	<0.100	0.270	<0.025
CO 15	8/1/2018	58.8	7.25	7.12	23.0	71.5	0.852	<0.100	0.122	0.040
CO 15	12/11/2018	111.3	8.73	11.94	7.0	10.1	1.16	0.168	0.107	<0.025

TABLE B.4 - HISTORICAL ANALYTICAL DATA - CO 15

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
CO 15	4/17/2019	17.0	7.80	9.17	19.1	11.5	0.574	0.144	<0.100	<0.025
CO 15	6/11/2019	21.9	6.56	3.10	22.8	9.8	1.00	<0.100	<0.100	<0.025
CO 15	8/28/2019	70.8	8.07	7.52	25.7	20.4	1.54	0.166	0.130	0.026
CO 15	10/28/2019	30.7	7.31	9.63	15.0	10.2	0.61	0.120	<0.100	<0.025
CO 15	3/31/2020	61.8	6.46	9.25	15.7	72.4	0.625	0.102	0.158	0.0320
CO 15	6/10/2020	18.7	6.24	6.22	25.0	10.4	0.456	0.148	<0.100	<0.030
CO 15	9/21/2020	NS	7.31	8.18	17.9	5.6	<0.250	<0.100	<0.100	<0.030
CO 15	12/17/2020	2.8	8.98	10.87	10.0	15.6	0.685	0.161	<0.100	<0.030
CO 15	3/18/2021	63.1	8.46	15.75	19.8	26.0	0.554	0.193	<0.100	<0.030
CO 15	5/5/2021	3.8	7.47	9.06	19.3	10.9	1.17	7.78	0.200	<0.030
CO 15	9/2/2021	*	*	7.81	24.3	13.8	0.926	<0.100	<0.100	<0.030
CO 15	11/23/2021	2.0	7.87	10.67	15.2	25.9	0.270	<0.100	<0.100	<0.030
CO 15	1/10/2022	24.3	7.90	11.64	9.8	9.6	<2.50	0.196	<0.100	<0.0300
CO 15	4/7/2022	16.5	7.48	9.75	17.3	11.7	0.853	<0.100	<0.100	0.0710
CO 15	8/3/2022	12.8	8.15	7.92	27.0	4.2	0.424	0.131	<0.100	<0.0300
CO 15	11/16/2022	9.5	7.38	10.50	11.2	10.7	0.424	<0.100	<0.100	<0.0300
CO 15	2/13/2023	21.8	7.15	11.46	10.2	7.5	0.717	0.242	<0.100	<0.0300
CO 15	5/24/2023	24.0	7.57	9.11	20.6	15.6	0.477	0.121	0.0461	0.0240

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

*** - outfall was dry

* - meter malfunctioned in field

TABLE B.5 - HISTORICAL ANALYTICAL DATA - SME 9

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHORUS (mg/L)
SME 9	4/7/2022	5.17	7.78	9.32	17.0	2.90	0.529	<0.100	0.135	<0.0300
SME 9	8/3/2022	9.20	8.10	7.97	25.4	<2.50	0.582	<0.100	<0.100	<0.0300
SME 9	11/16/2022	2.90	7.50	9.86	12.2	<2.50	<0.250	<0.100	<0.100	<0.0300
SME 9	2/13/2023	10.3	7.43	11.93	10.2	2.60	0.783	<0.100	<0.100	0.0900
SME 9	5/24/2023	16.3	8.07	11.59	21.0	59.0	0.660	<0.0500	<0.0350	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.6 - HISTORICAL ANALYTICAL DATA - SME 10

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 10	4/7/2022	4.94	7.82	9.16	18.0	<0.100	<0.0300	<0.100	0.477	2.80
SME 10	8/3/2022	10.3	8.08	6.35	25.5	<0.100	<0.0300	<0.100	0.940	4.10
SME 10	11/16/2022	9.80	7.18	8.03	12.2	<0.100	<0.0300	<0.100	0.516	4.60
SME 10	2/13/2023	19.1	7.32	11.34	9.7	0.185	<0.0300	<0.100	0.773	4.00
SME 10	5/24/2023	13.4	7.42	7.50	15.5	15.0	0.349	0.143	0.0371	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.7 - HISTORICAL ANALYTICAL DATA - GD 6

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 6	3/12/2013	10.3	8.03	9.65	11.90	5.8	0.29	0.21	<0.100	0.036
GD 6	5/8/2013	18.5	6.81	2.35	19.02	8.3	0.40	0.23	<0.100	0.033
GD 6	9/23/2013	6.0	7.28	5.17	26.93	5.8	0.36	<0.100	<0.100	<0.025
GD 6	12/10/2013	26.4	5.98	11.41	10.64	8.6	0.17	0.37	<0.100	0.041
GD 6	2/6/2014	15.5	4.34	15.80	6.85	5.5	0.16	0.26	<0.100	0.057
GD 6	6/26/2014	14.4	8.31	8.95	27.29	7.0	0.42	<0.100	<0.100	<0.025
GD 6	9/30/2014	7.1	8.35	6.53	26.78	7.0	0.55	<0.100	<0.100	<0.025
GD 6	11/19/2014	13.4	7.17	3.36	9.67	9.8	0.38	0.22	0.28	<0.025
GD 6	3/23/2015	16.5	7.95	8.95	18.40	8.2	0.26	0.22	<0.100	<0.025
GD 6	4/22/2015	14.9	7.59	10.82	19.80	8.0	0.28	0.22	<0.100	<0.025
GD 6	9/30/2015	14.1	8.19	12.31	25.47	12.4	0.974	<0.100	0.103	<0.025
GD 6	11/19/2015	42.5	6.97	15.87	17.75	16.0	0.768	0.468	0.131	0.037
GD 6	3/15/2016	16.1	7.68	11.58	19.98	7.9	0.500	0.124	<0.100	0.043
GD 6	6/29/2016	10.4	8.86	9.64	31.50	11.2	0.400	<0.100	<0.100	<0.025
GD 6	8/9/2016	10.4	8.26	6.98	30.70	10.3	0.621	<0.100	<0.100	<0.025
GD 6	12/7/2016	11.5	7.43	8.13	14.3	7.5	0.485	0.365	<0.100	<0.025
GD 6	3/2/2017	14.3	8.05	8.02	14.70	9.0	0.509	0.250	<0.100	<0.025
GD 6	6/21/2017	7.7	7.67	4.99	26.8	21.0	0.926	<0.100	0.11	<0.025
GD 6	8/17/2017	7.0	8.02	7.72	31.2	13.2	0.677	<0.100	<0.100	<0.025
GD 6	10/26/2017	8.3	6.25	7.84	15.8	12.0	0.385	0.126	<0.100	<0.025
GD 6	3/27/2018	10.1	7.97	9.00	12.1	10.9	<0.25	0.233	1.76	<0.025
GD 6	6/26/2018	8.0	8.02	6.78	29.6	9.6	0.782	0.108	<0.100	<0.025
GD 6	8/1/2018	25.4	7.66	7.52	22.7	21.9	0.636	0.335	0.138	0.090
GD 6	12/11/2018	13.8	7.97	10.92	8.2	5.8	0.362	0.397	<0.100	<0.025

TABLE B.7 - HISTORICAL ANALYTICAL DATA - GD 6

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 6	4/17/2019	9.0	7.10	8.00	20.5	9.6	0.624	0.198	<0.100	<0.025
GD 6	6/11/2019	17.9	7.07	3.68	23.8	12.4	0.728	<0.100	<0.100	<0.025
GD 6	8/28/2019	9.1	7.94	6.32	28.5	6.5	0.607	<0.100	<0.100	<0.025
GD 6	10/28/2019	18.4	7.48	6.63	16.4	9.9	0.467	0.198	<0.100	<0.025
GD 6	3/31/2020	16.0	6.06	8.86	16.1	8.40	<0.250	0.212	0.127	<0.025
GD 6	6/10/2020	7.4	7.04	6.36	26.5	10.4	0.832	0.127	<0.100	<0.030
GD 6	9/21/2020	NS	7.96	8.48	21.4	8.60	<0.250	<0.100	<0.100	<0.030
GD 6	12/17/2020	0.5	7.96	10.08	9.0	7.40	0.377	0.309	<0.100	<0.030
GD 6	3/18/2021	75.6	7.97	9.21	17.0	31.6	0.364	0.241	0.183	<0.030
GD 6	5/5/2021	5.7	7.55	8.62	19.2	12.3	0.542	7.95	0.124	<0.030
GD 6	9/2/2021	*	*	6.24	27.1	25.4	3.44	0.139	0.305	<0.030
GD 6	11/23/2021	<1.0	7.61	8.28	15.6	8.50	0.350	0.132	0.102	<0.0300
GD 6	1/10/2022	14.2	8.05	10.58	9.5	10.20	0.850	0.238	0.147	0.037
GD 6	4/7/2022	13.63	7.70	8.85	17.2	9.90	0.433	0.160	<0.100	<0.0300
GD 6	8/3/2022	10.1	7.71	7.21	29.7	5.30	0.588	<0.100	<0.100	<0.0300
GD 6	11/16/2022	23.9	7.47	9.78	12.2	7.50	0.476	0.166	<0.100	<0.0300
GD 6	2/13/2023	18.3	7.26	11.69	12.4	7.10	0.559	0.265	<0.100	<0.0300
GD 6	5/24/2023	3.8	8.01	9.09	24.6	7.47	0.468	0.101	0.0666	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.8 - HISTORICAL ANALYTICAL DATA - SS 13

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SS 13	3/12/2013	8	7.04	9.85	11.45	4.7	0.78	0.34	<0.10	0.032
SS 13	5/8/2013	10	6.68	2.94	18.75	5.7	0.72	0.36	<0.10	<0.050
SS 13	9/23/2013	12	7.04	3.38	25.31	9.6	0.84	<0.10	<0.10	0.028
SS 13	12/10/2013	12.2	6.14	10.93	8.99	5.6	0.67	0.33	0.12	0.077
SS 13	2/6/2014	7.2	4.26	17.50	5.14	4.1	0.44	0.42	<0.100	<0.025
SS 13	6/26/2014	23.2	8.33	8.09	28.44	5.4	0.52	<0.100	0.12	<0.025
SS 13	9/30/2014	12.4	7.41	4.26	24.77	12.0	0.44	<0.100	<0.100	<0.025
SS 13	11/19/2014	13.4	6.31	6.08	6.44	4.8	0.40	0.22	<0.100	0.044
SS 13	3/23/2015	15.9	7.33	8.57	15.4	7.6	0.71	0.22	<0.100	0.029
SS 13	4/22/2015	15.3	6.60	8.93	20.8	10.0	0.67	0.32	<0.100	<0.025
SS 13	9/30/2015	9.5	7.33	11.54	25.95	9.0	0.52	<0.100	<0.100	<0.025
SS 13	11/19/2015	35.8	7.07	18.48	15.31	4.8	0.97	0.242	0.181	<0.025
SS 13	3/15/2016	9.1	6.61	12.42	17.37	4.7	<0.25	0.323	<0.100	<0.025
SS 13	6/29/2016	9.7	7.86	6.15	30.6	9.8	0.53	<0.100	<0.100	<0.025
SS 13	8/9/2016	20.3	7.77	5.92	29.1	24.0	0.73	<0.100	<0.100	<0.025
SS 13	12/7/2016	4.8	7.39	6.97	12.5	3.6	0.45	0.108	<0.100	<0.025
SS 13	3/2/2017	12.0	6.64	7.19	13.4	4.6	0.75	0.249	<0.100	<0.025
SS 13	6/21/2017	8.7	7.54	5.82	26.1	12.8	0.82	<0.100	<0.100	<0.025
SS 13	8/17/2017	9.3	7.93	6.54	30.9	18.6	0.81	<0.100	<0.100	<0.025
SS 13	10/26/2017	5.2	6.70	7.41	15.4	7.2	0.60	0.122	<0.100	<0.025
SS 13	3/27/2018	6.4	8.19	8.23	12.4	16.2	<0.25	0.495	<0.100	<0.025
SS 13	6/26/2018	6.8	7.36	5.67	29.5	10.2	0.998	<0.100	0.140	<0.025
SS 13	8/1/2018	24.2	6.75	6.86	21.9	20.2	1.180	0.226	0.308	0.206
SS 13	12/11/2018	8.2	7.37	10.79	7.4	8.6	0.655	0.451	<0.100	<0.025

TABLE B.8 - HISTORICAL ANALYTICAL DATA - SS 13

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SS 13	4/17/2019	6.4	7.42	9.23	19.1	6.8	0.624	<0.100	<0.100	<0.025
SS 13	6/11/2019	8.9	6.59	3.12	23.4	<6.25	0.929	<0.100	<0.100	<0.025
SS 13	8/28/2019	6.7	7.93	7.33	29.7	24.4	1.170	<0.100	<0.100	<0.025
SS 13	10/28/2019	12.3	6.25	3.61	16.0	3.7	0.739	0.211	<0.100	0.031
SS 13	3/31/2020	60.4	6.95	8.64	14.9	92.0	0.928	0.233	0.147	0.0580
SS 13	6/10/2020	10.1	7.27	7.08	28.2	21.2	0.492	<0.100	<0.100	<0.030
SS 13	9/21/2020	NS	7.36	6.58	21.9	7.8	<0.250	<0.100	0.200	<0.030
SS 13	12/17/2020	12.3	8.04	10.83	8.3	5.3	0.432	0.405	<0.100	<0.030
SS 13	3/18/2021	26.8	7.61	9.23	16.9	16.5	0.926	0.163	<0.100	<0.030
SS 13	5/5/2021	0.5	7.77	8.13	18.2	10.5	1.41	7.64	0.160	0.0960
SS 13	9/2/2021	*	*	8.50	28.7	13.4	1.33	0.189	0.108	<0.030
SS 13	11/23/2021	<1.0	7.11	8.26	14.8	5.3	0.331	0.16	<0.100	<0.0300
SS 13	1/10/2022	9.1	7.71	11.23	8.8	7.0	0.725	0.295	<0.100	<0.0300
SS 13	4/7/2022	6.7	7.40	8.72	18.2	5.3	0.886	0.304	<0.100	<0.0300
SS 13	8/3/2022	14.2	7.92	7.03	31.4	44.4	1.650	<0.100	<0.100	<0.0300
SS 13	11/16/2022	4.4	7.06	9.81	13.1	5.5	0.263	<0.100	<0.100	<0.0300
SS 13	2/13/2023	10.6	6.45	11.05	10.9	2.5	1.000	0.459	<0.100	<0.0300
SS 13	5/24/2023	5.2	7.28	8.44	21.7	3.73	0.903	0.358	0.0655	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.9 - HISTORICAL ANALYTICAL DATA - SS 14

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SS 14	3/12/2013	9.7	7.40	11.23	10.93	4.7	0.77	0.40	0.11	0.087
SS 14	5/8/2013	10.3	6.47	2.75	16.42	5.0	0.53	0.45	<0.100	0.041
SS 14	9/23/2013	3.1	6.76	6.49	21.77	<2.5	0.45	0.38	<0.100	0.036
SS 14	12/10/2013	17.6	5.63	11.33	8.56	9.2	0.66	0.28	0.19	0.160
SS 14	2/6/2014	12.4	4.19	17.56	5.16	14.0	0.50	0.62	<0.100	0.074
SS 14	6/26/2014	7.9	8.18	7.58	24.14	<2.5	0.89	0.67	0.16	0.080
SS 14	9/30/2014	7.9	7.42	3.67	22.35	6.1	0.52	<0.100	<0.100	0.031
SS 14	11/19/2014	16.0	6.27	7.50	5.48	9.2	0.46	0.75	0.22	0.075
SS 14	3/23/2015	21.3	7.75	9.53	16.5	11.0	1.10	0.27	0.14	0.110
SS 14	4/22/2015	12.3	7.43	12.29	17.5	6.3	0.58	0.620	<0.100	<0.025
SS 14	9/30/2015	7.3	7.16	12.79	24.02	6.6	0.514	<0.10	0.176	0.088
SS 14	11/19/2015	27.0	6.49	20.71	15.16	23.3	0.996	0.442	0.183	0.131
SS 14	3/15/2016	11.3	7.18	12.11	16.01	8.1	0.834	0.50	<0.100	0.056
SS 14	6/29/2016	6.0	7.62	3.61	27.2	6.0	0.650	<0.100	0.160	0.103
SS 14	8/9/2016	22.3	7.71	5.99	26.9	12.7	0.871	0.164	0.119	0.062
SS 14	12/7/2016	7.6	7.27	7.72	11.9	<2.5	0.705	0.885	0.147	0.078
SS 14	3/2/2017	12.6	7.60	8.76	12.2	9.2	0.842	0.475	0.153	0.092
SS 14	6/21/2017	21.5	7.74	6.24	23.7	63.7	0.725	0.249	0.109	0.030
SS 14	8/17/2017	6.0	8.12	7.11	31.4	24.8	0.827	0.118	<0.100	0.070
SS 14	10/26/2017	4.3	7.39	7.66	13.9	3.6	0.582	0.699	<0.100	0.054
SS 14	3/27/2018	8.8	7.34	8.96	11.9	8.2	<0.25	0.673	0.148	0.044
SS 14	6/26/2018	7.7	8.47	10.65	29.3	18.7	1.010	0.206	0.148	0.044
SS 14	8/1/2018	42.9	6.35	7.04	22.5	60.0	0.885	0.109	0.276	0.233
SS 14	12/11/2018	8.4	6.95	11.53	7.4	4.3	0.635	0.812	0.117	0.057

