Rainbow City MS4

ANNUAL REPORT

APRIL 1, 2023 TO MARCH 31, 2024

Prepared by
S&ME, Inc.

May 31, 2024

City of Rainbow City
3700 Rainbow Drive
Rainbow City, Alabama 35906

Attention: Mayor Joe Taylor

Reference: **Annual Report: April 1, 2023 to March 31, 2024**
Rainbow City MS4
Rainbow City, Etowah County, Alabama
S&ME Project No. 23820129E
NPDES Permit No. ALR040056

Dear Mr. Taylor:

S&ME has prepared the attached Annual Report for the Rainbow City Phase II Small Municipal Separate Storm Sewer System in accordance with S&ME Proposal No. 23820129E, dated August 24, 2023 and authorized on August 28, 2023. The Annual Report covers the April 1, 2023 to March 31, 2024 reporting period.

S&ME appreciates the opportunity to provide our services to Rainbow City. Should you have questions concerning this report, or if additional information is required, please contact the undersigned.

Sincerely,

S&ME, Inc.

Sarah L. Yeldell, P.E.
Project Manager

Deborah J. Jones, P.E.
Senior Engineer

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1.0 Introduction

S&ME, Inc. has prepared this Annual Report for the Rainbow City, Alabama Urbanized Area Phase II Small Municipal Separate Storm Sewer System in accordance with S&ME 23820129E, dated August 24, 2023 and authorized on August 28, 2023.

The Annual Report is required by Part VI of the Alabama Department of Environmental Management (ADEM) National Pollutant Discharge Elimination System (NPDES) General Permit ALR040000 for discharges from regulated small municipal separate storm sewer systems (MS4).

1.1 Gadsden, Alabama Urbanized Area

The Storm Water Phase II Final Rule issued by the United States Environmental Protection Agency (USEPA) in 1999 required 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 the *Gadsden, Alabama Urbanized Area* to include the City of Attalla, the City of Gadsden, the City of Glencoe, the City of Hokes Bluff, City of Rainbow City, the City of Southside, and portions of unincorporated Etowah County.

In March 2022, the Bureau of the Census discontinued the practice of defining "urbanized areas." On June 7, 2023, USEPA issued a final rule clarifying the designation criteria for small MS4s. The rule replaced the term "urbanized area" in the Phase II regulations with the phrase "urban areas with a population of at least 50,000" to assist in identifying new MS4s. In December 2023, revised maps showing the 2020 urban area boundaries were released; however, ADEM has not provided guidance on the application of the 2020 maps in determining boundaries of existing MS4s. As a result, revised MS4 boundaries based on the 2020 Census were not available during the April 1, 2023 to March 31, 2024 reporting period.

A map outlining the approximate boundary of the 2010 *Gadsden, Alabama Urbanized Area* is included in **Appendix A** as **Figure 1**.

1.2 Permit History

The City of Attalla, the City of Gadsden, the City of Glencoe, the City of Hokes Bluff, City of Rainbow City, the City of Southside, and Etowah County initially applied for and received a NPDES MS4 Phase II General Permit from ADEM in 2003, with the seven entities as co-permittees under authorization number ALR040009. The five-year permit expired on March 9, 2008. A Notice of Intent for renewal of the permit was submitted 180 days prior to expiration and permit coverage was administratively continued until the re-issuance of the MS4 Phase II General Permit with an effective date of February 1, 2011.

The 2011 permit expired on February 1, 2016. A Notice of Intent for renewal of the permit was submitted by each entity 180 days prior to expiration; therefore, the permit coverage was extended until the re-issuance of the MS4 Phase II General Permit in September. To assist in compliance tracking, the Gadsden-Etowah MS4 entities were each issued a separate permit, although the entities agreed to continue under a joint SWMPP and monitoring

plan. The Ranbow City MS4 was authorized to discharge under authorization number ALR040056 with an effective date of October 1, 2016.

The 2016 permit expired on September 30, 2021. A Notice of Intent for renewal of the permit was submitted 180 days prior to expiration, and the MS4 Phase II General Permit was re-issued with an effective date of October 1, 2021. The current permit will expire on September 30, 2026. Under the new permitting system, Rainbow City was required to prepare a separate SWMPP detailing the individual actions taken by the City to comply with the 2021 permit, as well as the joint activities shared with the remaining Gadsden-Etowah MS4 entities.

A copy of the NPDES General Permit is included in the 2022 SWMPP.

1.3 Storm Sewer System

A Municipal Separate Storm Sewer System (MS4) is defined by 40 CFR Part 122.26(b)(8) to be a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is:

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

(ii) Designed or used for collecting or conveying storm water;

(iii) Not a combined sewer; and,

(iv) Not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

1.4 Rainbow City MS4 Area

The Rainbow City Municipal Separate Storm Sewer System (Rainbow City MS4) is defined as the area within both the city limits and the urbanized area boundary. As defined by the 2010 Census, the *Gadsden, Alabama Urbanized Area* encompasses approximately 74.8 square miles. The Rainbow City MS4 comprises approximately 7.6 square miles (10.2%) of the 2010 *Gadsden, Alabama Urbanized Area*. Approximately 29.7% of the city is located within the MS4 boundary. A map depicting the Rainbow City urbanized area and city limits is located in **Appendix A** as **Figure 2**.

1.4.1 Hydrologic Units in the Urbanized Area

Neely Henry Lake (Coosa River) is the primary receiving water for the Rainbow City MS4. Hydrologic Hierarchy, Watersheds, and Subwatersheds are provided in the tables below.

Table 1-1 Hydrologic Hierarchy

Type	Code	Name
REGION	03	South Atlantic-Gulf
SUBREGION	03-15	Alabama River Basin
BASIN	0315-01	Coosa-Tallapoosa: Above the confluence of and including the Coosa and Tallapoosa River Basins
SUBBASIN	031501-06	Middle Coosa

Table 1-2 Watersheds in the MS4 Area

Watershed	10 Digit HUC
Big Wills Creek	03150106-01
Big Canoe Creek-Coosa River	03150106-03

Table 1-3 Subwatersheds in the Rainbow City MS4 Area

Subwatershed	12 Digit HUC	Total Area (Acres)	Area within Rainbow City MS4 (Acres)
Horton Creek	03150106-01-08	16,902	3,225
Lower Big Canoe Creek	03150106-03-06	33,307	913
Coosa River-H. Neely Henry Lake	03150106-03-09	46,439	726

A map showing the HUC12 subwatersheds in relation to the Rainbow City MS4 boundary is included in the 2022 SWMPP.

1.5 Responsible Party

The **Building Department** is responsible for the coordination and implementation of the Storm Water Management Program Plan. Coordination between City departments is established in each section of the SWMPP.

The **Storm Water Steering** Committee is responsible for the implementation of the monitoring plan.

1.6 Annual Report Components

Part IV of the NPDES General Permit requires that the Rainbow City MS4 prepare and submit annual reports to the ADEM each year by May 31. The Annual Report must cover the year prior to the submittal date (April 1 through March 31) and is required to include the following:

1. Contacts and responsible parties who had input to and are responsible for the preparation of the annual report

2. Overall evaluation of the SWMPP-developments and progress on the following:
    a. Major accomplishments
    b. Overall program strengths/weaknesses
    c. Future direction of the program
    d. Overall determination of the effectiveness of the SWMPP considering water quality/watershed improvements
    e. Measurable goals that were not performed and reasons why the goals were not accomplished
    f. Evaluation of the monitoring data

3. A narrative report of all minimum storm water control measures referenced in the permit to include the following:
    a. Minimum control measures completed and in progress
    b. Assessment of the controls
    c. Discussion of proposed BMP revisions or any identified measurable goals that apply to the minimum storm water control measures

4. Summary table of the storm water controls that are planned/scheduled for the next reporting cycle

5. Results of information collected and analyzed during the reporting period including monitoring data used to assess the success of the program at reducing the discharge of pollutants to the Maximum Extent Practical (MEP)

6. Notice of reliance on another entity to satisfy some of your permit obligations

7. Results of the evaluation to determine whether discharges from any part of the MS4 contributes directly or indirectly to a waterbody that is included on the latest 303(d) list or for which a TMDL has been established or approved by EPA

8. All monitoring results collected during the reporting period

This Annual Report covers activities performed during the April 1, 2023 to March 31, 2024 reporting period under the SWMPP dated April 2022.

2.0 Contacts List

Reference Part VI.B.1

Part VI.B.1 of the NPDES Permit requires that the City of Rainbow City provide a list of contacts and responsible parties involved in the preparation of the Annual Report. The following personnel were directly responsible for the preparation of the 2023-2024 Annual Report:

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Questions concerning the 2023-2024 Annual Report should be directed to the **Building Department**.

3.0 Evaluation of Water Quality Concerns

Reference Part VI.B.7

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 (40CFR130) require states to identify waterbodies not in compliance with the water quality standards applicable to their designated use classifications. The identified waters are prioritized based on severity of the pollution. 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. The TMDL process establishes the allowable loading of pollutants, or other quantifiable parameters for a waterbody, based on the relationship between pollution sources and in-stream water quality conditions.

Maps showing the impaired waterbodies and watersheds in relation to the Rainbow City MS4 are provided in **Appendix A** as **Figures 3 and 4**.

3.1.1 Impaired Waterbodies Within the MS4

Two impaired waterbodies are located within the Rainbow City MS4 boundary.

Table 3-1 Impaired Waterbodies within the MS4

Waterbody	Impaired Segment	Type	Causes	Use
Big Wills Creek Embayment (Neely Henry Lake)	AL03150106-0108-111	303(d)	Nutrients	F&W
Coosa River (Neely Henry Lake)	AL03150106-0309-102	TMDL	Nutrients pH Organic Enrichment (CBOD, NBOD)	F&W

3.1.2 Impaired Watersheds Intersecting the MS4

In addition to the impaired waterbodies, the Rainbow City MS4 encompasses portions of watersheds for the following impaired waterbodies:

Table 3-2 Portions of Impaired Watersheds within the MS4

Watershed	Impaired Segment	Type	Causes	Use
Big Wills Creek Embayment (Neely Henry Lake)	AL03150106-0108-111	303(d)	Nutrients	F&W

Watershed	Impaired Segment	Type	Causes	Use
Coosa River (Neely Henry Lake)	AL03150106-0309-101	TMDL	Nutrients pH Organic Enrichment (CBOD, NBOD)	S F&W
Coosa River (Neely Henry Lake)	AL03150106-0309-102	TMDL	Nutrients pH Organic Enrichment (CBOD, NBOD)	F&W
Big Canoe Creek Embayment (Neely Henry Lake)	AL03150106-0306-111	TMDL	Nutrients pH Organic Enrichment (CBOD, NBOD)	S F&W

3.1.3 Neely Henry Lake TMDL

In 2008, the EPA approved TMDLs for Neely Henry Lake related to Nutrients (Total Phosphorous), pH, and Organic Enrichment/Dissolved Oxygen. The Rainbow City MS4 directly and indirectly discharges to Neely Henry Lake; therefore, **the Rainbow City MS4 is required to achieve a 30% reduction in Total Phosphorus discharge loading**.

Sources of nutrient and organic enrichment from non-point sources within the Coosa River watershed include:

- Runoff from pastures
- Runoff from animal operations
- Direct discharge to streams due to cattle
- Improper land application of animal waste
- Failing septic systems
- Urban runoff

Point source contributors of storm water pollution within the Coosa River watershed include:

- Discharge from wastewater treatment plants
- Discharge from industrial operations

Part IV.D of the NPDES General Permit requires that the City implement Best Management Practices (BMPs) and control measures specifically targeted to achieve the waste load allocations prescribed in the TMDL. The City must also implement a monitoring program to document that the waste load allocations prescribed in the TMDL are being achieved.

4.0 Overall Program Evaluation

Reference Part VI.B.2

4.1 Major Accomplishments

During the 2023-2024 reporting period, the City completed 65 out of 78 planned strategies, as well as one additional strategy. The number of completed activities (66) demonstrates the City's commitment to implement the SWMPP and Phase II Permit.

1. Performed construction inspections and addressed deficient sites

The City performed monthly inspections at active construction sites. Site with noted deficiencies were reinspected. When necessary, the site operators were contacted via email to explain noted deficiencies, clarify BMP requirements, and compel compliance. The City conducted 123 inspections for seven active construction sites during the 2023-2024 reporting period.

2. Maintained the recycling program and supported the Southside recycling program

The City maintained two drop-off recycling locations and distributed recycling bins to local businesses during the reporting period. Approximately 254 tons of recyclable material was collected, helping to reduce the amount of litter dumped within the MS4.

The City also entered into an agreement with the City of Southside to support the Southside recycling program by removing and recycling cardboard collected in the new Southside recycling trailers.

3. Performed outfall inspections and addressed a suspect illicit discharge

The City inspected 76 outfall locations during the reporting period. Two outfalls were missing and were removed from the outfall inventory. Dry weather flow was observed in two outfalls, and field screening for temperature, ammonia, and pH was conducted in accordance with the IDDE program. Field screening results did not indicate any suspected illicit discharges.

4.2 Overall Programs Strengths and Weaknesses

The City continues to evaluate the processes and procedures in which it accomplishes the objectives of the SWMPP. Their strengths and weaknesses remain very similar as in past years.

The main strength of the Rainbow City program is the completeness of the City's outfall inventory and MS4 map. By surveying system features and conducting a full stream walking program, the City was able to identify a large number of outfalls. The inventory has been maintained through annual dry weather inspections and observations. The inventory and map are crucial to understanding how runoff from the MS4 is conveyed to the waterbodies, and the types of outfalls identified may help target public education efforts regarding common pollutants.

The main weakness of the program is the small number of municipal staff that can be dedicated exclusively to the performance of the duties required by the Phase II Permit. This limits their availability to participate in activities throughout the City related to the SWMPP. The City currently employs a Building Official as the primary executive of the storm water program. The Building Official will assist with the storm water program responsibilities; the program duties are handled by two individuals. The City does not currently have the ability to expand the Department for the storm water program; therefore, this weakness is expected to remain for several years.

4.3 Future Direction of the Program

During the upcoming reporting period, the City will increase their efforts to promote educational materials and actively solicit public input by using resources such as social media to increase public engagement with the MS4 program.

4.4 Overall Effectiveness of the SWMPP

Rainbow City is proud of their efforts to achieve the objectives of the SWMPP. Based on this evaluation, the 2022 SWMPP appears to have been effective in meeting the objectives and requirements of the 2021 Phase II Permit.

4.5 Measurable Goals Not Performed

The City maintained the stormwater management webpage, but did not add any new educational material.

The City did not distribute storm water messaging or educational materials on social media.

Although the City provided the 2021-2022 Annual Report and 2022 SWMPP on the stormwater management webpage, the City did not actively seek public input on either document. Links to the documents were not posted on the City's social media accounts, and an announcement was not posted on the City's digital sign.

The City did not promote a Water Quality Awareness Week during the reporting period.

One City employee participated in the 2024 *Etowah Country Water Festival*, but the City did not promote the festival.

Although the City maintained a public complaint reporting form on the stormwater management webpage, they did not promote the form or reporting method on social media.

The City did not partner with Keep Etowah Beautiful, Clean Water Partnership of Alabama, and/or Alabama Power to support, sponsor, or promote anti-litter and cleanup events.

The City did not require the submittal of an as-built survey showing the final design specifications for the constructed storm water management facilities.

The City did not develop a written SOPs for municipal vehicle fueling.

The City did not develop a written SOP for materials storage.

5.0 Storm Water Monitoring Data Evaluation

Reference Part VI.B.5 and 8

5.1 Rationale Statement

As discussed in Section 3.0, the Rainbow City MS4 currently discharges to an impaired waterbody for which a TMDL has been approved. Part V.A of the 2021 MS4 Permit requires that the SWMPP include a monitoring plan to assess the effectiveness of the BMPs in achieving the waste load reductions/allocations outlined in the TMDL.

The intent of the 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. Where deviations are documented and/or expected, the collected monitoring data will be used to determine the extent and cause of the pollutant of concern.

The 2022 *Gadsden-Etowah Wet Weather Monitoring Plan* is included as Appendix C of the SWMPP dated April 1, 2022. The plan details monitoring parameters, monitoring locations, field documentation, and sampling procedures.

5.2 Monitoring Events

Beginning in January 2013, S&ME was retained by the Gadsden-Etowah Storm Water Steering Committee to collect the required quarterly surface water samples and provide analyses of the sampling events. On March 24, 2015, the cities of Attalla, Gadsden, Glencoe, Hokes Bluff, Rainbow City, and Southside and Etowah County entered into a Cooperative Agreement to jointly perform the quarterly monitoring.

Beginning in October 2023, the City of Gadsden elected to separate from the joint monitoring agreement and perform their own monitoring. Monitoring events conducted since October 2023 do not include monitoring points CO 15, GD 6, GD 7, GD 8, or GD 9.

Table 5-1 Monitoring Events to Date

MS4 Reporting Period	Monitoring Event	Date(s) Monitoring Conducted
April 1, 2012 – March 31, 2013	2013 Q1	March 12 & 13, 2013
April 1, 2013 – March 31, 2014	2013 Q2	May 8 & 20, 2013
	2013 Q3	September 23, 2013
	2013 Q4	December 10, 2013
	2014 Q1	February 6, 2014
April 1, 2014 – March 31, 2015	2014 Q2	June 26, 2014
	2014 Q3	September 30, 2014
	2014 Q4	November 19, 2014
	2015 Q1	March 23, 2015

MS4 Reporting Period	Monitoring Event	Date(s) Monitoring Conducted
April 1, 2015 – March 31, 2016	2015 Q2	April 22, 2015
	2015 Q3	September 30, 2015
	2015 Q4	November 19, 2015
	2016 Q1	March 15, 2016
April 1, 2016 – March 31, 2017	2016 Q2	June 29, 2016
	2016 Q3	August 9, 2016
	2016 Q4	December 7, 2016
	2017 Q1	March 2, 2017
April 1, 2017 – March 31, 2018	2017 Q2	June 21, 29, 30 and July 5, 2017
	2017 Q3	August 16-17, 2017
	2017 Q4	October 25-26, 2017
	2018 Q1	March 27-28, 2018
April 1, 2018 – March 31, 2019	2018 Q2	June 26 and 29, 2018
	2018 Q3	August 1-2, 2018
	2018 Q4	December 10-11, 2018
	2019 Q1	April 15 and 17, 2019
April 1, 2019 – March 31, 2020	2019 Q2	June 11-12, 2019
	2019 Q3	August 27-28, 2019
	2019 Q4	October 29-30, 2019
	2020 Q1	March 30-31, 2020
April 1, 2020 – March 31, 2021	2020 Q2	June 10, 2020
	2020 Q3	September 21, 2020
	2020 Q4	December 17, 2020
	2021 Q1	March 18, 2021
April 1, 2021 – March 31, 2022	2021 Q2	May 5, 2021
	2021 Q3	September 2, 2021
	2021 Q4	November 23, 2021
	2022 Q1	January 10-11, 2022
April 1, 2022 – March 31, 2023	2022 Q2	April 7, 2022
	2022 Q3	August 2-3, 2022
	2022 Q4	November 16, 2022
	2023 Q1	February 13-14, 2023

MS4 Reporting Period	Monitoring Event	Date(s) Monitoring Conducted
April 1, 2023 – March 31, 2024	2023 Q2	May 24-25, 2023
	2023 Q3	August 7, 2023
	2023 Q4	December 12, 2023
	2024 Q1	January 10, 2024

A monitoring report was issued to the members of the Steering Committee following each monitoring event. Copies of the reports for the monitoring events conducted during the April 1, 2023 to March 31, 2024 reporting period are provided in **Appendix C**.

5.3 Addition and Removal of Monitoring Points

No monitoring points were added or removed from the program during the April 1, 2023 to March 31, 2024 reporting period; however, in October 2023, the City of Gadsden began sampling monitoring points CO 15, GD 6, GD 7, GD 8, or GD 9 separately. The data collected by Gadsden during the fourth quarter of 2023 and the first quarter of 2024 has not been provided, and the five points were not included in the statistical analysis.

5.4 Statistical Analysis

A total of 45 quarterly monitoring events have been conducted since the Monitoring Program was first implemented in March of 2013. Charts 1 through 9 in **Appendix B** summarize the analytical data collected during these monitoring events.

Statistical analysis was performed on the cumulative monitoring data to evaluate trends and to determine whether there has been a statistically significant increase (SSI) of concentrations between specific monitoring points.

For the current statistical analysis, S&ME performed the statistical evaluation using the ChemStat Version 6.5 software produced by Starpoint Software. The appropriate statistical procedure used in this evaluation was determined by the characteristics of the data set. The approach used to determine the appropriate statistical evaluation and the results of the statistical evaluation are summarized in the following paragraphs.

Specific monitoring points were chosen for comparison based on their location within the MS4 area respective to other monitoring point locations and trend of collected data. Detailed results are given in **Appendix B**.

5.4.1 Approach to Statistical Analysis

Essentially, there are two sets of data to be compared during this statistical evaluation. Sen's non-parametric estimator of slope is a method of estimating the slope (change in concentration over time) of the data. Because this method is non-parametric, it is suitable for high percentage of non-detects and is not significantly affected by outliers. The result indicates whether there is an upward, downward, or no trend in the concentration data.

The Wilcoxon rank-sum test evaluates potential differences in the medians of two populations. The Wilcoxon rank-sum test can be used to compare a single data group against another data group. In this evaluation, we

compared the specific monitoring points to determine if a statistically significant difference is present in a monitoring point using a statistical significance value (alpha) of 0.01. If a statistically significant difference was observed, we then compared the median values of each point to evaluate whether a point had a statistically significant increase (SSI) over the background point.

The following laboratory parameters were evaluated in the statistical analysis:

- Total Suspended Solids (TSS)
- Total Phosphorous
- Orthophosphate
- Nitrate-Nitrite
- Total Kjeldahl Nitrogen (TKN)

5.4.2 Change in Concentration Over Time

Table 5-2 below lists the points and parameters for which a trend was indicated by the Sen's Slope Analysis. The remaining assessed parameters have no trend in the slope.

Table 5-2 Summary of Results of Slope Analysis

Point Analyzed	Parameter	Trend
SME 7	Ortho-phosphate	Upward
SS 13	TKN	Upward
SME 4	TKN	Upward

5.4.3 Statistically Significant Increases

Table 5-3 below reports the statistical evaluation for statistically significant increases (SSIs) for a summary of parameters and monitoring point comparisons.

Table 5-3 Summary of Results of SSIs

Point Analyzed	Point of Comparison	SSI Identified	Parameters w/ SSI
AT 5	SME 7	No	-
GD 5	SME 4	No	-
GD 12	SME 4	No	-
HB 3	SME 4	No	-
RC 2	SME 1	No	-
RC 2	SME 4	No	-
RC 14	SME 4	No	-

Point Analyzed	Point of Comparison	SSI Identified	Parameters w/ SSI
SME 1	SME 4	Yes	Ortho-phosphate, Total Phosphorus
SME 1	AT 5	No	-
SME 3	SME 4	No	-
SME 5	SME 4	No	-
SME 6	SME 4	No	-
SME 6	SME 5	No	-
SME 7	SME 4	Yes	Nitrate-Nitrite, Ortho-phosphate, Total Phosphorus
SME 9	HB 3	No	-
SME 9	SME 4	No	-
SME 10	GD 5	Yes	TKN
SME 10	SME 4	Yes	TKN
SS 5	SME 4	Yes	TKN
SS 13	SME 4	Yes	TKN
SS 14	SME 4	Yes	TKN, Ortho-phosphate, Total Phosphorus

5.5 Evaluation of Monitoring Results

The results of the slope analysis indicate that, although fluctuations occur from one monitoring event to another, pollutant concentrations in the MS4 waterbodies have remained generally consistent over the past 10 years. The exception is SME 7 (Big Wills Creek) and SME 4 (Neely Henry Lake), where an upward trend was identified for ortho-phosphate and TKN respectively. These locations are entry points for their respective waterbodies to the MS4. An upward trend was also identified at SS 13 (unnamed tributary to Neely Henry Lake) for TKN.

5.5.1 Monitoring Points SME 4, SME 5, and SME 6

Monitoring points SME 4, 5, and 6 were sited to assess water quality in the Coosa River where it enters the urbanized area, in the central portion of the urbanized area, and where it leaves the urbanized area, respectively. The points were first sampled in December 2020, and a total of fourteen monitoring events have been completed since, with the exception of SME 4 which was not sampled in September 2021.

Over the past fourteen monitoring events, turbidity increased between monitoring points SME 4 and SME 6 nine times and decreased four times, with one event not sampled. Total nitrogen increased in seven of the thirteen monitoring events and TSS increased in ten of the thirteen events. Ortho-phosphate was detected in two events at monitoring points SME 4 and SME 5 and was detected once at SME 6. Total phosphorous increased in four of the thirteen events.

As shown in Table 5-3, no SSIs were observed when the downstream Coosa River points were compared to the upstream river points. **These results indicate that no statistically significant increase in pollutants is occurring in the Coosa River due to runoff from the Gadsden-Etowah MS4.**

The Attalla, Glencoe, Hokes Bluff, Rainbow City, Southside, and Etowah County MS4s will continue to monitor points SME 4, SME 5, and SME 6 during the April 1, 2024 to March 31, 2025 reporting period.

5.5.2 Monitoring Points AT 5 and SME 7

Monitoring point SME 7 is located in Big Wills Creek, upstream of monitoring point AT 5. Monitoring point AT 5 is located in Big Wills Creek, downstream of its confluence with Little Wills Creek. Monitoring point SME 7 was first sampled in December 2020, and a total of fourteen monitoring events have been completed.

Nitrate-nitrite decreased between SME 7 and AT 5 in twelve out of the last fourteen monitoring events, ortho-phosphate decreased ten out of the last fourteen monitoring events, and total phosphorus decreased between the two points in twelve of the last fourteen events.

As shown in Table 5-3, no SSIs were observed when AT 5 was compared to SME 7 upstream, indicating that an increase in pollutant concentrations is not occurring as Big Wills Creek passes through the Attalla and Etowah County MS4s, possibly due to dilution as other waterbodies and runoff enter Big Wills Creek. The pollutants in Big Wills Creek are generally from outside of the MS4, and the urbanized area does not appear to be contributing additional pollution to the waterbody.

As shown in Table 5-3, SSIs for nitrate-nitrite, ortho-phosphate, and total phosphorus were noted when SME 7 was compared to the Coosa River (SME 4), indicating that the pollutant concentrations in Big Wills Creek are higher than the concentrations in the Coosa; however, as previously discussed, no SSIs were observed when the downstream Coosa River points were compared to the upstream river points. **These results indicate that although Big Wills Creek is a source of pollutants to the Coosa River, the flow is not sufficient to cause an observable impact on the Coosa River.**

The Attalla, Glencoe, Hokes Bluff, Rainbow City, Southside, and Etowah County MS4s will continue to monitor points SME 7 and AT 5 during the April 1, 2024 to March 31, 2025 reporting period.

5.5.3 Monitoring Point SME 1

Monitoring point SME 1 was sited to observe water quality at the location where the combined flow from Big Wills Creek, Black Creek, and Horton Creek enters the Coosa River. Monitoring point AT 5 is located in Big Wills Creek, monitoring point GD 8 (which is currently monitored by the City of Gadsden) is located in Black Creek, and monitoring point RC 2 is located in Horton Creek. The monitoring points were first sampled in March 2013, and a total of 45 monitoring events have been completed.

Generally, nitrogen and phosphorous results at AT 5 are higher than those recorded downstream at SME 1, whereas nitrogen and phosphorous values at RC 2 are lower than those recorded at downstream SME 1. As shown in Table 5-3, no SSIs were observed when SME 1 was compared to upstream point AT 5, indicating that an increase in pollutant concentrations is not occurring before the combined flow from AT 5, GD 8, and RC 2 discharges to the Coosa River.

These results indicate that the Big Wills Creek watershed is the primary source of nitrogen and phosphorous approaching SME 1. A portion of the observed reduction between AT 5 and SME 1 may come

from dilution as other waterbodies and runoff join Big Wills Creek. This further indicates that the urbanized area is not contributing additional pollution to the waterbody.

The Attalla, Glencoe, Hokes Bluff, Rainbow City, Southside, and Etowah County MS4s will continue to monitor points AT 5, RC 2, and SME 1 during the April 1, 2024 to March 31, 2025 reporting period.

5.5.4 Total Kjeldahl Nitrogen

As previously discussed, monitoring points SME 4, 5, and 6 were sited to assess water quality in the Coosa River where it enters the urbanized area, in the central portion of the urbanized area, and where it leaves the urbanized area, respectively. As shown in Table 5-2, an upward trend for TKN was observed at monitoring point SME 4. This appears to indicate that concentrations of TKN in the Coosa River flowing into the Gadsen-Etowah MS4 are generally increasing, although a corresponding upward trend was not observed at SME 5 or SME 6.

An upward trend was also observed for TKN concentrations at SS 13. Monitoring point SS 13 was sited to observe water quality in an unnamed tributary to the Coosa River in Southside. The drainage area for SS 13 includes portions of the Southside and Etowah County MS4s. Land uses in the SS 13 drainage area include residential, recreational, and agricultural.

As shown in Table 5-3, SSIs for TKN were observed at points SME 10, SS 5, SS 13, and SS 14, when compared to SME 4. This indicates that TKN concentrations in the tributaries to the Coosa River are generally higher than TKN concentrations in the river as it enters the Gadsden-Etowah MS4; however, there is no clear increase in the levels of TKN in the receiving water between SME 4 (Coosa River upstream) and SME 6 (Coosa River downstream). This seems to indicate that although levels of TKN are elevated at SME 10, SS 5, SS 13, and SS 14, the flow from the associated drainage areas is not sufficient to cause a statistically significant impact on the Coosa River.

5.6 Summary of Recommendations

The entities that comprise the Gadsden-Etowah MS4 initially took a watershed approach regarding their Storm Water Monitoring Plan. This approach has allowed the entities to evaluate how the overall watershed is responding to the established BMPs and to generally evaluate water quality across the MS4. The current *Wet-Weather Monitoring Program* went into effect April 2022.

The City of Gadsden opted to discontinue the 2015 Cooperative Agreement in October 2023. As a result, the watershed approach may no longer be feasible. During the April 1 2024, to March 31, 2025 reporting period, the Gadsden-Etowah MS4 entities will meet to discuss changes to the 2022 *Wet-Weather Monitoring Program*, including:

- Whether to continue the watershed approach or evaluate each MS4 separately
- Addition of monitoring parameters in waterbodies identified as being impaired due to pathogens

6.0 Narrative Report of Minimum Storm Water Control Measures

Reference Part VI.B.3 and 4

6.1 Public Education and Public Involvement on Storm Water Impacts

6.1.1 Implementation Status

During the April 1, 2023 to March 31, 2024 reporting period, Rainbow City completed eleven (11) of the eighteen (18) Public Education and Public Involvement strategies identified in the previous Annual Report and the 2022 SWMPP. The City did not complete four (4) strategies:

- The City provided hardcopy education materials at the library and at City Hall, but did not use the Rainbow City social media accounts to distribute storm water educational material (Strategy 2)
- The City did not seek public input by posting the 2022-2023 Annual Report or 2022 SWMPP on social media (Strategy 7).
- The City did not promote Water Quality Awareness Week (Strategy 11).
- The City did not partner with Keep Etowah Beautiful, Clean Water Partnership of Alabama, and/or Alabama Power to support, sponsor, and/or promote anti-litter and cleanup events (Strategy 15).

The City partially completed three (3) strategies:

- The City maintained the storm water webpage, but no new educational materials were added (Strategy 1)
- One City employee participated in the 2024 *Etowah County Water Festival*, but the City did not promote the festival (Strategy 12).
- The City maintained a public reporting system on the webpage, but did not promote it on the City's social media (Strategy 13).

The County also completed one additional strategy beyond those proposed in the previous Annual Report and the 2022 SWMPP.

- The City entered into an agreement with the City of Southside to support the Southside recycling program by removing and recycling cardboard collected in the new Southside recycling trailers (Strategy 19).

A table identifying each Public Education and Public Involvement strategy planned for the 2023-2024 reporting period, a description of actions taken by the City of Rainbow City, and a description of activities planned for the next reporting period is provided at the end of this section. Supporting documentation is included in **Appendix D.**

6.1.2 Proposed Activities for the April 1, 2024 to March 31, 2025 Reporting Period

The City will implement the activities listed in the 2022 SWMPP and in Table 6-1 as part of their Public Education and Public Involvement Program during the 2024-2025 reporting period. The City will evaluate the success of the

program to aid in preparing the required Annual Report based on the evaluation criteria established for each strategy.

6.1.3 Assessment of Controls

The strategies enacted during the reporting period appear to be effective in meeting the objectives of the Public Education and Public Involvement Control Measure as outlined in the 2021 permit. The strategies are adequate to educate the community about the impacts of storm water runoff, identify steps the community can take to help reduce pollutants, and provide opportunities for public involvement.

6.1.4 Proposed Changes

The City of Rainbow City requests no changes to the Public Education and Public Involvement strategies identified in the 2022 SWMPP.

6.1.5 Responsible Parties

The **Building Official** is responsible for overseeing, developing, and coordinating the Public Education and Public Involvement efforts. The **Building Official** is also responsible for providing content for the Storm Water Management webpage and performing plan review regarding erosion, sediment, pollution control, drainage, and flood control.

RecycleRBC is responsible for managing recycling activities within the City.

The **City Clerk** is responsible for posting storm water materials on the City's social media accounts.

The **Street Department** is responsible for performing brush pickup and large item pickup.

Rainbow City

Table 6-1 Control Measure 1 - Public Education and Involvement

See Section 5.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
1	**Maintain the Storm Water Webpage:** Maintain the webpage and provide additional educational materials each reporting period.	**INCOMPLETE** The City maintained the stormwater management webpage, but no new educational material was added during the reporting period. 112 views were recorded for the webpage.	The City will continue maintain and update the webpage to include information on storm water, household chemicals, impact of litter, water resources, illicit discharges, and community events related to storm water outreach.	A screenshot of the webpage and a screenshot of the views analytics page are attached. (See Documents 1-1 and 1-2)	88 views were recorded the previous reporting period https://www.rbcalabama.com/stormwater-management/	NO
2	**Distribute Storm Water Educational Material:** Distribute storm water messaging and educational materials using the Rainbow City social media accounts at least once per quarter.	**INCOMPLETE** 30 packets of hardcopy materials were distributed at City Hall and the Library. The City did not post storm water educational materials or messaging on social media.	The City will distribute storm water educational materials using the Rainbow City social media accounts at least once per quarter.	Copies of the educational materials and photos of the hardcopy educational material placements are attached. (See Documents 1-3, 1-4, and 1-5)	https://www.facebook.com/rbcalabama	NO
3	**Provide Information on Construction Site Storm Water Impacts:** Provide information on how construction site runoff can impact storm water quality to individuals requesting plan review and building/development permits.	36 permits were issued	The City will continue to provide educational information on construction storm water impacts to individuals requesting plan review and building/development permits.	A copy of the hardcopy construction educational materials is attached. (See Document 1-6)		NO
4	**Provide Information on Low Impact/Green Development:** Provide information on green development to individuals requesting plan review and building/development permits.	0 projects incorporated green infrastructure.	The City will provide educational information on green development to individuals requesting plan review and land disturbance permits.	A copy of the LID educational materials is attached. (See Document 1-7)		NO
5	**Plan Review and Permitting:** Review each application for a Land Disturbance Permit and the accompanying Sediment and Erosion Control Plan and Stormwater Management Plan.	10 plans reviewed 10 plans approved 0 plans rejected 4 plans met ADEM requirements	The City will continue to educate engineers, developers, and contractors through plan review and permitting of new construction and redevelopment.	A copy of a completed Land Disturbance Permit application is attached. (See Document 1-8)		NO

Rainbow City

Table 6-1 Control Measure 1 - Public Education and Involvement

See Section 5.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
6	**Annual Report and SWMPP Availability:** Provide the SWMPP and the current Annual Report on the Storm Water Management webpage.	The 2022-2023 Annual Report was added to the Storm Water Management webpage. 112 hits were recorded for the webpage.	The City will provide the SWMPP and the current Annual Report to the public through the City's website.	A screenshot of the webpage showing the Annual Report and SWMPP download buttons and a screenshot of the views analytics page are attached. (See Documents 1-1 and 1-2)		NO
7	**Seek Public Input:** Provide a link to the SWMPP and most recent Annual Report of the City's Facebook pages. Encourage stakeholders to provide comments or questions regarding the implementation of the SWMPP.	**INCOMPLETE** A link to the 2022-2023 Annual Report and the 2022 SWMPP was not added to the City's social media page. An announcement regarding the availability of the Annual Report was not posted on the digital sign.	The City will post a link to the Annual Report on the City's social media accounts to actively seek comments, questions, and concerns from stakeholders. The City will also post an announcement on the digital sign. The City will consider and respond to received comments as needed.		https://www.facebook.com/rbcalabama	NO
8	**Gadsden-Etowah MS4 Steering Committee Meetings:** Coordinate and/or participate in meetings of the Gadsden-Etowah Storm Water Steering Committee.	Joel Garmon attended the Steering Committee Meeting held **September 13, 2023**.	The City will continue to participate in meetings of the Gadsden-Etowah Storm Water Steering Committee at least once per reporting period.	The attendance record for the meeting is attached. (See Document 1-9)		NO
9	**Alabama Stormwater Association Participation:** City personnel will participate in meetings, seminars, or other events held by the Alabama Stormwater Association.	One City employee participated in the Clear Water Alabama Seminar held on September 20-21, 2023.	When possible, City personnel will participate in meeting, seminars, or other events held by the Alabama Stormwater Association.	A copy of the seminar attendance record is attached. (See Document 1-10)		NO
10	**Promote Storm Water Events Via Social Media:** Utilize the City of Rainbow City social media accounts to promote storm water events.	The May City cleanup event was advertised on the City's Facebook page in posts dated May 3, 2023 and May 6, 2023. A recap post was made on May 8, 2023. The October City cleanup event was advertised on the City's Facebook page in posts dated October 9, 2023, October 11, 2023, and October 13, 2023.	The City will utilize the Rainbow City social media accounts to promote storm water events.	Screenshots of the Facebook posts are attached. (See Documents 1-11 and 1-12)		NO
11	**Promote Water Quality Awareness Week:** Promote an annual *Water Quality Awareness Week* through City resources.	**INCOMPLETE** The City did not promote Water Quality Awareness Week.	The City will promote an annual Water Quality Awareness Week through City resources including co-sponsoring radio, television, and print advertisements with co-permittees and other stakeholders.			NO

Rainbow City

Table 6-1 Control Measure 1 - Public Education and Involvement

See Section 5.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
12	**Promote and participate in the Etowah County Water Festival:** Promote and participate in the annual *Etowah County Water Festival* .	**INCOMPLETE** The Etowah County Water Festival was held **February 16, 2024**. The City did not promote the festival. 1 employee participated in the festival.	The City will promote the 2025 *Etowah County Water Festival* through City resources. City personnel will participate in the festival.	Participation totals are listed on the Keep Etowah Beautiful Community Programs for 2023-2024 Summary Page. (See Document 1-13)	Adult Volunteers: 58 High School and College Presenters: 162 4th Grade Teachers: 64 4th Grade Students: 1212	NO
13	**Public Reporting System:** Provide a reporting number and form for reporting non-compliant construction sites, illicit discharges, impaired waterways, and violations of ordinances related to storm water pollution. Promote the reporting number on the City's social media accounts at least once per year. Evaluate the efficacy of the program.	**INCOMPLETE** The City maintained the public reporting form on the website, but did not promote the form on social media. 1 complaint received 1 complaint addressed 1 complaint resolved The reporting program was reviewed and no changes are recommended at this time.	The City will provide a contact number on the City's webpages for the public to report non-compliant construction sites, illicit discharges, impaired waterways, and violations of ordinances related to storm water pollution, and will publicize this number once a year on the City's social media accounts. The City will utilize a complaint form to track the reports and follow up when necessary and evaluate these methods annually.	A screenshot of the webpage with the download link for the reporting form and a blank copy of the report form are attached. A copy of the received complaint is attached. (See Documents 1-1, 1-14, and 1-15)	The number of received complaints decreased during the reporting period. 12 complaints were recorded during the previous reporting period.	NO
14	**Coordinate and Promote an Annual Community Cleanup Day:** Coordinate a community cleanup day annually.	2 community cleanup days were held on **May 6, 2023** and **October 14, 2023**. The May event was advertised on the City's Facebook page in posts dated May 3, 2023 and May 6, 2023. The event was also promoted during the April 24, 2023 council meeting and with a sign at City Hall. The October event was advertised on the City's Facebook page in posts dated October 9, 2023, October 11, 2023, and October 13, 2023 and with a sign at City Hall. 61 volunteers participated in May and over 100 volunteers participated in October.	The City will continue to coordinate a community cleanup day annually. Collected debris will be disposed of at a permitted landfill.	Screenshots of the Facebook posts, a photo of the City Municipal Building sign advertising the cleanup days, and a copy of the Council Meeting minutes are attached. (See Documents 1-11, 1-12, 1-16, 1-17, and 1-18)		NO

Rainbow City

Table 6-1 Control Measure 1 - Public Education and Involvement

See Section 5.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
15	**Promote and Participate in Anti-Litter/Cleanup Events:** Partner with Keep Etowah Beautiful, Clean Water Partnership of Alabama, and/or Alabama Power to support, sponsor, and/or promote anti-litter and cleanup events.	**INCOMPLETE** The City did not partner with Keep Etowah Beautiful, Clean Water Partnership of Alabama, and/or Alabama Power to support, sponsor, and/or promote an anti-litter or cleanup event.	The City will partner with Keep Etowah Beautiful, Clean Water Partnership of Alabama, and/or Alabama Power to support, sponsor, and/or promote events such as Renew our Rivers, Message in a Bottle, and/or community cleanup days.			NO
16	**Brush and Large Item Pickup:** Provide brush pickup on a monthly basis.	The City performed monthly pickups of brush and bulk items. The total amount of brush picked up was not available.	The City will continue to perform brush and large item pickup throughout the year on a monthly basis and dispose of collected debris at a permitted landfill.	An example invoice from Noble Hill Landfill for trash disposal, including large item pickup, is attached. (See Document 1-19)		NO
17	**Recycling Center:** Provide recycling locations for residents and local businesses.	The City maintained recycling drop-off points at the Community Center and Fire Station 2. Approximately 254 tons of materials collected.	The City will continue to manage two drop-off recycling locations and distribute bins to local businesses.	The 2023-2024 recycling receipt is attached. (See Document 1-20)		NO
18	**Program Evaluation:** Utilize collected information to evaluate the effectiveness of the Public Education and Involvement Program.	The program was evaluated and no changes were deemed necessary.	The City will utilize collected information to evaluate the effectiveness of the public education/public involvement program and to determine changes that may need to be made.			NO
19	**Additional Strategy:** The City entered into an agreement with the City of Southside to support the Southside cardboard recycling program.	Rainbow City personnel removed and recycled cardboard collected using the Southside recycling trailers.	The City will continue to partner with the City of Southside to remove and recycle cardboard collected in the Southside recycling trailers.	A screenshot of a Facebook post by the City of Southside is attached. (See Document 1-21)		

6.2 Illicit Discharge Detection and Elimination

6.2.1 Implementation Status

During the April 1, 2023 to March 31, 2024 reporting period, Rainbow City completed seventeen (17) of the nineteen (19) Illicit Discharge Detection and Elimination strategies identified in the previous Annual Report and the 2022 SWMPP. The City did not complete one (1) strategy:

- The City did not use the Rainbow City social media accounts to distribute storm water educational highlighting identification and reporting of potential illicit discharges (Strategy 15).

The City partially completed one (1) strategy:

- The City maintained a system for the public to report illicit discharges, but did not promote it on the City's social media (Strategy 16).

A table identifying each Illicit Discharge Detection and Elimination strategy planned for the 2023-2024 reporting period, a description of actions taken by the City of Rainbow City, and a description of activities planned for the next reporting period is provided at the end of this section. Supporting documentation is included in **Appendix E**.

6.2.2 Proposed Activities for the April 1, 2024 to March 31, 2025 Reporting Period

The City will implement the activities listed in the 2022 SWMPP and in Table 6-2 as part of their Illicit Discharge Detection and Elimination Program during the 2024-2025 reporting period. The City will evaluate the success of the program to aid in preparing the required Annual Report based on the evaluation criteria established for each strategy.

6.2.3 Assessment of Control

The strategies enacted during the reporting period appear to be effective in meeting the objectives of the Illicit Discharge Detection and Elimination Control Measure as outlined in the 2021 permit. The strategies are adequate to prevent or correct illicit discharges to the Gadsden-Etowah MS4.

6.2.4 Proposed Changes

The City of Rainbow City requests no changes to the Illicit Discharge Detection and Elimination strategies identified in the 2022 SWMPP.

6.2.5 Responsible Parties

The **Building Official** is responsible for overseeing, developing, and coordinating the IDDE program in the Rainbow City regulated MS4 area.

The **City Clerk** is responsible for posting storm water materials on the City's social media accounts.

Other City departments, including the **Public Works Department**, the **Parks and Recreation Department**, the **Building Department**, the **Fire Department**, and the **Police Department**, will report illicit discharges observed during the course of their normal duties. Reports of observed or suspected illicit discharges will be made to the Building Official.

The **Utilities Board of Rainbow City** is responsible for corrective actions regarding Sanitary Sewer Overflows.

The **Fire Department** is responsible for corrective actions regarding hazardous spill response and for reporting spills over 25 gallons to ADEM.

The **Building Department** is responsible for code enforcement involving illegal dumping.

Rainbow City

Table 6-2 Control Measure 2 - Illicit Discharge Detection and Elimination

See Section 6.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
1	**IDDE Ordinance:** Ordinance No. 490 regulates Illicit Discharge enforcement Evaluate the effectiveness of the Ordinance each reporting period	1 complaints received 0 illicit discharges identified 0 violations resolved	The City will evaluate the effectiveness of Ordinance Number 490 and update it as needed.	A copy of Ordinance No. 490 was included in Appendix E of the 2022 SWMPP.		NO
2	**MS4 Map:** Maintain and update the MS4 Map showing known outfalls from the Rainbow City MS4.	0 verified new outfalls 2 outfalls removed 230 outfalls total	The City will maintain the map of the Rainbow City MS4 area with known outfalls, priority areas, the waters of the State that receive discharges from the outfalls, and structural BMPs owned, operated, and/or maintained by the City.	The current MS4 map and outfall inventory are attached. (See Documents 2-1 and 2-2)		NO
3	**Identify Priority Areas:** Identify which drainage basins are considered Priority Areas for each reporting period.	3 drainage basins have been identified and IDP Assessment was performed on each basin 2 Priority Areas were identified. Drainage basins 1 and 2 had the highest IDP scores.	The City will identify which drainage basins are considered Priority Areas for each reporting period and provide an updated map with the new priority areas.	A table showing the calculated IDP scores and copies of the IDP worksheets for each basin are attached. (See Document 2-3)		NO
4	**Outfall Reconnaissance Inventory for New MS4 Areas:** Implement a stream-walking program designed to identify outfalls to the MS4 within the newly-added MS4 areas.	No areas were added to the Rainbow City MS4 during the reporting period.	Should the City limits or Urbanized Area boundary change, the City will implement a stream-walking program designed to identify outfalls to the MS4 within the newly-added MS4 areas.			NO
5	**Outfall Reconnaissance Inventory for Previously Unidentified Outfalls:** Identify, inspect, and screen previously unknows outfalls at time of discovery. Add the outfalls to the MS4 outfall inventory and map.	0 verified new outfalls 2 outfalls removed 230 outfalls total	Previously unknown outfalls encountered during dry-weather inspections of known outfalls will be identified, inspected, and screened at the time of discovery. Outfalls encountered during other field observations will be reported to the Building Inspector to be added to the outfall database for verification and inspection.	The current MS4 map and outfall inventory are attached. (See Documents 2-1 and 2-2)		NO
6	**Verification of Potential Outfalls Identified During Plan Review:** Verify outfalls identified during review of as-built drawings.	0 new outfalls identified from as-built drawings.	Outfalls identified during review of the as-built drawings or from the final inspection will be added to the outfall inventory and map as “Potential Outfalls” and will be inspected during the scheduled outfall inspection activities.			NO

Rainbow City

Table 6-2 Control Measure 2 - Illicit Discharge Detection and Elimination

See Section 6.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
7	**Dry Weather Screening Program:** Conduct dry weather ORI inspections on a minimum of 15% of all known outfalls during each reporting period.	76 outfalls inspected (33%) 0 new outfalls identified	The City will continue to implement and conduct dry weather ORI inspections on a minimum of 15% of all known outfalls during each reporting period, with priority outfalls being inspected at least once every three years and all outfalls being inspected in the 5-year permit cycle.	Maps showing the outfalls inspected during the reporting period and an example outfall inspection field sheet are attached. (See Documents 2-4 and 2-5)		NO
8	**Suspect Discharge Screening:** Screen dry-weather flows that are observed at an outfall during inspection.	3 dry weather flows screened 0 suspect discharges determined	The City will continue to screen dry-weather flows observed during outfall inspections as detailed in Section 8.9 of the IDDE Program.	Copies of the outfall inspections with screening are attached. (See Documents 2-6, 2-7, and 2-8)	Outfalls Z2-049, Z2-052, and Z2-072	NO
9	**Suspect Discharge Sampling:** Sample dry weather flows during observation for flows that have a severity index of 3 on one or more indicators in Section 4 of the ORI Field Sheet.	3 dry weather flows screened 0 suspect discharge determined 0 samples collected 0 confirmed illicit discharges	The City will collect samples of suspect discharges for further analysis as detailed in Section 8.10 of the IDDE Program.			NO
10	**Outfall Ranking:** Analyze data from to designate outfalls as having obvious, suspect, possible, or unlikely discharge potential.	0 obvious illicit discharges 0 suspect illicit discharges	The City will analyze data from each Outfall Reconnaissance Inventory Field Sheet to designate the observed outfall as having obvious, suspect, possible, or unlikely discharge potential.	A summary table showing outfall rankings is attached. (See Document 2-9)		NO
11	**Track the Locations of Illicit Discharge Complaints:** Maintain the City's GIS database to record locations of storm water complaints.	1 complaint received The complaint was determined to be related to drainage and not an illicit discharge.	The City will record the locations of reported illicit discharges in the City's GIS database to help identify area where additional BMPs may be required.	A copy of the received complaint is attached. (See Document 1-15)		NO
12	**Illicit Discharge Investigation:** Perform illicit discharge investigations to determine the source of a discharge problem and the responsible party.	0 illicit discharge investigations 0 illicit discharges confirmed	The City will perform illicit discharge investigations to determine the source of a discharge problem and the responsible party.			NO

Rainbow City

Table 6-2 Control Measure 2 - Illicit Discharge Detection and Elimination

See Section 6.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
13	**Corrective Action Record Keeping:** Create a case log detailing pertinent information when a suspect illicit discharge or illicit connection is identified.	0 illicit discharges confirmed	When a suspect illicit discharge or illicit connection is identified, a case log detailing pertinent information will be created to document information related to the resolution of the illicit discharge.			NO
14	**Illicit Discharge Elimination:** Report identified illicit discharges to the appropriate City department or agency for corrective action.	0 illicit discharge referred to other agencies 0 illicit discharges eliminated	The City will report identified illicit discharges to the appropriate city department for corrective actions.			NO
15	**Distribute Storm Water Educational Material via Social Media:** Provide educational materials highlighting identification and reporting of potential illicit discharges on the City's Facebook page at least once per year.	**INCOMPLETE** 0 social media posts were created	The City will provide educational materials highlighting identification and reporting of potential illicit discharges on the City's Facebook page or other social media account at least once during each reporting period.			NO
16	**Public Reporting System:** Provide a reporting number and form for reporting non-compliant construction sites, illicit discharges, impaired waterways, and violations of ordinances related to storm water pollution. Promote the reporting number on the City's social media accounts at least once per year. Evaluate the efficacy of the program.	**INCOMPLETE** The City maintained the public reporting form on the website, but did not promote the form on social media. 1 complaint received 1 complaint addressed 1 complaint resolved The reporting program was reviewed and no changes are recommended at this time.	The City will provide a contact number on the City's webpages for the public to report non-compliant construction sites, illicit discharges, impaired waterways, and violations of ordinances related to storm water pollution, and will publicize this number once a year on the City's social media accounts. The City will utilize a complaint form to track the reports and follow up when necessary and evaluate these methods annually.	A screenshot of the webpage with the download link for the reporting form and a blank copy of the report form are attached. A copy of the received complaint is attached. (See Documents 1-1, 1-14, and 1-15)	The number of received complaints decreased during the reporting period. 12 complaints were recorded during the previous reporting period.	NO
17	**Annual Municipal IDDE Training:** Train Municipal Employees in the identification of illicit discharges annually.	S&ME addressed illicit discharge identification in the Annual Training conducted on **March 20, 2023**. 4 City employees attended training.	The City will train personnel on the identification of illicit discharges and procedures for reporting illicit discharges within the City organization.	Copies of the sign-in sheet and the training materials are attached. (See Document 2-10)		NO

Rainbow City

Table 6-2 Control Measure 2 - Illicit Discharge Detection and Elimination

See Section 6.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
18	**Notify ADEM of Illicit Discharges from an Adjacent MS4:** Notify the appropriate MS4 and the ADEM Water Division within 48 hours of observation of a suspect illicit discharge from an adjacent MS4.	0 suspect illicit discharges reported to an adjacent MS4 and/or ADEM	Should the City identify a suspect illicit discharge originating within a neighboring MS4, the City will notify the appropriate MS4 and the ADEM Water Division within 48 hours.			NO
19	**Notify ADEM of Unpermitted Industrial Sites:** Report unpermitted facilities that require an NPDES permit to the Industrial Section of ADEM.	0 unpermitted facilities reported to ADEM	Unpermitted facilities will be reported to the Industrial Permits Section of ADEM.			NO

6.3 Construction Site Storm Water Runoff

6.3.1 Implementation Status

During the April 1, 2023 to March 31, 2024 reporting period, the City of Rainbow City completed fifteen (15) of the sixteen (16) Construction Site Storm Water Runoff strategies identified in the previous Annual Report and the 2022 SWMPP. The City partially completed one (1) strategy:

- The City maintained a system for the public to report noncompliant construction sites, but did not promote it on the City's social media (Strategy 9).

A table identifying each Construction Site Storm Water Runoff strategy planned for the 2023-2024 reporting period, a description of actions taken by the City of Rainbow City, and a description of activities planned for the next reporting period is provided at the end of this section. Supporting documentation is included in **Appendix F**.

6.3.2 Proposed Activities for the April 1, 2024 to March 31, 2025 Reporting Period

The City will implement the activities listed in the 2022 SWMPP and in Table 6-3 as part of their Construction Site Storm Water Runoff Control Measure during the 2024-2025 reporting period. The City will evaluate the success of the program to aid in preparing the required Annual Report based on the evaluation criteria established for each strategy.

6.3.3 Assessment of Controls

The strategies enacted during the reporting period appear to be effective in meeting the objectives of the Construction Site Storm Water Runoff Control Measure as outlined in the 2021 permit. The strategies are adequate to monitor and control pollutants associated with land disturbing activities.

6.3.4 Proposed Changes

The City of Rainbow City requests no changes to the Construction Site Storm Water Runoff strategies identified in the 2022 SWMPP.

6.3.5 Responsible Party

The **Building Department** is responsible for implementing the Construction Site Storm Water Runoff Control Program.

Rainbow City

Table 6-3 Control Measure 3 - Construction Site Storm Water Runoff

See Section 7.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
1	**Erosion and Sediment Control Ordinance:** The City's Ordinance 490 dated December 10, 2012 regulates storm water management within the City Evaluate the effectiveness of the Ordinance each reporting period	123 inspections completed 3 non-compliant construction sites 5 enforcement actions 0 non-compliant site reported to ADEM 1 repeat offender The ordinance appears effective. No changes required at this time.	The City will evaluate Ordinance 490 annually based on its effectiveness in addressing erosion and sediment control.	A copy of Ordinance No. 490 was included in Appendix E of the 2022 SWMPP.		NO
2	**BMP Training Program:** Conduct annual training for city personnel tasked with plan review. Certify city personnel tasked with conducting BMP Inspections.	1 employees attended annual plan review training 1 received QCI training	The City personnel tasked with plan review will undergo annual training for on-site control measures. City personnel tasked with conducting BMP inspections will be certified under an ADEM approved Qualified Credential Inspector training program and will attend annual refreshers.	The QCI certificate is attached. (See Document 3-1)		NO
3	**Require Plan Submittal:** Require submission of a Sediment and Erosion Control Plan and Storm Water Management Plan with a building permit application to the City for review.	10 plans reviewed 10 plans approved 0 plans rejected 4 plans met ADEM requirements	The City will continue to require the submittal of a BMP Plan with the land disturbance permit application.	A copy of a completed Land Disturbance Permit application is attached. (See Document 1-8)		NO
4	**Sediment and Erosion Control Plan Review Procedures:** Review the submitted Sediment and Erosion Control Plans within 30 days of receiving the plans.	10 plans reviewed 10 plans approved 0 plans rejected 4 plans met ADEM requirements	The City will review plans submitted with land disturbance permit applications and will inform the applicant whether their permit is approved or denied and the conditions of the decision within 30 days of receiving the application.	A copy of the plan review checklist is attached. (See Document 3-2)		NO
5	**Maintain Inventory of Qualifying Construction Sites:** Maintain a list of active qualifying construction sites within the MS4 boundary.	19 NPDES construction sites 15 NPDES construction sites within MS4 7 active qualifying sites	The City will continue to maintain a list of all active qualifying construction sites within the MS4 boundary.	The current inventory of NPDES-permitted construction sites within the MS4 boundary is attached. (See Document 3-3)		NO

Rainbow City

Table 6-3 Control Measure 3 - Construction Site Storm Water Runoff

See Section 7.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
6	**Inspection of Qualifying Non-Priority Sites:** Inspect qualifying construction sites using the BMP Inspection Form every three months until permit termination.	123 inspections completed 3 non-compliant construction sites 5 enforcement actions 0 non-compliant site reported to ADEM 1 repeat offender	The City will continue to perform BMP inspections at least once every three months at qualifying construction sites.	An example construction site inspection report is attached. (See Document 3-4)	The City performed monthly inspections of active construction sites, including sites that did not require an NPDES permit.	NO
7	**Inspection of Priority Construction Sites:** If a site is a Priority Site inspect the site once a month using the BMP Inspection Form until permit termination.	0 priority construction sites located within the MS4	Should a Priority watershed be designated, the City will identify and inspect qualifying Priority construction sites once per month.		The Rainbow City MS4 does not currently incorporate any waterbodies or watersheds that are impaired for siltation or turbidity.	NO
8	**Re-inspection of Sites:** Re-inspect sites where deficiencies are noted and cannot be corrected during inspection. Use the BMP Inspection Form to complete re-inspections.	3 sites were re-inspected for deficiencies	The City will conduct re-inspections on sites that had noted deficiencies during routine inspection that could not be corrected at the time of the inspection.	An example construction site inspection report is attached. (See Document 3-4)		NO
9	**Public Reporting System:** Provide a reporting number and form for reporting non-compliant construction sites, illicit discharges, impaired waterways, and violations of ordinances related to storm water pollution. Promote the reporting number on the City's social media accounts at least once per year. Evaluate the efficacy of the program.	**INCOMPLETE** The City maintained the public reporting form on the website, but did not promote the form on social media. 1 complaint received 1 complaint addressed 1 complaint resolved The reporting program was reviewed and no changes are recommended at this time.	The City will provide a contact number on the City's webpages for the public to report non-compliant construction sites, illicit discharges, impaired waterways, and violations of ordinances related to storm water pollution, and will publicize this number once a year on the City's social media accounts. The City will utilize a complaint form to track the reports and follow up when necessary and evaluate these methods annually.	A screenshot of the webpage with the download link for the reporting form and a blank copy of the report form are attached. A copy of the received complaint is attached. (See Documents 1-1, 1-14, and 1-15)	The number of received complaints decreased during the reporting period. 12 complaints were recorded during the previous reporting period.	NO
10	**Written Notice:** Provide a written notice to the property owner or permit holder if a violation of Stormwater Management Regulations or Land Disturbance Permit occurs.	0 written notices issued by email	The City will provide a written notice to the property owner or permit holder of any sites violating the Storm Water Management Regulations or the Land Disturbance Permit.			NO

Rainbow City

Table 6-3 Control Measure 3 - Construction Site Storm Water Runoff

See Section 7.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
11	**Consent Order:** Consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement to require specific corrective actions are authorized.	0 Consent Orders issued	The City will keep records of any Consent Orders, assurances of voluntary compliance, or other similar documents establishing an agreement to require specific corrective actions issued to noncompliant construction sites during the reporting period.			NO
12	**Compliance Order:** Issue a compliance order in the event a construction site continues to violate the terms of the permit if a Written Notice is not followed.	0 Compliance Orders issued	The City will keep records of any Compliance Orders issued to noncompliant construction sites during the reporting period.			NO
13	**Cease and Desist Order:** Issue a cease and desist order to the owner or operator of a noncompliant construction site if necessary.	0 Cease and Desist Orders issued	The City will keep records of any Cease and Desist Orders issued to the owner or operator of a noncompliant construction site.			NO
14	**Enforcement Tracking:** Maintain information regarding enforcement actions. Report the number of enforcement actions taken during the reporting period.	0 enforcement actions undertaken	The City will maintain the name of the owner/operator, the location of the construction project, the description of the violation, the required schedule for returning to compliance, and the description of enforcement response used regarding noncompliant construction sites.			NO
15	**Notify ADEM of Unpermitted Sites:** Notify ADEM of any construction site that is not permitted under to Alabama Construction General Permit.	0 unpermitted sites reported to ADEM	The City will notify ADEM of any qualifying construction site that is not permitted under the Alabama Construction General Permit.			NO
16	**Notify ADEM of Non-Compliant Sites:** Notify ADEM of non-compliant sites where the City's enforcement actions did not result in compliance.	0 non-compliant sites reported to ADEM	The City will report noncompliant sites where enforcement actions did not result in compliance.			NO

6.4 Post-Construction Storm Water Management in New Development and Redevelopment

6.4.1 Implementation Status

During the April 1, 2023 to March 31, 2024 reporting period, the City of Rainbow City completed eleven (11) of the twelve (12) Post-Construction Storm Water Management strategies identified in the previous Annual Report and the 2022 SWMPP. The City did not complete one (1) strategy:

- The City did not require submittal of as-built plans for post-construction storm water control measures completed during the reporting period (Strategy 6).

A table identifying each Post-Construction Storm Water Management strategy planned for the 2023-2024 reporting period, a description of actions taken by the City of Rainbow City, and a description of activities planned for the next reporting period is provided at the end of this section. Supporting documentation is included in **Appendix G**.

6.4.2 Proposed Activities for the April 1, 2024 to March 31, 2025 Reporting Period

The City will implement the activities listed in the 2022 SWMPP and in Table 6-4 as part of their Post-construction Storm Water Management Control Measure during the 2024-2025 reporting period. The City will evaluate the success of the program to aid in preparing the required Annual Report based on the evaluation criteria established for each strategy.

6.4.3 Assessment of Control

The strategies enacted during the reporting period appear to be effective in meeting the objectives of the Post-construction Storm Water Management Control Measure as outlined in the 2021 permit. The strategies are adequate to address post-construction storm water runoff from new development and re-development.

6.4.4 Proposed Changes

The City of Rainbow City requests no changes to the Post-construction Storm Water management strategies identified in the 2022 SWMPP.

6.4.5 Responsible Party

The **Building Department** is responsible for establishing design criteria for post-construction BMPs, evaluating the storm water ordinance, reviewing submitted Stormwater Management Plans, performing inspections of City-owned post-construction BMPs, and enforcing the provisions of the storm water ordinance.

Rainbow City

Table 6-4 Control Measure 4 - Post-Construction Storm Water Management

See Section 8.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
1	**Post Construction Stormwater Management Ordinance:** Section 7 of Ordinance No. 490 provides for post-construction storm water management measures to reduce runoff volume Evaluate the effectiveness of the Ordinance each reporting period	8 plans reviewed 8 plans approved 0 plans rejected No changes to the Post-Construction program are proposed at this time.	The City will evaluate Ordinance 490 annually on its effectiveness in reducing storm water pollution from new development or redevelopment.	A copy of Ordinance No. 490 was included in Appendix E of the 2022 SWMPP.		NO
2	**Encourage Low-Impact Development/Green Infrastructure Practices:** Provide information on green development to individuals requesting plan review and building/development permits.	0 plans incorporated LID design	The City will provide educational information on green development to individuals requesting plan review and building/development permits. The City will also encourage developers and engineers to consider green infrastructure alternatives during the pre-design conference.	A copy of the LID educational materials is attached. (See Document 1-7)		NO
3	**Evaluate Obstacles to Low Impact/Green Development:** Review and evaluate policies and ordinances to identify regulatory and policy impediments to the installation of green infrastructure and low-impact development techniques.	0 obstacles to Low Impact/Green Development were identified	The City will review and evaluate policies and ordinances related to building codes or other local regulations with the goal of identifying regulatory and policy impediments to the installation of green infrastructure and low-impact development techniques.			NO
4	**Require Plan Submittal:** Require a submission of a plan showing post-construction strategies with the application for a Land Disturbance Permit.	8 plans reviewed 8 plans approved 0 plans rejected	The City will continue to require the submittal of a plan showing post-construction storm water management strategies with the application for a Land Disturbance Permit.	A copy of a completed Land Disturbance Permit application is attached. (See Document 1-8)		NO
5	**Plan Review Procedures:** Review each application for a Land Disturbance Permit and the accompanying Sediment and Erosion Control Plan and Stormwater Management Plan.	8 plans were reviewed 0 additional metrics were deemed necessary	The City will review will review post-construction measures included the plans submitted by the applicant prior to approval or denial of the Land Disturbance Permit. The City will evaluate the plan review criteria to determine if additional metrics are necessary.	A copy of the plan review checklist is attached. (See Document 3-2)		NO

Rainbow City

Table 6-4 Control Measure 4 - Post-Construction Storm Water Management

See Section 8.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
6	**Require As-Built Certification:** Require As-Built Plans be provided to the Building Department after construction is complete. The plans are to include the final design specifications for all storm water management facilities.	**INCOMPLETE** 0 as-built plans submitted 2 post-construction BMPs installed 2 final inspections conducted The City did not require submittal of an as-built certification for post-construction stormwater management measures.	The City will require and record as-built surveys once final construction is completed.			NO
7	**Post-Installation Inspections:** Conduct an inspection of post-construction BMPs for compliance with the approved plans prior to issuance of a Certificate of Occupancy.	2 post-construction BMPs installed 2 final inspections conducted	The City will conduct inspections following the completion of the BMP to ensure that post-construction BMPs are installed in accordance with the reviewed and approved plans prior to issuance of a Certificate of Occupancy.	Copies of the final inspections of the new post-construction controls are attached. (See Documents 4-1 and 4-2)	Alabama Farm Credit Smart Moves Ministorage (outside of MS4 boundary)	NO
8	**Require Long-Term Maintenance On Storm Water Controls:** Evaluate Section 7 of the Rainbow City Ordinance No. 490 each reporting period for efficacy. The City will require that the owner of a property served by an on-site storm water management facility execute an inspection and maintenance agreement.	26 maintenance agreement submitted 26 plan reviewed 26 maintenance provision approved 0 maintenance provisions denied 2 enforcement actions	The City will require that the owner of a property served by an on-site storm water management facility execute an inspection and maintenance agreement.	An example maintenance agreement is attached. (See Document 4-3)		NO
9	**Inventory of Post-Construction Structural Controls:** Compile an inventory of post-construction structural controls located within the Rainbow City MS4. Update the inventory annually.	2 new structural BMPs added 27 total structural BMPs	The City will compile an inventory of post-construction structural controls located within the Rainbow City MS4. The inventory will be updated annually.	The inventory of structural BMPs is attached. A table listing the structural controls is also available on the current MS4 map. (See Documents 4-4 and 2-1)		NO
10	**Annual Inspection of Post-Construction Storm Water Controls:** Inspect post-construction BMPs within the MS4 a minimum of once per year.	25 inspections performed	The City will inspect City-owned or managed post-construction BMPs within the Rainbow City MS4 at a minimum of once per year.	An example inspection report is attached. (See Document 4-5)		NO

Rainbow City

Table 6-4 Control Measure 4 - Post-Construction Storm Water Management

See Section 8.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2023-2024 IMPLEMENTATION STATUS	2024-2025 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS / CHANGES	PROPOSED CHANGES
11	**Corrective Actions for Post-Construction Controls:** Perform or require maintenance or repairs if an inspection identifies a maintenance issue.	2 corrective actions required	The City will perform necessary maintenance or repairs to any city-owned post-construction controls identified as a maintenance issue.	The two inspection reports requiring corrective actions are attached. (See Documents 4-6 and 4-7)		NO
12	**Procedures to Address Non-Compliant Post-Construction BMPs:** Maintain records of escalating enforcement actions of non-compliant post-construction BMPs.	2 written notices issued	The City will maintain records of enforcement actions regarding post-construction controls during the reporting period.	A copy of an issued written notice is attached. (See Document 4-7)		NO

6.5 Pollution Prevention and Good Housekeeping for Municipal Operations

6.5.1 Implementation Status

During the April 1, 2023 to March 31, 2024 reporting period, the City of Rainbow City completed eleven (11) of the thirteen (13) Pollution Prevention and Good Housekeeping for Municipal Operations strategies identified in the previous Annual Report and the 2022 SWMPP. Two (2) strategies were not completed:

- The City operated one fueling area, but did not develop a written Standard Operating Procedure for municipal vehicle fueling operations by March 31, 2024 (Strategy 9).
- The City did not develop a written Standard Operating Procedure for materials storage by March 31, 2024 (Strategy 10).

A table identifying each Pollution Prevention and Good Housekeeping for Municipal Operations strategy planned for the 2023-2024 reporting period, a description of actions taken by the City of Rainbow City, and a description of activities planned for the next reporting period is provided at the end of this section. Supporting documentation is included in **Appendix H**.

6.5.2 Proposed Activities for the April 1, 2023 to March 31, 2024 Reporting Period

The City will implement the activities listed in the 2022 SWMPP and in Table 6-5 as part of their Pollution Prevention and Good Housekeeping for Municipal Operations Control Measure during the 2024-2025 reporting period. The City will evaluate the success of the program to aid in preparing the required Annual Report based on the evaluation criteria established for each strategy.

6.5.3 Assessment of Control

The strategies enacted during the reporting period appear to be effective in meeting the objectives of the Pollution Prevention and Good Housekeeping for Municipal Operations Control Measure as outlined in the 2021 permit. The strategies are adequate to address storm water pollution prevention from municipal operations.

6.5.4 Proposed Changes

The City of Rainbow City requests no changes to the Pollution Prevention and Good Housekeeping for Municipal Operations strategies identified in the 2022 SWMPP.

6.5.5 Responsible Parties

The **Building Department** is responsible for conducting the municipal facility evaluations and maintaining records of the facility inspections. The Building Department is also responsible for coordinating the annual reviews of the SOPs.

RecycleRBC is responsible for managing recycling activities within the City.

The **Street Department** will be responsible for roadway maintenance and collection and disposal of the waste collected in City-owned or operated BMPs.

Rainbow City

Table 6-5 Control Measure 5 - Pollution Prevention and Good Housekeeping for Municipal Operations

See Section 9.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2022-2023 IMPLEMENTATION STATUS	2023-2024 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS /CHANGES	PROPOSED CHANGES
1	**Municipal Facilities Inventory:** Maintain an inventory of all municipal facilities, including facilities that have the potential to discharge pollutants. Update the inventory annually.	14 municipal facilities 5 municipal facilities with pollution potential	The City will continue to maintain the inventory listing all Coty facilities, including City facilities that have the potential to discharge pollutants via storm water runoff.	The current municipal facility inventory is attached. (See Document 5-1)		NO
2	**Brush and Large Item Pickup:** Provide brush pickup on an as-needed basis.	The City performed monthly pickups of brush and bulk items. 4,069,020 pounds of debris collected	The City will continue to perform brush and large item pickup throughout the year on a monthly basis and dispose of collected debris at a permitted landfill.	An example invoice from Noble Hill Landfill for brush and large item pickup is attached. (See Document 1-19)		NO
3	**Recycling Center:** Provide recycling locations for residents and local businesses.	The City maintained recycling drop-off points at the Community Center and Fire Station 2. Approximately 254 tons of materials collected.	The City will continue to manage two drop-off recycling locations and distribute bins to local businesses.	The 2023-2024 recycling receipt is attached. (See Document 1-20)	96 tons of material were collected during the previous reporting period	NO
4	**Coordinate and Promote an Annual Community Cleanup Day:** Coordinate a community cleanup day annually.	2 community cleanup days were held on **May 6, 2023** and **October 14, 2023**. 61 volunteers participated in May and over 100 volunteers participated in October.	The City will continue to coordinate a community cleanup day annually. Collected debris will be disposed of at a permitted landfill.	Screenshots of the Facebook posts, a photo of the City Municipal Building sign advertising the cleanup days, and a copy of the Council Meeting minutes are attached. (See Documents 1-11, 1-12, 1-16, 1-17, and 1-18)		NO
5	**Evaluate Effectiveness of Litter Reduction Program:** Evaluate the litter reduction program.	The City evaluated the litter reduction program and determined no changes need to be made.	The City will track the number of scheduled brush pickups and pounds of debris collected, scheduled gutter clean outs, and the number of litter enforcements issued to evaluate the litter reduction program.			NO
6	**Municipal Vehicle and Equipment Washing SOP:** Evaluate the SOP for municipal vehicle and equipment washing by March 31 each year.	3 designated washing areas maintained The City evaluated municipal vehicle and equipment washing SOP and determined that no changes were necessary.	The City will evaluate the SOP for municipal equipment and vehicle washing by March 31, 2025.			NO

Rainbow City

Table 6-5 Control Measure 5 - Pollution Prevention and Good Housekeeping for Municipal Operations

See Section 9.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2022-2023 IMPLEMENTATION STATUS	2023-2024 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS /CHANGES	PROPOSED CHANGES
7	**Vehicle Maintenance SOP:** Evaluate the SOP for vehicle maintenance by March 31 each year.	The City regularly inspected municipal vehicles. The City evaluated the 2017 vehicle maintenance SOP and determined that no changes were necessary.	The City will evaluate the SOP for vehicle maintenance by March 31, 2025.	Example vehicle inspections are attached. (See Document 5-2)		NO
8	**Pesticide, Herbicide, and Fertilizer SOP:** Develop an SOP for pesticide, herbicide, and fertilizer management within 90 days of using and/or storing pesticides, herbicides, or fertilizers. Evaluate the SOP by March 31st each year if developed.	Pesticide, Herbicide, and Fertilizer (PHF) application within Rainbow City is currently performed by an outside contractor. Rainbow City does not store or use pesticides, herbicides, or fertilizers. An SOP was not developed.	Should City personnel begin using or storing pesticides, herbicides, or fertilizers, the City will develop an SOP for proper application, storage, or disposal within 90 days.	A copy of the pesticide applicator license is attached. (See Document 5-3)		NO
9	**Municipal Vehicle Fueling:** Develop an SOP for municipal vehicle fueling by March 31, 2024. Evaluate the SOP by March 31st each year.	**INCOMPLETE** The City operated one fueling area at the Street Department. The City did not develop a written Standard Operating Procedure for municipal vehicle fueling operations by March 31, 2024.	The City will develop the SOP for municipal vehicle fueling operations by **March 31, 2025**.			NO
10	**Materials Storage SOP:** Develop an SOP for materials storage by March 31, 2024. Evaluate the SOP by March 31st each year.	**INCOMPLETE** The City did not develop a written Standard Operating Procedure for materials storage by March 31, 2024.	The City will develop the SOP for materials storage by **March 31, 2025**. The SOP will cover materials storage facilities and storage yards.			NO
11	**Quarterly Inspection of Municipal Facilities:** Inspect municipal facilities that have the potential to discharge pollutants once per quarter.	5 facilities with pollution potential 20 inspections performed 2 deficiencies noted	The City will continue to inspect municipal facilities that have been determined to have potential discharge pollutants via stormwater runoff once per quarter.	Copies of the quarterly inspections are attached. (See Document 5-4)		NO
12	**Corrective Actions at Municipal Facilities:** Address noted deficiencies from quarterly inspections within 72 hours of the inspection.	1 deficiency noted 1 deficiency corrected 1 deficiency re-inspected	The City will continue to address deficiencies noted during a quarterly municipal facility inspection within 72 hours of the inspection.	Copies of the quarterly inspections are attached. (See Document 5-4)		NO

Rainbow City

Table 6-5 Control Measure 5 - Pollution Prevention and Good Housekeeping for Municipal Operations

See Section 9.0 of the 2022 SWMPP

STRATEGY NO.	STRATEGIES	2022-2023 IMPLEMENTATION STATUS	2023-2024 PROPOSED EFFORTS	SUPPORTING DOCUMENTATION	COMMENTS /CHANGES	PROPOSED CHANGES
13	**Annual Employee Training:** Conduct annual training on good housekeeping practices, the developed SOPs, and potential threats to storm water quality.	S&ME addressed good housekeeping and best practices at municipal facilities in the Annual Training conducted on **March 20, 2023**. 4 municipal employees attended training	Appropriate City personnel will undergo annual training on good housekeeping practices, the developed SOPs, and potential threats to storm water quality.	Copies of the sign-in sheet and the training materials are attached. (See Document 2-10)		NO

7.0 Notice of Reliance

Reference Part VI.B.6

7.1 Steering Committee

The Gadsden-Etowah Steering Committee was first established in 2011 following re-issuance of the joint permit. The intent of the steering committee was to provide for coordination between the co-permittees. When the joint permit was superseded by the separate permits in 2016, the committee continued to work together to produce and implement a joint SWMPP and monitoring program.

The Steering Committee will continue under the 2021 permit, although each entity currently operates under individual SWMPPs and the City of Gadsden has discontinued their participation in the joint monitoring program. The cities of Attalla, Glencoe, Hokes Bluff, Rainbow City, and Southside and Etowah County remain committed to partnership and joint implementation of the monitoring program.

Each of the seven entities provide at least one member to the Gadsden-Etowah Storm Water Steering Committee. Each entity is responsible for providing the required annual updates and monitoring data to the Steering Committee.

Table 7-1 Gadsden-Etowah 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	lisa.lowman@cityofhokesbluff.com
Etowah County	Robert Nail	256-549-5358	rnail@etowahcounty.org

8.0 Agency Certification

Reference Parts VI.A.2 and VII.G

I certify under penalty of law that this document and all attachments pertaining to the City of Rainbow City 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.

Joel Garmon, Building Official
Rainbow City, Alabama

5-31-24
Date

Appendices

Appendix A – Figures

GADSDEN-ETOWAH MS4 BOUNDARIES

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

ETOWAH COUNTY
ST. CLAIR COUNTY
CALHOUN COUNTY

GADSDEN
ATTALLA
HOKES BLUFF
RAINBOW CITY
SOUTHSIDE
GLENCOE

Line Creek
Brown Creek
Clear Creek
Big Wills Creek
Little Wills Creek
Town Creek
Black Creek
Rook Creek
Dry Creek
Little Canoe Creek
Hurricane Creek
Coal Creek
Little Cove Creek
Big Cove Creek
Turkeytown Creek
Coosa River
Dry Creek
Ohatchee Creek
Coffee Creek
Big Canoe Creek
Greens Creek
Permeter Creek
Terrys Creek

11 59 431 278 77 211 759 411

N

0 1.5 3 Miles

Legend

- Gadsden, AL Urbanized Area Outline
- Unincorporated Etowah County MS4

City Limits

- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside

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.

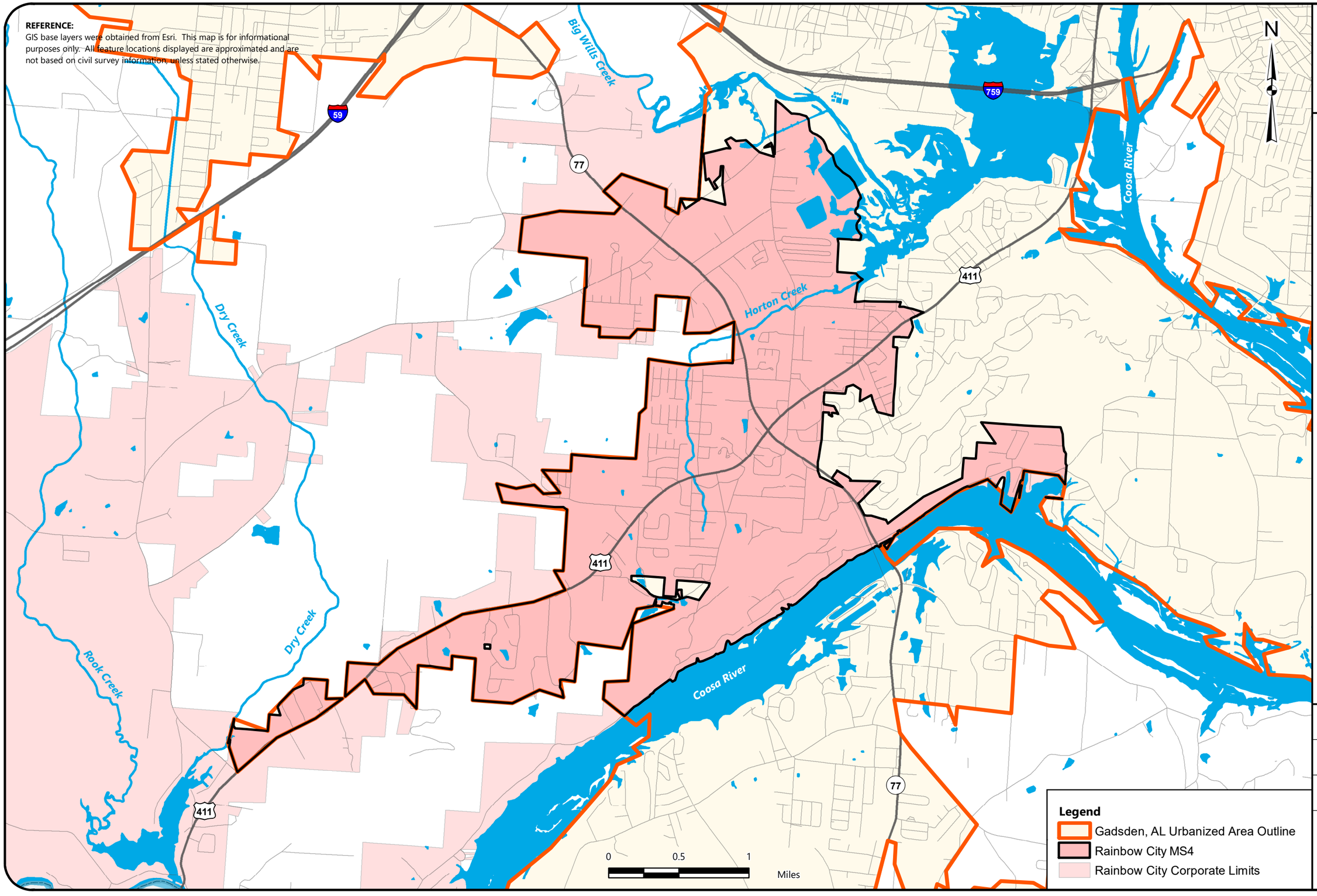
SCALE:
1:100,000

DATE:
02/18/2022

PROJECT NUMBER
23820129

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.