TABLE B.9 - HISTORICAL ANALYTICAL DATA - SS 14

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SS 14	4/17/2019	6.6	7.60	8.28	22.1	6.7	0.414	0.598	<0.100	0.042
SS 14	6/11/2019	12.6	6.78	3.47	23.8	5.9	0.928	0.444	<0.100	0.077
SS 14	8/28/2019	8.1	7.96	8.18	27.9	8.5	1.050	<0.100	0.174	<0.025
SS 14	10/28/2019	10.9	6.97	7.83	15.1	2.7	0.381	0.458	0.167	0.048
SS 14	3/31/2020	62.4	6.67	9.31	15.2	145	0.934	0.190	0.348	0.235
SS 14	6/10/2020	17.0	7.32	7.20	29.1	40.4	0.897	0.246	0.128	0.078
SS 14	9/21/2020	NS	7.62	7.59	20.7	8.4	0.281	0.345	<0.100	0.075
SS 14	12/17/2020	11.4	7.94	11.72	8.6	5.4	0.540	0.546	<0.100	0.050
SS 14	3/18/2021	31.4	7.73	9.77	16.8	19.8	0.670	0.189	<0.100	0.048
SS 14	5/5/2021	1.2	6.98	8.62	19.4	6.27	1.06	7.85	<0.100	0.073
SS 14	9/2/2021	*	*	7.80	26.3	3.0	0.935	0.552	0.128	0.980
SS 14	11/23/2021	<1.0	7.46	10.28	12.7	2.6	0.370	0.315	0.178	0.108
SS 14	1/10/2022	9.8	7.12	11.84	8.8	4.4	0.674	0.385	0.136	0.068
SS 14	4/7/2022	4.4	6.82	9.83	17.8	2.9	0.566	0.402	<0.100	0.033
SS 14	8/3/2022	10.0	8.03	7.77	30.2	6.5	0.723	0.176	0.123	<0.0300
SS 14	11/16/2022	4.3	7.37	9.76	10.8	2.5	0.406	<0.100	<0.100	0.039
SS 14	2/13/2023	12.0	6.82	11.64	10.8	4.3	0.749	0.501	<0.100	0.052
SS 14	5/24/2023	4.6	7.65	9.57	21.3	4.40	0.506	0.528	0.102	0.0440

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.10 - HISTORICAL ANALYTICAL DATA - GD 12

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 12	3/12/2013	8.5	7.41	10.93	13.43	3.9	0.54	0.25	<0.100	0.030
GD 12	5/8/2013	15.0	6.73	2.35	16.53	7.5	0.40	0.21	<0.100	0.030
GD 12	9/23/2013	9.8	6.76	3.94	26.07	9.0	0.48	<0.10	<0.100	0.026
GD 12	12/10/2013	18.8	6.15	10.09	10.18	5.9	0.45	0.22	0.11	0.079
GD 12	2/6/2014	12.3	4.17	16.99	5.76	3.9	0.28	0.31	<0.100	<0.025
GD 12	6/26/2014	28.5	8.38	9.40	26.72	32.0	0.62	0.11	0.12	0.035
GD 12	9/30/2014	10.6	7.68	5.77	24.68	11.0	0.39	<0.100	<0.100	<0.025
GD 12	11/19/2014	14.7	6.95	5.93	5.85	6.6	0.39	0.28	0.13	<0.025
GD 12	3/23/2015	17.6	7.80	9.56	16.80	8.1	0.59	0.24	<0.100	<0.025
GD 12	4/22/2015	17.3	7.45	11.04	19.80	14.0	0.43	0.25	<0.100	<0.025
GD 12	9/30/2015	7.4	7.30	11.07	24.67	8.5	0.695	<0.100	<0.100	<0.025
GD 12	11/19/2015	22.9	7.07	19.14	14.68	12.0	0.769	0.281	0.15	0.100
GD 12	3/15/2016	9.8	7.43	13.14	16.05	4.6	0.434	0.254	<0.100	0.032
GD 12	6/29/2016	12.9	8.22	7.68	31.20	12.0	0.380	<0.100	<0.100	0.036
GD 12	8/9/2016	22.1	7.57	4.39	27.60	13.3	0.629	<0.100	<0.100	<0.025
GD 12	12/7/2016	10.3	7.18	6.65	11.4	4.0	0.599	0.142	<0.100	<0.025
GD 12	3/2/2017	15.4	7.79	10.12	11.70	6.1	0.583	0.223	0.12	<0.025
GD 12	6/21/2017	16.1	7.43	5.12	24.3	16.8	0.770	<0.100	<0.100	<0.025
GD 12	8/17/2017	6.3	8.13	5.80	29.90	13.3	0.583	<0.100	<0.100	<0.025
GD 12	10/26/2017	9.8	6.74	7.53	13.2	7.8	0.312	0.19	<0.100	<0.025
GD 12	3/27/2018	6.3	7.71	9.24	11.5	4.2	<0.25	0.356	<0.100	<0.025
GD 12	6/26/2018	9.9	7.44	4.35	26.1	13.2	0.528	0.102	<0.100	<0.025
GD 12	8/1/2018	42.3	7.05	7.33	22.7	43.8	1.230	0.108	0.286	0.159
GD 12	12/11/2018	9.5	6.68	11.46	7.8	4.3	0.574	0.313	<0.100	<0.025

TABLE B.10 - HISTORICAL ANALYTICAL DATA - GD 12

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 12	4/17/2019	9.1	7.45	9.20	17.5	4.0	0.272	0.257	<0.100	<0.025
GD 12	6/11/2019	19.0	7.20	3.25	22.0	8.2	0.820	0.223	0.121	0.066
GD 12	8/28/2019	11.0	7.83	7.61	28.2	9.4	0.764	<0.100	0.103	<0.025
GD 12	10/28/2019	18.9	5.34	6.65	14.7	12.3	0.387	0.197	<0.100	0.044
GD 12	3/31/2020	76.3	6.71	9.44	14.5	143	1.00	0.177	0.167	0.0650
GD 12	6/10/2020	12.3	6.46	6.44	25.8	11.4	0.438	<0.100	<0.100	<0.030
GD 12	9/21/2020	NS	7.18	7.15	19.9	7.6	<0.250	0.103	<0.100	<0.030
GD 12	12/17/2020	13.1	8.03	11.10	8.5	3.7	<0.250	0.268	<0.100	<0.030
GD 12	3/18/2021	36.2	7.92	10.04	17.1	17.6	0.621	0.163	<0.100	<0.030
GD 12	5/5/2021	4.1	7.49	8.97	18.9	16.4	0.610	7.26	<0.100	<0.030
GD 12	9/2/2021	*	*	7.34	24.4	3.5	0.779	0.245	<0.100	<0.030
GD 12	11/23/2021	<1.0	7.80	11.27	12.5	2.8	<0.250	<0.100	<0.100	<0.0300
GD 12	1/10/2022	10.7	7.29	12.18	8.5	3.7	0.325	0.230	<0.100	<0.0300
GD 12	4/7/2022	6.19	7.51	9.97	17.0	3.4	0.522	0.177	<0.100	0.0740
GD 12	8/3/2022	11.8	8.09	8.02	31.5	6.4	0.999	<0.100	0.142	<0.0300
GD 12	11/16/2022	3.9	7.25	9.67	11.2	4.5	0.407	<0.100	<0.100	<0.0300
GD 12	2/13/2023	10.0	5.69	11.45	12.2	2.9	0.750	0.277	<0.100	<0.0300
GD 12	5/24/2023	4.3	7.73	9.20	20.5	4.60	0.357	0.293	0.0372	0.0440

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.11 - HISTORICAL ANALYTICAL DATA - RC 2

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
RC 2	3/12/2013	29.1	7.73	9.83	10.53	14.0	0.75	0.12	<0.100	0.088
RC 2	5/8/2013	18.9	6.16	3.06	16.36	12.0	0.55	0.19	<0.100	<0.025
RC 2	9/23/2013	11.4	6.24	3.00	23.61	6.3	0.43	<0.100	<0.100	<0.025
RC 2	12/10/2013	33.6	6.07	11.71	8.38	10.0	0.54	0.11	<0.100	0.062
RC 2	2/6/2014	30.4	3.89	17.28	5.62	9.6	0.43	0.26	<0.100	<0.025
RC 2	6/26/2014	17.6	7.90	6.81	24.81	7.2	0.44	0.15	<0.100	<0.025
RC 2	9/30/2014	3.4	7.27	5.55	22.25	2.5	0.40	<0.100	<0.100	<0.025
RC 2	11/19/2014	27.4	5.65	7.14	5.72	11.0	0.43	0.17	<0.100	<0.025
RC 2	3/23/2015	45.0	8.23	9.07	16.00	18.0	0.81	0.15	<0.100	0.044
RC 2	4/22/2015	14.1	7.64	11.42	18.40	4.8	<0.25	0.26	<0.100	<0.025
RC 2	9/30/2015	7.1	5.93	9.28	23.33	4.6	<0.25	<0.100	<0.100	<0.025
RC 2	11/19/2015	114.0	7.36	21.94	15.29	14.4	0.75	0.271	0.133	<0.025
RC 2	3/15/2016	14.5	7.62	16.67	14.61	6.0	0.43	0.181	<0.100	<0.025
RC 2	6/29/2016	12.1	7.78	4.31	28.30	10.9	0.35	<0.100	<0.100	0.077
RC 2	8/9/2016	24.5	8.12	5.05	26.50	9.9	0.45	0.140	<0.100	<0.025
RC 2	12/7/2016	17.2	7.86	7.47	12.0	11.9	0.53	0.200	<0.100	<0.025
RC 2	3/2/2017	25.3	7.71	7.74	13.10	8.0	0.45	0.166	<0.100	<0.025
RC 2	6/21/2017	14.2	7.91	5.61	23.7	12.3	0.51	<0.100	<0.100	<0.025
RC 2	8/17/2017	18.2	8.08	4.94	27.90	72.2	0.72	<0.100	0.133	<0.025
RC 2	10/26/2017	18.1	7.57	7.05	15.2	17.5	0.27	<0.100	<0.100	<0.025
RC 2	3/27/2018	18.2	7.91	8.43	12.4	12.5	<0.25	0.146	<0.100	<0.025
RC 2	6/26/2018	18.8	7.94	6.19	26.5	13.0	0.802	0.101	<0.100	<0.025
RC 2	8/1/2018	56.8	7.40	7.10	22.4	84.4	0.506	<0.100	<0.100	<0.025
RC 2	12/11/2018	16.0	7.54	11.41	7.7	3.1	0.479	0.316	<0.100	<0.025

TABLE B.11 - HISTORICAL ANALYTICAL DATA - RC 2

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
RC 2	4/17/2019	7.0	7.77	8.67	18.9	<5.00	0.288	0.165	<0.100	<0.025
RC 2	6/11/2019	14.3	6.83	3.78	23.0	5.2	0.520	<0.100	<0.100	<0.025
RC 2	8/28/2019	14.4	8.01	7.30	28.0	4.8	0.748	<0.100	<0.100	<0.025
RC 2	10/28/2019	11.4	7.55	9.42	14.9	3.4	<0.250	0.132	0.197	<0.025
RC 2	3/31/2020	84.5	7.90	9.10	15.7	90.0	0.574	0.190	0.118	0.0290
RC 2	6/10/2020	20.5	7.87	6.37	25.6	10.8	0.330	0.210	<0.100	<0.030
RC 2	9/21/2020	NS	7.24	7.03	19.6	5.2	<0.250	<0.100	<0.100	<0.030
RC 2	12/17/2020	28.1	7.91	11.23	8.9	5.4	0.396	0.218	<0.100	<0.030
RC 2	3/18/2021	67.5	7.90	8.68	16.7	26.8	0.611	0.145	<0.100	<0.030
RC 2	5/5/2021	2.8	7.31	8.95	19.1	15.6	0.892	7.91	<0.100	<0.030
RC 2	9/2/2021	*	*	6.52	25.0	3.4	0.802	0.122	<0.100	<0.030
RC 2	11/23/2021	3.5	7.66	8.33	12.2	19.2	0.340	0.124	<0.100	<0.0300
RC 2	1/10/2022	32.1	7.27	11.50	8.4	9.0	0.501	0.185	<0.100	<0.0300
RC 2	4/7/2022	10.96	7.41	9.02	17.5	5.0	0.386	0.186	0.144	<0.0300
RC 2	8/3/2022	15.1	8.26	7.41	27.1	13.8	0.352	0.175	<0.100	<0.0300
RC 2	11/16/2022	19.4	7.35	8.84	11.2	13.4	0.434	0.126	<0.100	<0.0300
RC 2	2/13/2023	20.0	7.12	11.58	10.9	5.3	0.636	0.273	<0.100	<0.0300
RC 2	5/24/2023	16.0	7.56	8.31	20.5	22.8	0.542	0.142	0.0469	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.12 - HISTORICAL ANALYTICAL DATA - GD 8

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 8	3/12/2013	6.6	7.65	11.73	9.85	4.5	0.25	0.13	<0.100	<0.025
GD 8	5/8/2013	18.7	6.71	1.72	14.47	19.0	0.38	0.11	<0.100	<0.025
GD 8	9/23/2013	17.8	6.22	3.98	22.74	9.6	0.41	<0.100	<0.100	<0.025
GD 8	12/10/2013	30.7	6.04	13.33	8.10	32.0	0.35	0.28	<0.100	0.040
GD 8	2/6/2014	15.5	3.87	16.32	6.48	13.0	0.13	0.25	<0.100	<0.025
GD 8	6/26/2014	30.8	8.19	6.64	26.15	7.3	0.48	0.25	<0.100	<0.025
GD 8	9/30/2014	11.9	7.32	5.06	23.19	6.0	0.42	0.14	<0.100	<0.025
GD 8	11/19/2014	25.3	5.16	9.01	5.87	13.0	0.32	0.23	<0.100	<0.025
GD 8	3/23/2015	10.6	8.67	9.76	14.8	4.8	<0.25	0.22	<0.100	<0.025
GD 8	4/22/2015	20.2	7.40	11.71	17.70	15.0	<0.25	0.16	<0.100	<0.025
GD 8	9/30/2015	9.0	7.79	9.48	24.33	6.8	0.483	0.184	<0.100	<0.025
GD 8	11/19/2015	212	6.94	23.30	15.13	79.6	0.852	0.233	0.101	<0.025
GD 8	3/15/2016	11.4	7.88	16.81	16.98	8.3	0.470	0.131	<0.100	<0.025
GD 8	6/29/2016	32.5	8.50	6.60	29.3	39.8	0.450	<0.100	<0.100	<0.025
GD 8	8/9/2016	12.7	8.90	5.87	28.9	6.3	0.668	0.217	<0.100	<0.025
GD 8	12/7/2016	10.1	7.75	8.84	12.1	7.0	0.409	0.308	<0.100	<0.025
GD 8	3/2/2017	19.7	8.14	9.76	12.2	3.6	0.342	0.284	<0.100	<0.025
GD 8	6/21/2017	7.9	8.73	6.50	25.0	7.0	0.642	<0.100	<0.100	<0.025
GD 8	8/17/2017	6.8	8.55	6.30	28.7	8.9	0.541	0.132	<0.100	<0.025
GD 8	10/26/2017	6.1	8.17	8.25	16.3	4.0	0.347	<0.100	<0.100	<0.025
GD 8	3/27/2018	8.9	8.09	9.52	12.1	6.5	<0.25	0.215	<0.100	<0.025
GD 8	6/26/2018	5.8	8.50	5.74	29.7	5.8	0.670	0.150	<0.100	<0.025
GD 8	8/1/2018	45.8	6.89	7.39	22.9	53.2	0.641	0.556	0.114	0.072
GD 8	12/11/2018	16.0	7.87	11.71	9.2	24.4	0.406	0.326	<0.100	<0.025