RAINBOW CITY MS4 BOUNDARIES

CITY OF RAINBOW CITY, ALABAMA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM
NPDES GENERAL PERMIT ALR040056

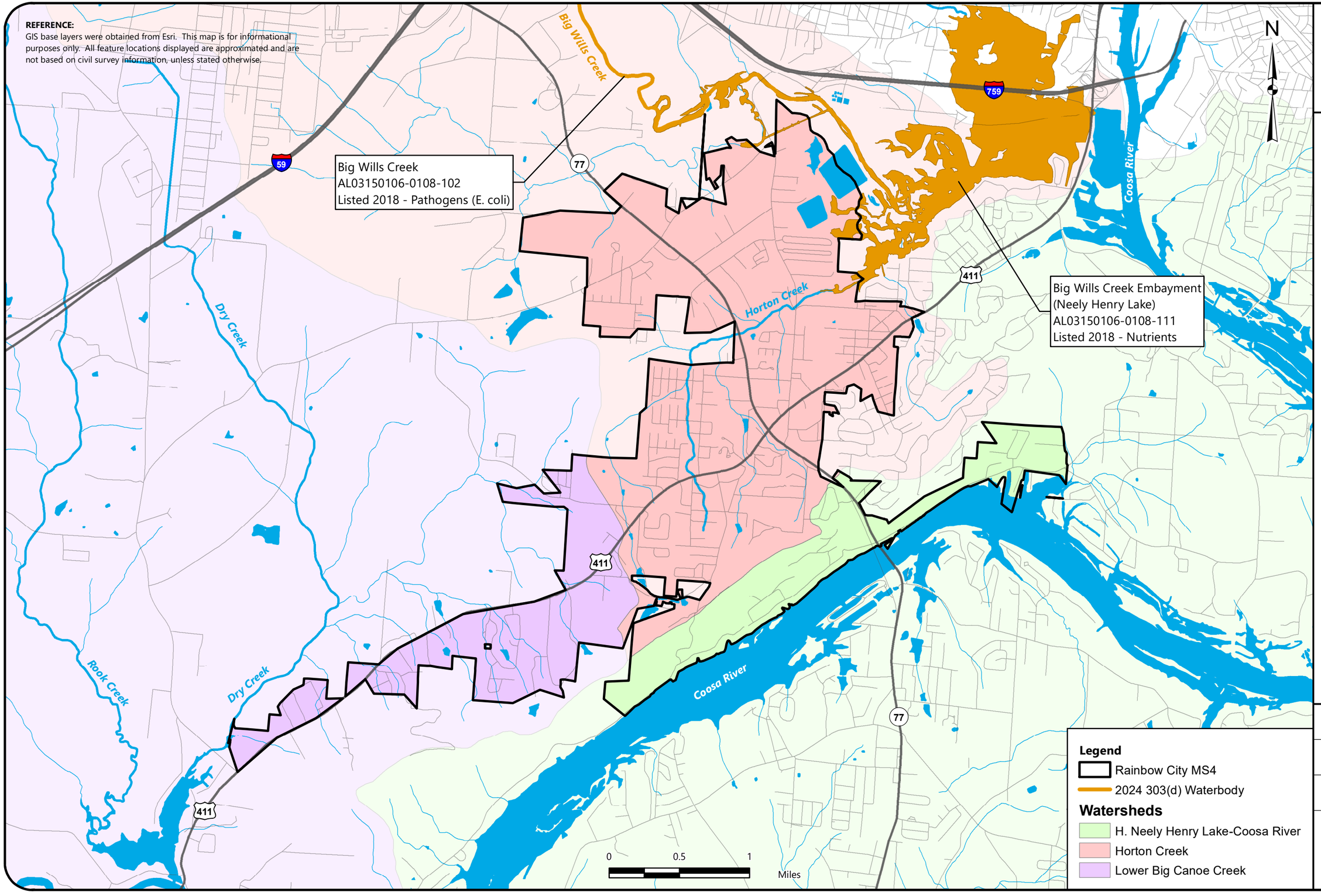
SCALE:
1:40,000

DATE:
02/19/2022

PROJECT NUMBER
23820129E

FIGURE NO.
2

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.



RAINBOW CITY MS4 303(d) WATERBODIES

CITY OF RAINBOW CITY, ALABAMA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM
NPDES GENERAL PERMIT ALR040056

SCALE: 1:40,000
DATE: 05/30/2024
PROJECT NUMBER 23820129E
FIGURE NO. 3

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.

Big Wills Creek Embayment
(Neely Henry Lake)
AL03150106-0108-111
2008 TMDL - Total Phosphorous, pH, Organic Enrichment (CBOD, NBOD)

Big Canoe Creek Embayment
(Neely Henry Lake)
AL03150106-0306-111
2008 TMDL - Total Phosphorous, pH, Organic Enrichment (CBOD, NBOD)

Coosa River (Neely Henry Lake)
AL03150106-0309-102
2008 TMDL - Total Phosphorous, pH, Organic Enrichment (CBOD, NBOD)

Big Wills Creek
Dry Creek
Horton Creek
Coosa River
Rook Creek

59
77
411
759

N

0 0.5 1
Miles

Legend
- Rainbow City MS4
- 2024 TMDL Waterbody

Watersheds
- H. Neely Henry Lake-Coosa River
- Horton Creek
- Lower Big Canoe Creek

RAINBOW CITY MS4 TMDLS

CITY OF RAINBOW CITY, ALABAMA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM
NPDES GENERAL PERMIT ALR040056

SCALE:
1:40,000

DATE:
05/30/2024

PROJECT NUMBER
23820129E

FIGURE NO.
4

Appendix B – Charts and Statistics

CHART 1 - TURBIDITY ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

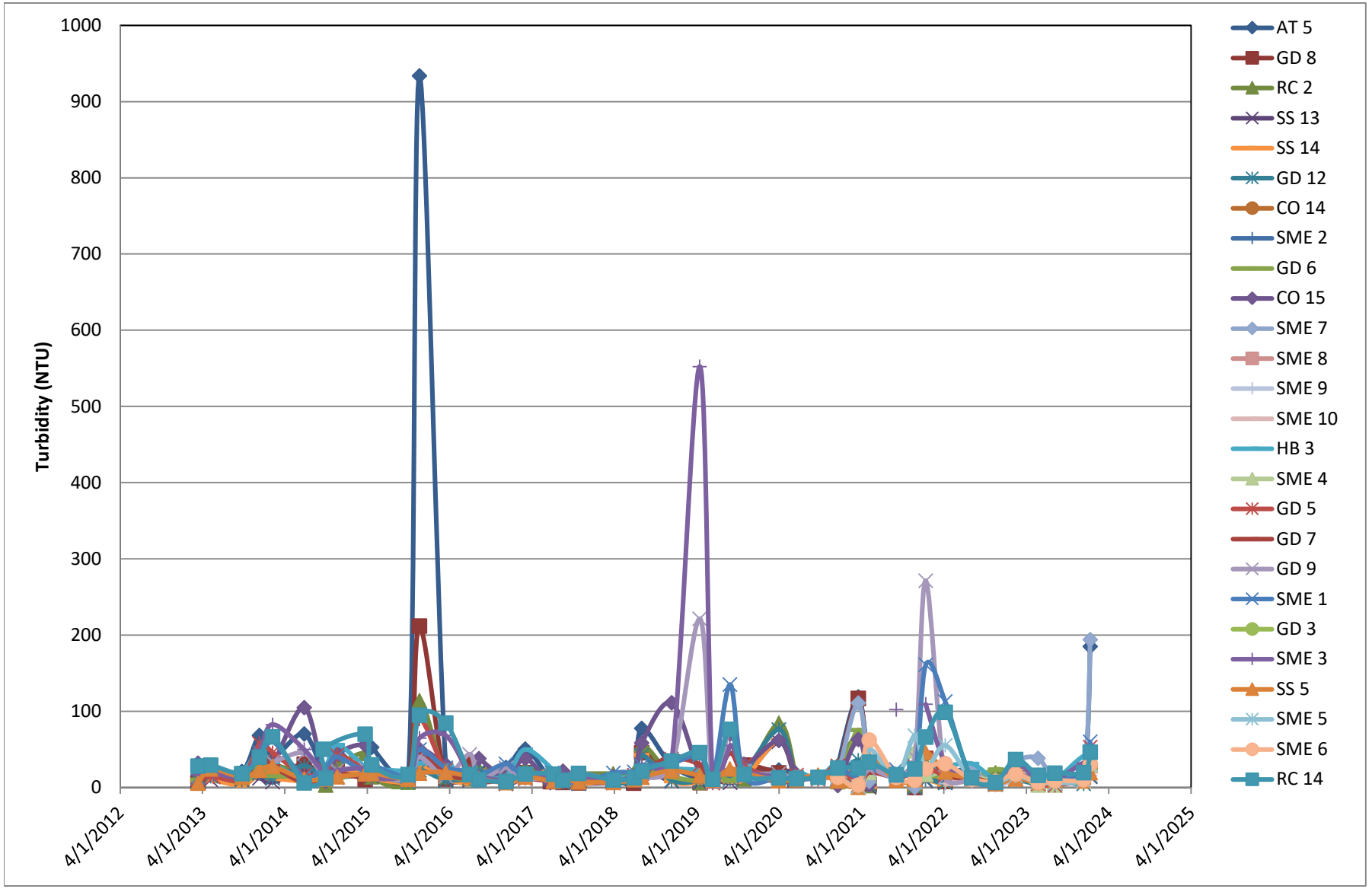


CHART 2 - pH ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

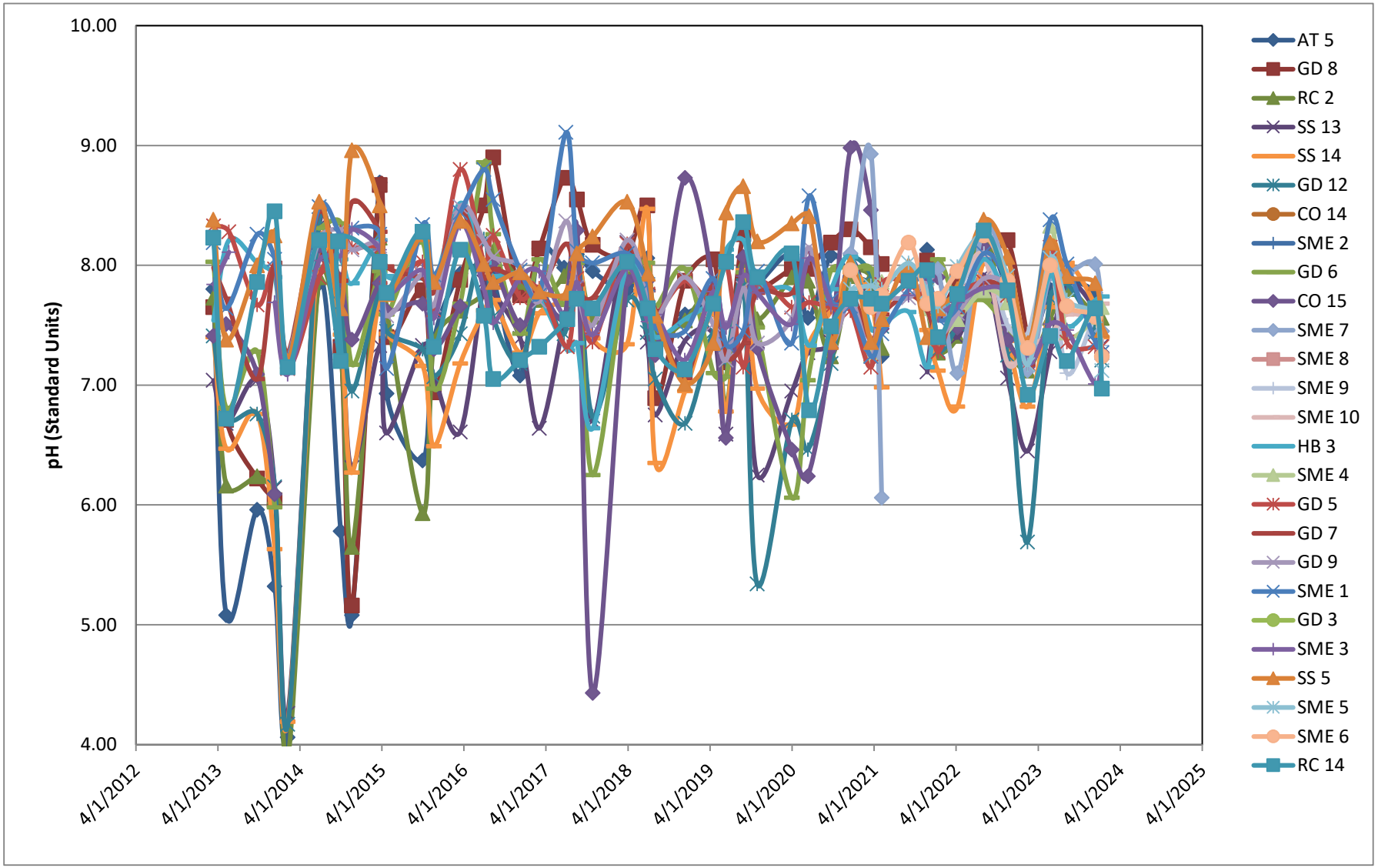


CHART 3 - DISSOLVED OXYGEN ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

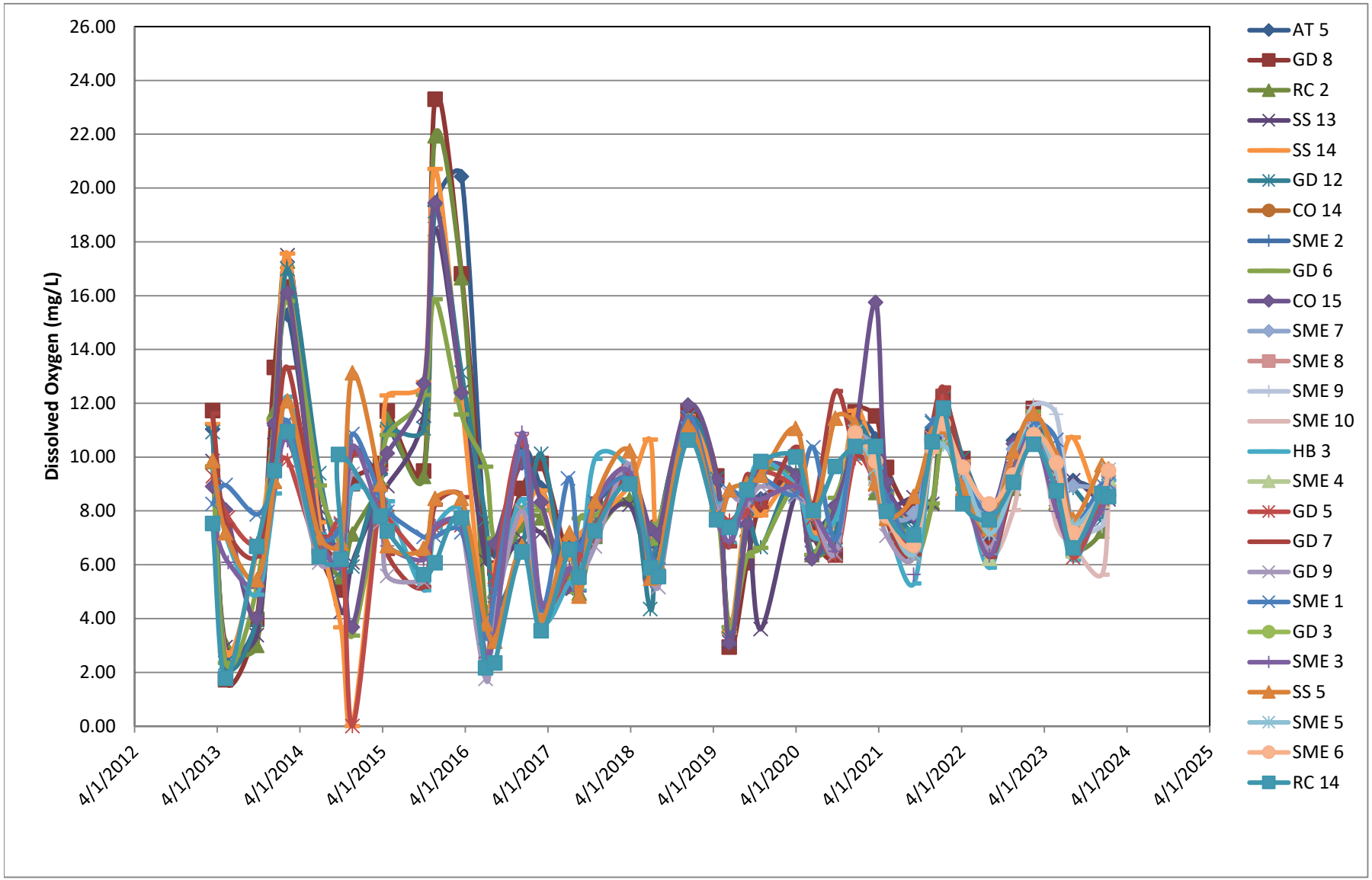


CHART 4 - TEMPERATURE ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

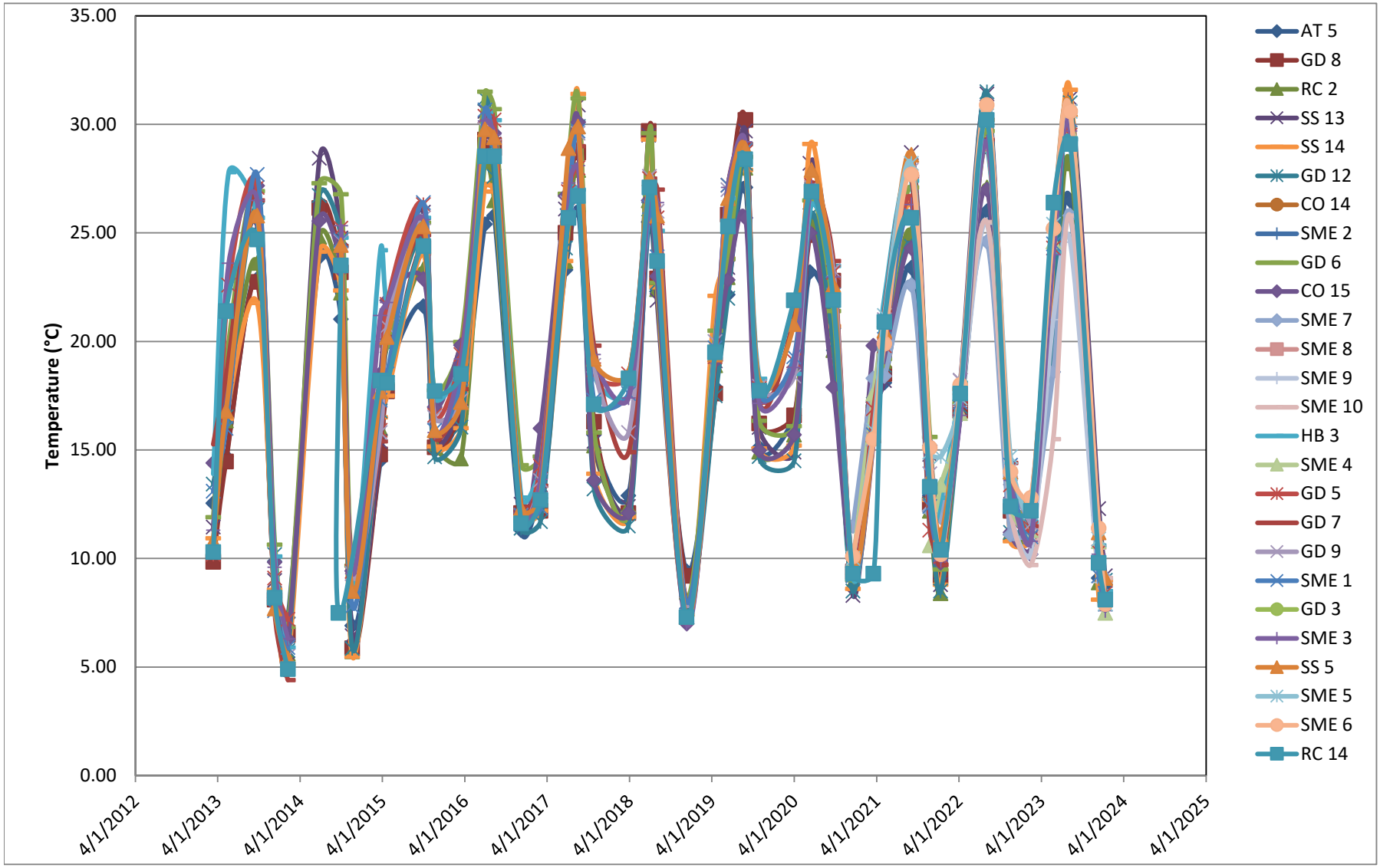


CHART 5 - TOTAL SUSPENDED SOLIDS ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

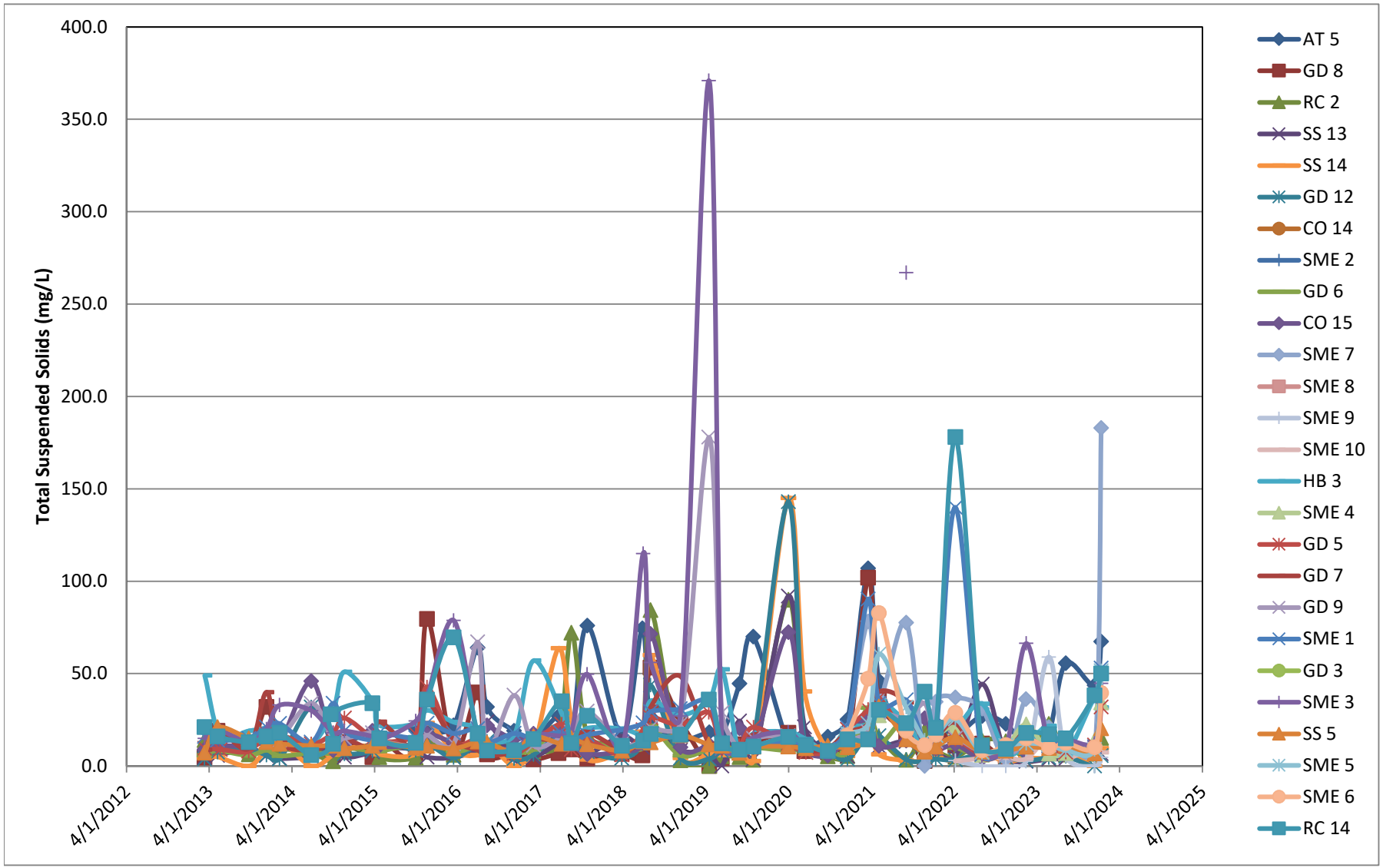


CHART 6 - TOTAL KJELDAHL ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

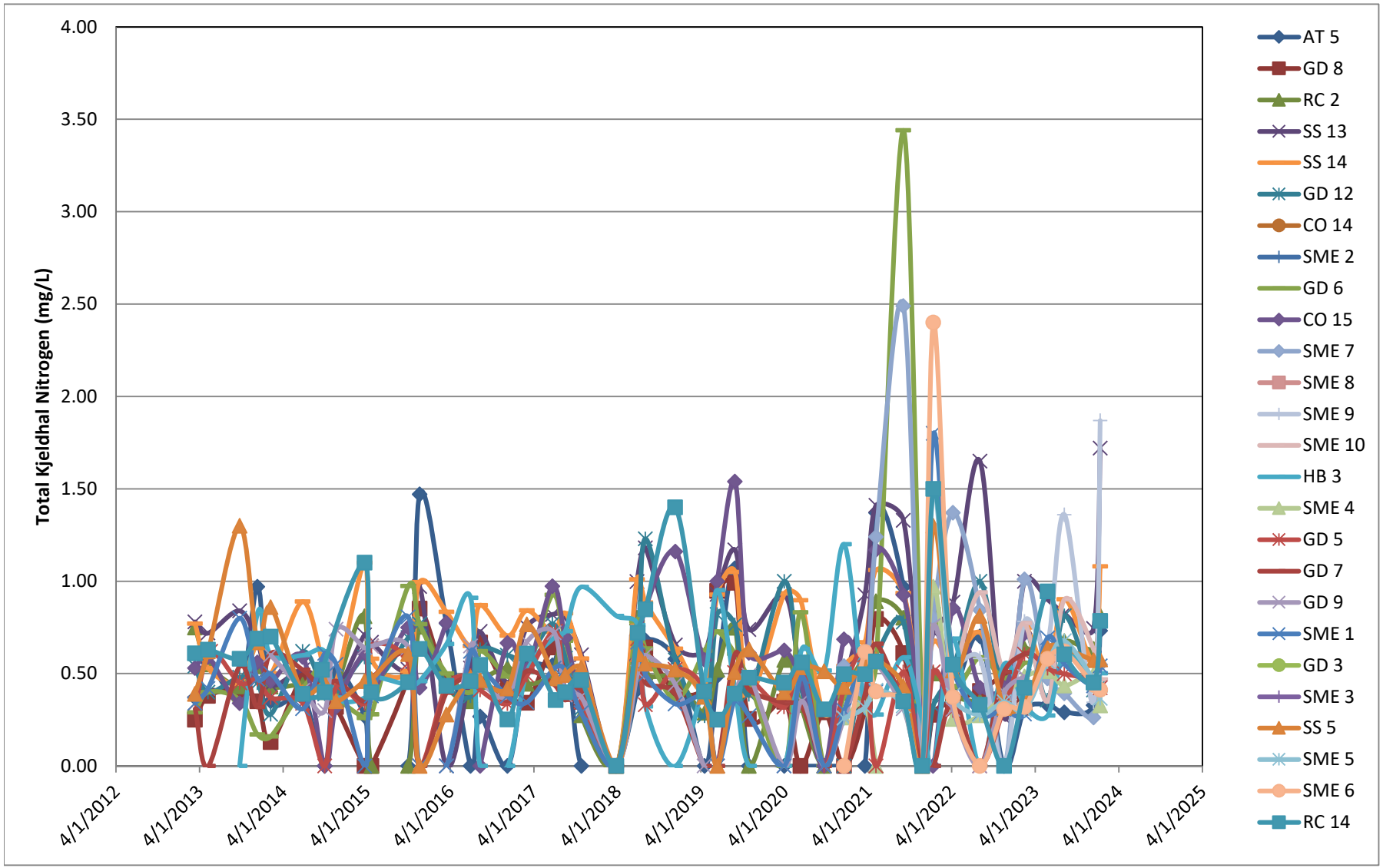


CHART 7 - NITRATE-NITRITE ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

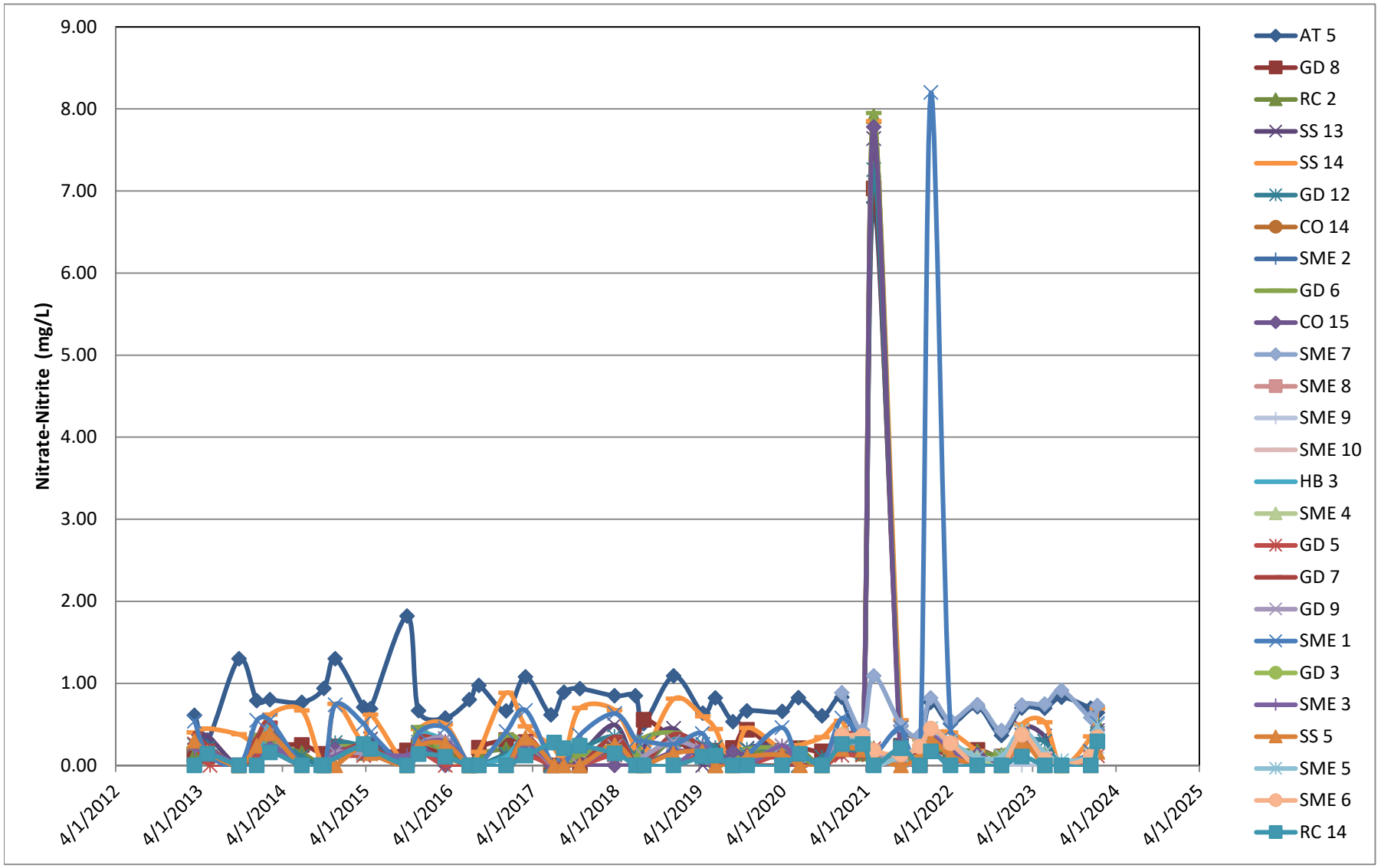


CHART 8 - TOTAL PHOSPHORUS ANALYTICAL DATA
MS4 WET-WEATHER MONITORING

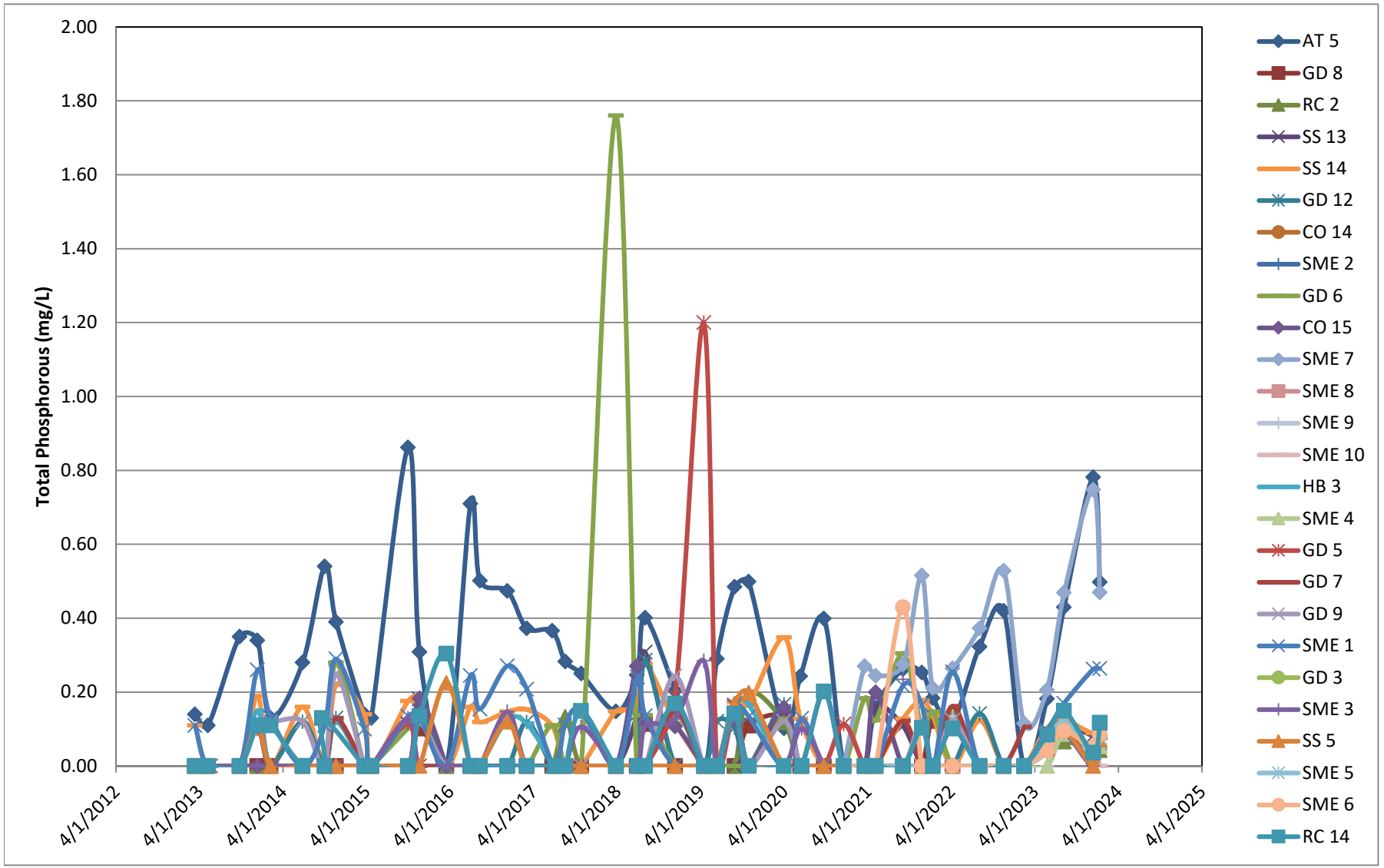
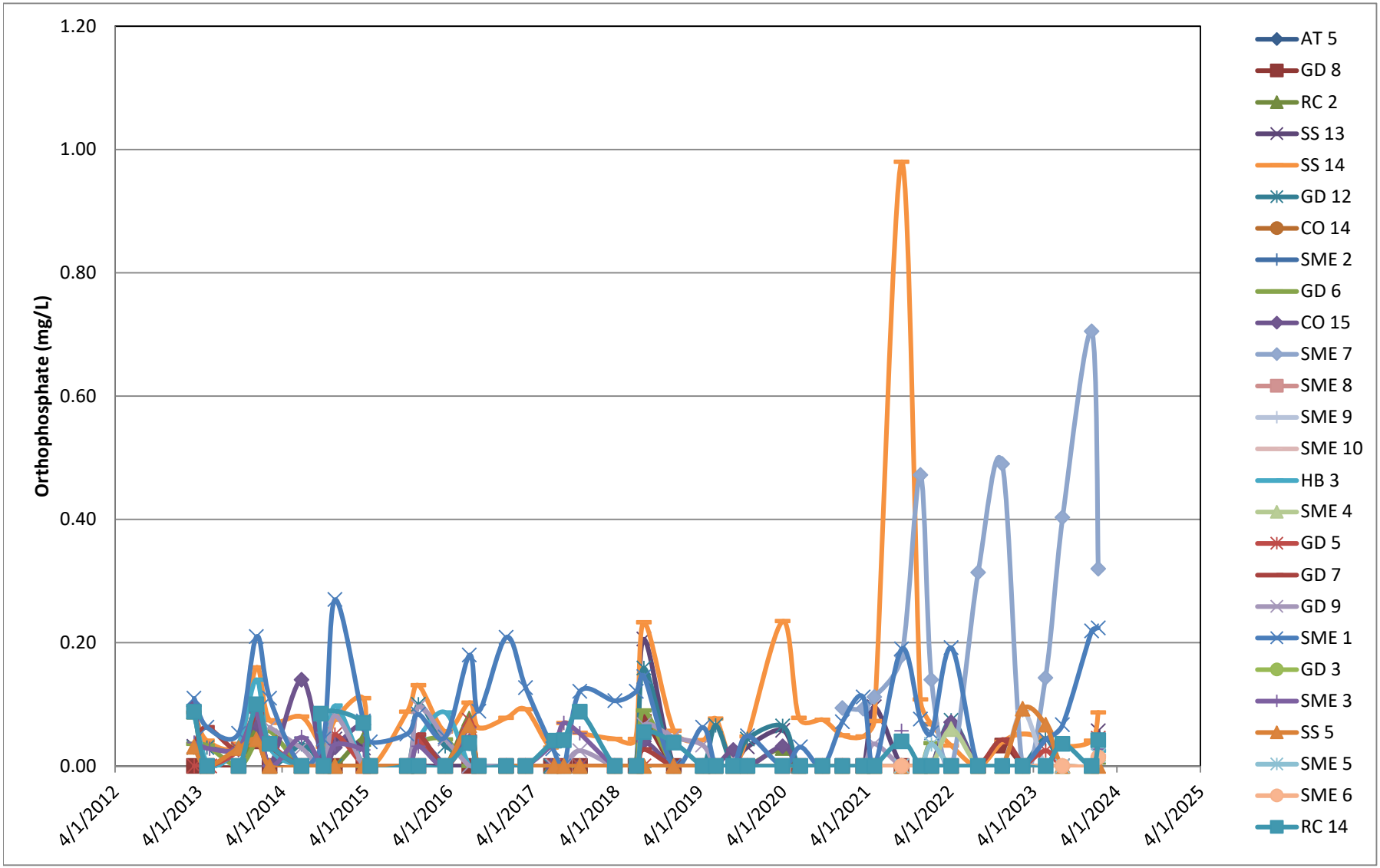


CHART 9 - ORTHOPHOSPHATE ANALYTICAL DATA
MS4 WET-WEATHER MONITORING



Basic Statistics

Parameter: Nitrate-nitrite

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements	562
Total Non-Detects	200 (35.5872%)
Pooled Mean	0.299324
Pooled Std Dev	0.804026
Maximum Detected Value	8.2 at SME 1 on 1/11/2022

Compliance Meas.	562
Compliance Mean	0.299324
Compliance Std Dev	0.804026
Maximum Detected Value	8.2 at SME 1 on 1/11/2022

Background Meas.	0
Background Mean	0
Background Std Dev	0
Maximum Detected Value	N/A