TABLE B.12 - HISTORICAL ANALYTICAL DATA - GD 8

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 8	4/17/2019	6.7	8.05	9.30	17.6	<5.00	0.437	0.115	<0.100	<0.025
GD 8	6/11/2019	9.4	7.19	2.94	25.8	4.1	0.948	0.181	<0.100	<0.025
GD 8	8/28/2019	14.2	8.26	6.07	30.2	11.8	0.992	0.212	<0.100	<0.025
GD 8	10/28/2019	29.6	7.83	8.22	16.2	12.9	0.255	0.435	0.109	<0.025
GD 8	3/31/2020	19.3	7.97	9.30	16.6	18.0	0.348	0.133	0.132	<0.025
GD 8	6/10/2020	10.8	7.97	7.13	24.9	8.0	<0.25	0.211	<0.100	<0.030
GD 8	9/21/2020	NS	8.19	6.36	22.8	7.4	0.290	0.171	<0.100	<0.030
GD 8	12/17/2020	17.5	8.30	11.68	9.4	11.5	<0.25	0.273	<0.100	<0.030
GD 8	3/18/2021	117.0	8.15	11.53	16.5	102.0	0.312	0.178	<0.100	<0.030
GD 8	5/5/2021	3.7	8.01	9.62	18.5	35.7	0.796	7.03	<0.100	<0.030
GD 8	9/2/2021	*	*	8.04	24.5	18.3	0.611	0.241	<0.100	<0.030
GD 8	11/23/2021	<1.0	8.04	10.73	12.5	2.7	<0.250	<0.100	<0.100	<0.0300
GD 8	1/10/2022	18.9	7.60	12.25	9.2	20.8	0.277	0.222	0.122	<0.0300
GD 8	4/7/2022	8.2	7.87	9.94	16.8	10.9	0.349	0.120	<0.100	<0.0300
GD 8	8/3/2022	14.4	8.14	6.97	29.0	12.1	0.406	0.189	<0.100	<0.0300
GD 8	11/16/2022	5.2	8.21	9.74	12.2	4.2	0.472	0.107	<0.100	0.033
GD 8	2/13/2023	15.0	7.39	11.81	11.1	16.5	0.316	0.237	<0.100	<0.0300
GD 8	5/24/2023	14.7	8.35	8.19	21.1	10.3	0.516	0.253	0.0462	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.13 - HISTORICAL ANALYTICAL DATA - AT 5

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
AT 5	3/12/2013	15	7.80	11.04	12.55	20.0	0.37	0.61	0.14	0.150
AT 5	5/8/2013	25	5.08	2.59	14.69	19.0	0.56	0.31	0.11	0.099
AT 5	9/23/2013	21	5.96	3.95	22.88	22.0	0.37	1.30	0.35	0.400
AT 5	12/10/2013	68	5.32	11.43	8.21	64.0	0.97	0.79	0.34	0.290
AT 5	2/6/2014	40	4.06	15.29	7.28	32.0	0.35	0.80	0.13	0.130
AT 5	6/26/2014	70	7.85	7.61	23.89	19.0	0.38	0.77	0.28	0.340
AT 5	9/30/2014	15	5.78	6.63	21.03	14.0	<0.25	0.94	0.54	0.490
AT 5	11/19/2014	47	5.08	10.23	6.91	27.0	0.50	1.30	0.39	0.410
AT 5	3/23/2015	17	8.69	9.39	14.5	15.0	0.27	0.71	0.14	0.130
AT 5	4/22/2015	53	6.93	11.13	18.4	76.0	<0.25	0.69	0.13	0.110
AT 5	9/30/2015	15	6.37	9.45	21.63	16.4	<0.25	1.82	0.86	0.664
AT 5	11/19/2015	934	7.38	19.33	14.98	74.6	1.47	0.67	0.31	0.261
AT 5	3/15/2016	30.2	7.93	20.43	16.86	26.7	0.772	0.578	<0.100	0.068
AT 5	6/29/2016	18.1	7.99	6.57	25.4	14.5	<0.250	0.800	0.71	0.598
AT 5	8/9/2016	17.1	7.89	6.47	25.8	18.3	0.268	0.975	0.502	0.482
AT 5	12/7/2016	26.5	7.08	10.19	11.3	16.9	<0.250	0.663	0.474	0.450
AT 5	3/2/2017	50.8	8.14	8.86	13.4	44.6	0.529	1.08	0.373	0.267
AT 5	6/21/2017	11.7	7.98	6.74	23.3	70.0	0.544	0.616	0.366	0.226
AT 5	8/17/2017	9.5	8.09	6.77	26.0	12.0	0.690	0.890	0.283	0.258
AT 5	10/26/2017	9.8	7.95	8.25	15.7	9.4	<0.250	0.936	0.250	0.226
AT 5	3/27/2018	14.5	7.79	9.03	12.9	15.9	<0.250	0.849	0.148	0.162
AT 5	6/26/2018	16.4	8.06	6.89	25.5	25.2	0.411	0.849	0.246	0.230
AT 5	8/1/2018	77.9	7.33	7.16	22.3	107.0	0.680	0.510	0.401	0.285
AT 5	12/11/2018	29.2	7.59	10.73	9.4	46.2	0.579	1.09	0.204	0.066

TABLE B.13 - HISTORICAL ANALYTICAL DATA - AT 5

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
AT 5	4/17/2019	12.2	7.63	8.99	17.9	14.4	<0.250	0.638	<0.100	0.061
AT 5	6/11/2019	24.6	7.18	3.48	22.2	15.9	0.486	0.822	0.290	0.206
AT 5	8/28/2019	20.7	7.84	7.42	27.1	23.5	1.070	0.534	0.485	0.404
AT 5	10/28/2019	22.5	7.84	8.45	15.1	17.0	<0.250	0.665	0.499	0.523
AT 5	3/31/2020	23.1	8.09	9.07	16.6	27.1	<0.250	0.657	0.102	0.0320
AT 5	6/10/2020	19.4	7.56	7.35	23.2	22.8	<0.250	0.825	0.243	0.248
AT 5	9/21/2020	NS	8.08	8.21	20.6	11.3	<0.250	0.603	0.399	0.491
AT 5	12/17/2020	28.7	7.91	11.21	9.6	18.6	<0.250	0.831	<0.100	0.087
AT 5	3/18/2021	119.0	7.82	10.68	17.2	55.6	<0.250	0.310	<0.100	0.050
AT 5	5/5/2021	6.5	7.24	8.45	18.1	43.7	1.37	6.86	0.157	0.121
AT 5	9/2/2021	*	*	7.75	23.4	67.4	0.969	0.482	0.262	0.131
AT 5	11/23/2021	<1.0	8.13	11.09	12.9	2.6	<0.250	0.343	0.253	<0.0300
AT 5	1/10/2022	20.8	7.39	11.46	10.0	29.7	0.279	0.769	0.184	0.126
AT 5	4/7/2022	21.9	7.53	9.30	16.6	33.8	0.380	0.509	0.121	0.101
AT 5	8/3/2022	21.7	8.17	7.50	26.0	30.8	0.702	0.715	0.323	0.271
AT 5	11/16/2022	6.4	7.80	10.62	11.1	7.3	<0.250	0.366	0.420	0.448
AT 5	2/13/2023	32.6	7.29	11.01	11.5	38.0	0.301	0.699	<0.100	0.0810
AT 5	5/24/2023	14.4	7.80	8.94	20.0	20.0	0.331	0.697	0.182	0.127

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.14 - HISTORICAL ANALYTICAL DATA - CO 14

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
CO 14	3/12/2013	8.2	6.88	9.65	12.92	3.5	0.42	0.32	<0.100	<0.025
CO 14	5/8/2013	13.0	6.61	3.02	16.37	6.7	0.74	0.34	<0.100	<0.12
CO 14	9/23/2013	15.0	6.70	3.78	22.58	9.6	0.30	<0.100	<0.100	0.036
CO 14	12/10/2013	14.4	5.82	11.15	9.37	9.7	0.55	0.11	<0.100	0.027
CO 14	2/6/2014	13.7	4.02	16.69	5.08	9.1	0.41	0.58	<0.100	<0.025
CO 14	6/26/2014	19.7	8.25	8.19	22.33	9.0	0.86	0.34	<0.100	<0.025
CO 14	9/30/2014	***	***	***	***	***	***	***	***	***
CO 14	11/19/2014	9.84	6.70	3.86	7.90	2.8	0.26	<0.100	<0.100	<0.025
CO 14	3/23/2015	18.9	6.85	8.78	17.20	10.0	0.67	0.25	<0.100	<0.025
CO 14	4/22/2015	13.8	6.23	11.19	18.00	8.6	0.60	0.49	<0.100	<0.025
CO 14	9/30/2015	***	***	***	***	***	***	***	***	***
CO 14	11/19/2015	24.30	6.64	16.06	15.25	5.9	1.27	<0.100	<0.100	<0.025
CO 14	3/15/2016	15.80	6.33	13.05	16.42	9.7	0.713	0.468	<0.100	<0.025
CO 14	6/29/2016	***	***	***	***	***	***	***	***	***
CO 14	8/9/2016	***	***	***	***	***	***	***	***	***
CO 14	12/7/2016	***	***	***	***	***	***	***	***	***
CO 14	3/2/2017	19	6.34	8.58	13.60	5.2	0.601	0.106	<0.100	<0.025
CO 14	6/21/2017	9.0	6.57	6.49	22.9	19.0	0.758	<0.100	<0.100	<0.025
CO 14	8/17/2017	13.8	7.83	6.22	28.0	50.6	0.851	<0.100	<0.100	<0.025
CO 14	10/26/2017	8.1	6.43	8.40	14.2	4.7	0.440	<0.100	<0.100	<0.025
CO 14	3/27/2018	8.2	7.63	9.45	11.4	9.5	<0.25	0.601	<0.100	<0.025
CO 14	6/26/2018	NS	NS	NS	NS	NS	NS	NS	NS	NS
CO 14	8/1/2018	40.2	6.99	7.42	22.1	28.3	0.764	<0.100	<0.100	<0.025
CO 14	12/11/2018	7.6	7.38	10.74	7.7	4.9	0.567	0.184	<0.100	<0.025

TABLE B.14 - HISTORICAL ANALYTICAL DATA - CO 14

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
CO 14	4/17/2019	9.3	7.91	8.99	19.0	9.4	2.96	0.460	<0.100	<0.025
CO 14	6/11/2019	17.5	7.07	3.56	22.4	5.6	0.773	<0.100	0.14	<0.025
CO 14	8/28/2019	***	***	***	***	***	***	***	***	***
CO 14	10/28/2019	***	***	***	***	***	***	***	***	***
CO 14	3/31/2020	77.6	7.84	9.07	15.0	106	0.532	0.402	<0.100	<0.025
CO 14	6/10/2020	13.8	7.64	7.20	24.4	5.6	0.482	0.244	<0.100	<0.030
CO 14	9/21/2020	***	***	***	***	***	***	***	***	***
CO 14	Removed from Monitoring Program September 2020									

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

*** - outfall was dry

TABLE B.15 - HISTORICAL ANALYTICAL DATA - SME 2

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 2	3/12/2013	6.0	7.12	9.28	14.17	8.1	0.47	0.28	<0.100	0.032
SME 2	5/8/2013	26.2	7.67	6.46	21.40	21.0	0.92	0.24	<0.100	0.042
SME 2	9/23/2013	7.3	6.92	5.51	26.24	7.1	0.34	<0.100	<0.100	0.039
SME 2	12/10/2013	11.8	5.71	11.05	11.01	7.0	0.42	0.31	0.15	0.100
SME 2	2/6/2014	19.9	4.21	14.38	6.13	14.0	0.59	0.39	<0.100	0.053
SME 2	6/26/2014	14.8	8.16	7.22	26.98	8.7	0.38	0.11	<0.100	<0.025
SME 2	9/30/2014	6.0	7.97	5.33	26.53	7.4	0.52	<0.100	<0.100	<0.025
SME 2	11/19/2014	9.5	7.06	3.53	10.20	6.8	<0.25	0.14	0.16	0.039
SME 2	3/23/2015	11.1	7.96	9.34	17.60	10.0	0.45	0.24	<0.100	<0.025
SME 2	4/22/2015	8.8	7.93	11.46	24.50	9.1	0.48	0.13	<0.100	<0.025
SME 2	9/30/2015	7.4	7.62	12.67	25.91	8.7	0.497	0.10	0.101	<0.025
SME 2	11/19/2015	22.0	6.55	14.30	19.12	82.3	1.21	0.22	0.219	0.062
SME 2	3/15/2016	8.2	7.86	13.43	20.73	6.3	0.486	<0.100	<0.100	<0.025
SME 2	6/29/2016	7.6	8.23	7.24	30.4	8.0	0.290	0.19	<0.100	<0.025
SME 2	8/9/2016	10.3	8.01	6.58	30.6	8.2	0.585	<0.100	<0.100	<0.025
SME 2	12/7/2016	6.0	7.52	6.86	12.7	5.8	0.469	<0.100	0.101	<0.025
SME 2	3/2/2017	11.8	8.03	8.55	15.2	11.4	0.720	0.267	<0.100	<0.025
SME 2	6/21/2017	5.2	7.18	4.64	26.6	11.4	0.886	<0.100	<0.100	<0.025
SME 2	8/17/2017	6.5	7.76	6.43	30.6	15.3	0.729	<0.100	<0.100	<0.025
SME 2	10/26/2017	5.2	7.03	6.87	17.6	8.5	0.382	<0.100	<0.100	<0.025
SME 2	3/27/2018	11.1	7.44	8.64	12.9	17.5	<0.25	0.161	<0.100	<0.025
SME 2	6/26/2018	10.8	7.97	6.43	29.6	9.9	0.731	0.111	<0.100	<0.025
SME 2	8/1/2018	29.6	7.39	6.46	23.4	24.8	0.423	0.371	0.128	0.099
SME 2	12/11/2018	9.7	7.82	9.99	7.9	5.1	0.368	0.212	0.166	<0.025

TABLE B.15 - HISTORICAL ANALYTICAL DATA - SME 2

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 2	4/17/2019	5.0	7.82	7.80	20.5	6.0	0.783	0.105	<0.100	<0.025
SME 2	6/11/2019	12.3	6.68	3.43	24.4	9.2	0.676	<0.100	<0.100	<0.025
SME 2	8/28/2019	6.6	7.83	6.26	29.2	5.9	0.452	<0.100	<0.100	<0.025
SME 2	10/28/2019	24.9	7.64	7.42	16.8	18.2	0.341	<0.100	0.107	<0.025
SME 2	3/31/2020	9.5	7.02	7.31	18.2	10.2	0.521	<0.100	<0.100	<0.025
SME 2	6/10/2020	10.4	7.81	6.40	27.0	8.0	0.367	0.117	<0.100	<0.030
SME 2	9/21/2020	NS	7.84	8.02	23.6	11.0	<0.250	<0.100	<0.100	<0.030
SME 2	12/17/2020	13.3	8.04	9.04	9.2	6.7	0.342	0.272	<0.100	0.041
SME 2	3/18/2021	27.3	8.20	12.80	18.4	13.8	0.528	0.193	<0.100	0.033
SME 2	5/5/2021	0.0	7.29	6.72	21.2	6.80	0.768	0.560	<0.100	0.039
SME 2	9/2/2021	*	*	6.31	27.5	11.8	0.562	0.134	<0.100	<0.030
SME 2	11/23/2021	<1.0	7.98	10.03	14.6	9.2	<0.250	0.170	<0.100	<0.0300
SME 2	1/10/2022	14.5	7.84	11.04	8.8	16.1	0.672	0.338	0.117	<0.0300
SME 2	Removed form Monitoring Program April 2022									

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.16 - HISTORICAL ANALYTICAL DATA - SME 8

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 8	12/17/2020	0.30	7.72	11.22	9.10	25.9	<0.25	0.312	<0.100	<0.030
SME 8	3/18/2021	48.8	8.17	9.47	18.0	17.7	0.460	0.183	<0.100	<0.030
SME 8	5/5/2021	3.3	7.11	9.39	18.5	60.3	0.366	0.597	0.118	<0.030
SME 8	9/2/2021	*	*	7.87	25.9	39.2	0.269	0.150	<0.100	<0.030
SME 8	1/10/2022	9.5	7.42	11.82	9.2	33.5	0.832	0.328	<0.100	<0.0300
SME 8	Removed from Monitoring Program April 2022									

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

* - meter malfunctioned in field

TABLE B.17 - HISTORICAL ANALYTICAL DATA - HB 3

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
HB 3	3/12/2013	33.3	7.54	9.48	13.90	49.0	0.83	0.19	<0.100	0.081
HB 3	5/20/2013	14.5	8.21	6.82	27.80	17.0	0.60	0.17	<0.100	<0.025
HB 3	9/23/2013	21.3	8.02	4.89	25.70	19.0	0.60	<0.100	<0.100	0.037
HB 3	12/10/2013	48.4	7.90	8.65	10.10	20.0	0.62	<0.100	0.15	0.140
HB 3	2/6/2014	32.0	7.22	12.24	5.90	13.0	0.37	0.48	<0.100	0.030
HB 3	6/26/2014	12.0	8.20	7.12	NS	12.0	0.37	<0.100	<0.100	<0.025
HB 3	9/30/2014	29.5	8.05	6.01	24.78	30.0	0.48	<0.100	<0.100	<0.025
HB 3	11/19/2014	56.1	7.85	8.83	8.80	51.0	0.44	0.11	0.12	0.098
HB 3	3/23/2015	27.0	8.21	8.40	24.20	35.0	0.46	0.26	<0.100	<0.025
HB 3	4/22/2015	25.0	7.91	8.36	21.90	22.0	0.66	0.20	<0.100	<0.025
HB 3	9/30/2015	22.0	7.89	5.05	25.70	23.0	0.91	<0.100	<0.100	<0.025
HB 3	11/19/2015	32.0	7.83	7.37	17.40	30.2	<0.25	0.377	<0.100	0.045
HB 3	3/15/2016	28.8	8.52	7.97	19.10	23.8	<0.25	0.295	<0.100	0.087
HB 3	6/29/2016	17.3	8.02	2.77	30.61	20.9	0.51	<0.100	<0.100	<0.025
HB 3	8/9/2016	11.3	7.91	4.31	30.19	14.3	0.703	<0.100	<0.100	<0.025
HB 3	12/7/2016	16.0	7.93	8.44	12.81	17.0	0.730	0.111	0.126	<0.025
HB 3	3/2/2017	50.0	7.75	3.90	14.33	57.1	0.969	0.334	0.115	<0.025
HB 3	7/5/2017	23.1	7.29	5.36	27.00	28.5	0.812	<0.100	<0.100	<0.025
HB 3	8/16/2017	13.7	7.35	5.04	27.00	12.7	0.763	<0.100	<0.100	<0.025
HB 3	10/25/2017	11.7	6.64	9.93	18.5	20.4	0.322	<0.100	<0.100	<0.025
HB 3	3/28/2018	13.2	7.99	9.47	17.6	20.2	<0.25	0.359	<0.100	<0.025
HB 3	6/29/2018	14.6	7.67	5.55	26.0	18.2	0.464	<0.100	<0.100	<0.025
HB 3	8/2/2018	28.3	7.40	5.64	25.1	35.3	0.952	<0.100	<0.100	<0.025
HB 3	12/10/2018	24.8	7.55	10.98	7.9	27.6	0.426	0.363	0.141	<0.025

TABLE B.17 - HISTORICAL ANALYTICAL DATA - HB 3

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
HB 3	4/15/2019	22.4	7.73	8.27	19.6	35.5	<0.250	0.233	<0.100	<0.025
HB 3	6/12/2019	12.4	8.13	6.77	26.6	52.3	<0.250	0.129	<0.100	<0.025
HB 3	8/27/2019	78.1	8.21	8.75	29.1	7.30	0.634	<0.100	0.179	<0.025
HB 3	10/29/2019	28.2	7.82	9.88	18.3	17.6	0.517	<0.100	0.166	<0.025
HB 3	3/30/2020	8.9	7.79	8.91	18.5	18.4	1.20	0.234	<0.100	<0.025
HB 3	6/16/2020	20.4	7.33	7.01	26.3	14.6	0.30	<0.100	<0.100	<0.030
HB 3	9/21/2020	12.1	7.80	7.69	23.5	8.30	0.28	<0.100	<0.100	<0.030
HB 3	12/17/2020	31.16	8.07	9.94	9.1	20.4	0.588	0.195	<0.100	<0.030
HB 3	3/18/2021	1.80	7.47	9.62	16.0	23.0	0.252	0.369	<0.100	<0.030
HB 3	5/5/2021	28.31	7.50	7.71	22.0	35.1	<0.250	0.207	<0.100	<0.030
HB 3	9/2/2021	19.2	7.61	5.30	27.4	23.6	0.689	<0.100	<0.100	<0.030
HB 3	11/23/2021	51.55	7.15	10.59	11.2	10.5	<0.250	0.137	<0.100	<0.0300
HB 3	1/11/2022	26.9	7.75	11.26	12.8	23.6	0.550	0.200	<0.10	<0.0300
HB 3	4/7/2022	27.8	7.61	9.40	18.1	21.0	0.329	0.268	<0.100	<0.0300
HB 3	8/2/2022	31.2	8.05	5.89	28.9	33.7	0.273	<0.100	<0.100	<0.0300
HB 3	11/16/2022	10.7	7.71	9.53	12.9	7.4	0.604	<0.100	<0.100	<0.0300
HB 3	2/14/2023	15.0	7.25	11.10	11.7	11.6	0.471	0.414	<0.100	<0.0300
HB 3	5/25/2023	14.0	7.92	8.75	24.1	21.7	0.502	0.0574	0.0588	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.18 - HISTORICAL ANALYTICAL DATA - SME 4

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 4	12/17/2020	17.70	7.69	10.82	9.80	17.8	0.263	0.387	<0.10	<0.03
SME 4	3/18/2021	2.20	7.25	9.20	17.60	21.6	0.331	0.319	<0.100	<0.030
SME 4	5/5/2021	20.02	7.86	7.81	21.0	27.5	<0.250	0.213	<0.100	<0.030
SME 4	9/2/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS
SME 4	11/23/2021	48.51	7.64	10.41	10.6	9.2	<0.250	0.164	<0.100	<0.0300
SME 4	1/11/2022	17.30	7.39	11.35	13.40	15.6	0.97	0.44	<0.10	<0.0300
SME 4	4/7/2022	21.6	7.55	9.30	16.7	20.9	0.254	0.273	<0.100	0.060
SME 4	8/2/2022	14.0	7.79	6.24	29.1	6.00	0.274	0.102	<0.100	<0.0300
SME 4	11/16/2022	9.91	7.69	9.45	12.5	10.5	0.382	<0.100	<0.100	<0.0300
SME 4	2/14/2023	15.8	7.27	10.99	11.3	22.5	0.484	0.416	<0.100	<0.0300
SME 4	5/25/2023	3.4	8.33	9.53	24.6	6.71	0.513	<0.0500	<0.0350	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.19 - HISTORICAL ANALYTICAL DATA - GD 5

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 5	3/13/2013	11.6	8.33	9.29	10.20	9.6	0.34	0.26	<0.10	<0.025
GD 5	5/20/2013	14.0	8.28	7.76	22.60	9.0	0.62	<0.100	<0.10	<0.025
GD 5	9/23/2013	11.5	7.67	6.78	27.10	8.0	0.45	<0.100	<0.10	0.027
GD 5	12/10/2013	57.9	7.97	9.10	9.10	18.0	0.47	0.10	0.10	0.088
GD 5	2/6/2014	45.9	7.14	9.88	7.20	17.0	0.37	0.17	<0.100	0.038
GD 5	6/26/2014	17.0	7.90	6.54	NS	12.0	0.34	<0.100	<0.100	<0.025
GD 5	9/30/2014	22.5	8.28	7.53	25.22	18.0	<0.25	<0.100	<0.100	<0.025
GD 5	11/19/2014	42.9	8.15	9.30	9.40	26.0	0.43	0.11	<0.100	0.051
GD 5	3/23/2015	24.0	8.14	8.58	15.90	15.0	0.34	0.12	<0.100	<0.025
GD 5	4/22/2015	25.0	7.81	7.78	21.70	13.0	0.65	0.14	<0.100	<0.025
GD 5	9/30/2015	18.0	8.03	6.27	26.30	17.3	0.557	<0.100	0.115	<0.025
GD 5	11/19/2015	90.0	7.63	7.34	16.60	42.8	<0.250	0.168	<0.100	0.042
GD 5	3/15/2016	23.7	8.80	7.47	19.40	13.2	0.435	<0.100	<0.100	<0.025
GD 5	6/29/2016	21.0	8.02	2.27	30.37	15.0	0.490	<0.100	<0.100	0.074
GD 5	8/9/2016	11.8	8.25	5.55	30.20	11.0	0.412	<0.100	<0.100	<0.025
GD 5	12/7/2016	10.0	7.73	10.61	11.96	6.8	0.337	<0.100	<0.100	<0.025
GD 5	3/2/2017	12.3	7.81	4.49	14.26	13.0	0.491	0.118	<0.100	<0.025
GD 5	7/5/2017	15.0	7.32	5.83	26.9	22.7	0.730	<0.100	<0.100	<0.025
GD 5	8/16/2017	8.0	7.89	6.22	28.0	9.0	0.404	<0.100	<0.100	<0.025
GD 5	10/25/2017	9.2	7.36	7.35	18.7	14.6	0.347	<0.100	<0.100	<0.025
GD 5	3/28/2018	6.1	8.18	9.47	18.5	6.06	<0.250	0.127	<0.100	<0.025
GD 5	6/29/2018	16.3	7.76	5.66	27.5	19.60	0.689	<0.100	<0.100	<0.025
GD 5	8/2/2018	18.4	7.59	6.02	25.7	26.40	0.332	<0.100	<0.100	<0.025
GD 5	12/10/2018	37.7	7.87	11.30	7.3	22.3	0.523	<0.100	0.190	<0.025

TABLE B.19 - HISTORICAL ANALYTICAL DATA - GD 5

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 5	4/15/2019	29.7	7.69	8.02	19.3	29.0	0.411	0.128	1.20	<0.025
GD 5	6/12/2019	6.0	8.02	7.64	27.2	9.3	<0.250	<0.100	<0.100	<0.025
GD 5	8/27/2019	75.2	7.15	7.98	28.7	10.9	0.506	<0.100	0.165	<0.025
GD 5	10/29/2019	29.0	7.85	9.42	17.8	21.0	0.477	<0.100	<0.100	<0.025
GD 5	3/30/2020	14.5	7.65	8.86	19.1	12.1	0.320	0.130	<0.100	<0.025
GD 5	6/16/2020	16.4	7.69	7.75	27.2	7.4	0.561	<0.100	<0.100	<0.030
GD 5	9/21/2020	10.8	7.65	6.33	23.2	7.9	<0.250	<0.100	<0.100	<0.030
GD 5	12/17/2020	28.7	7.62	9.96	9.7	19.8	0.422	0.122	0.113	<0.030
GD 5	3/18/2021	3.4	7.15	8.98	16.9	30.6	0.600	0.127	<0.100	<0.030
GD 5	5/5/2021	36.10	7.84	7.74	19.8	36.8	<0.250	0.204	<0.100	<0.030
GD 5	9/2/2021	10.28	7.84	6.90	26.5	16.1	0.510	<0.100	<0.100	<0.030
GD 5	11/23/2021	27.7	7.70	10.54	11.3	8.8	<0.250	<0.100	<0.100	<0.0300
GD 5	1/11/2022	26.8	7.28	12.25	10.1	12.1	0.510	0.300	<0.10	<0.0300
GD 5	4/7/2022	16.4	7.72	9.32	17.2	14.4	0.300	0.157	<0.100	<0.0300
GD 5	8/2/2022	13.0	7.86	6.60	29.1	6.4	<0.250	<0.100	<0.100	<0.0300
GD 5	11/16/2022	7.0	7.75	9.56	13.4	8.7	0.312	<0.100	<0.100	<0.0300
GD 5	2/14/2023	18.8	7.18	10.85	11.4	11.5	0.606	0.255	<0.100	<0.0300
GD 5	5/25/2023	5.1	8.15	9.33	24.3	10.0	0.528	0.0534	0.0462	0.0250

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.20 - HISTORICAL ANALYTICAL DATA - SME 3

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 3	3/13/2013	17.1	7.84	7.44	11.30	15.0	0.69	0.20	<0.100	0.038
SME 3	5/20/2013	18.5	8.11	6.09	23.60	19.0	0.69	0.17	<0.100	0.028
SME 3	9/23/2013	15.3	*	5.32	26.50	13.0	0.53	<0.100	<0.100	0.029
SME 3	12/10/2013	48.3	7.69	8.85	9.60	20.0	0.62	<0.100	<0.100	0.086
SME 3	2/6/2014	82.7	7.09	10.62	6.30	33.0	0.69	0.25	<0.100	<0.025
SME 3	6/26/2014	50.0	8.04	7.03	NS	30.0	0.53	<0.100	<0.100	0.047
SME 3	9/30/2014	17.3	8.08	5.98	25.33	18.0	0.66	<0.100	<0.100	<0.025
SME 3	11/19/2014	22.4	8.30	10.40	9.30	19.0	<0.250	0.12	<0.100	0.035
SME 3	3/23/2015	25.0	8.13	7.72	21.20	16.0	0.46	0.24	<0.100	0.026
SME 3	4/22/2015	12.0	7.76	6.70	21.80	14.0	0.45	0.15	<0.100	<0.025
SME 3	9/30/2015	18.0	7.96	6.19	25.60	24.4	0.42	0.125	0.129	<0.025
SME 3	11/19/2015	65.0	7.56	7.44	15.80	37.8	<0.250	0.253	<0.100	0.032
SME 3	3/15/2016	68.4	8.35	7.51	19.20	78.8	<0.250	0.295	<0.100	<0.025
SME 3	6/29/2016	17.7	7.80	2.56	30.16	15.3	0.37	<0.100	<0.100	0.062
SME 3	8/9/2016	14.8	7.52	3.43	29.53	10.8	0.564	<0.100	<0.100	<0.025
SME 3	12/7/2016	8.5	7.90	10.91	11.85	9.4	1.780	<0.100	0.147	<0.025
SME 3	3/2/2017	14.6	7.95	4.60	13.64	17.0	0.733	0.272	<0.100	<0.025
SME 3	7/5/2017	12.5	7.54	5.88	27.3	16.3	0.628	<0.100	<0.100	0.039
SME 3	8/16/2017	11.5	7.86	5.00	28.1	18.5	0.446	<0.100	<0.100	0.07
SME 3	10/25/2017	15.3	7.42	8.23	19.4	49.7	0.376	<0.100	0.106	0.053
SME 3	3/28/2018	8.9	7.98	9.44	17.4	11.2	<0.250	0.220	<0.100	<0.025
SME 3	6/29/2018	15.8	7.53	5.39	26.9	115.0	0.800	<0.100	<0.100	<0.025
SME 3	8/2/2018	30.0	7.59	5.66	26.4	56.0	0.981	<0.100	0.108	<0.025
SME 3	12/10/2018	33.1	7.21	10.68	7.0	27.1	0.433	<0.100	0.127	<0.025

TABLE B.20 - HISTORICAL ANALYTICAL DATA - SME 3

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 3	4/15/2019	552.6	7.78	7.65	19.7	371	0.271	0.234	0.285	<0.025
SME 3	6/12/2019	7.8	7.48	6.87	27.1	10.7	<0.250	<0.100	<0.100	<0.025
SME 3	8/27/2019	55.3	7.91	8.41	29.2	7.0	0.389	<0.100	0.149	<0.025
SME 3	10/29/2019	22.4	7.77	8.44	17.2	15.4	0.390	<0.100	<0.100	<0.025
SME 3	3/30/2020	14.4	7.51	8.91	18.8	18.2	0.657	0.239	<0.100	<0.025
SME 3	6/16/2020	9.2	8.06	7.95	27.1	10.1	0.466	<0.100	0.102	<0.030
SME 3	9/21/2020	15.3	7.67	6.50	23.0	10.7	0.660	<0.100	<0.100	<0.030
SME 3	12/17/2020	NS	NS	NS	NS	NS	NS	NS	NS	NS
SME 3	3/18/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS
SME 3	5/5/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS
SME 3	9/2/2021	102.33	7.75	5.64	26.3	267	1.24	<0.100	0.234	0.057
SME 3	11/23/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS
SME 3	1/11/2022	109.4	7.58	11.17	9.9	15.4	0.520	0.390	<0.10	<0.0300
SME 3	4/7/2022	32.3	7.69	8.99	16.6	27.0	0.406	0.181	<0.100	<0.0300
SME 3	8/2/2022	11.0	7.81	6.35	29.2	5.6	<0.250	<0.100	<0.100	<0.0300
SME 3	11/16/2022	7.3	7.76	9.28	13.6	10.3	0.294	<0.100	<0.100	<0.0300
SME 3	2/14/2023	33.2	7.18	10.81	10.8	66.4	0.351	0.325	<0.100	<0.0300
SME 3	5/25/2023	7.6	7.51	7.99	24.0	11.0	0.515	<0.0500	0.0569	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.21 - HISTORICAL ANALYTICAL DATA - GD 7