Background Locations

There are 0 background location

Compliance Locations

There are 17 compliance location

Location	Obs.	Non-Detects	% ND	Total
SME 6	14	3	21.4286	2.8845
SME 4	13	3	23.0769	2.808
AT 5	45	0	0	40.037
GD 12	45	13	28.8889	14.262
HB 3	45	20	44.4444	6.1724
RC 14	45	25	55.5556	3.461
RC 2	45	12	26.6667	13.911
SME 1	45	17	37.7778	19.334
SS 13	45	17	37.7778	15.367
SS 14	45	6	13.3333	24.542
SS 5	45	23	51.1111	4.648
GD 5	45	25	55.5556	2.9894
SME 3	41	23	56.0976	4.115
SME 5	14	1	7.14286	3.2528
SME 7	14	0	0	9.523
SME 10	8	5	62.5	0.761
SME 9	8	7	87.5	0.152

Location	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
SME 6	0.206036	0.157698	0.206036	0	4216.5	301.179
SME 4	0.216	0.161702	0.216	0	3984.5	306.5
AT 5	0.889711	0.950033	0.889711	0	23222	516.044
GD 12	0.316933	1.06521	0.316933	0	12308.5	273.522
HB 3	0.137164	0.14858	0.137164	0	10693	237.622
RC 14	0.0769111	0.0976906	0.0769111	0	8342.5	185.389
RC 2	0.309133	1.16372	0.309133	0	11469	254.867
SME 1	0.429644	1.20811	0.429644	0	13965.5	310.344
SS 13	0.341489	1.12475	0.341489	0	12361.5	274.7
SS 14	0.545378	1.13899	0.545378	0	17698	393.289

SS 5	0.103289	0.120736	0.103289	0	9436.5	209.7
GD 5	0.0664311	0.0854632	0.0664311	0	7912.5	175.833
SME 3	0.100366	0.126097	0.100366	0	8416.5	205.28
SME 5	0.232343	0.157724	0.232343	0	4527.5	323.393
SME 7	0.680214	0.213285	0.680214	0	7124	508.857
SME 10	0.095125	0.155735	0.095125	0	1543.5	192.938
SME 9	0.019	0.0537401	0.019	0	981.5	122.688

Analysis of Variance Statistics

SS Wells	31.7426
SS Total	362.663

Kruskal-Wallis Statistics

Non-Detect Rank	100.5
Background Rank Sum	0
Background Rank Mean	0
H Statistic	212.894
H Adjusted for Ties	222.941

Basic Statistics

Parameter: Ortho-phosphate

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements	561
Total Non-Detects	342 (60.9626%)
Pooled Mean	0.0500731
Pooled Std Dev	0.112675
Maximum Detected Value	0.98 at SS 14 on 9/2/2021
Compliance Meas.	561
Compliance Mean	0.0500731
Compliance Std Dev	0.112675
Maximum Detected Value	0.98 at SS 14 on 9/2/2021
Background Meas.	0
Background Mean	0
Background Std Dev	0
Maximum Detected Value	N/A

Background Locations

There are 0 background location

Compliance Locations

There are 17 compliance location

Location	Obs.	Non-Detects	% ND	Total
SME 6	14	13	92.8571	0.014
SME 4	13	11	84.6154	0.08
AT 5	45	1	2.22222	11.724
GD 12	44	30	68.1818	0.761
HB 3	45	37	82.2222	0.543
RC 14	45	31	68.8889	0.798
RC 2	45	39	86.6667	0.315
SME 1	45	12	26.6667	3.561
SS 13	45	35	77.7778	0.658
SS 14	45	3	6.66667	4.046
SS 5	45	39	86.6667	0.932
GD 5	45	37	82.2222	0.39
SME 3	41	27	65.8537	0.629
SME 5	14	12	85.7143	0.052
SME 7	14	2	14.2857	3.465
SME 10	8	7	87.5	0.017
SME 9	8	6	75	0.106

Location	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
SME 6	0.001	0.00374166	0.001	0	2572.5	183.75
SME 4	0.00615385	0.017097	0.00615385	0	2666.5	205.115
AT 5	0.260533	0.181392	0.260533	0	22807.5	506.833
GD 12	0.0172955	0.0319852	0.0172955	0	10852	246.636
HB 3	0.0120667	0.0307855	0.0120667	0	9782.5	217.389
RC 14	0.0177333	0.0296574	0.0177333	0	11200.5	248.9
RC 2	0.007	0.0204016	0.007	0	9162.5	203.611
SME 1	0.0791333	0.0750823	0.0791333	0	17362	385.822
SS 13	0.0146222	0.0369639	0.0146222	0	10186.5	226.367
SS 14	0.0899111	0.14392	0.0899111	0	19137.5	425.278

SS 5	0.0207111	0.100708	0.0207111	0	9300.5	206.678
GD 5	0.00866667	0.0207955	0.00866667	0	9595.5	213.233
SME 3	0.0153415	0.0239798	0.0153415	0	10201.5	248.817
SME 5	0.00371429	0.0100799	0.00371429	0	2782	198.714
SME 7	0.2475	0.208999	0.2475	0	6630	473.571
SME 10	0.002125	0.00601041	0.002125	0	1547.5	193.438
SME 9	0.01325	0.031513	0.01325	0	1854	231.75

Analysis of Variance Statistics

SS Wells	3.23122
SS Total	7.10953

Kruskal-Wallis Statistics

Non-Detect Rank	171.5
Background Rank Sum	0
Background Rank Mean	0
H Statistic	221.139
H Adjusted for Ties	285.917

Basic Statistics

Parameter: TKN

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements	561
Total Non-Detects	75 (13.369%)
Pooled Mean	0.570462
Pooled Std Dev	1.07634
Maximum Detected Value	22.8 at RC 2 on 5/24/2023

Compliance Meas.	561
Compliance Mean	0.570462
Compliance Std Dev	1.07634
Maximum Detected Value	22.8 at RC 2 on 5/24/2023

Background Meas.	0
Background Mean	0
Background Std Dev	0
Maximum Detected Value	N/A

Background Locations

There are 0 background location

Compliance Locations

There are 17 compliance location

Location	Obs.	Non-Detects	% ND	Total
SME 6	14	4	28.5714	6.209
SME 4	13	2	15.3846	4.731
AT 5	45	16	35.5556	16.953
GD 12	45	4	8.88889	23.369
HB 3	45	7	15.5556	20.696
RC 14	45	3	6.66667	24.22
RC 2	45	5	11.1111	43.772
SME 1	45	8	17.7778	18.458
SS 13	44	3	6.81818	32.833
SS 14	45	1	2.22222	31.176
SS 5	45	4	8.88889	22.836
GD 5	45	8	17.7778	26.683
SME 3	41	6	14.6341	20.328
SME 5	14	1	7.14286	6.193
SME 7	14	2	14.2857	10.384
SME 10	8	0	0	5.059
SME 9	8	1	12.5	6.129

Location	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
SME 6	0.4435	0.602179	0.4435	0	2656	189.714
SME 4	0.363923	0.245779	0.363923	0	2381	183.154
AT 5	0.376733	0.381963	0.376733	0	9178	203.956
GD 12	0.519311	0.260731	0.519311	0	13212	293.6
HB 3	0.459911	0.267353	0.459911	0	11896	264.356
RC 14	0.538222	0.296288	0.538222	0	13170	292.667
RC 2	0.972711	3.33578	0.972711	0	12653	281.178
SME 1	0.410178	0.305959	0.410178	0	9862	219.156
SS 13	0.746205	0.373045	0.746205	0	17538	398.591
SS 14	0.6928	0.242063	0.6928	0	17778	395.067

SS 5	0.507467	0.257851	0.507467	0	12937	287.489
GD 5	0.592956	1.44872	0.592956	0	9980	221.778
SME 3	0.495805	0.335466	0.495805	0	11153	272.024
SME 5	0.442357	0.341313	0.442357	0	2834	202.429
SME 7	0.741714	0.650414	0.741714	0	4652	332.286
SME 10	0.632375	0.217995	0.632375	0	2891	361.375
SME 9	0.766125	0.59006	0.766125	0	2870	358.75

Analysis of Variance Statistics

SS Wells	15.0605
SS Total	648.763

Kruskal-Wallis Statistics

Non-Detect Rank	38
Background Rank Sum	0
Background Rank Mean	0
H Statistic	87.0202
H Adjusted for Ties	87.2286

Basic Statistics

Parameter: Total Phosphorus

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements	562
Total Non-Detects	343 (61.032%)
Pooled Mean	0.0743566
Pooled Std Dev	0.133459
Maximum Detected Value	1.76 at GD 6 on 3/27/2018
Compliance Meas.	562
Compliance Mean	0.0743566
Compliance Std Dev	0.133459
Maximum Detected Value	1.2 at GD 5 on 4/15/2019
Background Meas.	0
Background Mean	0
Background Std Dev	0
Maximum Detected Value	N/A

Background Locations

There are 0 background location

Compliance Locations

There are 17 compliance location

Location	Obs.	Non-Detects	% ND	Total
SME 6	14	9	64.2857	0.703
SME 4	13	10	76.9231	0.1852
AT 5	45	5	11.1111	13.308
GD 12	45	31	68.8889	1.9989
HB 3	45	33	73.3333	1.4309
RC 14	45	31	68.8889	1.9568
RC 2	45	36	80	0.9287
SME 1	45	18	40	4.7521
SS 13	45	32	71.1111	1.8361
SS 14	45	17	37.7778	4.37
SS 5	45	37	82.2222	1.0422
GD 5	45	36	80	2.1053
SME 3	41	29	70.7317	1.6307
SME 5	14	9	64.2857	0.3956
SME 7	14	1	7.14286	4.689
SME 10	8	5	62.5	0.176
SME 9	8	4	50	0.2799

Location	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
SME 6	0.0502143	0.114422	0.0502143	0	3556	254
SME 4	0.0142462	0.0285081	0.0142462	0	2807	215.923
AT 5	0.295733	0.201729	0.295733	0	21343	474.289
GD 12	0.04442	0.0822909	0.04442	0	11384	252.978
HB 3	0.0317978	0.0577277	0.0317978	0	10764	239.2
RC 14	0.0434844	0.0732955	0.0434844	0	11459	254.644
RC 2	0.0206378	0.0479803	0.0206378	0	9871	219.356
SME 1	0.105602	0.0998413	0.105602	0	15663	348.067
SS 13	0.0408022	0.0726249	0.0408022	0	11170	248.222
SS 14	0.0971111	0.0875108	0.0971111	0	15662	348.044

SS 5	0.02316	0.0561634	0.02316	0	9792	217.6
GD 5	0.0467844	0.182151	0.0467844	0	10058	223.511
SME 3	0.0397732	0.0710108	0.0397732	0	10116	246.732
SME 5	0.0282571	0.0434708	0.0282571	0	3442	245.857
SME 7	0.334929	0.194539	0.334929	0	6971	497.929
SME 10	0.022	0.0341218	0.022	0	1943	242.875
SME 9	0.0349875	0.0505854	0.0349875	0	2202	275.25

Analysis of Variance Statistics

SS Wells	3.8888
SS Total	9.9922

Kruskal-Wallis Statistics

Non-Detect Rank	172
Background Rank Sum	0
Background Rank Mean	0
H Statistic	135.826
H Adjusted for Ties	175.789

Basic Statistics

Parameter: Total Suspended Solids

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements	562
Total Non-Detects	11 (1.9573%)
Pooled Mean	20.3957
Pooled Std Dev	28.9976
Maximum Detected Value	371 at SME 3 on 4/15/2019

Compliance Meas.	562
Compliance Mean	20.3957
Compliance Std Dev	28.9976
Maximum Detected Value	371 at SME 3 on 4/15/2019

Background Meas.	0
Background Mean	0
Background Std Dev	0
Maximum Detected Value	N/A

Background Locations

There are 0 background location

Compliance Locations

There are 17 compliance location

Location	Obs.	Non-Detects	% ND	Total
SME 6	14	0	0	329.2
SME 4	13	0	0	213.51
AT 5	45	0	0	1528.51
GD 12	45	1	2.22222	541.88
HB 3	45	0	0	1078.7
RC 14	45	0	0	1099.78
RC 2	45	1	2.22222	645.7
SME 1	45	0	0	1020.97
SS 13	45	1	2.22222	515.22
SS 14	45	4	8.88889	612.02
SS 5	45	0	0	545.51
GD 5	45	0	0	723.3
SME 3	41	0	0	1602.68
SME 5	14	0	0	300.23
SME 7	14	1	7.14286	577.6
SME 10	8	0	0	52.8
SME 9	8	3	37.5	74.8

Location	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
SME 6	23.5143	20.6797	23.5143	0	4727	337.643
SME 4	16.4238	8.74704	16.4238	0	3923	301.769
AT 5	33.9669	35.9377	33.9669	0	18107	402.378
GD 12	12.0418	21.3907	12.0418	0	7268	161.511
HB 3	23.9711	12.1512	23.9711	0	17648	392.178
RC 14	24.4396	26.9825	24.4396	0	15718	349.289
RC 2	14.3489	19.1703	14.3489	0	9126	202.8
SME 1	22.6882	22.793	22.6882	0	15578	346.178
SS 13	11.4493	14.5606	11.4493	0	7833	174.067
SS 14	13.6004	24.1101	13.6004	0	7382	164.044

SS 5	12.1224	4.3872	12.1224	0	10862	241.378
GD 5	16.0733	8.56184	16.0733	0	13419	298.2
SME 3	39.0898	68.702	39.0898	0	14979	365.341
SME 5	21.445	16.3328	21.445	0	4641	331.5
SME 7	41.2571	47.2388	41.2571	0	5381	384.357
SME 10	6.6	4.19762	6.6	0	875	109.375
SME 9	9.35	20.1786	9.35	0	736	92

Analysis of Variance Statistics

SS Wells	47498.1
SS Total	471723

Kruskal-Wallis Statistics

Non-Detect Rank	6
Background Rank Sum	0
Background Rank Mean	0
H Statistic	182.069
H Adjusted for Ties	182.071

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 17
Non detect rank is 9

Wilcoxon Ranks

Location	Date	Conc.	Rank
AT 5	3/12/2013	0.61	52
	5/8/2013	0.31	25
	9/23/2013	1.3	86
	12/10/2013	0.79	71
	2/6/2014	0.8	72
	6/26/2014	0.77	70
	9/30/2014	0.94	82
	11/19/2014	1.3	87
	3/23/2015	0.71	66
	4/22/2015	0.69	62
	9/30/2015	1.82	88
	11/19/2015	0.666	60
	3/15/2016	0.578	50
	6/29/2016	0.8	73
	8/9/2016	0.975	83
	12/7/2016	0.663	58
	3/2/2017	1.08	84
	6/21/2017	0.616	53
	8/17/2017	0.89	80
	10/26/2017	0.936	81
	3/27/2018	0.849	78
	6/26/2018	0.849	79
	8/1/2018	0.51	42
	12/11/2018	1.09	85
	4/17/2019	0.638	55
	6/11/2019	0.822	74
	8/28/2019	0.534	45
	10/28/2019	0.665	59
	3/31/2020	0.657	57
	6/10/2020	0.825	75
	9/21/2020	0.603	51
	12/17/2020	0.831	76
	3/18/2021	0.31	26
	5/5/2021	6.86	89
	9/2/2021	0.482	40
	11/23/2021	0.343	28
	1/10/2022	0.769	69
	4/7/2022	0.509	41
	8/3/2022	0.715	67
	11/16/2022	0.366	29
	2/13/2023	0.699	65
	5/24/2023	0.697	64
	8/7/2023	0.832	77
	12/12/2023	0.696	63
	1/10/2024	0.642	56

SME 1	3/12/2013	0.54	46
	5/8/2013	0.15	20
	9/23/2013	ND<-0	9
	12/10/2013	0.55	47
	2/6/2014	0.55	48
	6/26/2014	ND<-0	9
	9/30/2014	ND<-0	9
	11/19/2014	0.74	68
	3/23/2015	0.51	43
	4/22/2015	0.4	33
	9/30/2015	ND<-0	9
	11/19/2015	0.401	34
	3/15/2016	0.454	37
	6/29/2016	ND<-0	9
	8/9/2016	ND<-0	9
	12/7/2016	0.413	35
	3/2/2017	0.671	61
	6/29/2017	ND<-0	9
	8/16/2017	ND<-0	9
	10/25/2017	0.368	30
	3/28/2018	0.633	54
	6/29/2018	0.312	27
	8/2/2018	0.296	24
	12/10/2018	0.259	22
	4/15/2019	0.39	32
	6/12/2019	ND<-0	9
	8/27/2019	ND<-0	9
	10/29/2019	0.129	19
	3/30/2020	0.462	39
	6/16/2020	ND<-0	9
	9/21/2020	ND<-0	9
	12/17/2020	0.577	49
	3/18/2021	0.263	23
	5/5/2021	0.122	18
	9/2/2021	0.458	38
	11/23/2021	ND<-0	9
	1/11/2022	8.2	90
	4/7/2022	0.431	36
	8/2/2022	ND<-0	9
	11/16/2022	ND<-0	9
	2/14/2023	0.372	31
	5/25/2023	ND<-0	9
	8/7/2023	ND<-0	9
	12/12/2023	0.172	21
	1/10/2024	0.511	44

The Wilcoxon Statistic is 187
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -6.66557
The Standard Deviation adjusted for ties is 123.503
The Z Score adjusted for ties is -6.68807
-6.66557 < 2.326 indicating no statistical significance at 1% level
-6.68807 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 13
Non detect rank is 7

Wilcoxon Ranks

Location	Date	Conc.	Rank
AT 5	3/12/2013	0.15	55
	5/8/2013	0.099	39
	9/23/2013	0.4	79
	12/10/2013	0.29	75
	2/6/2014	0.13	51
	6/26/2014	0.34	77
	9/30/2014	0.49	85
	11/19/2014	0.41	81
	3/23/2015	0.13	52
	4/22/2015	0.11	42
	9/30/2015	0.664	89
	11/19/2015	0.261	70
	3/15/2016	0.068	31
	6/29/2016	0.598	88
	8/9/2016	0.482	84
	12/7/2016	0.45	83
	3/2/2017	0.267	71
	6/21/2017	0.226	65
	8/17/2017	0.258	69
	10/26/2017	0.226	66
	3/27/2018	0.162	56
	6/26/2018	0.23	67
	8/1/2018	0.285	74
	12/11/2018	0.066	29
	4/17/2019	0.061	26
	6/11/2019	0.206	60
	8/28/2019	0.404	80
	10/28/2019	0.523	87
	3/31/2020	0.032	16
	6/10/2020	0.248	68
	9/21/2020	0.491	86
	12/17/2020	0.087	37
	3/18/2021	0.05	22
	5/5/2021	0.121	45
	9/2/2021	0.131	53
	11/23/2021	ND<-0	7
	1/10/2022	0.126	48
	4/7/2022	0.101	40
	8/3/2022	0.271	73
	11/16/2022	0.448	82
	2/13/2023	0.081	35
	5/24/2023	0.127	49
	8/7/2023	0.373	78
	12/12/2023	0.752	90
	1/10/2024	0.299	76

SME 1	3/12/2013	0.11	43
	5/8/2013	0.063	27
	9/23/2013	0.053	24
	12/10/2013	0.21	62
	2/6/2014	0.11	44
	6/26/2014	ND<-0	7
	9/30/2014	0.044	19
	11/19/2014	0.27	72
	3/23/2015	0.073	33
	4/22/2015	0.039	17
	9/30/2015	0.052	23
	11/19/2015	0.084	36
	3/15/2016	0.047	20
	6/29/2016	0.18	57
	8/9/2016	0.089	38
	12/7/2016	0.209	61
	3/2/2017	0.127	50
	6/29/2017	0.028	14
	8/16/2017	ND<-0	7
	10/25/2017	0.121	46
	3/28/2018	0.106	41
	6/29/2018	0.121	47
	8/2/2018	0.145	54
	12/10/2018	ND<-0	7
	4/15/2019	0.063	28
	6/12/2019	ND<-0	7
	8/27/2019	ND<-0	7
	10/29/2019	0.049	21
	3/30/2020	ND<-0	7
	6/16/2020	0.031	15
	9/21/2020	ND<-0	7
	12/17/2020	0.072	32
	3/18/2021	ND<-0	7
	5/5/2021	ND<-0	7
	9/2/2021	0.19	58
	11/23/2021	0.076	34
	1/11/2022	0.054	25
	4/7/2022	0.192	59
	8/2/2022	ND<-0	7
	11/16/2022	ND<-0	7
	2/14/2023	ND<-0	7
	5/25/2023	0.043	18
	8/7/2023	0.067	30
	12/12/2023	0.219	63
	1/10/2024	0.224	64

The Wilcoxon Statistic is 324
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -5.56002
The Standard Deviation adjusted for ties is 123.735
The Z Score adjusted for ties is -5.56837
-5.56002 < 2.326 indicating no statistical significance at 1% level
-5.56837 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 24
Non detect rank is 12.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
AT 5	3/12/2013	0.37	46
	5/8/2013	0.56	71
	9/23/2013	0.37	47
	12/10/2013	0.97	86
	2/6/2014	0.35	42
	6/26/2014	0.38	49
	9/30/2014	ND<-0	12.5
	11/19/2014	0.5	60
	3/23/2015	0.27	26
	4/22/2015	ND<-0	12.5
	9/30/2015	ND<-0	12.5
	11/19/2015	1.47	89
	3/15/2016	0.772	82
	6/29/2016	ND<-0	12.5
	8/9/2016	0.268	25
	12/7/2016	ND<-0	12.5
	3/2/2017	0.529	63
	6/21/2017	0.544	66
	8/17/2017	0.69	78
	10/26/2017	ND<-0	12.5
	3/27/2018	ND<-0	12.5
	6/26/2018	0.411	53
	8/1/2018	0.68	77
	12/11/2018	0.579	72
	4/17/2019	ND<-0	12.5
	6/11/2019	0.486	58
	8/28/2019	1.07	87
	10/28/2019	ND<-0	12.5
	3/31/2020	ND<-0	12.5
	6/10/2020	ND<-0	12.5
	9/21/2020	ND<-0	12.5
	12/17/2020	ND<-0	12.5
	3/18/2021	ND<-0	12.5
	5/5/2021	1.37	88
	9/2/2021	0.969	85
	11/23/2021	ND<-0	12.5
	1/10/2022	0.279	28
	4/7/2022	0.38	50
	8/3/2022	0.702	80
	11/16/2022	ND<-0	12.5
	2/13/2023	0.301	34
	5/24/2023	0.331	38
	8/7/2023	0.291	32
	12/12/2023	0.329	37
	1/10/2024	0.732	81

SME 1	3/12/2013	0.34	40
	5/8/2013	0.42	54
	9/23/2013	0.8	83
	12/10/2013	0.47	56
	2/6/2014	0.5	61
	6/26/2014	0.31	36
	9/30/2014	0.61	74
	11/19/2014	0.55	69
	3/23/2015	ND<-0	12.5
	4/22/2015	0.38	51
	9/30/2015	0.807	84
	11/19/2015	ND<-0	12.5
	3/15/2016	ND<-0	12.5
	6/29/2016	0.62	75
	8/9/2016	0.547	68
	12/7/2016	0.378	48
	3/2/2017	0.345	41
	6/29/2017	0.53	64
	8/16/2017	0.52	62
	10/25/2017	0.288	31
	3/28/2018	ND<-0	12.5
	6/29/2018	0.67	76
	8/2/2018	0.495	59
	12/10/2018	0.336	39
	4/15/2019	0.36	45
	6/12/2019	ND<-0	12.5
	8/27/2019	0.356	44
	10/29/2019	0.272	27
	3/30/2020	ND<-0	12.5
	6/16/2020	0.485	57
	9/21/2020	ND<-0	12.5
	12/17/2020	0.3	33
	3/18/2021	0.58	73
	5/5/2021	0.402	52
	9/2/2021	0.353	43
	11/23/2021	ND<-0	12.5
	1/11/2022	1.8	90
	4/7/2022	0.544	67
	8/2/2022	0.281	29
	11/16/2022	0.306	35
	2/14/2023	0.281	30
	5/25/2023	0.694	79
	8/7/2023	0.552	70
	12/12/2023	0.434	55
	1/10/2024	0.542	65

The Wilcoxon Statistic is 1130
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is 0.944155
The Standard Deviation adjusted for ties is 122.742
The Z Score adjusted for ties is 0.953221
0.944155 < 2.326 indicating no statistical significance at 1% level
0.953221 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 23
Non detect rank is 12

Wilcoxon Ranks

Location	Date	Conc.	Rank
AT 5	3/12/2013	0.14	41
	5/8/2013	0.11	27
	9/23/2013	0.35	74
	12/10/2013	0.34	73
	2/6/2014	0.13	34
	6/26/2014	0.28	67
	9/30/2014	0.54	87
	11/19/2014	0.39	77
	3/23/2015	0.14	42
	4/22/2015	0.13	35
	9/30/2015	0.862	90
	11/19/2015	0.309	71
	3/15/2016	ND<-0	12
	6/29/2016	0.71	88
	8/9/2016	0.502	86
	12/7/2016	0.474	82
	3/2/2017	0.373	76
	6/21/2017	0.366	75
	8/17/2017	0.283	68
	10/26/2017	0.25	59
	3/27/2018	0.148	43
	6/26/2018	0.246	58
	8/1/2018	0.401	79
	12/11/2018	0.204	52
	4/17/2019	ND<-0	12
	6/11/2019	0.29	69
	8/28/2019	0.485	83
	10/28/2019	0.499	85
	3/31/2020	0.102	26
	6/10/2020	0.243	56
	9/21/2020	0.399	78
	12/17/2020	ND<-0	12
	3/18/2021	ND<-0	12
	5/5/2021	0.157	46
	9/2/2021	0.262	63
	11/23/2021	0.253	60
	1/10/2022	0.184	51
	4/7/2022	0.121	32
	8/3/2022	0.323	72
	11/16/2022	0.42	80
	2/13/2023	ND<-0	12
	5/24/2023	0.182	50
	8/7/2023	0.43	81
	12/12/2023	0.782	89
	1/10/2024	0.498	84

SME 1	3/12/2013	0.11	28
	5/8/2013	ND<-0	12
	9/23/2013	ND<-0	12
	12/10/2013	0.26	62
	2/6/2014	0.13	36
	6/26/2014	ND<-0	12
	9/30/2014	0.11	29
	11/19/2014	0.29	70
	3/23/2015	0.1	25
	4/22/2015	ND<-0	12
	9/30/2015	0.135	39
	11/19/2015	0.134	37
	3/15/2016	ND<-0	12
	6/29/2016	0.245	57
	8/9/2016	0.154	45
	12/7/2016	0.271	66
	3/2/2017	0.208	53
	6/29/2017	ND<-0	12
	8/16/2017	0.111	30
	10/25/2017	0.151	44
	3/28/2018	ND<-0	12
	6/29/2018	0.241	55
	8/2/2018	0.136	40
	12/10/2018	ND<-0	12
	4/15/2019	ND<-0	12
	6/12/2019	ND<-0	12
	8/27/2019	0.161	47
	10/29/2019	0.134	38
	3/30/2020	ND<-0	12
	6/16/2020	0.129	33
	9/21/2020	ND<-0	12
	12/17/2020	ND<-0	12
	3/18/2021	0.112	31
	5/5/2021	ND<-0	12
	9/2/2021	0.218	54
	11/23/2021	0.165	48
	1/11/2022	ND<-0	12
	4/7/2022	0.255	61
	8/2/2022	ND<-0	12
	11/16/2022	ND<-0	12
	2/14/2023	ND<-0	12
	5/25/2023	0.0961	24
	8/7/2023	0.17	49
	12/12/2023	0.262	64
	1/10/2024	0.264	65

The Wilcoxon Statistic is 411
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -4.85796
The Standard Deviation adjusted for ties is 122.884
The Z Score adjusted for ties is -4.89894
-4.85796 < 2.326 indicating no statistical significance at 1% level
-4.89894 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
AT 5	3/12/2013	20	51
	5/8/2013	19	47
	9/23/2013	22	56
	12/10/2013	64	82
	2/6/2014	32	70
	6/26/2014	19	48
	9/30/2014	14	24
	11/19/2014	27	64
	3/23/2015	15	29
	4/22/2015	76	86
	9/30/2015	16.4	36
	11/19/2015	74.6	85
	3/15/2016	26.7	63
	6/29/2016	14.5	28
	8/9/2016	18.3	44
	12/7/2016	16.9	37
	3/2/2017	44.6	78
	6/21/2017	70	84
	8/17/2017	12	16
	10/26/2017	9.41	7
	3/27/2018	15.9	33
	6/26/2018	25.2	62
	8/1/2018	107	88
	12/11/2018	46.2	79
	4/17/2019	14.4	27
	6/11/2019	15.9	34
	8/28/2019	23.5	61
	10/28/2019	17	39
	3/31/2020	27.1	65
	6/10/2020	22.8	57
	9/21/2020	11.3	13
	12/17/2020	18.6	46
	3/18/2021	55.6	81
	5/5/2021	43.7	77
	9/2/2021	67.4	83
	11/23/2021	2.6	1
	1/10/2022	29.7	67
	4/7/2022	33.8	71
	8/3/2022	30.8	68
	11/16/2022	7.3	4
	2/13/2023	38	76
	5/24/2023	20	52
	8/7/2023	12.4	17
	12/12/2023	10.9	11
	1/10/2024	220	90

SME 1	3/12/2013	16	35
	5/8/2013	14	25
	9/23/2013	15	30
	12/10/2013	21	55
	2/6/2014	23	58
	6/26/2014	13	21
	9/30/2014	34	72
	11/19/2014	19	49
	3/23/2015	14	26
	4/22/2015	18	43
	9/30/2015	15.3	32
	11/19/2015	23.2	59
	3/15/2016	17.7	41
	6/29/2016	20.3	53
	8/9/2016	12.6	18
	12/7/2016	17.7	42
	3/2/2017	15	31
	6/29/2017	18.3	45
	8/16/2017	12.7	19
	10/25/2017	16.9	38
	3/28/2018	19.8	50
	6/29/2018	23.3	60
	8/2/2018	29.5	66
	12/10/2018	31	69
	4/15/2019	35	74
	6/12/2019	9.67	8
	8/27/2019	7.1	3
	10/29/2019	11	12
	3/30/2020	13.3	22
	6/16/2020	11.4	15
	9/21/2020	9	6
	12/17/2020	20.9	54
	3/18/2021	90.4	87
	5/5/2021	34	73
	9/2/2021	35.8	75
	11/23/2021	12.7	20
	1/11/2022	17	40
	4/7/2022	140	89
	8/2/2022	6.3	2
	11/16/2022	7.9	5
	2/14/2023	11.3	14
	5/25/2023	10.6	10
	8/7/2023	13.9	23
	12/12/2023	10.4	9
	1/10/2024	53	80

The Wilcoxon Statistic is 723
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -2.34021
The Standard Deviation adjusted for ties is 123.92
The Z Score adjusted for ties is -2.34021
-2.34021 < 2.326 indicating no statistical significance at 1% level
-2.34021 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 27
Non detect rank is 14

Wilcoxon Ranks

Location	Date	Conc.	Rank
HB 3	3/12/2013	0.19	36
	5/20/2013	0.17	35
	9/23/2013	ND<-0	14
	12/10/2013	ND<-0	14
	2/6/2014	0.48	53
	6/26/2014	ND<-0	14
	9/30/2014	ND<-0	14
	11/19/2014	0.11	29
	3/23/2015	0.26	43
	4/22/2015	0.2	38
	9/30/2015	ND<-0	14
	11/19/2015	0.377	51
	3/15/2016	0.295	45
	6/29/2016	ND<-0	14
	8/9/2016	ND<-0	14
	12/7/2016	0.111	30
	3/2/2017	0.334	46
	7/5/2017	ND<-0	14
	8/16/2017	ND<-0	14
	10/25/2017	ND<-0	14
	3/28/2018	0.359	48
	6/29/2018	ND<-0	14
	8/2/2018	ND<-0	14
	12/10/2018	0.363	49
	4/15/2019	0.233	41
	6/12/2019	0.129	32
	8/27/2019	ND<-0	14
	10/29/2019	ND<-0	14
	3/30/2020	0.234	42
	6/16/2020	ND<-0	14
	9/21/2020	ND<-0	14
	12/17/2020	0.195	37
	3/18/2021	0.369	50
	5/5/2021	0.207	40
	9/2/2021	ND<-0	14
	11/23/2021	0.137	33
	1/11/2022	0.2	39
	4/7/2022	0.268	44
	8/2/2022	ND<-0	14
	11/16/2022	ND<-0	14
	2/14/2023	0.414	52
	5/25/2023	0.0574	28
	8/7/2023	ND<-0	14
	12/12/2023	0.126	31
	1/10/2024	0.354	47

SME 9	4/7/2022	ND<-0	14
	8/3/2022	ND<-0	14
	11/16/2022	ND<-0	14
	2/13/2023	ND<-0	14
	5/24/2023	ND<-0	14
	8/7/2023	ND<-0	14
	12/12/2023	ND<-0	14
	1/10/2024	0.152	34

The Wilcoxon Statistic is 96
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is -2.09942
The Standard Deviation adjusted for ties is 37.4972
The Z Score adjusted for ties is -2.2535
-2.09942 < 2.326 indicating no statistical significance at 1% level
-2.2535 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 43
Non detect rank is 22

Wilcoxon Ranks

Location	Date	Conc.	Rank
HB 3	3/12/2013	0.081	49
	5/20/2013	ND<-0	22
	9/23/2013	0.037	47
	12/10/2013	0.14	53
	2/6/2014	0.03	46
	6/26/2014	ND<-0	22
	9/30/2014	ND<-0	22
	11/19/2014	0.098	52
	3/23/2015	ND<-0	22
	4/22/2015	ND<-0	22
	9/30/2015	ND<-0	22
	11/19/2015	0.045	48
	3/15/2016	0.087	50
	6/29/2016	ND<-0	22
	8/9/2016	ND<-0	22
	12/7/2016	ND<-0	22
	3/2/2017	ND<-0	22
	7/5/2017	ND<-0	22
	8/16/2017	ND<-0	22
	10/25/2017	ND<-0	22
	3/28/2018	ND<-0	22
	6/29/2018	ND<-0	22
	8/2/2018	ND<-0	22
	12/10/2018	ND<-0	22
	4/15/2019	ND<-0	22
	6/12/2019	ND<-0	22
	8/27/2019	ND<-0	22
	10/29/2019	ND<-0	22
	3/30/2020	ND<-0	22
	6/16/2020	ND<-0	22
	9/21/2020	ND<-0	22
	12/17/2020	ND<-0	22
	3/18/2021	ND<-0	22
	5/5/2021	ND<-0	22
	9/2/2021	ND<-0	22
	11/23/2021	ND<-0	22
	1/11/2022	ND<-0	22
	4/7/2022	ND<-0	22
	8/2/2022	ND<-0	22
	11/16/2022	ND<-0	22
	2/14/2023	ND<-0	22
	5/25/2023	ND<-0	22
	8/7/2023	ND<-0	22
	12/12/2023	ND<-0	22
	1/10/2024	0.025	45

SME 9	4/7/2022	ND<-0	22
	8/3/2022	ND<-0	22
	11/16/2022	ND<-0	22
	2/13/2023	0.09	51
	5/24/2023	ND<-0	22
	8/7/2023	ND<-0	22
	12/12/2023	ND<-0	22
	1/10/2024	0.016	44

The Wilcoxon Statistic is 191
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is 0.260875
The Standard Deviation adjusted for ties is 27.4774
The Z Score adjusted for ties is 0.382132
0.260875 < 2.326 indicating no statistical significance at 1% level
0.382132 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 8
Non detect rank is 4.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
HB 3	3/12/2013	0.83	48
	5/20/2013	0.6	35
	9/23/2013	0.6	36
	12/10/2013	0.62	38
	2/6/2014	0.37	17
	6/26/2014	0.37	18
	9/30/2014	0.48	26
	11/19/2014	0.44	21
	3/23/2015	0.46	23
	4/22/2015	0.66	40
	9/30/2015	0.91	49
	11/19/2015	ND<-0	4.5
	3/15/2016	ND<-0	4.5
	6/29/2016	0.51	28
	8/9/2016	0.703	43
	12/7/2016	0.73	44
	3/2/2017	0.969	51
	7/5/2017	0.812	47
	8/16/2017	0.763	45
	10/25/2017	0.322	14
	3/28/2018	ND<-0	4.5
	6/29/2018	0.464	24
	8/2/2018	0.952	50
	12/10/2018	0.426	20
	4/15/2019	ND<-0	4.5
	6/12/2019	ND<-0	4.5
	8/27/2019	0.634	39
	10/29/2019	0.517	29
	3/30/2020	0.452	22
	6/16/2020	0.299	12
	9/21/2020	0.279	11
	12/17/2020	0.588	34
	3/18/2021	0.252	9
	5/5/2021	ND<-0	4.5
	9/2/2021	0.689	42
	11/23/2021	ND<-0	4.5
	1/11/2022	0.55	31
	4/7/2022	0.329	15
	8/2/2022	0.273	10
	11/16/2022	0.604	37
	2/14/2023	0.471	25
	5/25/2023	0.502	27
	8/7/2023	0.578	32
	12/12/2023	0.383	19
	1/10/2024	0.305	13

SME 9	4/7/2022	0.529	30
	8/3/2022	0.582	33
	11/16/2022	ND<-0	4.5
	2/13/2023	0.783	46
	5/24/2023	0.66	41
	8/7/2023	1.36	52
	12/12/2023	0.345	16
	1/10/2024	1.87	53

The Wilcoxon Statistic is 239.5
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is 1.46587
The Standard Deviation adjusted for ties is 40.181
The Z Score adjusted for ties is 1.46836
1.46587 < 2.326 indicating no statistical significance at 1% level
1.46836 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 37
Non detect rank is 19

Wilcoxon Ranks

Location	Date	Conc.	Rank
HB 3	3/12/2013	ND<-0	19
	5/20/2013	ND<-0	19
	9/23/2013	ND<-0	19
	12/10/2013	0.15	50
	2/6/2014	ND<-0	19
	6/26/2014	ND<-0	19
	9/30/2014	ND<-0	19
	11/19/2014	0.12	46
	3/23/2015	ND<-0	19
	4/22/2015	ND<-0	19
	9/30/2015	ND<-0	19
	11/19/2015	ND<-0	19
	3/15/2016	ND<-0	19
	6/29/2016	ND<-0	19
	8/9/2016	ND<-0	19
	12/7/2016	0.126	47
	3/2/2017	0.115	45
	7/5/2017	ND<-0	19
	8/16/2017	ND<-0	19
	10/25/2017	ND<-0	19
	3/28/2018	ND<-0	19
	6/29/2018	ND<-0	19
	8/2/2018	ND<-0	19
	12/10/2018	0.141	49
	4/15/2019	ND<-0	19
	6/12/2019	ND<-0	19
	8/27/2019	0.179	53
	10/29/2019	0.166	51
	3/30/2020	0.166	52
	6/16/2020	ND<-0	19
	9/21/2020	ND<-0	19
	12/17/2020	ND<-0	19
	3/18/2021	ND<-0	19
	5/5/2021	ND<-0	19
	9/2/2021	ND<-0	19
	11/23/2021	ND<-0	19
	1/11/2022	ND<-0	19
	4/7/2022	ND<-0	19
	8/2/2022	ND<-0	19
	11/16/2022	ND<-0	19
	2/14/2023	ND<-0	19
	5/25/2023	0.0588	41
	8/7/2023	0.0895	44
	12/12/2023	0.0444	40
	1/10/2024	0.0752	42

SME 9	4/7/2022	0.135	48
	8/3/2022	ND<-0	19
	11/16/2022	ND<-0	19
	2/13/2023	ND<-0	19
	5/24/2023	ND<-0	19
	8/7/2023	0.0873	43
	12/12/2023	0.0188	38
	1/10/2024	0.0388	39

The Wilcoxon Statistic is 208
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is 0.683243
The Standard Deviation adjusted for ties is 32.696
The Z Score adjusted for ties is 0.841082
0.683243 < 2.326 indicating no statistical significance at 1% level
0.841082 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 3
Non detect rank is 2

Wilcoxon Ranks

Location	Date	Conc.	Rank
HB 3	3/12/2013	49	49
	5/20/2013	17	19
	9/23/2013	19	23
	12/10/2013	20	25
	2/6/2014	13	16
	6/26/2014	12	14
	9/30/2014	30	40
	11/19/2014	51	50
	3/23/2015	35	44
	4/22/2015	22	32
	9/30/2015	23	33
	11/19/2015	30.2	41
	3/15/2016	23.8	37
	6/29/2016	20.9	29
	8/9/2016	14.3	17
	12/7/2016	17	20
	3/2/2017	57.1	52
	7/5/2017	28.5	39
	8/16/2017	12.7	15
	10/25/2017	20.4	27
	3/28/2018	20.2	26
	6/29/2018	18.2	22
	8/2/2018	35.3	46
	12/10/2018	27.6	38
	4/15/2019	35.5	47
	6/12/2019	52.3	51
	8/27/2019	7.3	9
	10/29/2019	17.6	21
	3/30/2020	19	24
	6/16/2020	14.6	18
	9/21/2020	8.3	11
	12/17/2020	20.4	28
	3/18/2021	23	34
	5/5/2021	35.1	45
	9/2/2021	23.6	35
	11/23/2021	10.5	12
	1/11/2022	23.6	36
	4/7/2022	21	30
	8/2/2022	33.7	43
	11/16/2022	7.4	10
	2/14/2023	11.6	13
	5/25/2023	21.7	31
	8/7/2023	6.8	8
	12/12/2023	36.8	48
	1/10/2024	31.7	42