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 7	3/12/2013	9.7	7.98	11.63	15.27	8.8	0.31	0.39	<0.100	0.037
GD 7	5/8/2013	26.1	7.72	7.46	18.40	20.0	<0.56	0.24	<0.100	0.063
GD 7	9/23/2013	10.9	7.05	6.31	26.50	9.6	0.54	<0.100	<0.100	0.026
GD 7	12/10/2013	41.9	8.02	9.68	7.50	40.0	0.32	0.34	0.11	0.084
GD 7	2/6/2014	28.0	7.27	13.32	4.40	13.0	0.61	0.52	<0.100	0.034
GD 7	6/26/2014	6.2	8.45	7.04	NS	8.7	0.52	<0.100	<0.100	<0.025
GD 7	9/30/2014	11.9	7.87	6.32	24.39	13.0	0.41	<0.100	<0.100	<0.025
GD 7	11/19/2014	19.6	8.53	10.10	9.60	15.0	0.46	0.14	0.13	<0.025
GD 7	3/23/2015	13.0	8.28	8.87	15.40	10.0	0.35	0.27	<0.100	<0.025
GD 7	4/22/2015	28.0	7.99	6.40	20.20	24.0	0.47	0.24	<0.100	<0.025
GD 7	9/30/2015	8.3	7.89	5.18	24.90	9.1	0.59	<0.100	<0.100	<0.025
GD 7	11/19/2015	45.0	7.78	8.23	15.60	34.3	<0.250	0.344	<0.100	0.051
GD 7	3/15/2016	17.2	8.46	8.51	17.80	13.9	0.397	0.261	<0.100	<0.025
GD 7	6/29/2016	10.7	7.90	2.22	30.32	8.6	0.490	<0.100	<0.100	0.048
GD 7	8/9/2016	6.5	7.97	4.08	29.31	5.7	0.471	<0.100	<0.100	<0.025
GD 7	12/7/2016	9.5	7.88	10.14	12.39	7.8	0.355	<0.100	<0.100	<0.025
GD 7	3/2/2017	10.8	7.80	4.57	13.35	14.4	0.514	0.36	<0.100	<0.025
GD 7	6/29/2017	9.4	8.18	6.59	26.4	13.4	0.440	<0.100	<0.100	<0.025
GD 7	8/16/2017	8.5	7.84	5.66	29.0	15.3	0.358	<0.100	<0.100	<0.025
GD 7	10/25/2017	9.9	7.73	6.93	19.8	18.4	0.416	<0.10	<0.100	<0.025
GD 7	3/28/2018	7.6	8.16	9.33	14.9	9.19	<0.250	0.350	<0.100	<0.025
GD 7	6/29/2018	14.2	7.79	5.56	27.5	14.60	0.625	<0.100	<0.100	<0.025
GD 7	8/2/2018	18.5	7.62	5.51	27.0	32.10	0.450	<0.100	<0.100	0.027
GD 7	12/10/2018	40.8	7.06	11.05	8.0	48.7	0.390	0.378	0.149	<0.025

TABLE B.21 - HISTORICAL ANALYTICAL DATA - GD 7

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 7	4/15/2019	30.1	7.83	7.85	19.2	12.0	<0.250	0.230	<0.100	<0.025
GD 7	6/12/2019	7.4	7.24	6.68	27.2	9.3	<0.250	0.132	<0.100	<0.025
GD 7	8/27/2019	45.3	7.35	9.35	29.1	6.3	0.604	<0.100	0.156	<0.025
GD 7	10/29/2019	17.6	7.77	8.14	17.2	17.0	0.414	<0.100	<0.100	<0.025
GD 7	3/30/2020	7.8	7.77	10.38	21.1	12.8	0.343	<0.100	<0.100	<0.025
GD 7	6/16/2020	9.1	8.12	8.25	27.3	8.3	0.322	<0.100	<0.100	<0.030
GD 7	9/21/2020	13.6	7.42	12.45	23.7	9.60	<0.250	<0.100	<0.100	<0.030
GD 7	12/17/2020	14.4	7.75	10.21	9.5	18.20	<0.250	0.373	<0.100	<0.030
GD 7	3/18/2021	1.2	7.37	9.75	15.4	23.00	0.387	0.312	<0.100	<0.030
GD 7	5/5/2021	19.74	7.59	7.64	21.4	40.3	0.661	<0.100	<0.100	<0.030
GD 7	9/2/2021	13.57	7.75	6.38	27.6	34.40	0.324	0.107	0.122	<0.030
GD 7	11/23/2021	25.2	7.62	11.21	11.7	11.10	<0.250	0.197	<0.100	<0.0300
GD 7	1/11/2022	46.0	7.38	12.59	9.7	15.20	<0.50	0.410	<0.10	<0.0300
GD 7	4/7/2022	17.4	7.61	9.33	17.2	23.4	0.361	0.280	0.162	<0.0300
GD 7	8/2/2022	10.2	7.86	6.29	29.3	4.30	<0.250	<0.100	<0.100	<0.0300
GD 7	11/16/2022	5.3	7.75	9.00	14.4	8.53	0.509	<0.100	<0.100	0.043
GD 7	2/14/2023	23.4	7.17	10.96	11.5	20.30	0.610	0.399	0.106	<0.0300
GD 7	5/25/2023	4.5	8.04	9.24	24.6	9.60	0.447	0.0646	0.0386	0.0270

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.22 - HISTORICAL ANALYTICAL DATA - GD 9

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 9	2/6/2014	33.6	7.20	11.27	5.50	14.0	0.60	0.40	0.12	0.063
GD 9	6/26/2014	45.0	8.22	6.08	NS	34.0	0.41	<0.100	0.12	0.029
GD 9	9/30/2014	12.4	8.30	6.93	24.61	15.0	0.30	<0.100	<0.100	<0.025
GD 9	11/19/2014	22.8	8.13	9.38	9.30	15.0	0.74	0.16	0.25	0.082
GD 9	3/23/2015	25.0	8.16	7.58	15.80	18.0	0.64	0.15	<0.100	<0.025
GD 9	4/22/2015	18.0	7.58	5.58	20.70	14.0	0.65	0.15	<0.100	<0.025
GD 9	9/30/2015	9.6	7.93	5.37	25.70	10.8	0.64	<0.100	<0.100	<0.025
GD 9	11/19/2015	40.0	7.67	NS	16.50	16.7	<0.250	0.254	0.116	0.096
GD 9	3/15/2016	14.8	8.49	7.66	17.30	12.1	<0.250	0.33	<0.100	0.044
GD 9	6/29/2016	43.7	8.20	1.76	29.77	67.2	0.65	<0.100	<0.100	<0.025
GD 9	8/9/2016	11.0	8.07	4.14	29.00	9.4	0.468	<0.100	<0.100	<0.025
GD 9	12/7/2016	26.0	7.99	8.01	11.99	38.3	0.378	<0.100	0.13	<0.025
GD 9	3/2/2017	10.7	7.70	4.26	13.60	11.2	0.673	0.269	<0.100	<0.025
GD 9	6/29/2017	15.8	8.37	5.85	26.4	15.7	0.722	<0.100	<0.100	<0.025
GD 9	8/16/2017	11.3	7.82	5.52	29.60	18.2	0.384	<0.100	<0.100	<0.025
GD 9	10/25/2017	18.9	7.50	6.68	18.9	29.7	0.375	<0.100	<0.100	0.025
GD 9	3/28/2018	10.2	8.21	9.75	15.8	12.4	<0.250	0.230	<0.100	<0.025
GD 9	6/29/2018	11.0	7.73	5.45	27.6	13.9	0.507	<0.100	<0.100	<0.025
GD 9	8/2/2018	13.0	7.55	5.17	26.0	20.8	0.600	0.110	<0.100	0.067
GD 9	12/10/2018	26.4	7.90	11.05	7.9	22.8	0.442	0.292	0.244	0.047
GD 9	4/15/2019	221.5	7.51	8.09	20.0	178	<0.250	0.194	<0.100	0.034
GD 9	6/12/2019	7.3	7.21	8.61	27.0	29.0	<0.250	0.116	<0.100	<0.025
GD 9	8/27/2019	76.5	7.81	8.22	28.8	9.3	0.385	<0.100	0.146	<0.025
GD 9	10/29/2019	22.3	7.35	8.91	17.9	15.0	0.491	<0.100	<0.100	<0.025

TABLE B.22 - HISTORICAL ANALYTICAL DATA - GD 9

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 9	3/30/2020	18.3	7.56	8.54	18.4	16.4	<0.250	0.243	0.121	<0.025
GD 9	6/16/2020	11.4	8.15	7.94	27.1	11.5	0.352	<0.100	<0.100	<0.030
GD 9	9/21/2020	11.6	7.38	6.41	23.3	9.0	<0.250	<0.100	<0.100	<0.030
GD 9	12/17/2020	12.33	7.71	10.62	9.7	13.1	0.261	0.336	<0.100	<0.030
GD 9	3/18/2021	1.70	7.24	8.83	15.5	18.6	0.576	0.189	<0.100	<0.030
GD 9	5/5/2021	23.76	7.68	7.08	21.0	29.0	0.564	0.176	<0.100	0.036
GD 9	9/2/2021	13.46	7.73	6.29	27.9	25.8	0.311	<0.100	<0.100	<0.030
GD 9	11/23/2021	39.41	7.84	10.71	13.9	33.9	<0.250	0.113	0.124	<0.0300
GD 9	1/11/2022	271.50	7.42	11.43	10.4	13.3	0.760	0.360	<0.10	<0.030
GD 9	4/7/2022	14.0	7.60	8.79	18.2	15.1	0.306	0.236	0.124	<0.0300
GD 9	8/2/2022	10.40	7.89	6.62	29.1	7.4	<0.250	<0.100	<0.100	<0.0300
GD 9	11/16/2022	4.52	7.81	9.41	14.1	5.7	0.399	<0.100	<0.100	<0.0300
GD 9	2/14/2023	16.10	7.17	11.09	11.6	12.6	0.484	0.362	<0.100	<0.0300
GD 9	5/25/2023	5.9	8.02	9.61	24.9	12.4	0.492	<0.0500	0.0537	0.0160

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.23 - HISTORICAL ANALYTICAL DATA - SME 1

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 1	3/12/2013	13.1	8.19	8.26	13.10	16.0	0.34	0.54	0.11	0.110
SME 1	5/8/2013	24.0	7.64	8.96	16.00	14.0	0.42	0.15	<0.100	0.063
SME 1	9/23/2013	14.2	8.26	7.87	27.70	15.0	0.80	<0.100	<0.100	0.053
SME 1	12/10/2013	46.3	8.05	9.15	7.60	21.0	0.47	0.55	0.26	0.210
SME 1	2/6/2014	61.0	7.22	11.34	5.90	23.0	0.50	0.55	0.13	0.110
SME 1	6/26/2014	14.0	8.49	7.05	NS	13.0	0.31	<0.100	<0.100	<0.025
SME 1	9/30/2014	27.6	8.25	7.46	24.67	34.0	0.61	<0.100	0.11	0.044
SME 1	11/19/2014	40.1	8.31	10.86	7.80	19.0	0.55	0.74	0.29	0.270
SME 1	3/23/2015	21.0	8.26	8.52	17.30	14.0	<0.250	0.51	0.10	0.073
SME 1	4/22/2015	29.0	7.14	7.97	18.50	18.0	0.38	0.40	<0.100	0.039
SME 1	9/30/2015	15.0	8.34	7.03	26.40	15.3	0.807	<0.100	0.135	0.052
SME 1	11/19/2015	50.0	7.92	7.04	15.90	23.2	<0.250	0.401	0.134	0.084
SME 1	3/15/2016	26.2	8.44	7.21	18.30	17.7	<0.250	0.454	<0.100	0.047
SME 1	6/29/2016	21.2	8.80	3.29	30.67	20.3	0.620	<0.100	0.245	0.180
SME 1	8/9/2016	15.3	8.55	4.98	28.87	12.6	0.547	<0.100	0.154	0.089
SME 1	12/7/2016	31.0	7.96	10.20	11.98	17.7	0.378	0.413	0.271	0.209
SME 1	3/2/2017	14.0	7.75	4.31	12.34	15.0	0.345	0.671	0.208	0.127
SME 1	6/29/2017	19.2	9.11	9.21	25.8	18.3	0.530	<0.100	0.000	0.028
SME 1	8/16/2017	10.6	8.12	6.58	29.7	12.7	0.520	<0.100	0.111	<0.025
SME 1	10/25/2017	5.4	8.02	8.32	17.3	16.9	0.288	0.368	0.151	0.121
SME 1	3/28/2018	19.3	8.10	9.18	17.6	19.8	<0.250	0.633	0.000	0.106
SME 1	6/29/2018	20.7	7.84	6.37	26.2	23.3	0.670	0.312	0.241	0.121
SME 1	8/2/2018	28.5	7.48	5.82	23.9	29.5	0.495	0.296	0.136	0.145
SME 1	12/10/2018	32.0	7.45	11.48	8.0	31.0	0.336	0.259	<0.100	<0.025

TABLE B.23 - HISTORICAL ANALYTICAL DATA - SME 1

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 1	4/15/2019	42.2	7.89	7.89	19.7	35.0	0.360	0.390	<0.100	0.063
SME 1	6/12/2019	12.2	7.34	8.73	27.2	9.7	<0.250	<0.100	<0.100	<0.025
SME 1	8/27/2019	135.2	7.45	8.51	28.8	7.1	0.356	<0.100	0.161	<0.025
SME 1	10/29/2019	14.5	7.95	9.21	17.6	11.0	0.272	0.129	0.134	0.049
SME 1	3/30/2020	13.3	7.35	8.61	19.3	13.3	<0.250	0.462	<0.100	<0.025
SME 1	6/16/2020	11.6	8.58	10.36	27.0	11.4	0.485	<0.100	0.129	0.031
SME 1	9/21/2020	13.8	7.71	6.92	22.2	9.0	<0.250	<0.100	<0.100	<0.030
SME 1	12/17/2020	23.19	7.66	10.68	9.2	20.9	0.300	0.577	<0.100	0.072
SME 1	3/18/2021	14.10	7.24	9.54	15.7	90.4	0.580	0.263	<0.100	0.112
SME 1	5/5/2021	28.83	7.43	8.53	20.1	34.0	0.402	0.122	<0.100	<0.030
SME 1	9/2/2021	23.89	7.80	6.93	25.8	35.8	0.353	0.458	0.218	0.190
SME 1	11/23/2021	18.42	7.91	11.34	12.4	12.7	<0.250	<0.100	0.165	0.076
SME 1	1/11/2022	161.2	7.55	11.29	10.2	17.0	1.800	8.200	<0.10	0.054
SME 1	4/7/2022	112.9	7.65	9.26	17.2	140	0.544	0.431	0.255	0.192
SME 1	8/2/2022	12.0	8.10	7.98	29.2	6.3	0.281	<0.100	<0.100	<0.0300
SME 1	11/16/2022	5.78	7.86	9.45	14.3	7.9	0.306	<0.100	<0.100	<0.0300
SME 1	2/14/2023	15.5	7.26	11.23	11.0	11.3	0.281	0.372	<0.100	<0.0300
SME 1	5/25/2023	6.6	8.38	10.64	24.5	10.6	0.694	<0.0500	0.0961	0.0430

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.24 - HISTORICAL ANALYTICAL DATA - SS 5

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SS 5	3/12/2013	5.98	8.38	9.87	10.80	7.2	0.39	0.30	<0.100	0.031
SS 5	5/8/2013	24.4	7.38	7.19	16.80	21.0	0.62	0.16	<0.100	<0.12
SS 5	9/23/2013	13.8	8.00	5.44	25.80	15.0	1.30	<0.100	<0.100	0.029
SS 5	12/10/2013	22.8	8.25	9.10	7.70	13.0	0.67	0.24	0.11	0.043
SS 5	2/6/2014	27.5	7.20	12.09	5.40	12.0	0.86	0.39	<0.100	<0.025
SS 5	6/26/2014	11.0	8.53	7.01	NS	11.0	0.40	<0.100	<0.100	<0.025
SS 5	9/30/2014	11.2	7.64	6.82	24.44	11.0	0.45	<0.100	<0.100	<0.025
SS 5	11/19/2014	14.1	8.96	13.13	8.50	9.6	0.35	<0.100	<0.100	<0.025
SS 5	3/23/2015	18.0	8.50	8.99	17.70	11.0	0.46	0.26	<0.100	<0.025
SS 5	4/22/2015	19.0	7.76	6.71	20.20	13.0	0.47	0.15	<0.100	<0.025
SS 5	9/30/2015	11.0	8.26	6.61	25.30	9.9	0.606	<0.100	<0.100	<0.025
SS 5	11/19/2015	19.0	7.86	8.47	15.90	11.0	<0.250	0.239	<0.100	<0.025
SS 5	3/15/2016	20.0	8.37	8.47	17.20	9.5	0.279	0.264	0.225	<0.025
SS 5	6/29/2016	14.7	8.01	3.81	29.77	13.2	0.480	<0.100	<0.100	0.066
SS 5	8/9/2016	11.6	7.86	3.16	29.40	12.6	0.464	<0.100	<0.100	<0.025
SS 5	12/7/2016	6.6	7.94	6.70	12.30	8.0	0.420	<0.100	0.12	<0.025
SS 5	3/2/2017	14.0	7.78	3.92	12.77	16.0	0.766	0.334	<0.100	<0.025
SS 5	7/5/2017	8.4	7.77	7.19	28.90	12.0	0.474	<0.100	<0.100	<0.025
SS 5	8/16/2017	10.2	8.10	4.83	29.90	15.1	0.493	<0.100	<0.100	<0.025
SS 5	10/25/2017	7.5	8.24	8.36	19.2	11.8	0.531	<0.100	<0.100	<0.025
SS 5	3/28/2018	7.0	8.53	10.23	18.5	8.33	<0.250	0.248	<0.100	<0.025
SS 5	6/29/2018	10.4	7.93	5.50	27.5	13.3	0.605	<0.100	<0.100	<0.025
SS 5	8/2/2018	13.5	7.58	6.04	25.8	12.8	0.554	<0.100	<0.100	<0.025
SS 5	12/10/2018	21.9	7.01	11.15	7.3	16.7	0.522	0.146	<0.100	<0.025