SME 9	4/7/2022	2.9	5
	8/3/2022	ND<-0	2
	11/16/2022	ND<-0	2
	2/13/2023	2.6	4
	5/24/2023	59	53
	8/7/2023	5.6	7
	12/12/2023	ND<-0	2
	1/10/2024	4.7	6

The Wilcoxon Statistic is 45
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is -3.36652
The Standard Deviation adjusted for ties is 40.246
The Z Score adjusted for ties is -3.3668
-3.36652 < 2.326 indicating no statistical significance at 1% level
-3.3668 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 29
Non detect rank is 15

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 1	3/12/2013	0.54	82
	5/8/2013	0.15	43
	9/23/2013	ND<-0	15
	12/10/2013	0.55	83
	2/6/2014	0.55	84
	6/26/2014	ND<-0	15
	9/30/2014	ND<-0	15
	11/19/2014	0.74	88
	3/23/2015	0.51	79
	4/22/2015	0.4	72
	9/30/2015	ND<-0	15
	11/19/2015	0.401	73
	3/15/2016	0.454	76
	6/29/2016	ND<-0	15
	8/9/2016	ND<-0	15
	12/7/2016	0.413	74
	3/2/2017	0.671	87
	6/29/2017	ND<-0	15
	8/16/2017	ND<-0	15
	10/25/2017	0.368	69
	3/28/2018	0.633	86
	6/29/2018	0.312	67
	8/2/2018	0.296	66
	12/10/2018	0.259	60
	4/15/2019	0.39	71
	6/12/2019	ND<-0	15
	8/27/2019	ND<-0	15
	10/29/2019	0.129	37
	3/30/2020	0.462	78
	6/16/2020	ND<-0	15
	9/21/2020	ND<-0	15
	12/17/2020	0.577	85
	3/18/2021	0.263	63
	5/5/2021	0.122	33
	9/2/2021	0.458	77
	11/23/2021	ND<-0	15
	1/11/2022	8.2	90
	4/7/2022	0.431	75
	8/2/2022	ND<-0	15
	11/16/2022	ND<-0	15
	2/14/2023	0.372	70
	5/25/2023	ND<-0	15
	8/7/2023	ND<-0	15
	12/12/2023	0.172	50
	1/10/2024	0.511	80

RC 2	3/12/2013	0.12	32
	5/8/2013	0.19	55
	9/23/2013	ND<-0	15
	12/10/2013	0.11	31
	2/6/2014	0.26	61
	6/26/2014	0.15	44
	9/30/2014	ND<-0	15
	11/19/2014	0.17	49
	3/23/2015	0.15	45
	4/22/2015	0.26	62
	9/30/2015	ND<-0	15
	11/19/2015	0.271	64
	3/15/2016	0.181	52
	6/29/2016	ND<-0	15
	8/9/2016	0.14	39
	12/7/2016	0.2	57
	3/2/2017	0.166	47
	6/21/2017	ND<-0	15
	8/17/2017	ND<-0	15
	10/26/2017	ND<-0	15
	3/27/2018	0.146	42
	6/26/2018	0.101	30
	8/1/2018	ND<-0	15
	12/11/2018	0.316	68
	4/17/2019	0.165	46
	6/11/2019	ND<-0	15
	8/28/2019	ND<-0	15
	10/28/2019	0.132	38
	3/31/2020	0.19	56
	6/10/2020	0.21	58
	9/21/2020	ND<-0	15
	12/17/2020	0.218	59
	3/18/2021	0.145	41
	5/5/2021	7.91	89
	9/2/2021	0.122	34
	11/23/2021	0.124	35
	1/10/2022	0.185	53
	4/7/2022	0.186	54
	8/3/2022	0.175	51
	11/16/2022	0.126	36
	2/13/2023	0.273	65
	5/24/2023	0.142	40
	8/7/2023	ND<-0	15
	12/12/2023	0.166	48
	1/10/2024	0.511	81

The Wilcoxon Statistic is 807
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -1.66236
The Standard Deviation adjusted for ties is 121.832
The Z Score adjusted for ties is -1.69085
-1.66236 < 2.326 indicating no statistical significance at 1% level
-1.69085 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 51
Non detect rank is 26

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 1	3/12/2013	0.11	77
	5/8/2013	0.063	66
	9/23/2013	0.053	63
	12/10/2013	0.21	87
	2/6/2014	0.11	78
	6/26/2014	ND<-0	26
	9/30/2014	0.044	58
	11/19/2014	0.27	90
	3/23/2015	0.073	70
	4/22/2015	0.039	56
	9/30/2015	0.052	62
	11/19/2015	0.084	73
	3/15/2016	0.047	60
	6/29/2016	0.18	83
	8/9/2016	0.089	75
	12/7/2016	0.209	86
	3/2/2017	0.127	81
	6/29/2017	0.028	53
	8/16/2017	ND<-0	26
	10/25/2017	0.121	79
	3/28/2018	0.106	76
	6/29/2018	0.121	80
	8/2/2018	0.145	82
	12/10/2018	ND<-0	26
	4/15/2019	0.063	67
	6/12/2019	ND<-0	26
	8/27/2019	ND<-0	26
	10/29/2019	0.049	61
	3/30/2020	ND<-0	26
	6/16/2020	0.031	55
	9/21/2020	ND<-0	26
	12/17/2020	0.072	69
	3/18/2021	ND<-0	26
	5/5/2021	ND<-0	26
	9/2/2021	0.19	84
	11/23/2021	0.076	71
	1/11/2022	0.054	64
	4/7/2022	0.192	85
	8/2/2022	ND<-0	26
	11/16/2022	ND<-0	26
	2/14/2023	ND<-0	26
	5/25/2023	0.043	57
	8/7/2023	0.067	68
	12/12/2023	0.219	88
	1/10/2024	0.224	89

RC 2	3/12/2013	0.088	74
	5/8/2013	ND<-0	26
	9/23/2013	ND<-0	26
	12/10/2013	0.062	65
	2/6/2014	ND<-0	26
	6/26/2014	ND<-0	26
	9/30/2014	ND<-0	26
	11/19/2014	ND<-0	26
	3/23/2015	0.044	59
	4/22/2015	ND<-0	26
	9/30/2015	ND<-0	26
	11/19/2015	ND<-0	26
	3/15/2016	ND<-0	26
	6/29/2016	0.077	72
	8/9/2016	ND<-0	26
	12/7/2016	ND<-0	26
	3/2/2017	ND<-0	26
	6/21/2017	ND<-0	26
	8/17/2017	ND<-0	26
	10/26/2017	ND<-0	26
	3/27/2018	ND<-0	26
	6/26/2018	ND<-0	26
	8/1/2018	ND<-0	26
	12/11/2018	ND<-0	26
	4/17/2019	ND<-0	26
	6/11/2019	ND<-0	26
	8/28/2019	ND<-0	26
	10/28/2019	ND<-0	26
	3/31/2020	0.029	54
	6/10/2020	ND<-0	26
	9/21/2020	ND<-0	26
	12/17/2020	ND<-0	26
	3/18/2021	ND<-0	26
	5/5/2021	ND<-0	26
	9/2/2021	ND<-0	26
	11/23/2021	ND<-0	26
	1/10/2022	ND<-0	26
	4/7/2022	ND<-0	26
	8/3/2022	ND<-0	26
	11/16/2022	ND<-0	26
	2/13/2023	ND<-0	26
	5/24/2023	ND<-0	26
	8/7/2023	ND<-0	26
	12/12/2023	ND<-0	26
	1/10/2024	0.015	52

The Wilcoxon Statistic is 355
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -5.30986
The Standard Deviation adjusted for ties is 112.083
The Z Score adjusted for ties is -5.87062
-5.30986 < 2.326 indicating no statistical significance at 1% level
-5.87062 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 13
Non detect rank is 7

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 1	3/12/2013	0.34	25
	5/8/2013	0.42	39
	9/23/2013	0.8	82
	12/10/2013	0.47	49
	2/6/2014	0.5	53
	6/26/2014	0.31	22
	9/30/2014	0.61	70
	11/19/2014	0.55	65
	3/23/2015	ND<-0	7
	4/22/2015	0.38	34
	9/30/2015	0.807	85
	11/19/2015	ND<-0	7
	3/15/2016	ND<-0	7
	6/29/2016	0.62	72
	8/9/2016	0.547	64
	12/7/2016	0.378	33
	3/2/2017	0.345	27
	6/29/2017	0.53	59
	8/16/2017	0.52	57
	10/25/2017	0.288	18
	3/28/2018	ND<-0	7
	6/29/2018	0.67	75
	8/2/2018	0.495	52
	12/10/2018	0.336	24
	4/15/2019	0.36	32
	6/12/2019	ND<-0	7
	8/27/2019	0.356	31
	10/29/2019	0.272	14
	3/30/2020	ND<-0	7
	6/16/2020	0.485	51
	9/21/2020	ND<-0	7
	12/17/2020	0.3	20
	3/18/2021	0.58	69
	5/5/2021	0.402	38
	9/2/2021	0.353	30
	11/23/2021	ND<-0	7
	1/11/2022	1.8	89
	4/7/2022	0.544	63
	8/2/2022	0.281	16
	11/16/2022	0.306	21
	2/14/2023	0.281	17
	5/25/2023	0.694	77
	8/7/2023	0.552	67
	12/12/2023	0.434	44
	1/10/2024	0.542	62

RC 2	3/12/2013	0.75	80
	5/8/2013	0.55	66
	9/23/2013	0.43	40
	12/10/2013	0.54	61
	2/6/2014	0.43	41
	6/26/2014	0.44	46
	9/30/2014	0.4	37
	11/19/2014	0.43	42
	3/23/2015	0.81	86
	4/22/2015	ND<-0	7
	9/30/2015	ND<-0	7
	11/19/2015	0.753	81
	3/15/2016	0.432	43
	6/29/2016	0.35	28
	8/9/2016	0.454	48
	12/7/2016	0.532	60
	3/2/2017	0.445	47
	6/21/2017	0.505	55
	8/17/2017	0.724	78
	10/26/2017	0.274	15
	3/27/2018	ND<-0	7
	6/26/2018	0.802	83
	8/1/2018	0.506	56
	12/11/2018	0.479	50
	4/17/2019	0.288	19
	6/11/2019	0.52	58
	8/28/2019	0.748	79
	10/28/2019	ND<-0	7
	3/31/2020	0.574	68
	6/10/2020	0.33	23
	9/21/2020	ND<-0	7
	12/17/2020	0.396	36
	3/18/2021	0.611	71
	5/5/2021	0.892	88
	9/2/2021	0.802	84
	11/23/2021	0.34	26
	1/10/2022	0.501	54
	4/7/2022	0.386	35
	8/3/2022	0.352	29
	11/16/2022	0.434	45
	2/13/2023	0.636	74
	5/24/2023	22.8	90
	8/7/2023	0.676	76
	12/12/2023	0.634	73
	1/10/2024	0.816	87

The Wilcoxon Statistic is 1258
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is 1.97708
The Standard Deviation adjusted for ties is 123.735
The Z Score adjusted for ties is 1.98005
1.97708 < 2.326 indicating no statistical significance at 1% level
1.98005 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 54
Non detect rank is 27.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 1	3/12/2013	0.11	61
	5/8/2013	ND<-0	27.5
	9/23/2013	ND<-0	27.5
	12/10/2013	0.26	86
	2/6/2014	0.13	67
	6/26/2014	ND<-0	27.5
	9/30/2014	0.11	62
	11/19/2014	0.29	90
	3/23/2015	0.1	60
	4/22/2015	ND<-0	27.5
	9/30/2015	0.135	72
	11/19/2015	0.134	70
	3/15/2016	ND<-0	27.5
	6/29/2016	0.245	84
	8/9/2016	0.154	76
	12/7/2016	0.271	89
	3/2/2017	0.208	81
	6/29/2017	ND<-0	27.5
	8/16/2017	0.111	63
	10/25/2017	0.151	75
	3/28/2018	ND<-0	27.5
	6/29/2018	0.241	83
	8/2/2018	0.136	73
	12/10/2018	ND<-0	27.5
	4/15/2019	ND<-0	27.5
	6/12/2019	ND<-0	27.5
	8/27/2019	0.161	77
	10/29/2019	0.134	71
	3/30/2020	ND<-0	27.5
	6/16/2020	0.129	66
	9/21/2020	ND<-0	27.5
	12/17/2020	ND<-0	27.5
	3/18/2021	0.112	64
	5/5/2021	ND<-0	27.5
	9/2/2021	0.218	82
	11/23/2021	0.165	78
	1/11/2022	ND<-0	27.5
	4/7/2022	0.255	85
	8/2/2022	ND<-0	27.5
	11/16/2022	ND<-0	27.5
	2/14/2023	ND<-0	27.5
	5/25/2023	0.0961	59
	8/7/2023	0.17	79
	12/12/2023	0.262	87
	1/10/2024	0.264	88

RC 2	3/12/2013	ND<-0	27.5
	5/8/2013	ND<-0	27.5
	9/23/2013	ND<-0	27.5
	12/10/2013	ND<-0	27.5
	2/6/2014	ND<-0	27.5
	6/26/2014	ND<-0	27.5
	9/30/2014	ND<-0	27.5
	11/19/2014	ND<-0	27.5
	3/23/2015	ND<-0	27.5
	4/22/2015	ND<-0	27.5
	9/30/2015	ND<-0	27.5
	11/19/2015	0.133	68
	3/15/2016	ND<-0	27.5
	6/29/2016	ND<-0	27.5
	8/9/2016	ND<-0	27.5
	12/7/2016	ND<-0	27.5
	3/2/2017	ND<-0	27.5
	6/21/2017	ND<-0	27.5
	8/17/2017	0.133	69
	10/26/2017	ND<-0	27.5
	3/27/2018	ND<-0	27.5
	6/26/2018	ND<-0	27.5
	8/1/2018	ND<-0	27.5
	12/11/2018	ND<-0	27.5
	4/17/2019	ND<-0	27.5
	6/11/2019	ND<-0	27.5
	8/28/2019	ND<-0	27.5
	10/28/2019	0.2	80
	3/31/2020	0.118	65
	6/10/2020	ND<-0	27.5
	9/21/2020	ND<-0	27.5
	12/17/2020	ND<-0	27.5
	3/18/2021	ND<-0	27.5
	5/5/2021	ND<-0	27.5
	9/2/2021	ND<-0	27.5
	11/23/2021	ND<-0	27.5
	1/10/2022	ND<-0	27.5
	4/7/2022	0.144	74
	8/3/2022	ND<-0	27.5
	11/16/2022	ND<-0	27.5
	2/13/2023	ND<-0	27.5
	5/24/2023	0.0469	57
	8/7/2023	0.0662	58
	12/12/2023	0.0448	56
	1/10/2024	0.0428	55

The Wilcoxon Statistic is 537
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -3.84118
The Standard Deviation adjusted for ties is 109.727
The Z Score adjusted for ties is -4.33804
-3.84118 < 2.326 indicating no statistical significance at 1% level
-4.33804 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 1
Non detect rank is 1

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 1	3/12/2013	16	60
	5/8/2013	14	51
	9/23/2013	15	55
	12/10/2013	21	74
	2/6/2014	23	75
	6/26/2014	13	45
	9/30/2014	34	81
	11/19/2014	19	69
	3/23/2015	14	52
	4/22/2015	18	66
	9/30/2015	15.3	58
	11/19/2015	23.2	76
	3/15/2016	17.7	64
	6/29/2016	20.3	72
	8/9/2016	12.6	42
	12/7/2016	17.7	65
	3/2/2017	15	56
	6/29/2017	18.3	68
	8/16/2017	12.7	43
	10/25/2017	16.9	61
	3/28/2018	19.8	71
	6/29/2018	23.3	77
	8/2/2018	29.5	79
	12/10/2018	31	80
	4/15/2019	35	83
	6/12/2019	9.67	27
	8/27/2019	7.1	20
	10/29/2019	11	34
	3/30/2020	13.3	47
	6/16/2020	11.4	37
	9/21/2020	9	24
	12/17/2020	20.9	73
	3/18/2021	90.4	89
	5/5/2021	34	82
	9/2/2021	35.8	84
	11/23/2021	12.7	44
	1/11/2022	17	62
	4/7/2022	140	90
	8/2/2022	6.3	17
	11/16/2022	7.9	22
	2/14/2023	11.3	36
	5/25/2023	10.6	31
	8/7/2023	13.9	50
	12/12/2023	10.4	30
	1/10/2024	53	85

RC 2	3/12/2013	14	53
	5/8/2013	12	39
	9/23/2013	6.3	18
	12/10/2013	10	29
	2/6/2014	9.6	26
	6/26/2014	7.2	21
	9/30/2014	2.5	2
	11/19/2014	11	35
	3/23/2015	18	67
	4/22/2015	4.8	7
	9/30/2015	4.6	6
	11/19/2015	14.4	54
	3/15/2016	6	15
	6/29/2016	10.9	33
	8/9/2016	9.9	28
	12/7/2016	11.9	38
	3/2/2017	8	23
	6/21/2017	12.3	40
	8/17/2017	72.2	86
	10/26/2017	17.5	63
	3/27/2018	12.5	41
	6/26/2018	13	46
	8/1/2018	84.4	87
	12/11/2018	3.1	3
	4/17/2019	ND<-0	1
	6/11/2019	5.2	10
	8/28/2019	4.8	8
	10/28/2019	3.4	4
	3/31/2020	90	88
	6/10/2020	10.8	32
	9/21/2020	5.2	11
	12/17/2020	5.4	14
	3/18/2021	26.8	78
	5/5/2021	15.6	59
	9/2/2021	3.4	5
	11/23/2021	19.2	70
	1/10/2022	9	25
	4/7/2022	5	9
	8/3/2022	13.8	49
	11/16/2022	13.4	48
	2/13/2023	5.3	12
	5/24/2023	5.3	13
	8/7/2023	6.2	16
	12/12/2023	6.6	19
	1/10/2024	15.2	57

The Wilcoxon Statistic is 453
The Expected value is is 1012.5
The Standard Deviation is 123.92
The Z Score is -4.51903
The Standard Deviation adjusted for ties is 123.92
The Z Score adjusted for ties is -4.51903
-4.51903 < 2.326 indicating no statistical significance at 1% level
-4.51903 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: GD 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 28
Non detect rank is 14.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	56
	3/18/2021	0.319	54
	5/5/2021	0.213	49
	11/23/2021	0.164	45
	1/11/2022	0.44	58
	4/7/2022	0.273	52
	8/2/2022	0.102	32
	11/16/2022	ND<-0	14.5
	2/14/2023	0.416	57
	5/25/2023	ND<-0	14.5
	8/7/2023	ND<-0	14.5
	12/12/2023	0.14	42
	1/10/2024	0.354	55
GD 5	3/13/2013	0.26	51
	5/20/2013	ND<-0	14.5
	9/23/2013	ND<-0	14.5
	12/10/2013	0.1	31
	2/6/2014	0.17	47
	6/26/2014	ND<-0	14.5
	9/30/2014	ND<-0	14.5
	11/19/2014	0.11	33
	3/23/2015	0.12	36
	4/22/2015	0.14	43
	9/30/2015	ND<-0	14.5
	11/19/2015	0.168	46
	3/15/2016	ND<-0	14.5
	6/29/2016	ND<-0	14.5
	8/9/2016	ND<-0	14.5
	12/7/2016	ND<-0	14.5
	3/2/2017	0.118	34
	7/5/2017	ND<-0	14.5
	8/16/2017	ND<-0	14.5
	10/25/2017	ND<-0	14.5
	3/28/2018	0.127	38
	6/29/2018	ND<-0	14.5
	8/2/2018	ND<-0	14.5
	12/10/2018	ND<-0	14.5
	4/15/2019	0.128	40
	6/12/2019	ND<-0	14.5
	8/27/2019	ND<-0	14.5
	10/29/2019	ND<-0	14.5
	3/30/2020	0.13	41
	6/16/2020	ND<-0	14.5
	9/21/2020	ND<-0	14.5

12/17/2020	0.122	37
3/18/2021	0.127	39
5/5/2021	0.204	48
9/2/2021	ND<-0	14.5
11/23/2021	ND<-0	14.5
1/11/2022	0.3	53
4/7/2022	0.157	44
8/2/2022	ND<-0	14.5
11/16/2022	ND<-0	14.5
2/14/2023	0.255	50
5/24/2023	0.0534	29
8/7/2023	ND<-0	14.5
12/12/2023	0.082	30
1/10/2024	0.118	35

The Wilcoxon Statistic is 132.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -2.99269
The Standard Deviation adjusted for ties is 50.5268
The Z Score adjusted for ties is -3.17653
-2.99269 < 2.326 indicating no statistical significance at 1% level
-3.17653 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: GD 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 48
Non detect rank is 24.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	24.5
	3/18/2021	ND<-0	24.5
	5/5/2021	ND<-0	24.5
	11/23/2021	ND<-0	24.5
	1/11/2022	ND<-0	24.5
	4/7/2022	0.06	56
	8/2/2022	ND<-0	24.5
	11/16/2022	ND<-0	24.5
	2/14/2023	ND<-0	24.5
	5/25/2023	ND<-0	24.5
	8/7/2023	ND<-0	24.5
	12/12/2023	ND<-0	24.5
	1/10/2024	0.02	49
GD 5	3/13/2013	ND<-0	24.5
	5/20/2013	ND<-0	24.5
	9/23/2013	0.027	51
	12/10/2013	0.088	58
	2/6/2014	0.038	52
	6/26/2014	ND<-0	24.5
	9/30/2014	ND<-0	24.5
	11/19/2014	0.051	55
	3/23/2015	ND<-0	24.5
	4/22/2015	ND<-0	24.5
	9/30/2015	ND<-0	24.5
	11/19/2015	0.042	53
	3/15/2016	ND<-0	24.5
	6/29/2016	0.074	57
	8/9/2016	ND<-0	24.5
	12/7/2016	ND<-0	24.5
	3/2/2017	ND<-0	24.5
	7/5/2017	ND<-0	24.5
	8/16/2017	ND<-0	24.5
	10/25/2017	ND<-0	24.5
	3/28/2018	ND<-0	24.5
	6/29/2018	ND<-0	24.5
	8/2/2018	ND<-0	24.5
	12/10/2018	ND<-0	24.5
	4/15/2019	ND<-0	24.5
	6/12/2019	ND<-0	24.5
	8/27/2019	ND<-0	24.5
	10/29/2019	ND<-0	24.5
	3/30/2020	ND<-0	24.5
	6/16/2020	ND<-0	24.5
	9/21/2020	ND<-0	24.5

12/17/2020	ND<-0	24.5
3/18/2021	ND<-0	24.5
5/5/2021	ND<-0	24.5
9/2/2021	ND<-0	24.5
11/23/2021	ND<-0	24.5
1/11/2022	ND<-0	24.5
4/7/2022	ND<-0	24.5
8/2/2022	ND<-0	24.5
11/16/2022	ND<-0	24.5
2/14/2023	ND<-0	24.5
5/24/2023	0.025	50
8/7/2023	ND<-0	24.5
12/12/2023	ND<-0	24.5
1/10/2024	0.045	54

The Wilcoxon Statistic is 301.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.158491
The Standard Deviation adjusted for ties is 35.3012
The Z Score adjusted for ties is 0.240785
0.158491 < 2.326 indicating no statistical significance at 1% level
0.240785 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: GD 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 10
Non detect rank is 5.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	12
	3/18/2021	0.331	18
	5/5/2021	ND<-0	5.5
	11/23/2021	ND<-0	5.5
	1/11/2022	0.97	57
	4/7/2022	0.254	11
	8/2/2022	0.274	13
	11/16/2022	0.382	26
	2/14/2023	0.484	39
	5/25/2023	0.513	47
	8/7/2023	0.436	34
	12/12/2023	0.497	42
	1/10/2024	0.327	17
GD 5	3/13/2013	0.34	21
	5/20/2013	0.62	53
	9/23/2013	0.45	35
	12/10/2013	0.47	37
	2/6/2014	0.37	25
	6/26/2014	0.34	22
	9/30/2014	ND<-0	5.5
	11/19/2014	0.43	32
	3/23/2015	0.34	23
	4/22/2015	0.65	54
	9/30/2015	0.557	49
	11/19/2015	ND<-0	5.5
	3/15/2016	0.435	33
	6/29/2016	0.49	40
	8/9/2016	0.412	29
	12/7/2016	0.337	20
	3/2/2017	0.491	41
	7/5/2017	0.73	56
	8/16/2017	0.404	27
	10/25/2017	0.347	24
	3/28/2018	ND<-0	5.5
	6/29/2018	0.689	55
	8/2/2018	0.332	19
	12/10/2018	0.523	48
	4/15/2019	0.411	28
	6/12/2019	ND<-0	5.5
	8/27/2019	0.506	44
	10/29/2019	0.477	38
	3/30/2020	0.32	16
	6/16/2020	0.561	50
	9/21/2020	ND<-0	5.5

12/17/2020	0.422	30
3/18/2021	0.6	51
5/5/2021	ND<-0	5.5
9/2/2021	0.51	45
11/23/2021	ND<-0	5.5
1/11/2022	0.51	46
4/7/2022	0.3	14
8/2/2022	ND<-0	5.5
11/16/2022	0.312	15
2/14/2023	0.606	52
5/24/2023	10	58
8/7/2023	0.499	43
12/12/2023	0.468	36
1/10/2024	0.424	31

The Wilcoxon Statistic is 349
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 1.04418
The Standard Deviation adjusted for ties is 53.4944
The Z Score adjusted for ties is 1.04684
1.04418 < 2.326 indicating no statistical significance at 1% level
1.04684 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: GD 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 46
Non detect rank is 23.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	23.5
	3/18/2021	ND<-0	23.5
	5/5/2021	ND<-0	23.5
	11/23/2021	ND<-0	23.5
	1/11/2022	ND<-0	23.5
	4/7/2022	ND<-0	23.5
	8/2/2022	ND<-0	23.5
	11/16/2022	ND<-0	23.5
	2/14/2023	ND<-0	23.5
	5/25/2023	ND<-0	23.5
	8/7/2023	0.0866	51
	12/12/2023	0.0454	47
	1/10/2024	0.0532	49
GD 5	3/13/2013	ND<-0	23.5
	5/20/2013	ND<-0	23.5
	9/23/2013	ND<-0	23.5
	12/10/2013	0.1	52
	2/6/2014	ND<-0	23.5
	6/26/2014	ND<-0	23.5
	9/30/2014	ND<-0	23.5
	11/19/2014	ND<-0	23.5
	3/23/2015	ND<-0	23.5
	4/22/2015	ND<-0	23.5
	9/30/2015	0.115	55
	11/19/2015	ND<-0	23.5
	3/15/2016	ND<-0	23.5
	6/29/2016	ND<-0	23.5
	8/9/2016	ND<-0	23.5
	12/7/2016	ND<-0	23.5
	3/2/2017	ND<-0	23.5
	7/5/2017	ND<-0	23.5
	8/16/2017	ND<-0	23.5
	10/25/2017	ND<-0	23.5
	3/28/2018	ND<-0	23.5
	6/29/2018	ND<-0	23.5
	8/2/2018	ND<-0	23.5
	12/10/2018	0.19	57
	4/15/2019	1.2	58
	6/12/2019	ND<-0	23.5
	8/27/2019	0.17	56
	10/29/2019	ND<-0	23.5
	3/30/2020	ND<-0	23.5
	6/16/2020	ND<-0	23.5
	9/21/2020	ND<-0	23.5

12/17/2020	0.113	54
3/18/2021	ND<-0	23.5
5/5/2021	ND<-0	23.5
9/2/2021	ND<-0	23.5
11/23/2021	ND<-0	23.5
1/11/2022	ND<-0	23.5
4/7/2022	ND<-0	23.5
8/2/2022	ND<-0	23.5
11/16/2022	ND<-0	23.5
2/14/2023	ND<-0	23.5
5/24/2023	0.0462	48
8/7/2023	0.103	53
12/12/2023	ND<-0	23.5
1/10/2024	0.0681	50

The Wilcoxon Statistic is 294
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.018646
The Standard Deviation adjusted for ties is 37.9687
The Z Score adjusted for ties is 0.0263375
0.018646 < 2.326 indicating no statistical significance at 1% level
0.0263375 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: GD 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	38
	3/18/2021	21.6	45
	5/5/2021	27.5	52
	11/23/2021	9.2	15
	1/11/2022	15.6	34
	4/7/2022	20.9	43
	8/2/2022	6	1
	11/16/2022	10.5	18
	2/14/2023	22.5	47
	5/25/2023	6.71	4
	8/7/2023	7	6
	12/12/2023	13.8	29
	1/10/2024	34.4	56
GD 5	3/13/2013	9.6	17
	5/20/2013	9	13
	9/23/2013	8	10
	12/10/2013	18	39
	2/6/2014	17	36
	6/26/2014	12	23
	9/30/2014	18	40
	11/19/2014	26	50
	3/23/2015	15	32
	4/22/2015	13	26
	9/30/2015	17.3	37
	11/19/2015	42.8	58
	3/15/2016	13.2	28
	6/29/2016	15	33
	8/9/2016	11	20
	12/7/2016	6.8	5
	3/2/2017	13	27
	7/5/2017	22.7	48
	8/16/2017	9	14
	10/25/2017	14.6	31
	3/28/2018	6.06	2
	6/29/2018	19.6	41
	8/2/2018	26.4	51
	12/10/2018	22.3	46
	4/15/2019	29	53
	6/12/2019	9.33	16
	8/27/2019	10.9	19
	10/29/2019	21	44
	3/30/2020	12.1	24
	6/16/2020	7.4	7
	9/21/2020	7.9	9

12/17/2020	19.8	42
3/18/2021	30.6	54
5/5/2021	36.8	57
9/2/2021	16.1	35
11/23/2021	8.8	12
1/11/2022	12.1	25
4/7/2022	14.4	30
8/2/2022	6.4	3
11/16/2022	8.67	11
2/14/2023	11.5	22
5/24/2023	24.3	49
8/7/2023	7.54	8
12/12/2023	11.3	21
1/10/2024	32	55

The Wilcoxon Statistic is 288
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -0.0932302
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is -0.0932302
-0.0932302 < 2.326 indicating no statistical significance at 1% level
-0.0932302 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: GD 12

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 16
Non detect rank is 8.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	54
	3/18/2021	0.319	51
	5/5/2021	0.213	32
	11/23/2021	0.164	25
	1/11/2022	0.44	57
	4/7/2022	0.273	44
	8/2/2022	0.102	17
	11/16/2022	ND<-0	8.5
	2/14/2023	0.416	56
	5/25/2023	ND<-0	8.5
	8/7/2023	ND<-0	8.5
	12/12/2023	0.14	22
	1/10/2024	0.354	52
GD 12	3/12/2013	0.25	39
	5/8/2013	0.21	31
	9/23/2013	ND<-0	8.5
	12/10/2013	0.22	33
	2/6/2014	0.31	49
	6/26/2014	0.11	21
	9/30/2014	ND<-0	8.5
	11/19/2014	0.28	46
	3/23/2015	0.24	37
	4/22/2015	0.25	40
	9/30/2015	ND<-0	8.5
	11/19/2015	0.281	47
	3/15/2016	0.254	41
	6/29/2016	ND<-0	8.5
	8/9/2016	ND<-0	8.5
	12/7/2016	0.142	23
	3/2/2017	0.223	34
	6/21/2017	ND<-0	8.5
	8/17/2017	ND<-0	8.5
	10/26/2017	0.19	29
	3/27/2018	0.356	53
	6/26/2018	0.102	18
	8/1/2018	0.108	20
	12/11/2018	0.313	50
	4/17/2019	0.257	42
	6/11/2019	0.223	35
	8/28/2019	ND<-0	8.5
	10/28/2019	0.197	30
	3/31/2020	0.177	27
	6/10/2020	ND<-0	8.5
	9/21/2020	0.103	19

12/17/2020	0.268	43
3/18/2021	0.163	24
5/5/2021	7.26	58
9/2/2021	0.245	38
11/23/2021	ND<-0	8.5
1/10/2022	0.23	36
4/7/2022	0.177	28
8/3/2022	ND<-0	8.5
11/16/2022	ND<-0	8.5
2/13/2023	0.277	45
5/24/2023	0.293	48
8/7/2023	ND<-0	8.5
12/12/2023	0.164	26
1/10/2024	0.389	55

The Wilcoxon Statistic is 240.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -0.978917
The Standard Deviation adjusted for ties is 53.0668
The Z Score adjusted for ties is -0.989319
-0.978917 < 2.326 indicating no statistical significance at 1% level
-0.989319 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: GD 12

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 41
Non detect rank is 21

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	21
	3/18/2021	ND<-0	21
	5/5/2021	ND<-0	21
	11/23/2021	ND<-0	21
	1/11/2022	ND<-0	21
	4/7/2022	0.06	52
	8/2/2022	ND<-0	21
	11/16/2022	ND<-0	21
	2/14/2023	ND<-0	21
	5/25/2023	ND<-0	21
	8/7/2023	ND<-0	21
	12/12/2023	ND<-0	21
	1/10/2024	0.02	42
GD 12	3/12/2013	0.03	44
	5/8/2013	0.03	45
	9/23/2013	0.026	43
	12/10/2013	0.079	56
	2/6/2014	ND<-0	21
	6/26/2014	0.035	47
	9/30/2014	ND<-0	21
	11/19/2014	ND<-0	21
	3/23/2015	ND<-0	21
	4/22/2015	ND<-0	21
	9/30/2015	ND<-0	21
	3/15/2016	0.032	46
	6/29/2016	0.036	48
	8/9/2016	ND<-0	21
	12/7/2016	ND<-0	21
	3/2/2017	ND<-0	21
	6/21/2017	ND<-0	21
	8/17/2017	ND<-0	21
	10/26/2017	ND<-0	21
	3/27/2018	ND<-0	21
	6/26/2018	ND<-0	21
	8/1/2018	0.159	57
	12/11/2018	ND<-0	21
	4/17/2019	ND<-0	21
	6/11/2019	0.066	54
	8/28/2019	ND<-0	21
	10/28/2019	0.044	50
	3/31/2020	0.065	53
	6/10/2020	ND<-0	21
	9/21/2020	ND<-0	21
	12/17/2020	ND<-0	21

3/18/2021	ND<-0	21
5/5/2021	ND<-0	21
9/2/2021	ND<-0	21
11/23/2021	ND<-0	21
1/10/2022	ND<-0	21
4/7/2022	0.074	55
8/3/2022	ND<-0	21
11/16/2022	ND<-0	21
2/13/2023	ND<-0	21
5/24/2023	0.044	51
8/7/2023	ND<-0	21
12/12/2023	ND<-0	21
1/10/2024	0.041	49

The Wilcoxon Statistic is 338
The Expected value is is 286
The Standard Deviation is 52.5801
The Z Score is 0.979458
The Standard Deviation adjusted for ties is 41.6662
The Z Score adjusted for ties is 1.23601
0.979458 < 2.326 indicating no statistical significance at 1% level
1.23601 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: GD 12

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 6
Non detect rank is 3.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	8
	3/18/2021	0.331	15
	5/5/2021	ND<-0	3.5
	11/23/2021	ND<-0	3.5
	1/11/2022	0.97	55
	4/7/2022	0.254	7
	8/2/2022	0.274	10
	11/16/2022	0.382	18
	2/14/2023	0.484	32
	5/25/2023	0.513	34
	8/7/2023	0.436	27
	12/12/2023	0.497	33
	1/10/2024	0.327	14
GD 12	3/12/2013	0.54	37
	5/8/2013	0.4	22
	9/23/2013	0.48	31
	12/10/2013	0.45	30
	2/6/2014	0.28	11
	6/26/2014	0.62	44
	9/30/2014	0.39	20
	11/19/2014	0.39	21
	3/23/2015	0.59	41
	4/22/2015	0.43	25
	9/30/2015	0.695	47
	11/19/2015	0.769	50
	3/15/2016	0.434	26
	6/29/2016	0.38	17
	8/9/2016	0.629	46
	12/7/2016	0.599	42
	3/2/2017	0.583	39
	6/21/2017	0.77	51
	8/17/2017	0.583	40
	10/26/2017	0.312	12
	3/27/2018	ND<-0	3.5
	6/26/2018	0.528	36
	8/1/2018	1.23	58
	12/11/2018	0.574	38
	4/17/2019	0.272	9
	6/11/2019	0.82	54
	8/28/2019	0.764	49
	10/28/2019	0.387	19
	3/31/2020	1	57
	6/10/2020	0.438	29
	9/21/2020	ND<-0	3.5

12/17/2020	ND<-0	3.5
3/18/2021	0.621	45
5/5/2021	0.61	43
9/2/2021	0.779	52
11/23/2021	ND<-0	3.5
1/10/2022	0.325	13
4/7/2022	0.522	35
8/3/2022	0.999	56
11/16/2022	0.407	23
2/13/2023	0.75	48
5/24/2023	0.357	16
8/7/2023	0.813	53
12/12/2023	0.412	24
1/10/2024	0.437	28

The Wilcoxon Statistic is 416
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.29346
The Standard Deviation adjusted for ties is 53.6018
The Z Score adjusted for ties is 2.2947
2.29346 < 2.326 indicating no statistical significance at 1% level
2.2947 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: GD 12

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 41
Non detect rank is 21

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	21
	3/18/2021	ND<-0	21
	5/5/2021	ND<-0	21
	11/23/2021	ND<-0	21
	1/11/2022	ND<-0	21
	4/7/2022	ND<-0	21
	8/2/2022	ND<-0	21
	11/16/2022	ND<-0	21
	2/14/2023	ND<-0	21
	5/25/2023	ND<-0	21
	8/7/2023	0.0866	46
	12/12/2023	0.0454	43
	1/10/2024	0.0532	44
GD 12	3/12/2013	ND<-0	21
	5/8/2013	ND<-0	21
	9/23/2013	ND<-0	21
	12/10/2013	0.11	49
	2/6/2014	ND<-0	21
	6/26/2014	0.12	51
	9/30/2014	ND<-0	21
	11/19/2014	0.13	53
	3/23/2015	ND<-0	21
	4/22/2015	ND<-0	21
	9/30/2015	ND<-0	21
	11/19/2015	0.15	55
	3/15/2016	ND<-0	21
	6/29/2016	ND<-0	21
	8/9/2016	ND<-0	21
	12/7/2016	ND<-0	21
	3/2/2017	0.119	50
	6/21/2017	ND<-0	21
	8/17/2017	ND<-0	21
	10/26/2017	ND<-0	21
	3/27/2018	ND<-0	21
	6/26/2018	ND<-0	21
	8/1/2018	0.286	57
	12/11/2018	ND<-0	21
	4/17/2019	ND<-0	21
	6/11/2019	0.121	52
	8/28/2019	0.103	48
	10/28/2019	ND<-0	21
	3/31/2020	0.167	56
	6/10/2020	ND<-0	21
	9/21/2020	ND<-0	21

12/17/2020	ND<-0	21
3/18/2021	ND<-0	21
5/5/2021	ND<-0	21
9/2/2021	ND<-0	21
11/23/2021	ND<-0	21
1/10/2022	ND<-0	21
4/7/2022	ND<-0	21
8/3/2022	0.142	54
11/16/2022	ND<-0	21
2/13/2023	ND<-0	21
5/24/2023	0.372	58
8/7/2023	0.0945	47
12/12/2023	0.0233	42
1/10/2024	0.0611	45

The Wilcoxon Statistic is 333
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.745842
The Standard Deviation adjusted for ties is 43.1341
The Z Score adjusted for ties is 0.92734
0.745842 < 2.326 indicating no statistical significance at 1% level
0.92734 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: GD 12

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 1
Non detect rank is 1

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	50
	3/18/2021	21.6	52
	5/5/2021	27.5	54
	11/23/2021	9.2	33
	1/11/2022	15.6	46
	4/7/2022	20.9	51
	8/2/2022	6	20
	11/16/2022	10.5	35
	2/14/2023	22.5	53
	5/25/2023	6.71	24
	8/7/2023	7	25
	12/12/2023	13.8	44
	1/10/2024	34.4	56
GD 12	3/12/2013	3.9	8
	5/8/2013	7.5	26
	9/23/2013	9	32
	12/10/2013	5.9	19
	2/6/2014	3.9	9
	6/26/2014	32	55
	9/30/2014	11	36
	11/19/2014	6.6	23
	3/23/2015	8.1	29
	4/22/2015	14	45
	9/30/2015	8.46	31
	11/19/2015	12	38
	3/15/2016	4.6	15
	6/29/2016	12	39
	8/9/2016	13.3	42
	12/7/2016	4	11
	3/2/2017	6.1	21
	6/21/2017	16.8	48
	8/17/2017	13.3	43
	10/26/2017	7.79	28
	3/27/2018	4.2	12
	6/26/2018	13.2	41
	8/1/2018	43.8	57
	12/11/2018	4.3	13
	4/17/2019	3.96	10
	6/11/2019	8.17	30
	8/28/2019	9.4	34
	10/28/2019	12.3	40
	3/31/2020	143	58
	6/10/2020	11.4	37
	9/21/2020	7.6	27