TABLE B.24 - HISTORICAL ANALYTICAL DATA - SS 5

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SS 5	4/15/2019	15.5	7.35	7.77	19.4	11.7	0.374	0.168	<0.100	<0.025
SS 5	6/12/2019	10.0	8.44	8.78	26.6	11.0	<0.250	<0.100	<0.100	<0.025
SS 5	8/27/2019	24.5	8.66	9.02	28.9	7.1	0.508	<0.100	0.168	<0.025
SS 5	10/29/2019	18.7	8.20	9.33	18.1	10.4	0.631	0.105	0.198	<0.025
SS 5	3/30/2020	9.2	8.35	11.07	20.8	10.6	0.399	0.127	<0.100	<0.025
SS 5	6/16/2020	10.5	8.41	7.99	27.9	9.7	0.534	<0.100	<0.100	<0.030
SS 5	9/21/2020	16.5	7.36	11.45	22.6	11.0	0.512	<0.100	<0.100	<0.030
SS 5	12/17/2020	8.64	8.02	11.24	9.6	10.1	0.428	0.200	<0.100	<0.030
SS 5	3/18/2021	0.60	7.36	9.03	15.7	14.6	0.570	0.191	<0.100	<0.030
SS 5	5/5/2021	38.40	7.55	7.72	20.5	32.2	0.576	0.108	<0.100	<0.030
SS 5	9/2/2021	9.62	8.00	8.54	28.6	14.4	0.431	<0.100	<0.100	<0.030
SS 5	11/23/2021	10.84	7.40	10.89	13.7	7.7	<0.250	0.126	<0.100	<0.0300
SS 5	1/11/2022	46.0	7.64	11.13	11.1	10.4	1.300	0.320	<0.10	<0.0300
SS 5	4/7/2022	20.7	7.80	8.85	17.9	15.6	0.516	0.122	<0.100	<0.0300
SS 5	8/2/2022	11.90	8.38	7.32	30.6	7.8	0.812	<0.100	<0.100	<0.0300
SS 5	11/16/2022	5.32	8.07	10.21	14.0	8.3	0.314	<0.100	<0.100	<0.0300
SS 5	2/14/2023	11.20	7.35	11.62	12.7	10.4	0.344	0.284	<0.100	0.093
SS 5	5/25/2023	7.0	8.19	10.03	25.5	9.80	0.638	<0.0500	0.0486	0.0670

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.25 - HISTORICAL ANALYTICAL DATA - SME 5

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 5	12/17/2020	15.24	7.80	10.94	10.00	17.7	0.258	0.371	<0.100	<0.030
SME 5	3/18/2021	1.70	7.83	9.59	15.90	23.0	0.317	0.316	<0.100	<0.030
SME 5	5/5/2021	50.11	7.80	7.96	21.2	60.6	0.410	<0.100	<0.100	<0.030
SME 5	9/2/2021	15.15	8.02	6.42	28.2	31.8	0.325	0.128	<0.100	<0.030
SME 5	11/23/2021	68.29	7.78	10.42	14.9	14.0	<0.250	0.231	<0.100	<0.0300
SME 5	1/11/2022	24.90	7.66	10.46	14.7	16.6	1.50	0.450	<0.10	0.035
SME 5	4/7/2022	55.4	7.99	9.43	17.4	25.4	0.385	0.290	<0.100	<0.0300
SME 5	8/2/2022	12.0	8.26	7.16	30.4	7.30	0.277	0.102	<0.100	<0.0300
SME 5	11/16/2022	7.26	7.91	9.00	14.7	11.1	0.347	0.113	<0.100	<0.0300
SME 5	2/14/2023	15.1	7.17	10.93	12.2	12.3	0.302	0.425	<0.100	<0.0300
SME 5	5/25/2023	7.1	8.06	9.41	25.4	11.4	0.564	0.155	0.0593	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.26 - HISTORICAL ANALYTICAL DATA - SME 6

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
SME 6	12/17/2020	13.6	7.96	10.89	10.1	16.7	<0.25	0.368	<0.10	<0.03
SME 6	3/18/2021	3.3	7.65	9.84	15.5	47.2	0.618	0.358	<0.100	<0.030
SME 6	5/5/2021	62.3	7.75	7.80	19.9	82.8	0.403	0.183	<0.100	<0.030
SME 6	9/2/2021	13.3	8.19	6.72	27.7	19.0	0.353	0.131	0.430	<0.030
SME 6	11/23/2021	9.8	7.68	10.35	15.1	11.2	<0.250	0.231	<0.100	<0.0300
SME 6	1/11/2022	24.4	7.72	11.24	10.2	16.9	2.40	0.450	<0.10	<0.0300
SME 6	4/7/2022	31.4	7.95	9.63	18.0	28.8	0.373	0.270	<0.100	<0.0300
SME 6	8/2/2022	11.1	8.25	8.26	30.9	8.40	<0.250	<0.100	<0.100	<0.0300
SME 6	11/16/2022	8.0	7.87	9.34	14.0	11.3	0.308	<0.100	<0.100	<0.0300
SME 6	2/14/2023	17.7	7.31	10.83	12.8	14.9	0.319	0.374	<0.100	<0.0300
SME 6	5/25/2023	6.7	8.00	9.79	25.2	10.0	0.580	0.0655	0.0424	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.27 - HISTORICAL ANALYTICAL DATA - RC 14

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
RC 14	3/12/2013	28.3	8.23	7.53	10.3	21.0	0.61	<0.100	<0.100	0.088
RC 14	5/8/2013	29.5	6.72	1.78	21.4	16.0	0.63	0.14	<0.100	<0.12
RC 14	9/23/2013	18.4	7.86	6.68	24.7	13.0	0.58	<0.100	<0.100	<0.025
RC 14	12/10/2013	40.0	8.45	9.50	8.2	16.0	0.69	<0.100	0.11	0.100
RC 14	2/6/2014	66.6	7.15	10.94	4.9	18.0	0.70	0.16	0.11	0.036
RC 14	6/26/2014	6.2	8.21	6.30	NS	5.9	0.39	<0.100	<0.100	<0.025
RC 14	9/30/2014	12.4	7.20	6.20	23.5	12.0	0.40	<0.100	<0.100	<0.025
RC 14	9/19/2014	50.3	8.20	10.10	7.5	28.0	0.52	<0.100	0.13	0.085
RC 14	3/23/2015	70.0	8.03	7.80	18.2	34.0	1.10	0.26	<0.100	0.070
RC 14	4/22/2015	30.0	7.77	7.25	18.1	15.0	0.40	0.20	<0.100	<0.025
RC 14	9/30/2015	17.0	8.28	5.63	24.4	12.6	0.454	<0.100	<0.100	<0.025
RC 14	11/19/2015	95.0	7.32	6.07	17.71	36.0	0.633	0.137	0.135	<0.025
RC 14	3/15/2016	85.0	8.13	7.73	18.5	69.6	0.434	0.106	0.304	<0.025
RC 14	6/29/2016	17.2	7.58	2.17	28.53	17.5	0.460	<0.100	<0.100	0.037
RC 14	8/9/2016	10.4	7.05	2.35	28.53	8.5	0.547	<0.100	<0.100	<0.025
RC 14	12/7/2016	7.9	7.21	6.47	11.62	8.6	0.252	<0.100	<0.100	<0.025
RC 14	3/2/2017	18.0	7.32	3.55	12.69	14.6	0.608	0.12	<0.100	<0.025
RC 14	7/5/2017	17.7	7.55	6.56	25.7	35.0	0.357	0.279	<0.100	0.041
RC 14	8/16/2017	9.8	7.72	5.54	26.7	12.4	0.400	0.21	<0.100	0.042
RC 14	10/25/2017	18.7	7.64	7.26	17.1	27.2	0.465	0.24	0.149	0.088
RC 14	3/28/2018	9.9	8.03	9.00	18.3	10.9	<0.25	0.148	<0.100	<0.025
RC 14	6/29/2018	12.9	7.64	5.89	27.1	13.8	0.722	<0.100	<0.100	<0.025
RC 14	8/2/2018	21.7	7.30	5.56	23.7	17.3	0.848	<0.100	<0.100	0.055
RC 14	12/10/2018	35.1	7.13	10.63	7.3	16.9	1.400	<0.100	0.169	0.038

TABLE B.27 - HISTORICAL ANALYTICAL DATA - RC 14

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
RC 14	4/15/2019	45.8	7.68	7.67	19.5	36.0	0.403	0.108	<0.100	<0.025
RC 14	6/12/2019	11.0	8.03	7.39	25.3	12.3	0.250	0.120	<0.100	<0.025
RC 14	8/27/2019	76.4	8.36	8.78	28.4	8.8	0.391	<0.100	0.141	<0.025
RC 14	10/29/2019	17.4	7.90	9.83	17.7	10.6	0.478	<0.100	<0.100	<0.025
RC 14	3/30/2020	12.9	8.10	10.01	21.9	15.7	0.451	<0.100	<0.100	<0.025
RC 14	6/16/2020	11.5	6.79	8.01	26.9	11.4	0.560	0.141	<0.100	<0.030
RC 14	9/21/2020	13.7	7.49	9.65	21.9	8.2	0.307	<0.100	0.202	<0.030
RC 14	12/17/2020	25.8	7.72	10.40	9.3	14.4	0.497	0.261	<0.100	<0.030
RC 14	3/18/2021	25.8	7.72	10.40	9.3	14.4	0.497	0.261	<0.100	<0.030
RC 14	5/5/2021	33.45	7.68	7.99	20.9	30.4	0.566	<0.100	<0.100	<0.030
RC 14	9/2/2021	16.75	7.87	7.11	25.7	23.2	0.350	0.210	<0.100	0.040
RC 14	11/23/2021	24.6	7.96	10.57	13.3	40.2	<0.250	<0.100	0.103	<0.0300
RC 14	1/11/2022	66.4	7.40	11.82	10.4	20.6	1.500	0.170	<0.10	<0.0300
RC 14	4/7/2022	99.0	7.76	8.27	17.6	178	0.548	<0.100	0.101	<0.0300
RC 14	8/2/2022	12.9	8.29	7.67	30.2	11.1	0.332	<0.100	<0.100	<0.0300
RC 14	11/16/2022	6.8	7.79	9.06	12.4	9.2	<0.250	<0.100	<0.100	<0.0300
RC 14	2/14/2023	36.9	6.92	10.48	12.2	17.9	0.423	0.107	<0.100	<0.0300
RC 14	5/25/2023	16.0	7.41	8.75	26.4	17.2	0.945	<0.0500	0.0850	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.28 - HISTORICAL ANALYTICAL DATA - GD 3

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 3	3/13/2013	11.6	8.00	9.28	10.70	11.0	0.44	0.29	<0.100	0.028
GD 3	5/20/2013	11.7	8.09	7.01	23.40	13.0	0.63	0.15	<0.100	0.026
GD 3	9/23/2013	12.4	7.80	6.50	26.40	10.0	0.58	<0.100	<0.100	0.025
GD 3	12/10/2013	45.7	7.85	9.23	9.30	23.0	0.64	0.21	0.14	0.085
GD 3	2/6/2014	90.2	7.13	10.58	6.10	27.0	0.68	0.21	0.12	<0.025
GD 3	6/26/2014	15.0	8.13	8.00	NS	14.0	0.40	0.12	<0.100	<0.025
GD 3	9/30/2014	19.5	8.11	6.69	25.06	19.0	0.32	<0.100	<0.100	<0.025
GD 3	11/19/2014	18.1	8.36	10.88	9.3	15.0	0.26	<0.100	<0.100	<0.025
GD 3	3/23/2015	13.0	8.32	7.84	16.5	10.0	0.34	0.22	<0.100	<0.025
GD 3	4/22/2015	26.0	7.86	6.74	20.6	21.0	0.36	0.18	<0.100	0.079
GD 3	9/30/2015	10.0	7.94	4.91	24.9	11.5	0.74	0.103	0.126	<0.025
GD 3	11/19/2015	40.0	7.61	7.74	16.0	22.0	<0.250	0.250	0.101	<0.025
GD 3	3/15/2016	25.5	8.04	8.62	18.7	11.7	<0.250	0.420	<0.100	0.071
GD 3	6/29/2016	6.0	7.84	2.78	29.94	10.7	<0.250	<0.100	<0.100	0.088
GD 3	8/9/2016	8.3	7.98	5.09	30.01	10.0	0.393	<0.100	<0.100	<0.025
GD 3	12/7/2016	5.9	7.91	10.55	12.0	8.1	0.356	<0.100	<0.100	<0.025
GD 3	3/2/2017	14.0	8.21	5.01	14.35	15.6	0.649	0.237	0.135	<0.025
GD 3	7/5/2017	11.2	7.48	6.23	27.3	14.4	0.560	<0.100	<0.100	<0.025
GD 3	8/16/2017	7.4	8.01	6.24	28.8	8.5	0.387	<0.100	<0.100	<0.025
GD 3	10/25/2017	8.9	7.54	7.25	19.1	13.6	0.390	<0.100	<0.100	<0.025
GD 3	3/28/2018	9.1	8.06	9.34	16.6	10.8	<0.250	0.241	<0.100	<0.025
GD 3	6/29/2018	12.9	7.68	5.63	27.3	12.7	0.511	<0.100	<0.100	<0.025
GD 3	8/2/2018	13.4	7.69	5.72	26.6	20.8	0.569	<0.100	<0.100	<0.025
GD 3	12/10/2018	41.4	7.40	11.09	6.8	31.3	0.519	<0.100	0.128	<0.025

TABLE B.28 - HISTORICAL ANALYTICAL DATA - GD 3

GADSDEN-ETOWAH MS4 MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
MONITORING POINT ID	DATE	TURBIDITY (NTU)	pH	DO (mg/L)	TEMP (°C)	TSS (mg/L)	TKN (mg/L)	NITRATE-NITRITE (mg/L)	TOTAL PHOSPHORUS (mg/L)	ORTHO-PHOSPHATE (mg/L)
GD 3	4/15/2019	15.3	7.71	8.02	19.9	14.7	<0.250	0.233	<0.100	<0.025
GD 3	6/12/2019	9.6	7.24	8.31	27.3	13.0	<0.250	<0.100	<0.100	<0.025
GD 3	8/27/2019	202.8	7.18	8.33	28.8	6.5	0.434	<0.100	0.159	<0.025
GD 3	10/29/2019	26.2	7.84	9.63	17.2	13.0	0.453	<0.100	<0.100	<0.025
GD 3	3/30/2020	17.4	7.58	8.83	18.8	18.0	0.281	0.216	<0.100	<0.025
GD 3	6/16/2020	11.6	8.03	8.20	27.5	9.5	0.363	<0.100	<0.100	<0.030
GD 3	9/21/2020	13.5	7.51	6.73	23.4	9.8	<0.250	<0.100	0.106	<0.030
	Removed from Monitoring Program September 2020									

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

Appendix III – Laboratory Reports

ANALYTICAL REPORT

June 01, 2023

S&ME - Huntsville

Sample Delivery Group:	L1619857
Samples Received:	05/25/2023
Project Number:	22820261
Description:	Gadsden-Etowah MS4
Site:	LAND
Report To:	Ms. Sarah Yeldell 360 D Quality Circle NW Suite 450 Huntsville, AL 35806

Entire Report Reviewed By:

Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 6

Sr: Sample Results 7

SME 7 L1619857-01 7

CO 15 L1619857-02 8

SME 9 L1619857-03 9

SME 10 L1619857-04 10

GD 6 L1619857-05 11

SS 13 L1619857-06 12

SS 14 L1619857-07 13

GD 12 L1619857-08 14

RC 2 L1619857-09 15

GD 8 L1619857-10 16

AT 5 L1619857-11 17

SME 12 L1619857-12 18

SME 13 L1619857-13 19

Qc: Quality Control Summary 20

Gravimetric Analysis by Method 2540 D-2011 20

Wet Chemistry by Method 351.2 21

Wet Chemistry by Method 353.2 23

Wet Chemistry by Method 365.4 25

Wet Chemistry by Method 4500P E-2011 27

Gl: Glossary of Terms 28

Al: Accreditations & Locations 29

Sc: Sample Chain of Custody 30

SME 7 L1619857-01 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 10:38 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066494	1	05/26/23 11:06	05/29/23 16:32	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:04	05/26/23 19:04	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068187	1	05/26/23 11:06	05/29/23 15:27	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:05	05/25/23 14:05	SDE	Mt. Juliet, TN

CO 15 L1619857-02 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 11:00 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:01	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:05	05/26/23 19:05	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:27	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:06	05/25/23 14:06	SDE	Mt. Juliet, TN

SME 9 L1619857-03 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 11:25 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:02	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:07	05/26/23 19:07	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:28	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:07	05/25/23 14:07	SDE	Mt. Juliet, TN

SME 10 L1619857-04 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 11:35 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:04	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:08	05/26/23 19:08	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:30	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:08	05/25/23 14:08	SDE	Mt. Juliet, TN

GD 6 L1619857-05 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 11:55 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:05	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:09	05/26/23 19:09	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:31	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:08	05/25/23 14:08	SDE	Mt. Juliet, TN

SS 13 L1619857-06 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 12:20 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:06	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:11	05/26/23 19:11	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:32	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:08	05/25/23 14:08	SDE	Mt. Juliet, TN

SS 14 L1619857-07 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 12:25 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:10	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:16	05/26/23 19:16	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:36	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:08	05/25/23 14:08	SDE	Mt. Juliet, TN

GD 12 L1619857-08 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 12:45 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:14	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:17	05/26/23 19:17	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:40	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:09	05/25/23 14:09	SDE	Mt. Juliet, TN

RC 2 L1619857-09 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 13:00 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:16	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:18	05/26/23 19:18	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:42	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:09	05/25/23 14:09	SDE	Mt. Juliet, TN

GD 8 L1619857-10 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 13:20 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:18	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:20	05/26/23 19:20	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:44	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:09	05/25/23 14:09	SDE	Mt. Juliet, TN

AT 5 L1619857-11 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 13:20 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:19	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:21	05/26/23 19:21	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:45	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:12	05/25/23 14:12	SDE	Mt. Juliet, TN

SME 12 L1619857-12 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 13:45 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:20	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066461	1	05/26/23 19:22	05/26/23 19:22	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:46	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:13	05/25/23 14:13	SDE	Mt. Juliet, TN

SME 13 L1619857-13 WW

Collected by: Patrick Curwen | Collected date/time: 05/24/23 14:00 | Received date/time: 05/25/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068383	1	05/30/23 14:01	05/30/23 14:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2066498	1	05/27/23 10:52	05/29/23 18:22	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066503	1	05/26/23 20:59	05/26/23 20:59	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2068224	1	05/27/23 10:52	05/29/23 18:48	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2066668	1	05/25/23 14:13	05/25/23 14:13	SDE	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	21.0		5.00	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.474		0.140	0.250	1	05/29/2023 16:32	WG2066494

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.749		0.0500	0.100	1	05/26/2023 19:04	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.206		0.0350	0.100	1	05/29/2023 15:27	WG2068187

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.143		0.0140	0.0300	1	05/25/2023 14:05	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	15.6		5.00	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.477		0.140	0.250	1	05/29/2023 18:01	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.121		0.0500	0.100	1	05/26/2023 19:05	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0461	J	0.0350	0.100	1	05/29/2023 18:27	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0240	J	0.0140	0.0300	1	05/25/2023 14:06	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	59.0		5.00	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.660		0.140	0.250	1	05/29/2023 18:02	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/26/2023 19:07	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	U		0.0350	0.100	1	05/29/2023 18:28	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/25/2023 14:07	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	15.0		2.50	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.349		0.140	0.250	1	05/29/2023 18:04	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.143		0.0500	0.100	1	05/26/2023 19:08	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0371	J	0.0350	0.100	1	05/29/2023 18:30	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/25/2023 14:08	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	7.47		3.33	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.468		0.140	0.250	1	05/29/2023 18:05	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.101		0.0500	0.100	1	05/26/2023 19:09	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0666	J	0.0350	0.100	1	05/29/2023 18:31	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/25/2023 14:08	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	3.73		3.33	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.903		0.140	0.250	1	05/29/2023 18:06	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.358		0.0500	0.100	1	05/26/2023 19:11	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0655	J	0.0350	0.100	1	05/29/2023 18:32	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/25/2023 14:08	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	4.40		2.50	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.506		0.140	0.250	1	05/29/2023 18:10	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.528		0.0500	0.100	1	05/26/2023 19:16	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.102		0.0350	0.100	1	05/29/2023 18:36	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0440		0.0140	0.0300	1	05/25/2023 14:08	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	4.60		2.50	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.357		0.140	0.250	1	05/29/2023 18:14	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.293		0.0500	0.100	1	05/26/2023 19:17	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0372	J	0.0350	0.100	1	05/29/2023 18:40	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0440		0.0140	0.0300	1	05/25/2023 14:09	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	22.8		5.00	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.542		0.140	0.250	1	05/29/2023 18:16	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.142		0.0500	0.100	1	05/26/2023 19:18	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0469	J	0.0350	0.100	1	05/29/2023 18:42	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/25/2023 14:09	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	10.3		3.33	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.516		0.140	0.250	1	05/29/2023 18:18	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.253		0.0500	0.100	1	05/26/2023 19:20	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0462	J	0.0350	0.100	1	05/29/2023 18:44	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/25/2023 14:09	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	20.0		3.33	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.331		0.140	0.250	1	05/29/2023 18:19	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.697		0.0500	0.100	1	05/26/2023 19:21	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.182		0.0350	0.100	1	05/29/2023 18:45	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.127		0.0140	0.0300	1	05/25/2023 14:12	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	19.6		3.33	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.375		0.140	0.250	1	05/29/2023 18:20	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.700		0.0500	0.100	1	05/26/2023 19:22	WG2066461

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.204		0.0350	0.100	1	05/29/2023 18:46	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.126		0.0140	0.0300	1	05/25/2023 14:13	WG2066668

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	25.8		5.00	1	05/30/2023 14:03	WG2068383

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.999		0.140	0.250	1	05/29/2023 18:22	WG2066498

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.752	J6	0.0500	0.100	1	05/26/2023 20:59	WG2066503

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.225		0.0350	0.100	1	05/29/2023 18:48	WG2068224

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.160		0.0140	0.0300	1	05/25/2023 14:13	WG2066668

QUALITY CONTROL SUMMARY

L1619857-01,02,03,04,05,06,07,08,09,10,11,12,13

Method Blank (MB)

(MB) R3931142-1 05/30/23 14:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Suspended Solids	U		2.50	2.50

L1619828-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619828-01 05/30/23 14:03 • (DUP) R3931142-3 05/30/23 14:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	184	192	1	4.26		5

L1619865-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619865-01 05/30/23 14:03 • (DUP) R3931142-4 05/30/23 14:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	ND	ND	1	37.5	P1	5

Laboratory Control Sample (LCS)

(LCS) R3931142-2 05/30/23 14:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	720	93.1	85.7-114	

QUALITY CONTROL SUMMARY

L1619857-01

Method Blank (MB)

(MB) R3930316-1 05/29/23 16:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Kjeldahl Nitrogen, TKN	U		0.140	0.250

L1619628-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619628-01 05/29/23 16:27 • (DUP) R3930316-7 05/29/23 16:29

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	42.3	43.5	10	2.80		20

Laboratory Control Sample (LCS)

(LCS) R3930316-2 05/29/23 16:09

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	12.0	100	75.2-120	

L1619628-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1619628-01 05/29/23 16:11 • (MS) R3930316-5 05/29/23 16:13 • (MSD) R3930316-6 05/29/23 16:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Kjeldahl Nitrogen, TKN	5.00	29.5	30.0	30.0	10.0	10.0	1	90.0-110	E V	E V	0.000	20

QUALITY CONTROL SUMMARY

L1619857-02,03,04,05,06,07,08,09,10,11,12,13

Method Blank (MB)

(MB) R3930329-1 05/29/23 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Kjeldahl Nitrogen, TKN	U		0.140	0.250

L1619857-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1619857-08 05/29/23 18:14 • (DUP) R3930329-5 05/29/23 18:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.357	0.411	1	14.1		20

L1619932-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619932-01 05/29/23 18:29 • (DUP) R3930329-6 05/29/23 18:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	1.99	1.97	1	1.01		20

Laboratory Control Sample (LCS)

(LCS) R3930329-2 05/29/23 18:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	11.9	99.6	75.2-120	

L1619857-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1619857-06 05/29/23 18:06 • (MS) R3930329-3 05/29/23 18:08 • (MSD) R3930329-4 05/29/23 18:09

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Kjeldahl Nitrogen, TKN	5.00	0.903	6.02	6.00	102	102	1	90.0-110			0.333	20

L1619932-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1619932-01 05/29/23 18:29 • (MS) R3930329-7 05/29/23 18:32

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Kjeldahl Nitrogen, TKN	5.00	1.99	6.91	98.4	1	90.0-110	

Method Blank (MB)

(MB) R3929952-1 05/26/23 18:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0500	0.100

L1619857-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1619857-12 05/26/23 19:22 • (DUP) R3929952-6 05/26/23 19:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.700	0.697	1	0.429		20

L1619842-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619842-01 05/26/23 19:26 • (DUP) R3929952-8 05/26/23 19:27

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3929952-2 05/26/23 18:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.49	99.6	90.0-110	

L1619857-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1619857-12 05/26/23 19:22 • (MS) R3929952-7 05/26/23 19:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.700	3.03	93.2	1	90.0-110	

L1619842-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1619842-01 05/26/23 19:26 • (MS) R3929952-9 05/26/23 19:32 • (MSD) R3929952-10 05/26/23 19:33

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	2.50	U	2.31	2.32	92.4	92.8	1	90.0-110			0.432	20

Method Blank (MB)

(MB) R3929966-1 05/26/23 20:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0500	0.100

L1619957-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619957-01 05/26/23 20:55 • (DUP) R3929966-6 05/26/23 20:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	1.64	1.61	1	1.85		20

L1619857-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1619857-13 05/26/23 20:59 • (DUP) R3929966-8 05/26/23 21:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.752	0.747	1	0.667		20

Laboratory Control Sample (LCS)

(LCS) R3929966-2 05/26/23 20:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.46	98.4	90.0-110	

L1619957-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1619957-01 05/26/23 20:55 • (MS) R3929966-7 05/26/23 20:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	1.64	3.91	90.8	1	90.0-110	

L1619857-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1619857-13 05/26/23 20:59 • (MS) R3929966-9 05/26/23 21:06 • (MSD) R3929966-10 05/26/23 21:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	2.50	0.752	2.83	3.04	83.1	91.5	1	90.0-110	J6		7.16	20

Method Blank (MB)

(MB) R3930311-1 05/29/23 14:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	U		0.0350	0.100

L1619857-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619857-01 05/29/23 15:27 • (DUP) R3930311-7 05/29/23 15:29

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.206	0.194	1	6.00		20

L1619628-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619628-01 05/29/23 15:31 • (DUP) R3930311-8 05/29/23 15:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	5.06	5.30	2	4.63		20

Laboratory Control Sample (LCS)

(LCS) R3930311-2 05/29/23 14:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.19	93.3	83.2-116	

L1619628-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1619628-01 05/29/23 14:57 • (MS) R3930311-5 05/29/23 14:59 • (MSD) R3930311-6 05/29/23 15:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphorus,Total	2.50	5.28	7.12	7.08	73.6	72.0	1	90.0-110	E J6	E J6	0.563	20

Method Blank (MB)

(MB) R3930331-1 05/29/23 18:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	U		0.0350	0.100

L1619857-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1619857-08 05/29/23 18:40 • (DUP) R3930331-5 05/29/23 18:41

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0372	0.0394	1	5.74	J	20

L1619932-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619932-01 05/29/23 19:04 • (DUP) R3930331-6 05/29/23 18:58

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	U	0.0437	1	200	J P1	20

Laboratory Control Sample (LCS)

(LCS) R3930331-2 05/29/23 18:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.15	92.1	83.2-116	

L1619857-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1619857-06 05/29/23 18:32 • (MS) R3930331-3 05/29/23 18:34 • (MSD) R3930331-4 05/29/23 18:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphorus,Total	2.50	0.0655	2.44	2.39	95.0	93.0	1	90.0-110			2.07	20

QUALITY CONTROL SUMMARY

L1619857-01,02,03,04,05,06,07,08,09,10,11,12,13

Method Blank (MB)

(MB) R3929380-1 05/25/23 14:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphate,Ortho	U		0.0140	0.0300

L1619857-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1619857-03 05/25/23 14:07 • (DUP) R3929380-5 05/25/23 14:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	U	U	1	0.000		20

L1619857-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1619857-11 05/25/23 14:12 • (DUP) R3929380-6 05/25/23 14:12

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.127	0.129	1	1.56		20

Laboratory Control Sample (LCS)

(LCS) R3929380-2 05/25/23 14:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.246	101	85.0-115	

L1619857-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1619857-01 05/25/23 14:05 • (MS) R3929380-3 05/25/23 14:06 • (MSD) R3929380-4 05/25/23 14:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphate,Ortho	0.500	0.143	0.680	0.649	107	101	1	80.0-120			4.67	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
S&ME - Huntsville
360 D Quality Circle NW
Suite 450
Huntsville. AL 35806

Billing Information:
Accounts Payable
360 D Quality Circle NW
Suite 450
Huntsville, AL 35806

Pres Chk

Report to:
Ms. Sarah Yeldell

Email To: syeidell@smeinc.com

Project Description:
Gadsden-Etowah MS4

City/State Collected: Gadsde, AL

Please Circle: PT MT CT ET

Phone: 256-837-8882

Client Project # 22820261

Lab Project # QOREHAL-22820261

Collected by (print): Patrick Cronin

Site/Facility ID # LAND

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # U619857
J181

Acctnum: QOREHAL
Template: T181690
Prelogin: P989876
PM: 034 - Craig Cothron
PB: DK 3/29/23
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PORTHO 100ml Amb NoPres	PT 250mlHDPE-H2SO4	TKN / NO2NO3 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres							Remarks	Sample # (lab only)
SME 7	Grab	WW	2'	5/24/23	1038	4	X	X	X	X								-01
CO 15		WW	2'		1100	4	X	X	X	X								-02
SME 9		WW	2'		1125	4	X	X	X	X								-03
SME 10		WW	2'		1155	4	X	X	X	X								-04
GD 6		WW	2'		1155	4	X	X	X	X								-05
SS 13		WW	2'		1220	4	X	X	X	X								-06
SS 14		WW	2'		1225	4	X	X	X	X								-07
GD 12		WW	2'		1295	4	X	X	X	X								-08
RC 2		WW	2'		1300	4	X	X	X	X								-09
GD 8		WW	2'		1320	4	X	X	X	X								-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 6357 9923

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: X Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	05-24-23	14:00	Fed EX	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: NSA7 2.4 +0 = 2.4
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/25/23 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Company Name/Address:
S&ME - Huntsville
360 D Quality Circle NW
Suite 450
Huntsville. AL 35806

Billing Information:
Accounts Payable
360 D Quality Circle NW
Suite 450
Huntsville, AL 35806

Report to:
Ms. Sarah Yeldell

Email To: syeldell@smeinc.com

Project Description:
Gadsden-Etowah MS4

City/State Collected: Gadsden, AL

Please Circle: PT MT CT ET

Phone: 256-837-8882

Client Project # 22820261

Lab Project # QOREHAL-22820261

Collected by (print): Patrick Crum

Site/Facility ID # LAND

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1619857

Table #

Acctnum: QOREHAL
Template: T181690
Prelogin: P989876
PM: 034 - Craig Cothron
PB: DK 3/29/23
Shipped Via: FedEx Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PORTHO 100ml Amb NoPres	PT 250mlHDPE-H2SO4	TKN / NO2NO3 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres							Remarks	Sample # (lab only)
AT 5	Grab	WW	2'	5/24/23	1320	4	X	X	X	X								-11
SME 12	↓	WW	2'	↓	1345	4	X	X	X	X								-12
SME 13	↓	WW	2'	↓	1400	4	X	X	X	X								-13
		WW				4	X	X	X	X								

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: X Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	05-24-23	14:00	FedEx	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: / If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/25/23 Time: 0900 / Hold: / Condition: NCF / OK

4619857

Tracking Numbers	Temperature
6357 9925	2.4
6357 9925 6699	4.3

ANALYTICAL REPORT

June 02, 2023

S&ME - Huntsville

Sample Delivery Group:	L1620368
Samples Received:	05/26/2023
Project Number:	22820261
Description:	Gadsden-Etowah MS4
Site:	BOAT
Report To:	Ms. Sarah Yeldell 360 D Quality Circle NW Suite 450 Huntsville, AL 35806

Entire Report Reviewed By:

Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 6

Sr: Sample Results 7

- HB 3 L1620368-01 7
- SME 4 L1620368-02 8
- GD 5 L1620368-03 9
- SME 3 L1620368-04 10
- GD 7 L1620368-05 11
- GD 9 L1620368-06 12
- SME 1 L1620368-07 13
- SS 5 L1620368-08 14
- SME 5 L1620368-09 15
- SME 6 L1620368-10 16
- RC 14 L1620368-11 17
- SME 11 L1620368-12 18

Qc: Quality Control Summary 19

- Gravimetric Analysis by Method 2540 D-2011 19
- Wet Chemistry by Method 351.2 21
- Wet Chemistry by Method 353.2 25
- Wet Chemistry by Method 365.4 27
- Wet Chemistry by Method 4500P E-2011 29

Gl: Glossary of Terms 30

Al: Accreditations & Locations 31

Sc: Sample Chain of Custody 32

HB 3 L1620368-01 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 10:40 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068684	1	05/30/23 21:02	05/30/23 21:06	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:03	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:15	05/27/23 19:15	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 21:59	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:15	05/26/23 13:15	EPW	Mt. Juliet, TN

SME 4 L1620368-02 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 10:45 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2068684	1	05/30/23 21:02	05/30/23 21:06	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:05	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:16	05/27/23 19:16	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:00	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:16	05/26/23 13:16	EPW	Mt. Juliet, TN