12/17/2020	3.7	6
3/18/2021	17.6	49
5/5/2021	16.4	47
9/2/2021	3.5	5
11/23/2021	2.8	2
1/10/2022	3.7	7
4/7/2022	3.4	4
8/3/2022	6.4	22
11/16/2022	4.5	14
2/13/2023	2.9	3
5/24/2023	4.6	16
8/7/2023	5.2	17
12/12/2023	ND<-0	1
1/10/2024	5.6	18

The Wilcoxon Statistic is 133
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -2.98337
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is -2.98337
-2.98337 < 2.326 indicating no statistical significance at 1% level
-2.98337 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: HB 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 23
Non detect rank is 12

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	54
	3/18/2021	0.319	46
	5/5/2021	0.213	39
	11/23/2021	0.164	32
	1/11/2022	0.44	57
	4/7/2022	0.273	44
	8/2/2022	0.102	25
	11/16/2022	ND<-0	12
	2/14/2023	0.416	56
	5/25/2023	ND<-0	12
	8/7/2023	ND<-0	12
	12/12/2023	0.14	31
	1/10/2024	0.354	48
HB 3	3/12/2013	0.19	34
	5/20/2013	0.17	33
	9/23/2013	ND<-0	12
	12/10/2013	ND<-0	12
	2/6/2014	0.48	58
	6/26/2014	ND<-0	12
	9/30/2014	ND<-0	12
	11/19/2014	0.11	26
	3/23/2015	0.26	42
	4/22/2015	0.2	36
	9/30/2015	ND<-0	12
	11/19/2015	0.377	53
	3/15/2016	0.295	45
	6/29/2016	ND<-0	12
	8/9/2016	ND<-0	12
	12/7/2016	0.111	27
	3/2/2017	0.334	47
	7/5/2017	ND<-0	12
	8/16/2017	ND<-0	12
	10/25/2017	ND<-0	12
	3/28/2018	0.359	50
	6/29/2018	ND<-0	12
	8/2/2018	ND<-0	12
	12/10/2018	0.363	51
	4/15/2019	0.233	40
	6/12/2019	0.129	29
	8/27/2019	ND<-0	12
	10/29/2019	ND<-0	12
	3/30/2020	0.234	41
	6/16/2020	ND<-0	12
	9/21/2020	ND<-0	12

12/17/2020	0.195	35
3/18/2021	0.369	52
5/5/2021	0.207	38
9/2/2021	ND<-0	12
11/23/2021	0.137	30
1/11/2022	0.2	37
4/7/2022	0.268	43
8/2/2022	ND<-0	12
11/16/2022	ND<-0	12
2/14/2023	0.414	55
5/25/2023	0.0574	24
8/7/2023	ND<-0	12
12/12/2023	0.126	28
1/10/2024	0.354	49

The Wilcoxon Statistic is 208
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -1.58491
The Standard Deviation adjusted for ties is 51.9343
The Z Score adjusted for ties is -1.63668
-1.58491 < 2.326 indicating no statistical significance at 1% level
-1.63668 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: HB 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 48
Non detect rank is 24.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	24.5
	3/18/2021	ND<-0	24.5
	5/5/2021	ND<-0	24.5
	11/23/2021	ND<-0	24.5
	1/11/2022	ND<-0	24.5
	4/7/2022	0.06	54
	8/2/2022	ND<-0	24.5
	11/16/2022	ND<-0	24.5
	2/14/2023	ND<-0	24.5
	5/25/2023	ND<-0	24.5
	8/7/2023	ND<-0	24.5
	12/12/2023	ND<-0	24.5
	1/10/2024	0.02	49
HB 3	3/12/2013	0.081	55
	5/20/2013	ND<-0	24.5
	9/23/2013	0.037	52
	12/10/2013	0.14	58
	2/6/2014	0.03	51
	6/26/2014	ND<-0	24.5
	9/30/2014	ND<-0	24.5
	11/19/2014	0.098	57
	3/23/2015	ND<-0	24.5
	4/22/2015	ND<-0	24.5
	9/30/2015	ND<-0	24.5
	11/19/2015	0.045	53
	3/15/2016	0.087	56
	6/29/2016	ND<-0	24.5
	8/9/2016	ND<-0	24.5
	12/7/2016	ND<-0	24.5
	3/2/2017	ND<-0	24.5
	7/5/2017	ND<-0	24.5
	8/16/2017	ND<-0	24.5
	10/25/2017	ND<-0	24.5
	3/28/2018	ND<-0	24.5
	6/29/2018	ND<-0	24.5
	8/2/2018	ND<-0	24.5
	12/10/2018	ND<-0	24.5
	4/15/2019	ND<-0	24.5
	6/12/2019	ND<-0	24.5
	8/27/2019	ND<-0	24.5
	10/29/2019	ND<-0	24.5
	3/30/2020	ND<-0	24.5
	6/16/2020	ND<-0	24.5
	9/21/2020	ND<-0	24.5

12/17/2020	ND<-0	24.5
3/18/2021	ND<-0	24.5
5/5/2021	ND<-0	24.5
9/2/2021	ND<-0	24.5
11/23/2021	ND<-0	24.5
1/11/2022	ND<-0	24.5
4/7/2022	ND<-0	24.5
8/2/2022	ND<-0	24.5
11/16/2022	ND<-0	24.5
2/14/2023	ND<-0	24.5
5/25/2023	ND<-0	24.5
8/7/2023	ND<-0	24.5
12/12/2023	ND<-0	24.5
1/10/2024	0.025	50

The Wilcoxon Statistic is 303.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.195783
The Standard Deviation adjusted for ties is 35.3012
The Z Score adjusted for ties is 0.29744
0.195783 < 2.326 indicating no statistical significance at 1% level
0.29744 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: HB 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 9
Non detect rank is 5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	12
	3/18/2021	0.331	21
	5/5/2021	ND<-0	5
	11/23/2021	ND<-0	5
	1/11/2022	0.97	58
	4/7/2022	0.254	11
	8/2/2022	0.274	14
	11/16/2022	0.382	24
	2/14/2023	0.484	34
	5/25/2023	0.513	38
	8/7/2023	0.436	27
	12/12/2023	0.497	35
	1/10/2024	0.327	19
HB 3	3/12/2013	0.83	54
	5/20/2013	0.6	43
	9/23/2013	0.6	44
	12/10/2013	0.62	46
	2/6/2014	0.37	22
	6/26/2014	0.37	23
	9/30/2014	0.48	33
	11/19/2014	0.44	28
	3/23/2015	0.46	30
	4/22/2015	0.66	48
	9/30/2015	0.91	55
	11/19/2015	ND<-0	5
	3/15/2016	ND<-0	5
	6/29/2016	0.51	37
	8/9/2016	0.703	50
	12/7/2016	0.73	51
	3/2/2017	0.969	57
	7/5/2017	0.812	53
	8/16/2017	0.763	52
	10/25/2017	0.322	18
	3/28/2018	ND<-0	5
	6/29/2018	0.464	31
	8/2/2018	0.952	56
	12/10/2018	0.426	26
	4/15/2019	ND<-0	5
	6/12/2019	ND<-0	5
	8/27/2019	0.634	47
	10/29/2019	0.517	39
	3/30/2020	0.452	29
	6/16/2020	0.299	16
	9/21/2020	0.279	15

12/17/2020	0.588	42
3/18/2021	0.252	10
5/5/2021	ND<-0	5
9/2/2021	0.689	49
11/23/2021	ND<-0	5
1/11/2022	0.55	40
4/7/2022	0.329	20
8/2/2022	0.273	13
11/16/2022	0.604	45
2/14/2023	0.471	32
5/25/2023	0.502	36
8/7/2023	0.578	41
12/12/2023	0.383	25
1/10/2024	0.305	17

The Wilcoxon Statistic is 373
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 1.49168
The Standard Deviation adjusted for ties is 53.5316
The Z Score adjusted for ties is 1.49444
1.49168 < 2.326 indicating no statistical significance at 1% level
1.49444 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: HB 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 43
Non detect rank is 22

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	22
	3/18/2021	ND<-0	22
	5/5/2021	ND<-0	22
	11/23/2021	ND<-0	22
	1/11/2022	ND<-0	22
	4/7/2022	ND<-0	22
	8/2/2022	ND<-0	22
	11/16/2022	ND<-0	22
	2/14/2023	ND<-0	22
	5/25/2023	ND<-0	22
	8/7/2023	0.0866	49
	12/12/2023	0.0454	45
	1/10/2024	0.0532	46
HB 3	3/12/2013	ND<-0	22
	5/20/2013	ND<-0	22
	9/23/2013	ND<-0	22
	12/10/2013	0.15	55
	2/6/2014	ND<-0	22
	6/26/2014	ND<-0	22
	9/30/2014	ND<-0	22
	11/19/2014	0.12	52
	3/23/2015	ND<-0	22
	4/22/2015	ND<-0	22
	9/30/2015	ND<-0	22
	11/19/2015	ND<-0	22
	3/15/2016	ND<-0	22
	6/29/2016	ND<-0	22
	8/9/2016	ND<-0	22
	12/7/2016	0.126	53
	3/2/2017	0.115	51
	7/5/2017	ND<-0	22
	8/16/2017	ND<-0	22
	10/25/2017	ND<-0	22
	3/28/2018	ND<-0	22
	6/29/2018	ND<-0	22
	8/2/2018	ND<-0	22
	12/10/2018	0.141	54
	4/15/2019	ND<-0	22
	6/12/2019	ND<-0	22
	8/27/2019	0.179	58
	10/29/2019	0.166	56
	3/30/2020	0.166	57
	6/16/2020	ND<-0	22
	9/21/2020	ND<-0	22

12/17/2020	ND<-0	22
3/18/2021	ND<-0	22
5/5/2021	ND<-0	22
9/2/2021	ND<-0	22
11/23/2021	ND<-0	22
1/11/2022	ND<-0	22
4/7/2022	ND<-0	22
8/2/2022	ND<-0	22
11/16/2022	ND<-0	22
2/14/2023	ND<-0	22
5/25/2023	0.0588	47
8/7/2023	0.0895	50
12/12/2023	0.0444	44
1/10/2024	0.0752	48

The Wilcoxon Statistic is 316
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.428859
The Standard Deviation adjusted for ties is 41.2854
The Z Score adjusted for ties is 0.557098
0.428859 < 2.326 indicating no statistical significance at 1% level
0.557098 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: HB 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	22
	3/18/2021	21.6	33
	5/5/2021	27.5	42
	11/23/2021	9.2	8
	1/11/2022	15.6	18
	4/7/2022	20.9	30
	8/2/2022	6	1
	11/16/2022	10.5	9
	2/14/2023	22.5	36
	5/25/2023	6.71	2
	8/7/2023	7	4
	12/12/2023	13.8	15
	1/10/2024	34.4	49
HB 3	3/12/2013	49	55
	5/20/2013	17	19
	9/23/2013	19	24
	12/10/2013	20	26
	2/6/2014	13	14
	6/26/2014	12	12
	9/30/2014	30	45
	11/19/2014	51	56
	3/23/2015	35	50
	4/22/2015	22	35
	9/30/2015	23	37
	11/19/2015	30.2	46
	3/15/2016	23.8	41
	6/29/2016	20.9	31
	8/9/2016	14.3	16
	12/7/2016	17	20
	3/2/2017	57.1	58
	7/5/2017	28.5	44
	8/16/2017	12.7	13
	10/25/2017	20.4	28
	3/28/2018	20.2	27
	6/29/2018	18.2	23
	8/2/2018	35.3	52
	12/10/2018	27.6	43
	4/15/2019	35.5	53
	6/12/2019	52.3	57
	8/27/2019	7.3	5
	10/29/2019	17.6	21
	3/30/2020	19	25
	6/16/2020	14.6	17
	9/21/2020	8.3	7

12/17/2020	20.4	29
3/18/2021	23	38
5/5/2021	35.1	51
9/2/2021	23.6	39
11/23/2021	10.5	10
1/11/2022	23.6	40
4/7/2022	21	32
8/2/2022	33.7	48
11/16/2022	7.4	6
2/14/2023	11.6	11
5/25/2023	21.7	34
8/7/2023	6.8	3
12/12/2023	36.8	54
1/10/2024	31.7	47

The Wilcoxon Statistic is 407
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.12565
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is 2.12565
2.12565 < 2.326 indicating no statistical significance at 1% level
2.12565 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 15
Non detect rank is 8

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	54
	3/18/2021	0.319	52
	5/5/2021	0.213	44
	11/23/2021	0.164	31
	1/11/2022	0.44	56
	4/7/2022	0.273	49
	8/2/2022	0.102	17
	11/16/2022	ND<-0	8
	2/14/2023	0.416	55
	5/25/2023	ND<-0	8
	8/7/2023	ND<-0	8
	12/12/2023	0.14	24
	1/10/2024	0.354	53
RC 2	3/12/2013	0.12	19
	5/8/2013	0.19	40
	9/23/2013	ND<-0	8
	12/10/2013	0.11	18
	2/6/2014	0.26	46
	6/26/2014	0.15	29
	9/30/2014	ND<-0	8
	11/19/2014	0.17	35
	3/23/2015	0.15	30
	4/22/2015	0.26	47
	9/30/2015	ND<-0	8
	11/19/2015	0.271	48
	3/15/2016	0.181	37
	6/29/2016	ND<-0	8
	8/9/2016	0.14	25
	12/7/2016	0.2	42
	3/2/2017	0.166	33
	6/21/2017	ND<-0	8
	8/17/2017	ND<-0	8
	10/26/2017	ND<-0	8
	3/27/2018	0.146	28
	6/26/2018	0.101	16
	8/1/2018	ND<-0	8
	12/11/2018	0.316	51
	4/17/2019	0.165	32
	6/11/2019	ND<-0	8
	8/28/2019	ND<-0	8
	10/28/2019	0.132	23
	3/31/2020	0.19	41
	6/10/2020	0.21	43
	9/21/2020	ND<-0	8

12/17/2020	0.218	45
3/18/2021	0.145	27
5/5/2021	7.91	58
9/2/2021	0.122	20
11/23/2021	0.124	21
1/10/2022	0.185	38
4/7/2022	0.186	39
8/3/2022	0.175	36
11/16/2022	0.126	22
2/13/2023	0.273	50
5/24/2023	0.142	26
8/7/2023	ND<-0	8
12/12/2023	0.166	34
1/10/2024	0.511	57

The Wilcoxon Statistic is 217
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -1.4171
The Standard Deviation adjusted for ties is 53.1668
The Z Score adjusted for ties is -1.42946
-1.4171 < 2.326 indicating no statistical significance at 1% level
-1.42946 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 50
Non detect rank is 25.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	25.5
	3/18/2021	ND<-0	25.5
	5/5/2021	ND<-0	25.5
	11/23/2021	ND<-0	25.5
	1/11/2022	ND<-0	25.5
	4/7/2022	0.06	55
	8/2/2022	ND<-0	25.5
	11/16/2022	ND<-0	25.5
	2/14/2023	ND<-0	25.5
	5/25/2023	ND<-0	25.5
	8/7/2023	ND<-0	25.5
	12/12/2023	ND<-0	25.5
	1/10/2024	0.02	52
RC 2	3/12/2013	0.088	58
	5/8/2013	ND<-0	25.5
	9/23/2013	ND<-0	25.5
	12/10/2013	0.062	56
	2/6/2014	ND<-0	25.5
	6/26/2014	ND<-0	25.5
	9/30/2014	ND<-0	25.5
	11/19/2014	ND<-0	25.5
	3/23/2015	0.044	54
	4/22/2015	ND<-0	25.5
	9/30/2015	ND<-0	25.5
	11/19/2015	ND<-0	25.5
	3/15/2016	ND<-0	25.5
	6/29/2016	0.077	57
	8/9/2016	ND<-0	25.5
	12/7/2016	ND<-0	25.5
	3/2/2017	ND<-0	25.5
	6/21/2017	ND<-0	25.5
	8/17/2017	ND<-0	25.5
	10/26/2017	ND<-0	25.5
	3/27/2018	ND<-0	25.5
	6/26/2018	ND<-0	25.5
	8/1/2018	ND<-0	25.5
	12/11/2018	ND<-0	25.5
	4/17/2019	ND<-0	25.5
	6/11/2019	ND<-0	25.5
	8/28/2019	ND<-0	25.5
	10/28/2019	ND<-0	25.5
	3/31/2020	0.029	53
	6/10/2020	ND<-0	25.5
	9/21/2020	ND<-0	25.5

12/17/2020	ND<-0	25.5
3/18/2021	ND<-0	25.5
5/5/2021	ND<-0	25.5
9/2/2021	ND<-0	25.5
11/23/2021	ND<-0	25.5
1/10/2022	ND<-0	25.5
4/7/2022	ND<-0	25.5
8/3/2022	ND<-0	25.5
11/16/2022	ND<-0	25.5
2/13/2023	ND<-0	25.5
5/24/2023	ND<-0	25.5
8/7/2023	ND<-0	25.5
12/12/2023	ND<-0	25.5
1/10/2024	0.015	51

The Wilcoxon Statistic is 288.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -0.0839072
The Standard Deviation adjusted for ties is 32.1519
The Z Score adjusted for ties is -0.13996
-0.0839072 < 2.326 indicating no statistical significance at 1% level
-0.13996 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 7
Non detect rank is 4

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	9
	3/18/2021	0.331	15
	5/5/2021	ND<-0	4
	11/23/2021	ND<-0	4
	1/11/2022	0.97	57
	4/7/2022	0.254	8
	8/2/2022	0.274	10
	11/16/2022	0.382	19
	2/14/2023	0.484	33
	5/25/2023	0.513	38
	8/7/2023	0.436	28
	12/12/2023	0.497	34
	1/10/2024	0.327	13
RC 2	3/12/2013	0.75	50
	5/8/2013	0.55	42
	9/23/2013	0.43	23
	12/10/2013	0.54	41
	2/6/2014	0.43	24
	6/26/2014	0.44	29
	9/30/2014	0.4	22
	11/19/2014	0.43	25
	3/23/2015	0.81	54
	4/22/2015	ND<-0	4
	9/30/2015	ND<-0	4
	11/19/2015	0.753	51
	3/15/2016	0.432	26
	6/29/2016	0.35	17
	8/9/2016	0.454	31
	12/7/2016	0.532	40
	3/2/2017	0.445	30
	6/21/2017	0.505	36
	8/17/2017	0.724	48
	10/26/2017	0.274	11
	3/27/2018	ND<-0	4
	6/26/2018	0.802	52
	8/1/2018	0.506	37
	12/11/2018	0.479	32
	4/17/2019	0.288	12
	6/11/2019	0.52	39
	8/28/2019	0.748	49
	10/28/2019	ND<-0	4
	3/31/2020	0.574	43
	6/10/2020	0.33	14
	9/21/2020	ND<-0	4

12/17/2020	0.396	21
3/18/2021	0.611	44
5/5/2021	0.892	56
9/2/2021	0.802	53
11/23/2021	0.34	16
1/10/2022	0.501	35
4/7/2022	0.386	20
8/3/2022	0.352	18
11/16/2022	0.434	27
2/13/2023	0.636	46
5/24/2023	22.8	58
8/7/2023	0.676	47
12/12/2023	0.634	45
1/10/2024	0.816	55

The Wilcoxon Statistic is 404
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.06971
The Standard Deviation adjusted for ties is 53.5845
The Z Score adjusted for ties is 2.0715
2.06971 < 2.326 indicating no statistical significance at 1% level
2.0715 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 46
Non detect rank is 23.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	23.5
	3/18/2021	ND<-0	23.5
	5/5/2021	ND<-0	23.5
	11/23/2021	ND<-0	23.5
	1/11/2022	ND<-0	23.5
	4/7/2022	ND<-0	23.5
	8/2/2022	ND<-0	23.5
	11/16/2022	ND<-0	23.5
	2/14/2023	ND<-0	23.5
	5/25/2023	ND<-0	23.5
	8/7/2023	0.0866	53
	12/12/2023	0.0454	49
	1/10/2024	0.0532	51
RC 2	3/12/2013	ND<-0	23.5
	5/8/2013	ND<-0	23.5
	9/23/2013	ND<-0	23.5
	12/10/2013	ND<-0	23.5
	2/6/2014	ND<-0	23.5
	6/26/2014	ND<-0	23.5
	9/30/2014	ND<-0	23.5
	11/19/2014	ND<-0	23.5
	3/23/2015	ND<-0	23.5
	4/22/2015	ND<-0	23.5
	9/30/2015	ND<-0	23.5
	11/19/2015	0.133	55
	3/15/2016	ND<-0	23.5
	6/29/2016	ND<-0	23.5
	8/9/2016	ND<-0	23.5
	12/7/2016	ND<-0	23.5
	3/2/2017	ND<-0	23.5
	6/21/2017	ND<-0	23.5
	8/17/2017	0.133	56
	10/26/2017	ND<-0	23.5
	3/27/2018	ND<-0	23.5
	6/26/2018	ND<-0	23.5
	8/1/2018	ND<-0	23.5
	12/11/2018	ND<-0	23.5
	4/17/2019	ND<-0	23.5
	6/11/2019	ND<-0	23.5
	8/28/2019	ND<-0	23.5
	10/28/2019	0.2	58
	3/31/2020	0.118	54
	6/10/2020	ND<-0	23.5
	9/21/2020	ND<-0	23.5

12/17/2020	ND<-0	23.5
3/18/2021	ND<-0	23.5
5/5/2021	ND<-0	23.5
9/2/2021	ND<-0	23.5
11/23/2021	ND<-0	23.5
1/10/2022	ND<-0	23.5
4/7/2022	0.144	57
8/3/2022	ND<-0	23.5
11/16/2022	ND<-0	23.5
2/13/2023	ND<-0	23.5
5/24/2023	0.0469	50
8/7/2023	0.0662	52
12/12/2023	0.0448	48
1/10/2024	0.0428	47

The Wilcoxon Statistic is 288
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -0.0932302
The Standard Deviation adjusted for ties is 37.9687
The Z Score adjusted for ties is -0.131688
-0.0932302 < 2.326 indicating no statistical significance at 1% level
-0.131688 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: RC 2

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 1
Non detect rank is 1

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	47
	3/18/2021	21.6	51
	5/5/2021	27.5	54
	11/23/2021	9.2	25
	1/11/2022	15.6	44
	4/7/2022	20.9	50
	8/2/2022	6	15
	11/16/2022	10.5	29
	2/14/2023	22.5	52
	5/25/2023	6.71	20
	8/7/2023	7	21
	12/12/2023	13.8	39
	1/10/2024	34.4	55
RC 2	3/12/2013	14	41
	5/8/2013	12	34
	9/23/2013	6.3	18
	12/10/2013	10	28
	2/6/2014	9.6	26
	6/26/2014	7.2	22
	9/30/2014	2.5	2
	11/19/2014	11	32
	3/23/2015	18	48
	4/22/2015	4.8	7
	9/30/2015	4.6	6
	11/19/2015	14.4	42
	3/15/2016	6	16
	6/29/2016	10.9	31
	8/9/2016	9.9	27
	12/7/2016	11.9	33
	3/2/2017	8	23
	6/21/2017	12.3	35
	8/17/2017	72.2	56
	10/26/2017	17.5	46
	3/27/2018	12.5	36
	6/26/2018	13	37
	8/1/2018	84.4	57
	12/11/2018	3.1	3
	4/17/2019	ND<-0	1
	6/11/2019	5.2	10
	8/28/2019	4.8	8
	10/28/2019	3.4	4
	3/31/2020	90	58
	6/10/2020	10.8	30
	9/21/2020	5.2	11

12/17/2020	5.4	14
3/18/2021	26.8	53
5/5/2021	15.6	45
9/2/2021	3.4	5
11/23/2021	19.2	49
1/10/2022	9	24
4/7/2022	5	9
8/3/2022	13.8	40
11/16/2022	13.4	38
2/13/2023	5.3	12
5/24/2023	5.3	13
8/7/2023	6.2	17
12/12/2023	6.6	19
1/10/2024	15.2	43

The Wilcoxon Statistic is 174
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -2.21888
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is -2.21888
-2.21888 < 2.326 indicating no statistical significance at 1% level
-2.21888 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: RC 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 28
Non detect rank is 14.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	56
	3/18/2021	0.319	54
	5/5/2021	0.213	47
	11/23/2021	0.164	42
	1/11/2022	0.44	58
	4/7/2022	0.273	51
	8/2/2022	0.102	30
	11/16/2022	ND<-0	14.5
	2/14/2023	0.416	57
	5/25/2023	ND<-0	14.5
	8/7/2023	ND<-0	14.5
	12/12/2023	0.14	37
	1/10/2024	0.354	55
RC 14	3/12/2013	ND<-0	14.5
	5/8/2013	0.14	38
	9/23/2013	ND<-0	14.5
	12/10/2013	ND<-0	14.5
	2/6/2014	0.16	41
	6/26/2014	ND<-0	14.5
	9/19/2014	ND<-0	14.5
	9/30/2014	ND<-0	14.5
	3/23/2015	0.26	49
	4/22/2015	0.2	44
	9/30/2015	ND<-0	14.5
	11/19/2015	0.137	36
	3/15/2016	0.106	31
	6/29/2016	ND<-0	14.5
	8/9/2016	ND<-0	14.5
	12/7/2016	ND<-0	14.5
	3/2/2017	0.12	34
	7/5/2017	0.279	52
	8/16/2017	0.21	45
	10/25/2017	0.24	48
	3/28/2018	0.148	40
	6/29/2018	ND<-0	14.5
	8/2/2018	ND<-0	14.5
	12/10/2018	ND<-0	14.5
	4/15/2019	0.108	33
	6/12/2019	0.12	35
	8/27/2019	ND<-0	14.5
	10/29/2019	ND<-0	14.5
	3/30/2020	ND<-0	14.5
	6/16/2020	0.141	39
	9/21/2020	ND<-0	14.5

12/17/2020	0.261	50
3/18/2021	ND<-0	14.5
5/5/2021	ND<-0	14.5
9/2/2021	0.21	46
11/23/2021	ND<-0	14.5
1/11/2022	0.17	43
4/7/2022	ND<-0	14.5
8/2/2022	ND<-0	14.5
11/16/2022	ND<-0	14.5
2/14/2023	0.107	32
5/25/2023	0.05	29
8/7/2023	ND<-0	14.5
12/12/2023	ND<-0	14.5
1/10/2024	0.294	53

The Wilcoxon Statistic is 145.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -2.75029
The Standard Deviation adjusted for ties is 50.5268
The Z Score adjusted for ties is -2.91924
-2.75029 < 2.326 indicating no statistical significance at 1% level
-2.91924 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: RC 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 42
Non detect rank is 21.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	21.5
	3/18/2021	ND<-0	21.5
	5/5/2021	ND<-0	21.5
	11/23/2021	ND<-0	21.5
	1/11/2022	ND<-0	21.5
	4/7/2022	0.06	53
	8/2/2022	ND<-0	21.5
	11/16/2022	ND<-0	21.5
	2/14/2023	ND<-0	21.5
	5/25/2023	ND<-0	21.5
	8/7/2023	ND<-0	21.5
	12/12/2023	ND<-0	21.5
	1/10/2024	0.02	43
RC 14	3/12/2013	0.088	56
	5/8/2013	ND<-0	21.5
	9/23/2013	ND<-0	21.5
	12/10/2013	0.1	58
	2/6/2014	0.036	44
	6/26/2014	ND<-0	21.5
	9/19/2014	0.085	55
	9/30/2014	ND<-0	21.5
	3/23/2015	0.07	54
	4/22/2015	ND<-0	21.5
	9/30/2015	ND<-0	21.5
	11/19/2015	ND<-0	21.5
	3/15/2016	ND<-0	21.5
	6/29/2016	0.037	46
	8/9/2016	ND<-0	21.5
	12/7/2016	ND<-0	21.5
	3/2/2017	ND<-0	21.5
	7/5/2017	0.041	49
	8/16/2017	0.042	50
	10/25/2017	0.088	57
	3/28/2018	ND<-0	21.5
	6/29/2018	ND<-0	21.5
	8/2/2018	0.055	52
	12/10/2018	0.038	47
	4/15/2019	ND<-0	21.5
	6/12/2019	ND<-0	21.5
	8/27/2019	ND<-0	21.5
	10/29/2019	ND<-0	21.5
	3/30/2020	ND<-0	21.5
	6/16/2020	ND<-0	21.5
	9/21/2020	ND<-0	21.5

12/17/2020	ND<-0	21.5
3/18/2021	ND<-0	21.5
5/5/2021	ND<-0	21.5
9/2/2021	0.04	48
11/23/2021	ND<-0	21.5
1/11/2022	ND<-0	21.5
4/7/2022	ND<-0	21.5
8/2/2022	ND<-0	21.5
11/16/2022	ND<-0	21.5
2/14/2023	ND<-0	21.5
5/25/2023	ND<-0	21.5
8/7/2023	0.036	45
12/12/2023	ND<-0	21.5
1/10/2024	0.042	51

The Wilcoxon Statistic is 343.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.941625
The Standard Deviation adjusted for ties is 42.2418
The Z Score adjusted for ties is 1.1955
0.941625 < 2.326 indicating no statistical significance at 1% level
1.1955 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: RC 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 5
Non detect rank is 3

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	9
	3/18/2021	0.331	13
	5/5/2021	ND<-0	3
	11/23/2021	ND<-0	3
	1/11/2022	0.97	55
	4/7/2022	0.254	8
	8/2/2022	0.274	10
	11/16/2022	0.382	17
	2/14/2023	0.484	33
	5/25/2023	0.513	36
	8/7/2023	0.436	26
	12/12/2023	0.497	34
	1/10/2024	0.327	12
RC 14	3/12/2013	0.61	45
	5/8/2013	0.63	46
	9/23/2013	0.58	42
	12/10/2013	0.69	48
	2/6/2014	0.7	49
	6/26/2014	0.39	18
	9/19/2014	0.52	37
	9/30/2014	0.4	20
	3/23/2015	1.1	56
	4/22/2015	0.4	21
	9/30/2015	0.454	29
	11/19/2015	0.633	47
	3/15/2016	0.434	25
	6/29/2016	0.46	30
	8/9/2016	0.547	38
	12/7/2016	0.252	7
	3/2/2017	0.608	44
	7/5/2017	0.357	16
	8/16/2017	0.4	22
	10/25/2017	0.465	31
	3/28/2018	ND<-0	3
	6/29/2018	0.722	50
	8/2/2018	0.848	53
	12/10/2018	1.4	57
	4/15/2019	0.403	23
	6/12/2019	0.25	6
	8/27/2019	0.391	19
	10/29/2019	0.478	32
	3/30/2020	0.451	27
	6/16/2020	0.56	40
	9/21/2020	0.307	11

12/17/2020	0.497	35
3/18/2021	0.779	51
5/5/2021	0.566	41
9/2/2021	0.35	15
11/23/2021	ND<-0	3
1/11/2022	1.5	58
4/7/2022	0.548	39
8/2/2022	0.332	14
11/16/2022	ND<-0	3
2/14/2023	0.423	24
5/25/2023	0.945	54
8/7/2023	0.604	43
12/12/2023	0.451	28
1/10/2024	0.785	52

The Wilcoxon Statistic is 417
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.31211
The Standard Deviation adjusted for ties is 53.6142
The Z Score adjusted for ties is 2.31282
2.31211 < 2.326 indicating no statistical significance at 1% level
2.31282 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: RC 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 41
Non detect rank is 21

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	21
	3/18/2021	ND<-0	21
	5/5/2021	ND<-0	21
	11/23/2021	ND<-0	21
	1/11/2022	ND<-0	21
	4/7/2022	ND<-0	21
	8/2/2022	ND<-0	21
	11/16/2022	ND<-0	21
	2/14/2023	ND<-0	21
	5/25/2023	ND<-0	21
	8/7/2023	0.0866	45
	12/12/2023	0.0454	43
	1/10/2024	0.0532	44
RC 14	3/12/2013	ND<-0	21
	5/8/2013	ND<-0	21
	9/23/2013	ND<-0	21
	12/10/2013	0.11	48
	2/6/2014	0.11	49
	6/26/2014	ND<-0	21
	9/19/2014	0.13	51
	9/30/2014	ND<-0	21
	3/23/2015	ND<-0	21
	4/22/2015	ND<-0	21
	9/30/2015	ND<-0	21
	11/19/2015	0.135	52
	3/15/2016	0.304	58
	6/29/2016	ND<-0	21
	8/9/2016	ND<-0	21
	12/7/2016	ND<-0	21
	3/2/2017	ND<-0	21
	7/5/2017	ND<-0	21
	8/16/2017	ND<-0	21
	10/25/2017	0.149	54
	3/28/2018	ND<-0	21
	6/29/2018	ND<-0	21
	8/2/2018	ND<-0	21
	12/10/2018	0.169	56
	4/15/2019	ND<-0	21
	6/12/2019	ND<-0	21
	8/27/2019	0.141	53
	10/29/2019	ND<-0	21
	3/30/2020	ND<-0	21
	6/16/2020	ND<-0	21
	9/21/2020	0.202	57

12/17/2020	ND<-0	21
3/18/2021	ND<-0	21
5/5/2021	ND<-0	21
9/2/2021	ND<-0	21
11/23/2021	0.103	47
1/11/2022	ND<-0	21
4/7/2022	0.101	46
8/2/2022	ND<-0	21
11/16/2022	ND<-0	21
2/14/2023	ND<-0	21
5/25/2023	ND<-0	21
8/7/2023	0.15	55
12/12/2023	0.0358	42
1/10/2024	0.117	50

The Wilcoxon Statistic is 334
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.764488
The Standard Deviation adjusted for ties is 43.1341
The Z Score adjusted for ties is 0.950524
0.764488 < 2.326 indicating no statistical significance at 1% level
0.950524 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: RC 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	35
	3/18/2021	21.6	41
	5/5/2021	27.5	45
	11/23/2021	9.2	9
	1/11/2022	15.6	27
	4/7/2022	20.9	39
	8/2/2022	6	2
	11/16/2022	10.5	11
	2/14/2023	22.5	42
	5/25/2023	6.71	3
	8/7/2023	7	4
	12/12/2023	13.8	21
	1/10/2024	34.4	49
RC 14	3/12/2013	21	40
	5/8/2013	16	29
	9/23/2013	13	20
	12/10/2013	16	30
	2/6/2014	18	37
	6/26/2014	5.9	1
	9/19/2014	28	46
	9/30/2014	12	16
	3/23/2015	34	48
	4/22/2015	15	25
	9/30/2015	12.6	19
	11/19/2015	36	51
	3/15/2016	69.6	57
	6/29/2016	17.5	34
	8/9/2016	8.48	6
	12/7/2016	8.6	7
	3/2/2017	14.6	24
	7/5/2017	35	50
	8/16/2017	12.4	18
	10/25/2017	27.2	44
	3/28/2018	10.9	13
	6/29/2018	13.8	22
	8/2/2018	17.3	33
	12/10/2018	16.9	31
	4/15/2019	36	52
	6/12/2019	12.3	17
	8/27/2019	8.8	8
	10/29/2019	10.6	12
	3/30/2020	15.7	28
	6/16/2020	11.4	15
	9/21/2020	8.2	5

12/17/2020	14.4	23
3/18/2021	51.6	56
5/5/2021	30.4	47
9/2/2021	23.2	43
11/23/2021	40.2	54
1/11/2022	20.6	38
4/7/2022	178	58
8/2/2022	11.1	14
11/16/2022	9.2	10
2/14/2023	17.9	36
5/25/2023	17.2	32
8/7/2023	15	26
12/12/2023	38.2	53
1/10/2024	50	55

The Wilcoxon Statistic is 348
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 1.02553
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is 1.02553
1.02553 < 2.326 indicating no statistical significance at 1% level
1.02553 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 20
Non detect rank is 10.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	38
	3/18/2021	0.319	34
	5/5/2021	0.213	28
	11/23/2021	0.164	26
	1/11/2022	0.44	45
	4/7/2022	0.273	31
	8/2/2022	0.102	21
	11/16/2022	ND<-0	10.5
	2/14/2023	0.416	43
	5/25/2023	ND<-0	10.5
	8/7/2023	ND<-0	10.5
	12/12/2023	0.14	24
	1/10/2024	0.354	35
SME 1	3/12/2013	0.54	51
	5/8/2013	0.15	25
	9/23/2013	ND<-0	10.5
	12/10/2013	0.55	52
	2/6/2014	0.55	53
	6/26/2014	ND<-0	10.5
	9/30/2014	ND<-0	10.5
	11/19/2014	0.74	57
	3/23/2015	0.51	49
	4/22/2015	0.4	40
	9/30/2015	ND<-0	10.5
	11/19/2015	0.401	41
	3/15/2016	0.454	46
	6/29/2016	ND<-0	10.5
	8/9/2016	ND<-0	10.5
	12/7/2016	0.413	42
	3/2/2017	0.671	56
	6/29/2017	ND<-0	10.5
	8/16/2017	ND<-0	10.5
	10/25/2017	0.368	36
	3/28/2018	0.633	55
	6/29/2018	0.312	33
	8/2/2018	0.296	32
	12/10/2018	0.259	29
	4/15/2019	0.39	39
	6/12/2019	ND<-0	10.5
	8/27/2019	ND<-0	10.5
	10/29/2019	0.129	23
	3/30/2020	0.462	48
	6/16/2020	ND<-0	10.5
	9/21/2020	ND<-0	10.5

12/17/2020	0.577	54
3/18/2021	0.263	30
5/5/2021	0.122	22
9/2/2021	0.458	47
11/23/2021	ND<-0	10.5
1/11/2022	8.2	58
4/7/2022	0.431	44
8/2/2022	ND<-0	10.5
11/16/2022	ND<-0	10.5
2/14/2023	0.372	37
5/25/2023	ND<-0	10.5
8/7/2023	ND<-0	10.5
12/12/2023	0.172	27
1/10/2024	0.511	50

The Wilcoxon Statistic is 319.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.49412
The Standard Deviation adjusted for ties is 52.5222
The Z Score adjusted for ties is 0.504549
0.49412 < 2.326 indicating no statistical significance at 1% level
0.504549 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 23
Non detect rank is 12

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	12
	3/18/2021	ND<-0	12
	5/5/2021	ND<-0	12
	11/23/2021	ND<-0	12
	1/11/2022	ND<-0	12
	4/7/2022	0.06	35
	8/2/2022	ND<-0	12
	11/16/2022	ND<-0	12
	2/14/2023	ND<-0	12
	5/25/2023	ND<-0	12
	8/7/2023	ND<-0	12
	12/12/2023	ND<-0	12
	1/10/2024	0.02	24
SME 1	3/12/2013	0.11	45
	5/8/2013	0.063	36
	9/23/2013	0.053	33
	12/10/2013	0.21	55
	2/6/2014	0.11	46
	6/26/2014	ND<-0	12
	9/30/2014	0.044	29
	11/19/2014	0.27	58
	3/23/2015	0.073	40
	4/22/2015	0.039	27
	9/30/2015	0.052	32
	11/19/2015	0.084	42
	3/15/2016	0.047	30
	6/29/2016	0.18	51
	8/9/2016	0.089	43
	12/7/2016	0.209	54
	3/2/2017	0.127	49
	6/29/2017	0.028	25
	8/16/2017	ND<-0	12
	10/25/2017	0.121	47
	3/28/2018	0.106	44
	6/29/2018	0.121	48
	8/2/2018	0.145	50
	12/10/2018	ND<-0	12
	4/15/2019	0.063	37
	6/12/2019	ND<-0	12
	8/27/2019	ND<-0	12
	10/29/2019	0.049	31
	3/30/2020	ND<-0	12
	6/16/2020	0.031	26
	9/21/2020	ND<-0	12

12/17/2020	0.072	39
3/18/2021	ND<-0	12
5/5/2021	ND<-0	12
9/2/2021	0.19	52
11/23/2021	0.076	41
1/11/2022	0.054	34
4/7/2022	0.192	53
8/2/2022	ND<-0	12
11/16/2022	ND<-0	12
2/14/2023	ND<-0	12
5/25/2023	0.043	28
8/7/2023	0.067	38
12/12/2023	0.219	56
1/10/2024	0.224	57

The Wilcoxon Statistic is 485
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 3.58004
The Standard Deviation adjusted for ties is 51.9343
The Z Score adjusted for ties is 3.69698
3.58004 > 2.326 indicating statistical significance at 1% level
3.69698 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 10
Non detect rank is 5.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	12
	3/18/2021	0.331	22
	5/5/2021	ND<-0	5.5
	11/23/2021	ND<-0	5.5
	1/11/2022	0.97	57
	4/7/2022	0.254	11
	8/2/2022	0.274	14
	11/16/2022	0.382	31
	2/14/2023	0.484	37
	5/25/2023	0.513	42
	8/7/2023	0.436	35
	12/12/2023	0.497	40
	1/10/2024	0.327	21
SME 1	3/12/2013	0.34	24
	5/8/2013	0.42	33
	9/23/2013	0.8	55
	12/10/2013	0.47	36
	2/6/2014	0.5	41
	6/26/2014	0.31	20
	9/30/2014	0.61	51
	11/19/2014	0.55	48
	3/23/2015	ND<-0	5.5
	4/22/2015	0.38	30
	9/30/2015	0.807	56
	11/19/2015	ND<-0	5.5
	3/15/2016	ND<-0	5.5
	6/29/2016	0.62	52
	8/9/2016	0.547	47
	12/7/2016	0.378	29
	3/2/2017	0.345	25
	6/29/2017	0.53	44
	8/16/2017	0.52	43
	10/25/2017	0.288	17
	3/28/2018	ND<-0	5.5
	6/29/2018	0.67	53
	8/2/2018	0.495	39
	12/10/2018	0.336	23
	4/15/2019	0.36	28
	6/12/2019	ND<-0	5.5
	8/27/2019	0.356	27
	10/29/2019	0.272	13
	3/30/2020	ND<-0	5.5
	6/16/2020	0.485	38
	9/21/2020	ND<-0	5.5

12/17/2020	0.3	18
3/18/2021	0.58	50
5/5/2021	0.402	32
9/2/2021	0.353	26
11/23/2021	ND<-0	5.5
1/11/2022	1.8	58
4/7/2022	0.544	46
8/2/2022	0.281	15
11/16/2022	0.306	19
2/14/2023	0.281	16
5/25/2023	0.694	54
8/7/2023	0.552	49
12/12/2023	0.434	34
1/10/2024	0.542	45

The Wilcoxon Statistic is 343
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.932302
The Standard Deviation adjusted for ties is 53.4944
The Z Score adjusted for ties is 0.934677
0.932302 < 2.326 indicating no statistical significance at 1% level
0.934677 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 28
Non detect rank is 14.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	14.5
	3/18/2021	ND<-0	14.5
	5/5/2021	ND<-0	14.5
	11/23/2021	ND<-0	14.5
	1/11/2022	ND<-0	14.5
	4/7/2022	ND<-0	14.5
	8/2/2022	ND<-0	14.5
	11/16/2022	ND<-0	14.5
	2/14/2023	ND<-0	14.5
	5/25/2023	ND<-0	14.5
	8/7/2023	0.0866	31
	12/12/2023	0.0454	29
	1/10/2024	0.0532	30
SME 1	3/12/2013	0.11	34
	5/8/2013	ND<-0	14.5
	9/23/2013	ND<-0	14.5
	12/10/2013	0.26	54
	2/6/2014	0.13	39
	6/26/2014	ND<-0	14.5
	9/30/2014	0.11	35
	11/19/2014	0.29	58
	3/23/2015	0.1	33
	4/22/2015	ND<-0	14.5
	9/30/2015	0.135	42
	11/19/2015	0.134	40
	3/15/2016	ND<-0	14.5
	6/29/2016	0.245	52
	8/9/2016	0.154	45
	12/7/2016	0.271	57
	3/2/2017	0.208	49
	6/29/2017	ND<-0	14.5
	8/16/2017	0.111	36
	10/25/2017	0.151	44
	3/28/2018	ND<-0	14.5
	6/29/2018	0.241	51
	8/2/2018	0.136	43
	12/10/2018	ND<-0	14.5
	4/15/2019	ND<-0	14.5
	6/12/2019	ND<-0	14.5
	8/27/2019	0.161	46
	10/29/2019	0.134	41
	3/30/2020	ND<-0	14.5
	6/16/2020	0.129	38
	9/21/2020	ND<-0	14.5

12/17/2020	ND<-0	14.5
3/18/2021	0.112	37
5/5/2021	ND<-0	14.5
9/2/2021	0.218	50
11/23/2021	0.165	47
1/11/2022	ND<-0	14.5
4/7/2022	0.255	53
8/2/2022	ND<-0	14.5
11/16/2022	ND<-0	14.5
2/14/2023	ND<-0	14.5
5/25/2023	0.0961	32
8/7/2023	0.17	48
12/12/2023	0.262	55
1/10/2024	0.264	56

The Wilcoxon Statistic is 441
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.75961
The Standard Deviation adjusted for ties is 50.5268
The Z Score adjusted for ties is 2.92914
2.75961 > 2.326 indicating statistical significance at 1% level
2.92914 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 1

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	34
	3/18/2021	21.6	43
	5/5/2021	27.5	48
	11/23/2021	9.2	8
	1/11/2022	15.6	28
	4/7/2022	20.9	40
	8/2/2022	6	1
	11/16/2022	10.5	11
	2/14/2023	22.5	44
	5/25/2023	6.71	3
	8/7/2023	7	4
	12/12/2023	13.8	21
	1/10/2024	34.4	53
SME 1	3/12/2013	16	29
	5/8/2013	14	23
	9/23/2013	15	25
	12/10/2013	21	42
	2/6/2014	23	45
	6/26/2014	13	19
	9/30/2014	34	51
	11/19/2014	19	37
	3/23/2015	14	24
	4/22/2015	18	35
	9/30/2015	15.3	27
	11/19/2015	23.2	46
	3/15/2016	17.7	32
	6/29/2016	20.3	39
	8/9/2016	12.6	16
	12/7/2016	17.7	33
	3/2/2017	15	26
	6/29/2017	18.3	36
	8/16/2017	12.7	17
	10/25/2017	16.9	30
	3/28/2018	19.8	38
	6/29/2018	23.3	47
	8/2/2018	29.5	49
	12/10/2018	31	50
	4/15/2019	35	54
	6/12/2019	9.67	9
	8/27/2019	7.1	5
	10/29/2019	11	13
	3/30/2020	13.3	20
	6/16/2020	11.4	15
	9/21/2020	9	7

12/17/2020	20.9	41
3/18/2021	90.4	57
5/5/2021	34	52
9/2/2021	35.8	55
11/23/2021	12.7	18
1/11/2022	17	31
4/7/2022	140	58
8/2/2022	6.3	2
11/16/2022	7.9	6
2/14/2023	11.3	14
5/25/2023	10.6	12
8/7/2023	13.9	22
12/12/2023	10.4	10
1/10/2024	53	56

The Wilcoxon Statistic is 338
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.839072
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is 0.839072
0.839072 < 2.326 indicating no statistical significance at 1% level
0.839072 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 26
Non detect rank is 13.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	51
	3/18/2021	0.319	47
	5/5/2021	0.213	37
	11/23/2021	0.164	33
	1/11/2022	0.44	54
	4/7/2022	0.273	45
	8/2/2022	0.102	27
	11/16/2022	ND<-0	13.5
	2/14/2023	0.416	53
	5/25/2023	ND<-0	13.5
	8/7/2023	ND<-0	13.5
	12/12/2023	0.14	31
	1/10/2024	0.354	50
SME 3	3/13/2013	0.2	36
	5/20/2013	0.17	34
	9/23/2013	ND<-0	13.5
	12/10/2013	ND<-0	13.5
	2/6/2014	0.25	42
	6/26/2014	ND<-0	13.5
	9/30/2014	ND<-0	13.5
	11/19/2014	0.12	29
	3/23/2015	0.24	41
	4/22/2015	0.15	32
	9/30/2015	0.125	30
	11/19/2015	0.253	43
	3/15/2016	0.295	46
	6/29/2016	ND<-0	13.5
	8/9/2016	ND<-0	13.5
	12/7/2016	ND<-0	13.5
	3/2/2017	0.272	44
	7/5/2017	ND<-0	13.5
	8/16/2017	ND<-0	13.5
	10/25/2017	ND<-0	13.5
	3/28/2018	0.22	38
	6/29/2018	ND<-0	13.5
	8/2/2018	ND<-0	13.5
	12/10/2018	ND<-0	13.5
	4/15/2019	0.234	39
	6/12/2019	ND<-0	13.5
	8/27/2019	ND<-0	13.5
	10/29/2019	ND<-0	13.5
	3/30/2020	0.239	40
	6/16/2020	ND<-0	13.5
	9/21/2020	ND<-0	13.5

9/2/2021	ND<-0	13.5
1/11/2022	0.39	52
4/7/2022	0.181	35
8/2/2022	ND<-0	13.5
11/16/2022	ND<-0	13.5
2/14/2023	0.325	48
5/25/2023	ND<-0	13.5
8/7/2023	ND<-0	13.5
12/12/2023	0.103	28
1/10/2024	0.348	49

The Wilcoxon Statistic is 155.5
The Expected value is is 266.5
The Standard Deviation is 49.4259
The Z Score is -2.2559
The Standard Deviation adjusted for ties is 46.5892
The Z Score adjusted for ties is -2.39326
-2.2559 < 2.326 indicating no statistical significance at 1% level
-2.39326 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 38
Non detect rank is 19.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	19.5
	3/18/2021	ND<-0	19.5
	5/5/2021	ND<-0	19.5
	11/23/2021	ND<-0	19.5
	1/11/2022	ND<-0	19.5
	4/7/2022	0.06	51
	8/2/2022	ND<-0	19.5
	11/16/2022	ND<-0	19.5
	2/14/2023	ND<-0	19.5
	5/25/2023	ND<-0	19.5
	8/7/2023	ND<-0	19.5
	12/12/2023	ND<-0	19.5
	1/10/2024	0.02	39
SME 3	3/13/2013	0.038	46
	5/20/2013	0.028	42
	9/23/2013	0.029	43
	12/10/2013	0.086	54
	2/6/2014	ND<-0	19.5
	6/26/2014	0.047	48
	9/30/2014	ND<-0	19.5
	11/19/2014	0.035	45
	3/23/2015	0.026	40
	4/22/2015	ND<-0	19.5
	9/30/2015	ND<-0	19.5
	11/19/2015	0.032	44
	3/15/2016	ND<-0	19.5
	6/29/2016	0.062	52
	8/9/2016	ND<-0	19.5
	12/7/2016	ND<-0	19.5
	3/2/2017	ND<-0	19.5
	7/5/2017	0.039	47
	8/16/2017	0.07	53
	10/25/2017	0.053	49
	3/28/2018	ND<-0	19.5
	6/29/2018	ND<-0	19.5
	8/2/2018	ND<-0	19.5
	12/10/2018	ND<-0	19.5
	4/15/2019	ND<-0	19.5
	6/12/2019	ND<-0	19.5
	8/27/2019	ND<-0	19.5
	10/29/2019	ND<-0	19.5
	3/30/2020	ND<-0	19.5
	6/16/2020	ND<-0	19.5
	9/21/2020	ND<-0	19.5

9/2/2021	0.057	50
1/11/2022	ND<-0	19.5
4/7/2022	ND<-0	19.5
8/2/2022	ND<-0	19.5
11/16/2022	ND<-0	19.5
2/14/2023	ND<-0	19.5
5/25/2023	ND<-0	19.5
8/7/2023	ND<-0	19.5
12/12/2023	ND<-0	19.5
1/10/2024	0.027	41

The Wilcoxon Statistic is 319.5
The Expected value is is 266.5
The Standard Deviation is 49.4259
The Z Score is 1.0622
The Standard Deviation adjusted for ties is 39.8989
The Z Score adjusted for ties is 1.31583
1.0622 < 2.326 indicating no statistical significance at 1% level
1.31583 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 8
Non detect rank is 4.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	10
	3/18/2021	0.331	15
	5/5/2021	ND<-0	4.5
	11/23/2021	ND<-0	4.5
	1/11/2022	0.97	51
	4/7/2022	0.254	9
	8/2/2022	0.274	12
	11/16/2022	0.382	19
	2/14/2023	0.484	32
	5/25/2023	0.513	35
	8/7/2023	0.436	27
	12/12/2023	0.497	33
	1/10/2024	0.327	14
SME 3	3/13/2013	0.69	46
	5/20/2013	0.69	47
	9/23/2013	0.53	38
	12/10/2013	0.62	41
	2/6/2014	0.69	48
	6/26/2014	0.53	39
	9/30/2014	0.66	44
	11/19/2014	ND<-0	4.5
	3/23/2015	0.46	30
	4/22/2015	0.45	29
	9/30/2015	0.42	24
	11/19/2015	ND<-0	4.5
	3/15/2016	ND<-0	4.5
	6/29/2016	0.37	17
	8/9/2016	0.564	40
	12/7/2016	1.78	54
	3/2/2017	0.733	49
	7/5/2017	0.628	42
	8/16/2017	0.446	28
	10/25/2017	0.376	18
	3/28/2018	ND<-0	4.5
	6/29/2018	0.8	50
	8/2/2018	0.981	52
	12/10/2018	0.433	26
	4/15/2019	0.271	11
	6/12/2019	ND<-0	4.5
	8/27/2019	0.389	20
	10/29/2019	0.39	21
	3/30/2020	0.657	43
	6/16/2020	0.466	31
	9/21/2020	0.66	45

9/2/2021	1.24	53
1/11/2022	0.52	37
4/7/2022	0.406	23
8/2/2022	ND<-0	4.5
11/16/2022	0.294	13
2/14/2023	0.351	16
5/25/2023	0.515	36
8/7/2023	0.424	25
12/12/2023	0.502	34
1/10/2024	0.392	22

The Wilcoxon Statistic is 358
The Expected value is is 266.5
The Standard Deviation is 49.4259
The Z Score is 1.84114
The Standard Deviation adjusted for ties is 49.3467
The Z Score adjusted for ties is 1.8441
1.84114 < 2.326 indicating no statistical significance at 1% level
1.8441 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 39
Non detect rank is 20

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	20
	3/18/2021	ND<-0	20
	5/5/2021	ND<-0	20
	11/23/2021	ND<-0	20
	1/11/2022	ND<-0	20
	4/7/2022	ND<-0	20
	8/2/2022	ND<-0	20
	11/16/2022	ND<-0	20
	2/14/2023	ND<-0	20
	5/25/2023	ND<-0	20
	8/7/2023	0.0866	43
	12/12/2023	0.0454	40
	1/10/2024	0.0532	41
SME 3	3/13/2013	ND<-0	20
	5/20/2013	ND<-0	20
	9/23/2013	ND<-0	20
	12/10/2013	ND<-0	20
	2/6/2014	ND<-0	20
	6/26/2014	ND<-0	20
	9/30/2014	ND<-0	20
	11/19/2014	ND<-0	20
	3/23/2015	ND<-0	20
	4/22/2015	ND<-0	20
	9/30/2015	0.129	50
	11/19/2015	ND<-0	20
	3/15/2016	ND<-0	20
	6/29/2016	ND<-0	20
	8/9/2016	ND<-0	20
	12/7/2016	0.147	51
	3/2/2017	ND<-0	20
	7/5/2017	ND<-0	20
	8/16/2017	ND<-0	20
	10/25/2017	0.106	47
	3/28/2018	ND<-0	20
	6/29/2018	ND<-0	20
	8/2/2018	0.108	48
	12/10/2018	0.127	49
	4/15/2019	0.285	54
	6/12/2019	ND<-0	20
	8/27/2019	0.149	52
	10/29/2019	ND<-0	20
	3/30/2020	ND<-0	20
	6/16/2020	0.102	46
	9/21/2020	ND<-0	20

9/2/2021	0.234	53
1/11/2022	ND<-0	20
4/7/2022	ND<-0	20
8/2/2022	ND<-0	20
11/16/2022	ND<-0	20
2/14/2023	ND<-0	20
5/25/2023	0.0569	42
8/7/2023	0.0912	44
12/12/2023	ND<-0	20
1/10/2024	0.0956	45

The Wilcoxon Statistic is 300
The Expected value is is 266.5
The Standard Deviation is 49.4259
The Z Score is 0.667667
The Standard Deviation adjusted for ties is 39.0247
The Z Score adjusted for ties is 0.845619
0.667667 < 2.326 indicating no statistical significance at 1% level
0.845619 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 3

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	29
	3/18/2021	21.6	37
	5/5/2021	27.5	42
	11/23/2021	9.2	6
	1/11/2022	15.6	25
	4/7/2022	20.9	36
	8/2/2022	6	2
	11/16/2022	10.5	10
	2/14/2023	22.5	38
	5/25/2023	6.71	3
	8/7/2023	7	4
	12/12/2023	13.8	18
	1/10/2024	34.4	45
SME 3	3/13/2013	15	21
	5/20/2013	19	33
	9/23/2013	13	16
	12/10/2013	20	35
	2/6/2014	33	44
	6/26/2014	30	43
	9/30/2014	18	30
	11/19/2014	19	34
	3/23/2015	16	26
	4/22/2015	14	19
	9/30/2015	24.4	39
	11/19/2015	37.8	46
	3/15/2016	78.8	51
	6/29/2016	15.3	22
	8/9/2016	10.8	13
	12/7/2016	9.38	7
	3/2/2017	17	28
	7/5/2017	16.3	27
	8/16/2017	18.5	32
	10/25/2017	49.7	48
	3/28/2018	11.2	15
	6/29/2018	115	52
	8/2/2018	56	49
	12/10/2018	27.1	41
	4/15/2019	371	54
	6/12/2019	10.7	11
	8/27/2019	7	5
	10/29/2019	15.4	23
	3/30/2020	18.2	31
	6/16/2020	10.1	8
	9/21/2020	10.7	12

9/2/2021	267	53
1/11/2022	15.4	24
4/7/2022	27	40
8/2/2022	5.6	1
11/16/2022	10.3	9
2/14/2023	66.4	50
5/25/2023	11	14
8/7/2023	14.4	20
12/12/2023	13.4	17
1/10/2024	44.8	47

The Wilcoxon Statistic is 329
The Expected value is is 266.5
The Standard Deviation is 49.4259
The Z Score is 1.2544
The Standard Deviation adjusted for ties is 49.4259
The Z Score adjusted for ties is 1.2544
1.2544 < 2.326 indicating no statistical significance at 1% level
1.2544 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 4
Non detect rank is 2.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	22
	3/18/2021	0.319	19
	5/5/2021	0.213	14
	11/23/2021	0.164	13
	1/11/2022	0.44	25
	4/7/2022	0.273	16
	8/2/2022	0.102	6
	11/16/2022	ND<-0	2.5
	2/14/2023	0.416	23
	5/25/2023	ND<-0	2.5
	8/7/2023	ND<-0	2.5
	12/12/2023	0.14	11
	1/10/2024	0.354	20
SME 5	12/17/2020	0.371	21
	3/18/2021	0.316	18
	5/5/2021	ND<-0	2.5
	9/2/2021	0.128	10
	11/23/2021	0.231	15
	1/11/2022	0.45	26
	4/7/2022	0.29	17
	8/2/2022	0.102	7
	11/16/2022	0.113	8
	2/14/2023	0.425	24
	5/25/2023	0.155	12
	8/7/2023	0.0568	5
	12/12/2023	0.127	9
	1/10/2024	0.488	27

The Wilcoxon Statistic is 96.5
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 0.242631
The Standard Deviation adjusted for ties is 20.576
The Z Score adjusted for ties is 0.243002
0.242631 < 2.326 indicating no statistical significance at 1% level
0.243002 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 23
Non detect rank is 12

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	12
	3/18/2021	ND<-0	12
	5/5/2021	ND<-0	12
	11/23/2021	ND<-0	12
	1/11/2022	ND<-0	12
	4/7/2022	0.06	27
	8/2/2022	ND<-0	12
	11/16/2022	ND<-0	12
	2/14/2023	ND<-0	12
	5/25/2023	ND<-0	12
	8/7/2023	ND<-0	12
	12/12/2023	ND<-0	12
	1/10/2024	0.02	25
SME 5	12/17/2020	ND<-0	12
	3/18/2021	ND<-0	12
	5/5/2021	ND<-0	12
	9/2/2021	ND<-0	12
	11/23/2021	ND<-0	12
	1/11/2022	0.035	26
	4/7/2022	ND<-0	12
	8/2/2022	ND<-0	12
	11/16/2022	ND<-0	12
	2/14/2023	ND<-0	12
	5/25/2023	ND<-0	12
	8/7/2023	ND<-0	12
	12/12/2023	ND<-0	12
	1/10/2024	0.017	24

The Wilcoxon Statistic is 89
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is -0.121315
The Standard Deviation adjusted for ties is 12.7396
The Z Score adjusted for ties is -0.196239
-0.121315 < 2.326 indicating no statistical significance at 1% level
-0.196239 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 3
Non detect rank is 2

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	6
	3/18/2021	0.331	13
	5/5/2021	ND<-0	2
	11/23/2021	ND<-0	2
	1/11/2022	0.97	26
	4/7/2022	0.254	4
	8/2/2022	0.274	7
	11/16/2022	0.382	16
	2/14/2023	0.484	21
	5/25/2023	0.513	23
	8/7/2023	0.436	19
	12/12/2023	0.497	22
	1/10/2024	0.327	12
SME 5	12/17/2020	0.258	5
	3/18/2021	0.317	10
	5/5/2021	0.41	18
	9/2/2021	0.325	11
	11/23/2021	ND<-0	2
	1/11/2022	1.5	27
	4/7/2022	0.385	17
	8/2/2022	0.277	8
	11/16/2022	0.347	14
	2/14/2023	0.302	9
	5/25/2023	0.564	24
	8/7/2023	0.677	25
	12/12/2023	0.465	20
	1/10/2024	0.366	15

The Wilcoxon Statistic is 100
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 0.412472
The Standard Deviation adjusted for ties is 20.5949
The Z Score adjusted for ties is 0.412724
0.412472 < 2.326 indicating no statistical significance at 1% level
0.412724 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 19
Non detect rank is 10

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	10
	3/18/2021	ND<-0	10
	5/5/2021	ND<-0	10
	11/23/2021	ND<-0	10
	1/11/2022	ND<-0	10
	4/7/2022	ND<-0	10
	8/2/2022	ND<-0	10
	11/16/2022	ND<-0	10
	2/14/2023	ND<-0	10
	5/25/2023	ND<-0	10
	8/7/2023	0.0866	25
	12/12/2023	0.0454	21
	1/10/2024	0.0532	22
SME 5	12/17/2020	ND<-0	10
	3/18/2021	ND<-0	10
	5/5/2021	ND<-0	10
	9/2/2021	0.1	26
	11/23/2021	ND<-0	10
	1/11/2022	ND<-0	10
	4/7/2022	ND<-0	10
	8/2/2022	ND<-0	10
	11/16/2022	ND<-0	10
	2/14/2023	ND<-0	10
	5/25/2023	0.0593	23
	8/7/2023	0.122	27
	12/12/2023	0.037	20
	1/10/2024	0.0773	24

The Wilcoxon Statistic is 105
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 0.655103
The Standard Deviation adjusted for ties is 16.64
The Z Score adjusted for ties is 0.811299
0.655103 < 2.326 indicating no statistical significance at 1% level
0.811299 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	17
	3/18/2021	21.6	19
	5/5/2021	27.5	23
	11/23/2021	9.2	7
	1/11/2022	15.6	14
	4/7/2022	20.9	18
	8/2/2022	6	1
	11/16/2022	10.5	8
	2/14/2023	22.5	20
	5/25/2023	6.71	2
	8/7/2023	7	3
	12/12/2023	13.8	12
	1/10/2024	34.4	25
SME 5	12/17/2020	17.7	16
	3/18/2021	23	21
	5/5/2021	60.6	27
	9/2/2021	31.8	24
	11/23/2021	14	13
	1/11/2022	16.6	15
	4/7/2022	25.4	22
	8/2/2022	7.3	4
	11/16/2022	11.1	9
	2/14/2023	12.3	11
	5/25/2023	11.4	10
	8/7/2023	8.6	5
	12/12/2023	8.93	6
	1/10/2024	51.5	26

The Wilcoxon Statistic is 104
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 0.606577
The Standard Deviation adjusted for ties is 20.6074
The Z Score adjusted for ties is 0.606577
0.606577 < 2.326 indicating no statistical significance at 1% level
0.606577 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 6
Non detect rank is 3.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	24
	3/18/2021	0.319	18
	5/5/2021	0.213	14
	11/23/2021	0.164	12
	1/11/2022	0.44	26
	4/7/2022	0.273	17
	8/2/2022	0.102	8
	11/16/2022	ND<-0	3.5
	2/14/2023	0.416	25
	5/25/2023	ND<-0	3.5
	8/7/2023	ND<-0	3.5
	12/12/2023	0.14	11
	1/10/2024	0.354	20
SME 6	12/17/2020	0.368	22
	3/18/2021	0.358	21
	5/5/2021	0.183	13
	9/2/2021	0.131	10
	11/23/2021	0.231	15
	1/11/2022	0.45	27
	4/7/2022	0.27	16
	8/2/2022	ND<-0	3.5
	11/16/2022	ND<-0	3.5
	2/14/2023	0.374	23
	5/25/2023	0.0655	7
	8/7/2023	ND<-0	3.5
	12/12/2023	0.11	9
	1/10/2024	0.344	19

The Wilcoxon Statistic is 87.5
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is -0.194105
The Standard Deviation adjusted for ties is 20.4971
The Z Score adjusted for ties is -0.19515
-0.194105 < 2.326 indicating no statistical significance at 1% level
-0.19515 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 24
Non detect rank is 12.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	12.5
	3/18/2021	ND<-0	12.5
	5/5/2021	ND<-0	12.5
	11/23/2021	ND<-0	12.5
	1/11/2022	ND<-0	12.5
	4/7/2022	0.06	27
	8/2/2022	ND<-0	12.5
	11/16/2022	ND<-0	12.5
	2/14/2023	ND<-0	12.5
	5/25/2023	ND<-0	12.5
	8/7/2023	ND<-0	12.5
	12/12/2023	ND<-0	12.5
	1/10/2024	0.02	26
SME 6	12/17/2020	ND<-0	12.5
	3/18/2021	ND<-0	12.5
	5/5/2021	ND<-0	12.5
	9/2/2021	ND<-0	12.5
	11/23/2021	ND<-0	12.5
	1/11/2022	ND<-0	12.5
	4/7/2022	ND<-0	12.5
	8/2/2022	ND<-0	12.5
	11/16/2022	ND<-0	12.5
	2/14/2023	ND<-0	12.5
	5/25/2023	ND<-0	12.5
	8/7/2023	ND<-0	12.5
	12/12/2023	ND<-0	12.5
	1/10/2024	0.014	25

The Wilcoxon Statistic is 82.5
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is -0.436735
The Standard Deviation adjusted for ties is 11.248
The Z Score adjusted for ties is -0.800139
-0.436735 < 2.326 indicating no statistical significance at 1% level
-0.800139 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 6
Non detect rank is 3.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	8
	3/18/2021	0.331	13
	5/5/2021	ND<-0	3.5
	11/23/2021	ND<-0	3.5
	1/11/2022	0.97	26
	4/7/2022	0.254	7
	8/2/2022	0.274	9
	11/16/2022	0.382	16
	2/14/2023	0.484	21
	5/25/2023	0.513	23
	8/7/2023	0.436	19
	12/12/2023	0.497	22
	1/10/2024	0.327	12
SME 6	12/17/2020	ND<-0	3.5
	3/18/2021	ND<-0	3.5
	5/5/2021	0.403	17
	9/2/2021	0.353	14
	11/23/2021	ND<-0	3.5
	1/11/2022	2.4	27
	4/7/2022	0.373	15
	8/2/2022	ND<-0	3.5
	11/16/2022	0.308	10
	2/14/2023	0.319	11
	5/25/2023	0.58	24
	8/7/2023	0.62	25
	12/12/2023	0.44	20
	1/10/2024	0.413	18

The Wilcoxon Statistic is 90
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is -0.0727892
The Standard Deviation adjusted for ties is 20.4971
The Z Score adjusted for ties is -0.0731812
-0.0727892 < 2.326 indicating no statistical significance at 1% level
-0.0731812 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 19
Non detect rank is 10

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	10
	3/18/2021	ND<-0	10
	5/5/2021	ND<-0	10
	11/23/2021	ND<-0	10
	1/11/2022	ND<-0	10
	4/7/2022	ND<-0	10
	8/2/2022	ND<-0	10
	11/16/2022	ND<-0	10
	2/14/2023	ND<-0	10
	5/25/2023	ND<-0	10
	8/7/2023	0.0866	25
	12/12/2023	0.0454	21
	1/10/2024	0.0532	23
SME 6	12/17/2020	ND<-0	10
	3/18/2021	ND<-0	10
	5/5/2021	ND<-0	10
	9/2/2021	0.43	27
	11/23/2021	ND<-0	10
	1/11/2022	ND<-0	10
	4/7/2022	ND<-0	10
	8/2/2022	ND<-0	10
	11/16/2022	ND<-0	10
	2/14/2023	ND<-0	10
	5/25/2023	0.0424	20
	8/7/2023	0.095	26
	12/12/2023	0.0507	22
	1/10/2024	0.0849	24

The Wilcoxon Statistic is 104
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 0.606577
The Standard Deviation adjusted for ties is 16.64
The Z Score adjusted for ties is 0.751203
0.606577 < 2.326 indicating no statistical significance at 1% level
0.751203 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	17
	3/18/2021	21.6	20
	5/5/2021	27.5	22
	11/23/2021	9.2	5
	1/11/2022	15.6	14
	4/7/2022	20.9	19
	8/2/2022	6	1
	11/16/2022	10.5	8
	2/14/2023	22.5	21
	5/25/2023	6.71	2
	8/7/2023	7	3
	12/12/2023	13.8	12
	1/10/2024	34.4	24
SME 6	12/17/2020	16.7	15
	3/18/2021	47.2	26
	5/5/2021	82.8	27
	9/2/2021	19	18
	11/23/2021	11.2	9
	1/11/2022	16.9	16
	4/7/2022	28.8	23
	8/2/2022	8.4	4
	11/16/2022	11.3	10
	2/14/2023	14.9	13
	5/25/2023	10	6
	8/7/2023	12.4	11
	12/12/2023	10.1	7
	1/10/2024	39.5	25

The Wilcoxon Statistic is 105
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 0.655103
The Standard Deviation adjusted for ties is 20.6074
The Z Score adjusted for ties is 0.655103
0.655103 < 2.326 indicating no statistical significance at 1% level
0.655103 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 7

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 3
Non detect rank is 2

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	12
	3/18/2021	0.319	9
	5/5/2021	0.213	7
	11/23/2021	0.164	6
	1/11/2022	0.44	16
	4/7/2022	0.273	8
	8/2/2022	0.102	4
	11/16/2022	ND<-0	2
	2/14/2023	0.416	13
	5/25/2023	ND<-0	2
	8/7/2023	ND<-0	2
	12/12/2023	0.14	5
	1/10/2024	0.354	10
SME 7	12/17/2020	0.884	25
	3/18/2021	0.429	15
	5/5/2021	1.09	27
	9/2/2021	0.491	17
	11/23/2021	0.367	11
	1/10/2022	0.832	24
	4/7/2022	0.549	18
	8/3/2022	0.742	22
	11/16/2022	0.424	14
	2/13/2023	0.737	21
	5/24/2023	0.749	23
	8/7/2023	0.916	26
	12/12/2023	0.584	19
	1/10/2024	0.729	20

The Wilcoxon Statistic is 177
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 4.14899
The Standard Deviation adjusted for ties is 20.5949
The Z Score adjusted for ties is 4.15152

4.14899 > 2.326 indicating statistical significance at 1% level

4.15152 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 7

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 13
Non detect rank is 7

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	7
	3/18/2021	ND<-0	7
	5/5/2021	ND<-0	7
	11/23/2021	ND<-0	7
	1/11/2022	ND<-0	7
	4/7/2022	0.06	15
	8/2/2022	ND<-0	7
	11/16/2022	ND<-0	7
	2/14/2023	ND<-0	7
	5/25/2023	ND<-0	7
	8/7/2023	ND<-0	7
	12/12/2023	ND<-0	7
	1/10/2024	0.02	14
SME 7	12/17/2020	0.094	17
	3/18/2021	0.093	16
	5/5/2021	0.112	18
	9/2/2021	0.179	21
	11/23/2021	0.472	25
	1/10/2022	0.14	19
	4/7/2022	ND<-0	7
	8/3/2022	0.314	22
	11/16/2022	0.49	26
	2/13/2023	ND<-0	7
	5/24/2023	0.143	20
	8/7/2023	0.403	24
	12/12/2023	0.705	27
	1/10/2024	0.32	23

The Wilcoxon Statistic is 167
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 3.66372
The Standard Deviation adjusted for ties is 19.4289
The Z Score adjusted for ties is 3.88597

3.66372 > 2.326 indicating statistical significance at 1% level

3.88597 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 7

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 4
Non detect rank is 2.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	7
	3/18/2021	0.331	10
	5/5/2021	ND<-0	2.5
	11/23/2021	ND<-0	2.5
	1/11/2022	0.97	23
	4/7/2022	0.254	5
	8/2/2022	0.274	8
	11/16/2022	0.382	11
	2/14/2023	0.484	16
	5/25/2023	0.513	18
	8/7/2023	0.436	14
	12/12/2023	0.497	17
	1/10/2024	0.327	9
SME 7	12/17/2020	0.541	19
	3/18/2021	0.407	13
	5/5/2021	1.24	25
	9/2/2021	2.49	27
	11/23/2021	ND<-0	2.5
	1/10/2022	0.805	21
	4/7/2022	1.37	26
	8/3/2022	0.844	22
	11/16/2022	ND<-0	2.5
	2/13/2023	1.01	24
	5/24/2023	0.474	15
	8/7/2023	0.393	12
	12/12/2023	0.262	6
	1/10/2024	0.548	20

The Wilcoxon Statistic is 130
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 1.86826
The Standard Deviation adjusted for ties is 20.576
The Z Score adjusted for ties is 1.87112
1.86826 < 2.326 indicating no statistical significance at 1% level
1.87112 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 7

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 11
Non detect rank is 6

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	6
	3/18/2021	ND<-0	6
	5/5/2021	ND<-0	6
	11/23/2021	ND<-0	6
	1/11/2022	ND<-0	6
	4/7/2022	ND<-0	6
	8/2/2022	ND<-0	6
	11/16/2022	ND<-0	6
	2/14/2023	ND<-0	6
	5/25/2023	ND<-0	6
	8/7/2023	0.0866	14
	12/12/2023	0.0454	12
	1/10/2024	0.0532	13
SME 7	12/17/2020	ND<-0	6
	3/18/2021	0.27	20
	5/5/2021	0.244	18
	9/2/2021	0.275	21
	11/23/2021	0.516	25
	1/10/2022	0.211	17
	4/7/2022	0.264	19
	8/3/2022	0.373	22
	11/16/2022	0.528	26
	2/13/2023	0.115	15
	5/24/2023	0.206	16
	8/7/2023	0.469	23
	12/12/2023	0.748	27
	1/10/2024	0.47	24

The Wilcoxon Statistic is 174
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 4.00341
The Standard Deviation adjusted for ties is 19.9035
The Z Score adjusted for ties is 4.14501

4.00341 > 2.326 indicating statistical significance at 1% level

4.14501 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 7

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 1
Non detect rank is 1

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	12
	3/18/2021	21.6	16
	5/5/2021	27.5	18
	11/23/2021	9.2	7
	1/11/2022	15.6	11
	4/7/2022	20.9	14
	8/2/2022	6	3
	11/16/2022	10.5	8
	2/14/2023	22.5	17
	5/25/2023	6.71	4
	8/7/2023	7	6
	12/12/2023	13.8	10
	1/10/2024	34.4	20
SME 7	12/17/2020	19.4	13
	3/18/2021	78.2	26
	5/5/2021	36.4	23
	9/2/2021	77.6	25
	11/23/2021	ND<-0	1
	1/10/2022	34.7	21
	4/7/2022	37.2	24
	8/3/2022	31	19
	11/16/2022	3.8	2
	2/13/2023	36.2	22
	5/24/2023	21	15
	8/7/2023	12.3	9
	12/12/2023	6.8	5
	1/10/2024	183	27

The Wilcoxon Statistic is 127
The Expected value is is 91
The Standard Deviation is 20.6074
The Z Score is 1.72268
The Standard Deviation adjusted for ties is 20.6074
The Z Score adjusted for ties is 1.72268
1.72268 < 2.326 indicating no statistical significance at 1% level
1.72268 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 10
Non detect rank is 5.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	19
	3/18/2021	0.319	17
	5/5/2021	0.213	15
	11/23/2021	0.164	14
	1/11/2022	0.44	21
	4/7/2022	0.273	16
	8/2/2022	0.102	11
	11/16/2022	ND<-0	5.5
	2/14/2023	0.416	20
	5/25/2023	ND<-0	5.5
	8/7/2023	ND<-0	5.5
	12/12/2023	0.14	12
	1/10/2024	0.354	18
SME 9	4/7/2022	ND<-0	5.5
	8/3/2022	ND<-0	5.5
	11/16/2022	ND<-0	5.5
	2/13/2023	ND<-0	5.5
	5/24/2023	ND<-0	5.5
	8/7/2023	ND<-0	5.5
	12/12/2023	ND<-0	5.5
	1/10/2024	0.152	13

The Wilcoxon Statistic is 15.5
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is -2.67957
The Standard Deviation adjusted for ties is 13.0475
The Z Score adjusted for ties is -2.83579
-2.67957 < 2.326 indicating no statistical significance at 1% level
-2.83579 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 17
Non detect rank is 9

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	9
	3/18/2021	ND<-0	9
	5/5/2021	ND<-0	9
	11/23/2021	ND<-0	9
	1/11/2022	ND<-0	9
	4/7/2022	0.06	20
	8/2/2022	ND<-0	9
	11/16/2022	ND<-0	9
	2/14/2023	ND<-0	9
	5/25/2023	ND<-0	9
	8/7/2023	ND<-0	9
	12/12/2023	ND<-0	9
	1/10/2024	0.02	19
SME 9	4/7/2022	ND<-0	9
	8/3/2022	ND<-0	9
	11/16/2022	ND<-0	9
	2/13/2023	0.09	21
	5/24/2023	ND<-0	9
	8/7/2023	ND<-0	9
	12/12/2023	ND<-0	9
	1/10/2024	0.016	18

The Wilcoxon Statistic is 57
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is 0.325893
The Standard Deviation adjusted for ties is 9.46774
The Z Score adjusted for ties is 0.475298
0.325893 < 2.326 indicating no statistical significance at 1% level
0.475298 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 3
Non detect rank is 2

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	5
	3/18/2021	0.331	8
	5/5/2021	ND<-0	2
	11/23/2021	ND<-0	2
	1/11/2022	0.97	19
	4/7/2022	0.254	4
	8/2/2022	0.274	6
	11/16/2022	0.382	10
	2/14/2023	0.484	12
	5/25/2023	0.513	14
	8/7/2023	0.436	11
	12/12/2023	0.497	13
	1/10/2024	0.327	7
SME 9	4/7/2022	0.529	15
	8/3/2022	0.582	16
	11/16/2022	ND<-0	2
	2/13/2023	0.783	18
	5/24/2023	0.66	17
	8/7/2023	1.36	20
	12/12/2023	0.345	9
	1/10/2024	1.87	21

The Wilcoxon Statistic is 82
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is 2.13641
The Standard Deviation adjusted for ties is 13.7903
The Z Score adjusted for ties is 2.13919
2.13641 < 2.326 indicating no statistical significance at 1% level
2.13919 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 14
Non detect rank is 7.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	7.5
	3/18/2021	ND<-0	7.5
	5/5/2021	ND<-0	7.5
	11/23/2021	ND<-0	7.5
	1/11/2022	ND<-0	7.5
	4/7/2022	ND<-0	7.5
	8/2/2022	ND<-0	7.5
	11/16/2022	ND<-0	7.5
	2/14/2023	ND<-0	7.5
	5/25/2023	ND<-0	7.5
	8/7/2023	0.0866	19
	12/12/2023	0.0454	17
	1/10/2024	0.0532	18
SME 9	4/7/2022	0.135	21
	8/3/2022	ND<-0	7.5
	11/16/2022	ND<-0	7.5
	2/13/2023	ND<-0	7.5
	5/24/2023	ND<-0	7.5
	8/7/2023	0.0873	20
	12/12/2023	0.0188	15
	1/10/2024	0.0388	16

The Wilcoxon Statistic is 66
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is 0.977679
The Standard Deviation adjusted for ties is 11.5902
The Z Score adjusted for ties is 1.16477
0.977679 < 2.326 indicating no statistical significance at 1% level
1.16477 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 9

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 3
Non detect rank is 2

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	15
	3/18/2021	21.6	17
	5/5/2021	27.5	19
	11/23/2021	9.2	11
	1/11/2022	15.6	14
	4/7/2022	20.9	16
	8/2/2022	6	8
	11/16/2022	10.5	12
	2/14/2023	22.5	18
	5/25/2023	6.71	9
	8/7/2023	7	10
	12/12/2023	13.8	13
	1/10/2024	34.4	20
SME 9	4/7/2022	2.9	5
	8/3/2022	ND<-0	2
	11/16/2022	ND<-0	2
	2/13/2023	2.6	4
	5/24/2023	59	21
	8/7/2023	5.6	7
	12/12/2023	ND<-0	2
	1/10/2024	4.7	6

The Wilcoxon Statistic is 13
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is -2.86062
The Standard Deviation adjusted for ties is 13.7903
The Z Score adjusted for ties is -2.86434
-2.86062 < 2.326 indicating no statistical significance at 1% level
-2.86434 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 8
Non detect rank is 4.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	18
	3/18/2021	0.319	16
	5/5/2021	0.213	14
	11/23/2021	0.164	12
	1/11/2022	0.44	21
	4/7/2022	0.273	15
	8/2/2022	0.102	9
	11/16/2022	ND<-0	4.5
	2/14/2023	0.416	19
	5/25/2023	ND<-0	4.5
	8/7/2023	ND<-0	4.5
	12/12/2023	0.14	10
	1/10/2024	0.354	17
SME 10	4/7/2022	ND<-0	4.5
	8/3/2022	ND<-0	4.5
	11/16/2022	ND<-0	4.5
	2/13/2023	0.185	13
	5/24/2023	0.143	11
	8/7/2023	ND<-0	4.5
	12/12/2023	ND<-0	4.5
	1/10/2024	0.433	20