GD 5 L1620368-03 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 11:05 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:06	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:18	05/27/23 19:18	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:01	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:16	05/26/23 13:16	EPW	Mt. Juliet, TN

SME 3 L1620368-04 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 11:15 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:07	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:19	05/27/23 19:19	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:05	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:17	05/26/23 13:17	EPW	Mt. Juliet, TN

GD 7 L1620368-05 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 11:25 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:08	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:24	05/27/23 19:24	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:06	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:17	05/26/23 13:17	EPW	Mt. Juliet, TN

GD 9 L1620368-06 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 11:35 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:10	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:25	05/27/23 19:25	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:07	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:18	05/26/23 13:18	EPW	Mt. Juliet, TN

SME 1 L1620368-07 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 11:40 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:11	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:27	05/27/23 19:27	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:09	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:18	05/26/23 13:18	EPW	Mt. Juliet, TN

SS 5 L1620368-08 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 12:25 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:14	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:28	05/27/23 19:28	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:11	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:19	05/26/23 13:19	EPW	Mt. Juliet, TN

SME 5 L1620368-09 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 12:35 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067313	1	05/30/23 16:17	06/01/23 22:20	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066756	1	05/26/23 23:41	05/26/23 23:41	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070289	1	05/30/23 16:17	06/01/23 22:14	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:19	05/26/23 13:19	EPW	Mt. Juliet, TN

SME 6 L1620368-10 WW

Collected by: Nathanael Wade | Collected date/time: 05/25/23 13:25 | Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067314	1	05/30/23 16:19	06/01/23 17:09	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2066756	1	05/26/23 23:42	05/26/23 23:42	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070227	1	05/30/23 16:19	06/01/23 17:19	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:20	05/26/23 13:20	EPW	Mt. Juliet, TN

RC 14 L1620368-11 WW

Collected by: Nathanael Wade
Collected date/time: 05/25/23 13:05
Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067314	1	05/30/23 16:19	06/01/23 17:14	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:29	05/27/23 19:29	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070227	1	05/30/23 16:19	06/01/23 17:24	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:20	05/26/23 13:20	EPW	Mt. Juliet, TN

SME 11 L1620368-12 WW

Collected by: Nathanael Wade
Collected date/time: 05/25/23 10:50
Received date/time: 05/26/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2069067	1	05/31/23 10:26	05/31/23 11:54	AS	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2067314	1	05/30/23 16:19	06/01/23 17:18	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2067127	1	05/27/23 19:31	05/27/23 19:31	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2070227	1	05/30/23 16:19	06/01/23 17:26	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2067188	1	05/26/23 13:21	05/26/23 13:21	EPW	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	21.7		3.85	1	05/30/2023 21:06	WG2068684

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.502		0.140	0.250	1	06/01/2023 22:03	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.0574	J	0.0500	0.100	1	05/27/2023 19:15	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0588	J	0.0350	0.100	1	06/01/2023 21:59	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/26/2023 13:15	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	6.71		2.95	1	05/30/2023 21:06	WG2068684

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.513		0.140	0.250	1	06/01/2023 22:05	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/27/2023 19:16	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	U		0.0350	0.100	1	06/01/2023 22:00	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/26/2023 13:16	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	10.0		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.528		0.140	0.250	1	06/01/2023 22:06	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.0534	J	0.0500	0.100	1	05/27/2023 19:18	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0462	J	0.0350	0.100	1	06/01/2023 22:01	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0250	J	0.0140	0.0300	1	05/26/2023 13:16	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	11.0		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.515		0.140	0.250	1	06/01/2023 22:07	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/27/2023 19:19	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0569	J	0.0350	0.100	1	06/01/2023 22:05	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/26/2023 13:17	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	9.60		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.447		0.140	0.250	1	06/01/2023 22:08	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.0646	J	0.0500	0.100	1	05/27/2023 19:24	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0386	J	0.0350	0.100	1	06/01/2023 22:06	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0270	J	0.0140	0.0300	1	05/26/2023 13:17	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	12.4		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.492		0.140	0.250	1	06/01/2023 22:10	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/27/2023 19:25	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0537	J	0.0350	0.100	1	06/01/2023 22:07	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0160	J	0.0140	0.0300	1	05/26/2023 13:18	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	10.6		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.694		0.140	0.250	1	06/01/2023 22:11	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/27/2023 19:27	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0961	J	0.0350	0.100	1	06/01/2023 22:09	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0430		0.0140	0.0300	1	05/26/2023 13:18	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	9.80		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.638	J5	0.140	0.250	1	06/01/2023 22:14	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/27/2023 19:28	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0486	J	0.0350	0.100	1	06/01/2023 22:11	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.0670		0.0140	0.0300	1	05/26/2023 13:19	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	11.4		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.564	J5	0.140	0.250	1	06/01/2023 22:20	WG2067313

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.155		0.0500	0.100	1	05/26/2023 23:41	WG2066756

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0593	J	0.0350	0.100	1	06/01/2023 22:14	WG2070289

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/26/2023 13:19	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	10.0		10.0	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.580	J5	0.140	0.250	1	06/01/2023 17:09	WG2067314

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.0655	J	0.0500	0.100	1	05/26/2023 23:42	WG2066756

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0424	J P1	0.0350	0.100	1	06/01/2023 17:19	WG2070227

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/26/2023 13:20	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	17.2		10.0	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.945	J5 P1	0.140	0.250	1	06/01/2023 17:14	WG2067314

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/27/2023 19:29	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0850	J	0.0350	0.100	1	06/01/2023 17:24	WG2070227

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/26/2023 13:20	WG2067188

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	6.40		5.00	1	05/31/2023 11:54	WG2069067

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	0.464		0.140	0.250	1	06/01/2023 17:18	WG2067314

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/27/2023 19:31	WG2067127

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0536	J	0.0350	0.100	1	06/01/2023 17:26	WG2070227

Wet Chemistry by Method 4500P E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphate,Ortho	U		0.0140	0.0300	1	05/26/2023 13:21	WG2067188

QUALITY CONTROL SUMMARY

L1620368-01,02

Method Blank (MB)

(MB) R3931150-1 05/30/23 21:06

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Suspended Solids	U		2.50	2.50

L1619625-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1619625-01 05/30/23 21:06 • (DUP) R3931150-3 05/30/23 21:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	59.3	31.3	1	61.8	P1	5

L1620019-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1620019-02 05/30/23 21:06 • (DUP) R3931150-4 05/30/23 21:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	19.7	18.0	1	9.07	P1	5

Laboratory Control Sample (LCS)

(LCS) R3931150-2 05/30/23 21:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	724	93.7	85.7-114	

QUALITY CONTROL SUMMARY

L1620368-03,04,05,06,07,08,09,10,11,12

Method Blank (MB)

(MB) R3931440-1 05/31/23 11:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Suspended Solids	U		2.50	2.50

L1620368-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-10 05/31/23 11:54 • (DUP) R3931440-3 05/31/23 11:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	10.0	10.0	1	0.000		5

L1620368-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-11 05/31/23 11:54 • (DUP) R3931440-4 05/31/23 11:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	17.2	18.0	1	4.55		5

Laboratory Control Sample (LCS)

(LCS) R3931440-2 05/31/23 11:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	708	91.6	85.7-114	

Method Blank (MB)

(MB) R3931929-1 06/01/23 21:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Kjeldahl Nitrogen, TKN	U		0.140	0.250

L1620368-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-07 06/01/23 22:11 • (DUP) R3931929-3 06/01/23 22:12

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.694	0.637	1	8.56		20

L1620368-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-08 06/01/23 22:14 • (DUP) R3931929-4 06/01/23 22:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.638	0.593	1	7.31		20

Laboratory Control Sample (LCS)

(LCS) R3931929-2 06/01/23 21:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	13.6	114	75.2-120	

L1620368-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1620368-08 06/01/23 22:14 • (MS) R3931929-5 06/01/23 22:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Kjeldahl Nitrogen, TKN	5.00	0.638	6.74	122	1	90.0-110	J5

Sample Narrative:

MS: Matrix spike failure due to matrix.

L1620368-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620368-09 06/01/23 22:20 • (MS) R3931929-6 06/01/23 22:21 • (MSD) R3931929-7 06/01/23 22:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Kjeldahl Nitrogen, TKN	5.00	0.564	6.66	6.41	122	117	1	90.0-110	J5	J5	3.83	20

Sample Narrative:

MS: Matrix spike failure due to matrix.

MSD: Matrix spike failure due to matrix.

Method Blank (MB)

(MB) R3931905-1 06/01/23 17:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Kjeldahl Nitrogen, TKN	U		0.140	0.250

L1620368-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-10 06/01/23 17:09 • (DUP) R3931905-3 06/01/23 17:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.580	0.639	1	9.68		20

L1620368-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-11 06/01/23 17:14 • (DUP) R3931905-6 06/01/23 17:16

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.945	0.739	1	24.5	P1	20

Laboratory Control Sample (LCS)

(LCS) R3931905-2 06/01/23 17:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	13.4	112	75.2-120	

L1620368-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620368-10 06/01/23 17:09 • (MS) R3931905-4 06/01/23 17:12 • (MSD) R3931905-5 06/01/23 17:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Kjeldahl Nitrogen, TKN	5.00	0.580	6.45	6.11	117	111	1	90.0-110	J5	J5	5.41	20

Sample Narrative:

MS: Matrix spike failure due to matrix.

MSD: Matrix spike failure due to matrix.

L1620368-11 Original Sample (OS) • Matrix Spike (MS)

(OS) L1620368-11 06/01/23 17:14 • (MS) R3931905-7 06/01/23 17:17

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Kjeldahl Nitrogen, TKN	5.00	0.945	6.60	113	1	90.0-110	J5

Sample Narrative:

MS: Matrix spike failure due to matrix.

QUALITY CONTROL SUMMARY

L1620368-09,10

Method Blank (MB)

(MB) R3929969-1 05/26/23 23:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0500	0.100

L1618810-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1618810-02 05/26/23 23:04 • (DUP) R3929969-3 05/26/23 23:05

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	U	U	1	0.000		20

L1619971-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1619971-02 05/26/23 23:23 • (DUP) R3929969-6 05/26/23 23:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.170	0.167	1	1.78		20

Laboratory Control Sample (LCS)

(LCS) R3929969-2 05/26/23 23:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.54	102	90.0-110	

L1618810-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1618810-02 05/26/23 23:04 • (MS) R3929969-4 05/26/23 23:06 • (MSD) R3929969-5 05/26/23 23:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	2.50	U	2.39	2.37	95.6	94.8	1	90.0-110			0.840	20

L1619971-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1619971-02 05/26/23 23:23 • (MS) R3929969-7 05/26/23 23:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.170	2.50	93.2	1	90.0-110	

Method Blank (MB)

(MB) R3930110-1 05/27/23 18:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0500	0.100

L1620076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1620076-01 05/27/23 18:09 • (DUP) R3930110-3 05/27/23 18:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	2.16	2.11	1	2.34		20

L1620368-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-12 05/27/23 19:31 • (DUP) R3930110-7 05/27/23 19:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3930110-2 05/27/23 18:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.68	107	90.0-110	

L1620076-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620076-01 05/27/23 18:09 • (MS) R3930110-4 05/27/23 18:12 • (MSD) R3930110-6 05/27/23 19:08

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	2.50	2.16	4.65	4.42	99.6	90.4	1	90.0-110			5.07	20

L1620368-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1620368-12 05/27/23 19:31 • (MS) R3930110-8 05/27/23 19:33

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	U	2.64	106	1	90.0-110	

Method Blank (MB)

(MB) R3931897-1 06/01/23 17:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	U		0.0350	0.100

L1620368-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-10 06/01/23 17:19 • (DUP) R3931897-3 06/01/23 17:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0424	0.0758	1	56.5	J P1	20

L1620368-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-11 06/01/23 17:24 • (DUP) R3931897-6 06/01/23 17:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0850	0.0699	1	19.5	J	20

Laboratory Control Sample (LCS)

(LCS) R3931897-2 06/01/23 17:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.37	98.5	83.2-116	

L1620368-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620368-10 06/01/23 17:19 • (MS) R3931897-4 06/01/23 17:21 • (MSD) R3931897-5 06/01/23 17:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphorus,Total	2.50	0.0424	2.54	2.50	99.9	98.3	1	90.0-110			1.59	20

Method Blank (MB)

(MB) R3931934-1 06/01/23 21:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	U		0.0350	0.100

L1620368-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-07 06/01/23 22:09 • (DUP) R3931934-3 06/01/23 22:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0961	0.0927	1	3.60	J	20

L1620368-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-08 06/01/23 22:11 • (DUP) R3931934-4 06/01/23 22:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0486	0.0483	1	0.619	J	20

Laboratory Control Sample (LCS)

(LCS) R3931934-2 06/01/23 21:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.38	98.8	83.2-116	

L1620368-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620368-09 06/01/23 22:14 • (MS) R3931934-5 06/01/23 22:15 • (MSD) R3931934-6 06/01/23 22:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphorus,Total	2.50	0.0593	2.56	2.49	100	97.2	1	90.0-110			2.77	20

QUALITY CONTROL SUMMARY

L1620368-01,02,03,04,05,06,07,08,09,10,11,12

Method Blank (MB)

(MB) R3929783-1 05/26/23 12:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphate,Ortho	U		0.0140	0.0300

L1620311-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1620311-01 05/26/23 13:13 • (DUP) R3929783-3 05/26/23 13:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.126	0.125	1	0.797		20

L1620368-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1620368-12 05/26/23 13:21 • (DUP) R3929783-6 05/26/23 13:21

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3929783-2 05/26/23 13:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.253	103	85.0-115	

L1620316-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620316-01 05/26/23 13:14 • (MS) R3929783-4 05/26/23 13:14 • (MSD) R3929783-5 05/26/23 13:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphate,Ortho	0.500	0.0340	0.983	0.988	190	191	1	80.0-120	J5	J5	0.507	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
S&ME - Huntsville
360 D Quality Circle NW
Suite 450
Huntsville. AL 35806

Billing Information:
Accounts Payable
360 D Quality Circle NW
Suite 450
Huntsville, AL 35806

Report to:
Ms. Sarah Yeldell

Email To: syeldell@smeinc.com

Project Description: Gadsden-Etowah MS4
City/State Collected: Gadsden, AL
Please Circle: PT MT CT ET

Phone: 256-837-8882
Client Project # 22820261
Lab Project # QOREHAL-22820261

Collected by (print): Nathanael Hale
Site/Facility ID # BOAT
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓
Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Date Results Needed
Quote #

Analysis / Container / Preservative

Chain of Custody Page 1

Pace — PEOPLE ADVANCING SCIENCE
MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # U620368
Table #
Acctnum: QOREHAL
Template: T203454
Prelogin: P989880
PM: 034 - Craig Cothron
PB: BF 3/28/23
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PORTHO 100ml Amb NoPres	PT 250mlHDPE-H2SO4	TKN / NO2NO3 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres						Remarks	Sample # (lab only)
								L2	L2								
HB 3	G	WW	5'	5-25	1040	4	X	X	X	X							01
SME 4		WW			1045	4	X	X	X	X							02
GD 5		WW			1105	4	X	X	X	X							03
SME 3		WW			1115	4	X	X	X	X							04
GD 7		WW			1125	4	X	X	X	X							05
GD 9		WW			1135	4	X	X	X	X							06
SME 1		WW			1140	4	X	X	X	X							07
SS 5		WW			1225	4	X	X	X	X							08
SME 5		WW			1235	4	X	X	X	X							09
SME 6		WW			1325	4	X	X	X	X							10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____
Tracking # 6337 2240 5623

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No (circled: No) HCL / MeoH TBR
	5-25	1430		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: NSAT °C Bottles Received: 48
				4.6
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/26/23 Time: 0900
			(18)	

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Company Name/Address:
S&ME - Huntsville
360 D Quality Circle NW
Suite 450
Huntsville. AL 35806

Billing Information:
Accounts Payable
360 D Quality Circle NW
Suite 450
Huntsville, AL 35806

Report to:
Ms. Sarah Yeldell

Email To: syeldell@smeinc.com

Project Description:
Gadsden-Etowah MS4

City/State Collected:

Please Circle: PT MT CT ET

Phone: 256-837-8882

Client Project # 22820261

Lab Project # QOREHAL-22820261

Collected by (print):

Site/Facility ID # BOAT

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ____

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1620368

Table #

Acctnum: QOREHAL
Template: T203454
Prelogin: P989880
PM: 034 - Craig Cothron
PB: BF 3/28/23
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PORTHO 100ml Amb NoPres	PT 250mlHDPE-H2SO4	TKN / NO2NO3 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres						Remarks	Sample # (lab only)
RC 14	G	WW	5'	5-25	1305	4	X	X	X	X							11
SME 11	G	WW	1	1	1050	4	X	X	X	X							12
		WW				4	X	X	X	X							

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/26/23 Time: 0900	Hold: / Condition: NCF / OK

Tracking Numbers	Temperature
6337 2240 5612	4.6
5623	2.3