The Wilcoxon Statistic is 30.5
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is -1.59326
The Standard Deviation adjusted for ties is 13.4263
The Z Score adjusted for ties is -1.63857
-1.59326 < 2.326 indicating no statistical significance at 1% level
-1.63857 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 18
Non detect rank is 9.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	9.5
	3/18/2021	ND<-0	9.5
	5/5/2021	ND<-0	9.5
	11/23/2021	ND<-0	9.5
	1/11/2022	ND<-0	9.5
	4/7/2022	0.06	21
	8/2/2022	ND<-0	9.5
	11/16/2022	ND<-0	9.5
	2/14/2023	ND<-0	9.5
	5/25/2023	ND<-0	9.5
	8/7/2023	ND<-0	9.5
	12/12/2023	ND<-0	9.5
	1/10/2024	0.02	20
SME 10	4/7/2022	ND<-0	9.5
	8/3/2022	ND<-0	9.5
	11/16/2022	ND<-0	9.5
	2/13/2023	ND<-0	9.5
	5/24/2023	ND<-0	9.5
	8/7/2023	ND<-0	9.5
	12/12/2023	ND<-0	9.5
	1/10/2024	0.017	19

The Wilcoxon Statistic is 49.5
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is -0.217262
The Standard Deviation adjusted for ties is 8.40805
The Z Score adjusted for ties is -0.356801
-0.217262 < 2.326 indicating no statistical significance at 1% level
-0.356801 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 2
Non detect rank is 1.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	4
	3/18/2021	0.331	7
	5/5/2021	ND<-0	1.5
	11/23/2021	ND<-0	1.5
	1/11/2022	0.97	21
	4/7/2022	0.254	3
	8/2/2022	0.274	5
	11/16/2022	0.382	9
	2/14/2023	0.484	13
	5/25/2023	0.513	15
	8/7/2023	0.436	10
	12/12/2023	0.497	14
	1/10/2024	0.327	6
SME 10	4/7/2022	0.477	12
	8/3/2022	0.94	20
	11/16/2022	0.516	16
	2/13/2023	0.773	18
	5/24/2023	0.349	8
	8/7/2023	0.903	19
	12/12/2023	0.633	17
	1/10/2024	0.468	11

The Wilcoxon Statistic is 85
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is 2.35367
The Standard Deviation adjusted for ties is 13.8037
The Z Score adjusted for ties is 2.35444

2.35367 > 2.326 indicating statistical significance at 1% level

2.35444 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 15
Non detect rank is 8

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	8
	3/18/2021	ND<-0	8
	5/5/2021	ND<-0	8
	11/23/2021	ND<-0	8
	1/11/2022	ND<-0	8
	4/7/2022	ND<-0	8
	8/2/2022	ND<-0	8
	11/16/2022	ND<-0	8
	2/14/2023	ND<-0	8
	5/25/2023	ND<-0	8
	8/7/2023	0.0866	20
	12/12/2023	0.0454	17
	1/10/2024	0.0532	19
SME 10	4/7/2022	ND<-0	8
	8/3/2022	ND<-0	8
	11/16/2022	ND<-0	8
	2/13/2023	ND<-0	8
	5/24/2023	0.0371	16
	8/7/2023	0.0918	21
	12/12/2023	0.0471	18
	1/10/2024	ND<-0	8

The Wilcoxon Statistic is 59
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is 0.470734
The Standard Deviation adjusted for ties is 11.0151
The Z Score adjusted for ties is 0.590097
0.470734 < 2.326 indicating no statistical significance at 1% level
0.590097 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	16
	3/18/2021	21.6	18
	5/5/2021	27.5	20
	11/23/2021	9.2	10
	1/11/2022	15.6	15
	4/7/2022	20.9	17
	8/2/2022	6	6
	11/16/2022	10.5	11
	2/14/2023	22.5	19
	5/25/2023	6.71	7
	8/7/2023	7	8
	12/12/2023	13.8	13
	1/10/2024	34.4	21
SME 10	4/7/2022	2.8	1
	8/3/2022	4.1	3
	11/16/2022	4.6	5
	2/13/2023	4	2
	5/24/2023	15	14
	8/7/2023	4.4	4
	12/12/2023	10.6	12
	1/10/2024	7.3	9

The Wilcoxon Statistic is 14
The Expected value is is 52
The Standard Deviation is 13.8082
The Z Score is -2.7882
The Standard Deviation adjusted for ties is 13.8082
The Z Score adjusted for ties is -2.7882
-2.7882 < 2.326 indicating no statistical significance at 1% level
-2.7882 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SS 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 26
Non detect rank is 13.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	55
	3/18/2021	0.319	51
	5/5/2021	0.213	42
	11/23/2021	0.164	37
	1/11/2022	0.44	58
	4/7/2022	0.273	48
	8/2/2022	0.102	27
	11/16/2022	ND<-0	13.5
	2/14/2023	0.416	57
	5/25/2023	ND<-0	13.5
	8/7/2023	ND<-0	13.5
	12/12/2023	0.14	33
	1/10/2024	0.354	54
SS 5	3/12/2013	0.3	50
	5/8/2013	0.16	36
	9/23/2013	ND<-0	13.5
	12/10/2013	0.24	44
	2/6/2014	0.39	56
	6/26/2014	ND<-0	13.5
	9/30/2014	ND<-0	13.5
	11/19/2014	ND<-0	13.5
	3/23/2015	0.26	46
	4/22/2015	0.15	35
	9/30/2015	ND<-0	13.5
	11/19/2015	0.239	43
	3/15/2016	0.264	47
	6/29/2016	ND<-0	13.5
	8/9/2016	ND<-0	13.5
	12/7/2016	ND<-0	13.5
	3/2/2017	0.334	53
	7/5/2017	ND<-0	13.5
	8/16/2017	ND<-0	13.5
	10/25/2017	ND<-0	13.5
	3/28/2018	0.248	45
	6/29/2018	ND<-0	13.5
	8/2/2018	ND<-0	13.5
	12/10/2018	0.146	34
	4/15/2019	0.168	39
	6/12/2019	ND<-0	13.5
	8/27/2019	ND<-0	13.5
	10/29/2019	0.105	28
	3/30/2020	0.127	32
	6/16/2020	ND<-0	13.5
	9/21/2020	ND<-0	13.5

12/17/2020	0.2	41
3/18/2021	0.191	40
5/5/2021	0.108	29
9/2/2021	ND<-0	13.5
11/23/2021	0.126	31
1/11/2022	0.32	52
4/7/2022	0.122	30
8/2/2022	ND<-0	13.5
11/16/2022	ND<-0	13.5
2/14/2023	0.284	49
5/25/2023	ND<-0	13.5
8/7/2023	ND<-0	13.5
12/12/2023	ND<-0	13.5
1/10/2024	0.166	38

The Wilcoxon Statistic is 173.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -2.2282
The Standard Deviation adjusted for ties is 51.1611
The Z Score adjusted for ties is -2.33576
-2.2282 < 2.326 indicating no statistical significance at 1% level
-2.33576 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SS 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 50
Non detect rank is 25.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	25.5
	3/18/2021	ND<-0	25.5
	5/5/2021	ND<-0	25.5
	11/23/2021	ND<-0	25.5
	1/11/2022	ND<-0	25.5
	4/7/2022	0.06	55
	8/2/2022	ND<-0	25.5
	11/16/2022	ND<-0	25.5
	2/14/2023	ND<-0	25.5
	5/25/2023	ND<-0	25.5
	8/7/2023	ND<-0	25.5
	12/12/2023	ND<-0	25.5
	1/10/2024	0.02	51
SS 5	3/12/2013	0.031	53
	5/8/2013	ND<-0	25.5
	9/23/2013	0.029	52
	12/10/2013	0.043	54
	2/6/2014	ND<-0	25.5
	6/26/2014	ND<-0	25.5
	9/30/2014	ND<-0	25.5
	11/19/2014	ND<-0	25.5
	3/23/2015	ND<-0	25.5
	4/22/2015	ND<-0	25.5
	9/30/2015	ND<-0	25.5
	11/19/2015	ND<-0	25.5
	3/15/2016	ND<-0	25.5
	6/29/2016	0.066	56
	8/9/2016	ND<-0	25.5
	12/7/2016	ND<-0	25.5
	3/2/2017	ND<-0	25.5
	7/5/2017	ND<-0	25.5
	8/16/2017	ND<-0	25.5
	10/25/2017	ND<-0	25.5
	3/28/2018	ND<-0	25.5
	6/29/2018	ND<-0	25.5
	8/2/2018	ND<-0	25.5
	12/10/2018	ND<-0	25.5
	4/15/2019	ND<-0	25.5
	6/12/2019	ND<-0	25.5
	8/27/2019	ND<-0	25.5
	10/29/2019	ND<-0	25.5
	3/30/2020	ND<-0	25.5
	6/16/2020	ND<-0	25.5
	9/21/2020	ND<-0	25.5

12/17/2020	ND<-0	25.5
3/18/2021	ND<-0	25.5
5/5/2021	ND<-0	25.5
9/2/2021	ND<-0	25.5
11/23/2021	ND<-0	25.5
1/11/2022	ND<-0	25.5
4/7/2022	ND<-0	25.5
8/2/2022	ND<-0	25.5
11/16/2022	ND<-0	25.5
2/14/2023	0.093	57
5/25/2023	0.67	58
8/7/2023	ND<-0	25.5
12/12/2023	ND<-0	25.5
1/10/2024	ND<-0	25.5

The Wilcoxon Statistic is 289.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -0.0652612
The Standard Deviation adjusted for ties is 32.1519
The Z Score adjusted for ties is -0.108858
-0.0652612 < 2.326 indicating no statistical significance at 1% level
-0.108858 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SS 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 6
Non detect rank is 3.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	8
	3/18/2021	0.331	13
	5/5/2021	ND<-0	3.5
	11/23/2021	ND<-0	3.5
	1/11/2022	0.97	56
	4/7/2022	0.254	7
	8/2/2022	0.274	9
	11/16/2022	0.382	17
	2/14/2023	0.484	31
	5/25/2023	0.513	36
	8/7/2023	0.436	24
	12/12/2023	0.497	33
	1/10/2024	0.327	12
SS 5	3/12/2013	0.39	18
	5/8/2013	0.62	48
	9/23/2013	1.3	57
	12/10/2013	0.67	52
	2/6/2014	0.86	55
	6/26/2014	0.4	20
	9/30/2014	0.45	25
	11/19/2014	0.35	15
	3/23/2015	0.46	26
	4/22/2015	0.47	28
	9/30/2015	0.606	47
	11/19/2015	ND<-0	3.5
	3/15/2016	0.279	10
	6/29/2016	0.48	30
	8/9/2016	0.464	27
	12/7/2016	0.42	21
	3/2/2017	0.766	53
	7/5/2017	0.474	29
	8/16/2017	0.493	32
	10/25/2017	0.531	39
	3/28/2018	ND<-0	3.5
	6/29/2018	0.605	46
	8/2/2018	0.554	41
	12/10/2018	0.522	38
	4/15/2019	0.374	16
	6/12/2019	ND<-0	3.5
	8/27/2019	0.508	34
	10/29/2019	0.631	49
	3/30/2020	0.399	19
	6/16/2020	0.534	40
	9/21/2020	0.512	35

12/17/2020	0.428	22
3/18/2021	0.57	42
5/5/2021	0.576	44
9/2/2021	0.431	23
11/23/2021	ND<-0	3.5
1/11/2022	1.3	58
4/7/2022	0.516	37
8/2/2022	0.812	54
11/16/2022	0.314	11
2/14/2023	0.344	14
5/25/2023	0.638	51
8/7/2023	0.636	50
12/12/2023	0.573	43
1/10/2024	0.576	45

The Wilcoxon Statistic is 423
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.42399
The Standard Deviation adjusted for ties is 53.6018
The Z Score adjusted for ties is 2.42529
2.42399 > 2.326 indicating statistical significance at 1% level
2.42529 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SS 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 47
Non detect rank is 24

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	24
	3/18/2021	ND<-0	24
	5/5/2021	ND<-0	24
	11/23/2021	ND<-0	24
	1/11/2022	ND<-0	24
	4/7/2022	ND<-0	24
	8/2/2022	ND<-0	24
	11/16/2022	ND<-0	24
	2/14/2023	ND<-0	24
	5/25/2023	ND<-0	24
	8/7/2023	0.0866	52
	12/12/2023	0.0454	48
	1/10/2024	0.0532	50
SS 5	3/12/2013	ND<-0	24
	5/8/2013	ND<-0	24
	9/23/2013	ND<-0	24
	12/10/2013	0.11	54
	2/6/2014	ND<-0	24
	6/26/2014	ND<-0	24
	9/30/2014	ND<-0	24
	11/19/2014	ND<-0	24
	3/23/2015	ND<-0	24
	4/22/2015	ND<-0	24
	9/30/2015	ND<-0	24
	11/19/2015	ND<-0	24
	3/15/2016	0.225	58
	6/29/2016	ND<-0	24
	8/9/2016	ND<-0	24
	12/7/2016	0.12	55
	3/2/2017	ND<-0	24
	7/5/2017	ND<-0	24
	8/16/2017	ND<-0	24
	10/25/2017	ND<-0	24
	3/28/2018	ND<-0	24
	6/29/2018	ND<-0	24
	8/2/2018	ND<-0	24
	12/10/2018	ND<-0	24
	4/15/2019	ND<-0	24
	6/12/2019	ND<-0	24
	8/27/2019	0.17	56
	10/29/2019	0.2	57
	3/30/2020	ND<-0	24
	6/16/2020	ND<-0	24
	9/21/2020	ND<-0	24

12/17/2020	ND<-0	24
3/18/2021	ND<-0	24
5/5/2021	ND<-0	24
9/2/2021	ND<-0	24
11/23/2021	ND<-0	24
1/11/2022	ND<-0	24
4/7/2022	ND<-0	24
8/2/2022	ND<-0	24
11/16/2022	ND<-0	24
2/14/2023	ND<-0	24
5/25/2023	0.0486	49
8/7/2023	0.0971	53
12/12/2023	ND<-0	24
1/10/2024	0.0715	51

The Wilcoxon Statistic is 286
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -0.130522
The Standard Deviation adjusted for ties is 36.6876
The Z Score adjusted for ties is -0.1908
-0.130522 < 2.326 indicating no statistical significance at 1% level
-0.1908 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SS 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	50
	3/18/2021	21.6	54
	5/5/2021	27.5	56
	11/23/2021	9.2	12
	1/11/2022	15.6	46
	4/7/2022	20.9	52
	8/2/2022	6	1
	11/16/2022	10.5	22
	2/14/2023	22.5	55
	5/25/2023	6.71	2
	8/7/2023	7	4
	12/12/2023	13.8	41
	1/10/2024	34.4	58
SS 5	3/12/2013	7.2	6
	5/8/2013	21	53
	9/23/2013	15	44
	12/10/2013	13	37
	2/6/2014	12	33
	6/26/2014	11	24
	9/30/2014	11	25
	11/19/2014	9.6	14
	3/23/2015	11	26
	4/22/2015	13	38
	9/30/2015	9.91	17
	11/19/2015	11	27
	3/15/2016	9.5	13
	6/29/2016	13.2	39
	8/9/2016	12.6	35
	12/7/2016	8	9
	3/2/2017	16	48
	7/5/2017	12	34
	8/16/2017	15.1	45
	10/25/2017	11.8	32
	3/28/2018	8.33	11
	6/29/2018	13.3	40
	8/2/2018	12.8	36
	12/10/2018	16.7	49
	4/15/2019	11.7	31
	6/12/2019	11	28
	8/27/2019	7.1	5
	10/29/2019	10.4	19
	3/30/2020	10.6	23
	6/16/2020	9.67	15
	9/21/2020	11	29

12/17/2020	10.1	18
3/18/2021	14.6	43
5/5/2021	32.2	57
9/2/2021	14.4	42
11/23/2021	7.7	7
1/11/2022	10.4	20
4/7/2022	15.6	47
8/2/2022	7.8	8
11/16/2022	8.3	10
2/14/2023	10.4	21
5/25/2023	9.8	16
8/7/2023	11.5	30
12/12/2023	6.8	3
1/10/2024	20.4	51

The Wilcoxon Statistic is 223
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -1.30522
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is -1.30522
-1.30522 < 2.326 indicating no statistical significance at 1% level
-1.30522 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SS 13

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 20
Non detect rank is 10.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	49
	3/18/2021	0.319	41
	5/5/2021	0.213	31
	11/23/2021	0.164	28
	1/11/2022	0.44	54
	4/7/2022	0.273	38
	8/2/2022	0.102	22
	11/16/2022	ND<-0	10.5
	2/14/2023	0.416	51
	5/25/2023	ND<-0	10.5
	8/7/2023	ND<-0	10.5
	12/12/2023	0.14	25
	1/10/2024	0.354	46
SS 13	3/12/2013	0.34	45
	5/8/2013	0.36	48
	9/23/2013	ND<-0	10.5
	12/10/2013	0.33	44
	2/6/2014	0.42	52
	6/26/2014	ND<-0	10.5
	9/30/2014	ND<-0	10.5
	11/19/2014	0.22	32
	3/23/2015	0.22	33
	4/22/2015	0.32	42
	9/30/2015	ND<-0	10.5
	11/19/2015	0.242	36
	3/15/2016	0.323	43
	6/29/2016	ND<-0	10.5
	8/9/2016	ND<-0	10.5
	12/7/2016	0.108	23
	3/2/2017	0.249	37
	6/21/2017	ND<-0	10.5
	8/17/2017	ND<-0	10.5
	10/26/2017	0.122	24
	3/27/2018	0.495	57
	6/26/2018	ND<-0	10.5
	8/1/2018	0.226	34
	12/11/2018	0.451	55
	4/17/2019	ND<-0	10.5
	6/11/2019	ND<-0	10.5
	8/28/2019	ND<-0	10.5
	10/28/2019	0.211	30
	3/31/2020	0.233	35
	6/10/2020	ND<-0	10.5
	9/21/2020	ND<-0	10.5

12/17/2020	0.405	50
3/18/2021	0.163	27
5/5/2021	7.64	58
9/2/2021	0.189	29
11/23/2021	0.16	26
1/10/2022	0.295	39
4/7/2022	0.304	40
8/3/2022	ND<-0	10.5
11/16/2022	ND<-0	10.5
2/13/2023	0.459	56
5/24/2023	0.358	47
8/7/2023	ND<-0	10.5
12/12/2023	0.098	21
1/10/2024	0.426	53

The Wilcoxon Statistic is 259.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -0.624642
The Standard Deviation adjusted for ties is 52.5222
The Z Score adjusted for ties is -0.637826
-0.624642 < 2.326 indicating no statistical significance at 1% level
-0.637826 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SS 13

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 46
Non detect rank is 23.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	23.5
	3/18/2021	ND<-0	23.5
	5/5/2021	ND<-0	23.5
	11/23/2021	ND<-0	23.5
	1/11/2022	ND<-0	23.5
	4/7/2022	0.06	55
	8/2/2022	ND<-0	23.5
	11/16/2022	ND<-0	23.5
	2/14/2023	ND<-0	23.5
	5/25/2023	ND<-0	23.5
	8/7/2023	ND<-0	23.5
	12/12/2023	ND<-0	23.5
	1/10/2024	0.02	47
SS 13	3/12/2013	0.032	51
	5/8/2013	ND<-0	23.5
	9/23/2013	0.028	48
	12/10/2013	0.077	56
	2/6/2014	ND<-0	23.5
	6/26/2014	ND<-0	23.5
	9/30/2014	ND<-0	23.5
	11/19/2014	0.044	52
	3/23/2015	0.029	49
	4/22/2015	ND<-0	23.5
	9/30/2015	ND<-0	23.5
	11/19/2015	ND<-0	23.5
	3/15/2016	ND<-0	23.5
	6/29/2016	ND<-0	23.5
	8/9/2016	ND<-0	23.5
	12/7/2016	ND<-0	23.5
	3/2/2017	ND<-0	23.5
	6/21/2017	ND<-0	23.5
	8/17/2017	ND<-0	23.5
	10/26/2017	ND<-0	23.5
	3/27/2018	ND<-0	23.5
	6/26/2018	ND<-0	23.5
	8/1/2018	0.206	58
	12/11/2018	ND<-0	23.5
	4/17/2019	ND<-0	23.5
	6/11/2019	ND<-0	23.5
	8/28/2019	ND<-0	23.5
	10/28/2019	0.031	50
	3/31/2020	0.058	54
	6/10/2020	ND<-0	23.5
	9/21/2020	ND<-0	23.5

12/17/2020	ND<-0	23.5
3/18/2021	ND<-0	23.5
5/5/2021	0.096	57
9/2/2021	ND<-0	23.5
11/23/2021	ND<-0	23.5
1/10/2022	ND<-0	23.5
4/7/2022	ND<-0	23.5
8/3/2022	ND<-0	23.5
11/16/2022	ND<-0	23.5
2/13/2023	ND<-0	23.5
5/24/2023	ND<-0	23.5
8/7/2023	ND<-0	23.5
12/12/2023	ND<-0	23.5
1/10/2024	0.057	53

The Wilcoxon Statistic is 315.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.419536
The Standard Deviation adjusted for ties is 37.9687
The Z Score adjusted for ties is 0.592594
0.419536 < 2.326 indicating no statistical significance at 1% level
0.592594 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SS 13

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 5
Non detect rank is 3

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	8
	3/18/2021	0.331	12
	5/5/2021	ND<-0	3
	11/23/2021	ND<-0	3
	1/11/2022	0.97	48
	4/7/2022	0.254	6
	8/2/2022	0.274	9
	11/16/2022	0.382	13
	2/14/2023	0.484	19
	5/25/2023	0.513	22
	8/7/2023	0.436	15
	12/12/2023	0.497	21
	1/10/2024	0.327	10
SS 13	3/12/2013	0.78	38
	5/8/2013	0.72	32
	9/23/2013	0.84	42
	12/10/2013	0.67	29
	2/6/2014	0.44	16
	6/26/2014	0.52	23
	9/30/2014	0.44	17
	3/23/2015	0.71	31
	4/22/2015	0.67	30
	9/30/2015	0.523	24
	11/19/2015	0.971	49
	3/15/2016	ND<-0	3
	6/29/2016	0.53	25
	8/9/2016	0.728	34
	12/7/2016	0.453	18
	3/2/2017	0.754	37
	6/21/2017	0.82	40
	8/17/2017	0.806	39
	10/26/2017	0.602	26
	3/27/2018	ND<-0	3
	6/26/2018	0.998	50
	8/1/2018	1.18	53
	12/11/2018	0.655	28
	4/17/2019	0.624	27
	6/11/2019	0.929	47
	8/28/2019	1.17	52
	10/28/2019	0.739	35
	3/31/2020	0.928	46
	6/10/2020	0.492	20
	9/21/2020	ND<-0	3
	12/17/2020	0.432	14

3/18/2021	0.926	45
5/5/2021	1.41	55
9/2/2021	1.33	54
11/23/2021	0.33	11
1/10/2022	0.725	33
4/7/2022	0.886	43
8/3/2022	1.65	56
11/16/2022	0.26	7
2/13/2023	1	51
5/24/2023	0.903	44
8/7/2023	0.825	41
12/12/2023	0.744	36
1/10/2024	1.72	57

The Wilcoxon Statistic is 474
The Expected value is is 286
The Standard Deviation is 52.5801
The Z Score is 3.56599
The Standard Deviation adjusted for ties is 52.5631
The Z Score adjusted for ties is 3.56714
3.56599 > 2.326 indicating statistical significance at 1% level
3.56714 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SS 13

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 42
Non detect rank is 21.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	21.5
	3/18/2021	ND<-0	21.5
	5/5/2021	ND<-0	21.5
	11/23/2021	ND<-0	21.5
	1/11/2022	ND<-0	21.5
	4/7/2022	ND<-0	21.5
	8/2/2022	ND<-0	21.5
	11/16/2022	ND<-0	21.5
	2/14/2023	ND<-0	21.5
	5/25/2023	ND<-0	21.5
	8/7/2023	0.0866	47
	12/12/2023	0.0454	43
	1/10/2024	0.0532	44
SS 13	3/12/2013	ND<-0	21.5
	5/8/2013	ND<-0	21.5
	9/23/2013	ND<-0	21.5
	12/10/2013	0.12	51
	2/6/2014	ND<-0	21.5
	6/26/2014	0.12	52
	9/30/2014	ND<-0	21.5
	11/19/2014	ND<-0	21.5
	3/23/2015	ND<-0	21.5
	4/22/2015	ND<-0	21.5
	9/30/2015	ND<-0	21.5
	11/19/2015	0.181	56
	3/15/2016	ND<-0	21.5
	6/29/2016	ND<-0	21.5
	8/9/2016	ND<-0	21.5
	12/7/2016	ND<-0	21.5
	3/2/2017	ND<-0	21.5
	6/21/2017	ND<-0	21.5
	8/17/2017	ND<-0	21.5
	10/26/2017	ND<-0	21.5
	3/27/2018	ND<-0	21.5
	6/26/2018	0.14	53
	8/1/2018	0.308	58
	12/11/2018	ND<-0	21.5
	4/17/2019	ND<-0	21.5
	6/11/2019	ND<-0	21.5
	8/28/2019	ND<-0	21.5
	10/28/2019	ND<-0	21.5
	3/31/2020	0.147	54
	6/10/2020	ND<-0	21.5
	9/21/2020	0.2	57

12/17/2020	ND<-0	21.5
3/18/2021	ND<-0	21.5
5/5/2021	0.16	55
9/2/2021	0.108	49
11/23/2021	ND<-0	21.5
1/10/2022	ND<-0	21.5
4/7/2022	ND<-0	21.5
8/3/2022	ND<-0	21.5
11/16/2022	ND<-0	21.5
2/13/2023	ND<-0	21.5
5/24/2023	0.0655	45
8/7/2023	0.111	50
12/12/2023	0.0822	46
1/10/2024	0.0934	48

The Wilcoxon Statistic is 327
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 0.633965
The Standard Deviation adjusted for ties is 42.2418
The Z Score adjusted for ties is 0.804889
0.633965 < 2.326 indicating no statistical significance at 1% level
0.804889 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SS 13

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 1
Non detect rank is 1

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	46
	3/18/2021	21.6	51
	5/5/2021	27.5	55
	11/23/2021	9.2	32
	1/11/2022	15.6	43
	4/7/2022	20.9	49
	8/2/2022	6	21
	11/16/2022	10.5	37
	2/14/2023	22.5	52
	5/25/2023	6.71	22
	8/7/2023	7	25
	12/12/2023	13.8	42
	1/10/2024	34.4	56
SS 13	3/12/2013	4.7	9
	5/8/2013	5.7	20
	9/23/2013	9.6	33
	12/10/2013	5.6	19
	2/6/2014	4.1	7
	6/26/2014	5.4	16
	9/30/2014	12	39
	11/19/2014	4.8	11
	3/23/2015	7.6	28
	4/22/2015	10	35
	9/30/2015	8.96	31
	11/19/2015	4.8	12
	3/15/2016	4.7	10
	6/29/2016	9.8	34
	8/9/2016	24	53
	12/7/2016	3.6	3
	3/2/2017	4.6	8
	6/21/2017	12.8	40
	8/17/2017	18.6	47
	10/26/2017	7.17	27
	3/27/2018	16.2	44
	6/26/2018	10.2	36
	8/1/2018	20.2	48
	12/11/2018	8.6	30
	4/17/2019	6.75	24
	6/11/2019	ND<-0	1
	8/28/2019	24.4	54
	10/28/2019	3.7	4
	3/31/2020	92	58
	6/10/2020	21.2	50
	9/21/2020	7.8	29

12/17/2020	5.3	13
3/18/2021	16.5	45
5/5/2021	10.5	38
9/2/2021	13.4	41
11/23/2021	5.3	14
1/10/2022	7	26
4/7/2022	5.3	15
8/3/2022	44.4	57
11/16/2022	5.5	17
2/13/2023	2.5	2
5/24/2023	3.73	5
8/7/2023	4	6
12/12/2023	5.5	18
1/10/2024	6.71	23

The Wilcoxon Statistic is 145
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -2.75961
The Standard Deviation adjusted for ties is 53.6307
The Z Score adjusted for ties is -2.75961
-2.75961 < 2.326 indicating no statistical significance at 1% level
-2.75961 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SS 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 9
Non detect rank is 5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.387	33
	3/18/2021	0.319	27
	5/5/2021	0.213	20
	11/23/2021	0.164	14
	1/11/2022	0.44	37
	4/7/2022	0.273	24
	8/2/2022	0.102	10
	11/16/2022	ND<-0	5
	2/14/2023	0.416	36
	5/25/2023	ND<-0	5
	8/7/2023	ND<-0	5
	12/12/2023	0.14	13
	1/10/2024	0.354	30
SS 14	3/12/2013	0.4	34
	5/8/2013	0.45	40
	9/23/2013	0.38	31
	12/10/2013	0.28	25
	2/6/2014	0.62	49
	6/26/2014	0.67	51
	9/30/2014	ND<-0	5
	11/19/2014	0.75	55
	3/23/2015	0.27	23
	4/22/2015	0.62	50
	9/30/2015	ND<-0	5
	11/19/2015	0.442	38
	3/15/2016	0.5	43
	6/29/2016	ND<-0	5
	8/9/2016	0.164	15
	12/7/2016	0.885	57
	3/2/2017	0.475	42
	6/21/2017	0.249	22
	8/17/2017	0.118	12
	10/26/2017	0.699	54
	3/27/2018	0.673	52
	6/26/2018	0.206	19
	8/1/2018	0.109	11
	12/11/2018	0.812	56
	4/17/2019	0.598	48
	6/11/2019	0.444	39
	8/28/2019	ND<-0	5
	10/28/2019	0.458	41
	3/31/2020	0.19	18
	6/10/2020	0.246	21
	9/21/2020	0.345	28

12/17/2020	0.546	46
3/18/2021	0.189	17
5/5/2021	7.85	58
9/2/2021	0.552	47
11/23/2021	0.315	26
1/10/2022	0.385	32
4/7/2022	0.402	35
8/3/2022	0.176	16
11/16/2022	ND<-0	5
2/13/2023	0.501	44
5/24/2023	0.528	45
8/7/2023	ND<-0	5
12/12/2023	0.352	29
1/10/2024	0.693	53

The Wilcoxon Statistic is 417
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.31211
The Standard Deviation adjusted for ties is 53.5316
The Z Score adjusted for ties is 2.31639
2.31211 < 2.326 indicating no statistical significance at 1% level
2.31639 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SS 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 14
Non detect rank is 7.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	7.5
	3/18/2021	ND<-0	7.5
	5/5/2021	ND<-0	7.5
	11/23/2021	ND<-0	7.5
	1/11/2022	ND<-0	7.5
	4/7/2022	0.06	35
	8/2/2022	ND<-0	7.5
	11/16/2022	ND<-0	7.5
	2/14/2023	ND<-0	7.5
	5/25/2023	ND<-0	7.5
	8/7/2023	ND<-0	7.5
	12/12/2023	ND<-0	7.5
	1/10/2024	0.02	15
SS 14	3/12/2013	0.087	47
	5/8/2013	0.041	22
	9/23/2013	0.036	20
	12/10/2013	0.16	55
	2/6/2014	0.074	40
	6/26/2014	0.08	46
	9/30/2014	0.031	17
	11/19/2014	0.075	41
	3/23/2015	0.11	53
	4/22/2015	ND<-0	7.5
	9/30/2015	0.088	49
	11/19/2015	0.131	54
	3/15/2016	0.056	33
	6/29/2016	0.103	51
	8/9/2016	0.062	36
	12/7/2016	0.078	44
	3/2/2017	0.092	50
	6/21/2017	0.03	16
	8/17/2017	0.07	38
	10/26/2017	0.054	32
	3/27/2018	0.044	25
	6/26/2018	0.044	26
	8/1/2018	0.233	56
	12/11/2018	0.057	34
	4/17/2019	0.042	24
	6/11/2019	0.077	43
	8/28/2019	ND<-0	7.5
	10/28/2019	0.048	28
	3/31/2020	0.235	57
	6/10/2020	0.078	45
	9/21/2020	0.075	42

12/17/2020	0.05	30
3/18/2021	0.048	29
5/5/2021	0.073	39
9/2/2021	0.98	58
11/23/2021	0.108	52
1/10/2022	0.068	37
4/7/2022	0.033	19
8/3/2022	ND<-0	7.5
11/16/2022	0.039	21
2/13/2023	0.052	31
5/24/2023	0.044	27
8/7/2023	0.032	18
12/12/2023	0.041	23
1/10/2024	0.087	48

The Wilcoxon Statistic is 543.5
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 4.67083
The Standard Deviation adjusted for ties is 53.254
The Z Score adjusted for ties is 4.70387
4.67083 > 2.326 indicating statistical significance at 1% level
4.70387 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SS 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 3
Non detect rank is 2

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	0.263	5
	3/18/2021	0.331	9
	5/5/2021	ND<-0	2
	11/23/2021	ND<-0	2
	1/11/2022	0.97	52
	4/7/2022	0.254	4
	8/2/2022	0.274	6
	11/16/2022	0.382	12
	2/14/2023	0.484	18
	5/25/2023	0.513	22
	8/7/2023	0.436	15
	12/12/2023	0.497	19
	1/10/2024	0.327	8
SS 14	3/12/2013	0.77	40
	5/8/2013	0.53	25
	9/23/2013	0.45	16
	12/10/2013	0.66	33
	2/6/2014	0.5	20
	6/26/2014	0.89	46
	9/30/2014	0.52	24
	11/19/2014	0.46	17
	3/23/2015	1.1	58
	4/22/2015	0.58	29
	9/30/2015	0.514	23
	11/19/2015	0.996	53
	3/15/2016	0.834	42
	6/29/2016	0.65	32
	8/9/2016	0.871	44
	12/7/2016	0.705	36
	3/2/2017	0.842	43
	6/21/2017	0.725	38
	8/17/2017	0.827	41
	10/26/2017	0.582	30
	3/27/2018	ND<-0	2
	6/26/2018	1.01	54
	8/1/2018	0.885	45
	12/11/2018	0.635	31
	4/17/2019	0.414	14
	6/11/2019	0.928	49
	8/28/2019	1.05	55
	10/28/2019	0.381	11
	3/31/2020	0.934	50
	6/10/2020	0.897	47
	9/21/2020	0.281	7

12/17/2020	0.54	26
3/18/2021	0.67	34
5/5/2021	1.06	56
9/2/2021	0.935	51
11/23/2021	0.37	10
1/10/2022	0.674	35
4/7/2022	0.566	27
8/3/2022	0.723	37
11/16/2022	0.406	13
2/13/2023	0.749	39
5/24/2023	0.506	21
8/7/2023	0.903	48
12/12/2023	0.573	28
1/10/2024	1.08	57

The Wilcoxon Statistic is 502
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 3.89702
The Standard Deviation adjusted for ties is 53.6274
The Z Score adjusted for ties is 3.89726
3.89702 > 2.326 indicating statistical significance at 1% level
3.89726 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SS 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 27
Non detect rank is 14

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	ND<-0	14
	3/18/2021	ND<-0	14
	5/5/2021	ND<-0	14
	11/23/2021	ND<-0	14
	1/11/2022	ND<-0	14
	4/7/2022	ND<-0	14
	8/2/2022	ND<-0	14
	11/16/2022	ND<-0	14
	2/14/2023	ND<-0	14
	5/25/2023	ND<-0	14
	8/7/2023	0.0866	30
	12/12/2023	0.0454	28
	1/10/2024	0.0532	29
SS 14	3/12/2013	0.11	34
	5/8/2013	ND<-0	14
	9/23/2013	ND<-0	14
	12/10/2013	0.19	55
	2/6/2014	ND<-0	14
	6/26/2014	0.16	48
	9/30/2014	ND<-0	14
	11/19/2014	0.22	56
	3/23/2015	0.14	43
	4/22/2015	ND<-0	14
	9/30/2015	0.176	52
	11/19/2015	0.183	54
	3/15/2016	ND<-0	14
	6/29/2016	0.16	49
	8/9/2016	0.119	37
	12/7/2016	0.147	44
	3/2/2017	0.153	47
	6/21/2017	0.109	33
	8/17/2017	ND<-0	14
	10/26/2017	ND<-0	14
	3/27/2018	0.148	45
	6/26/2018	0.148	46
	8/1/2018	0.276	57
	12/11/2018	0.117	35
	4/17/2019	ND<-0	14
	6/11/2019	ND<-0	14
	8/28/2019	0.174	51
	10/28/2019	0.167	50
	3/31/2020	0.348	58
	6/10/2020	0.128	40
	9/21/2020	ND<-0	14

12/17/2020	ND<-0	14
3/18/2021	ND<-0	14
5/5/2021	ND<-0	14
9/2/2021	0.128	41
11/23/2021	0.178	53
1/10/2022	0.136	42
4/7/2022	ND<-0	14
8/3/2022	0.123	38
11/16/2022	ND<-0	14
2/13/2023	ND<-0	14
5/24/2023	0.102	32
8/7/2023	0.124	39
12/12/2023	0.089	31
1/10/2024	0.117	36

The Wilcoxon Statistic is 449
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is 2.90878
The Standard Deviation adjusted for ties is 50.8567
The Z Score adjusted for ties is 3.06744
2.90878 > 2.326 indicating statistical significance at 1% level
3.06744 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SS 14

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 4
Non detect rank is 2.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 4	12/17/2020	17.8	45
	3/18/2021	21.6	49
	5/5/2021	27.5	53
	11/23/2021	9.2	35
	1/11/2022	15.6	44
	4/7/2022	20.9	48
	8/2/2022	6	19
	11/16/2022	10.5	39
	2/14/2023	22.5	50
	5/25/2023	6.71	27
	8/7/2023	7	28
	12/12/2023	13.8	42
	1/10/2024	34.4	54
SS 14	3/12/2013	4.7	15
	5/8/2013	5	16
	9/23/2013	ND<-0	2.5
	12/10/2013	9.2	36
	2/6/2014	14	43
	6/26/2014	ND<-0	2.5
	9/30/2014	6.1	21
	11/19/2014	9.2	37
	3/23/2015	11	40
	4/22/2015	6.3	23
	9/30/2015	6.59	25
	11/19/2015	23.3	51
	3/15/2016	8.1	29
	6/29/2016	6	20
	8/9/2016	12.7	41
	12/7/2016	ND<-0	2.5
	3/2/2017	9.19	34
	6/21/2017	63.7	57
	8/17/2017	24.8	52
	10/26/2017	3.55	10
	3/27/2018	8.2	30
	6/26/2018	18.7	46
	8/1/2018	60	56
	12/11/2018	4.3	11
	4/17/2019	6.67	26
	6/11/2019	5.9	18
	8/28/2019	8.5	33
	10/28/2019	2.7	7
	3/31/2020	145	58
	6/10/2020	40.4	55
	9/21/2020	8.4	32

12/17/2020	5.4	17
3/18/2021	19.8	47
5/5/2021	6.27	22
9/2/2021	3	9
11/23/2021	2.55	6
1/10/2022	4.4	13
4/7/2022	2.9	8
8/3/2022	6.5	24
11/16/2022	2.5	5
2/13/2023	4.3	12
5/24/2023	4.4	14
8/7/2023	8.2	31
12/12/2023	ND<-0	2.5
1/10/2024	9.6	38

The Wilcoxon Statistic is 143
The Expected value is is 292.5
The Standard Deviation is 53.6307
The Z Score is -2.79691
The Standard Deviation adjusted for ties is 53.6224
The Z Score adjusted for ties is -2.79734
-2.79691 < 2.326 indicating no statistical significance at 1% level
-2.79734 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 4
Non detect rank is 2.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 5	12/17/2020	0.371	23
	3/18/2021	0.316	19
	5/5/2021	ND<-0	2.5
	9/2/2021	0.128	11
	11/23/2021	0.231	15
	1/11/2022	0.45	26
	4/7/2022	0.29	18
	8/2/2022	0.102	7
	11/16/2022	0.113	9
	2/14/2023	0.425	25
	5/25/2023	0.155	13
	8/7/2023	0.0568	5
	12/12/2023	0.127	10
	1/10/2024	0.488	28
SME 6	12/17/2020	0.368	22
	3/18/2021	0.358	21
	5/5/2021	0.183	14
	9/2/2021	0.131	12
	11/23/2021	0.231	16
	1/11/2022	0.45	27
	4/7/2022	0.27	17
	8/2/2022	ND<-0	2.5
	11/16/2022	ND<-0	2.5
	2/14/2023	0.374	24
	5/25/2023	0.0655	6
	8/7/2023	ND<-0	2.5
	12/12/2023	0.11	8
	1/10/2024	0.344	20

The Wilcoxon Statistic is 89.5
The Expected value is is 98
The Standard Deviation is 21.7639
The Z Score is -0.413529
The Standard Deviation adjusted for ties is 21.7341
The Z Score adjusted for ties is -0.414096
-0.413529 < 2.326 indicating no statistical significance at 1% level
-0.414096 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 25
Non detect rank is 13

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 5	12/17/2020	ND<-0	13
	3/18/2021	ND<-0	13
	5/5/2021	ND<-0	13
	9/2/2021	ND<-0	13
	11/23/2021	ND<-0	13
	1/11/2022	0.035	28
	4/7/2022	ND<-0	13
	8/2/2022	ND<-0	13
	11/16/2022	ND<-0	13
	2/14/2023	ND<-0	13
	5/25/2023	ND<-0	13
	8/7/2023	ND<-0	13
	12/12/2023	ND<-0	13
	1/10/2024	0.017	27
SME 6	12/17/2020	ND<-0	13
	3/18/2021	ND<-0	13
	5/5/2021	ND<-0	13
	9/2/2021	ND<-0	13
	11/23/2021	ND<-0	13
	1/11/2022	ND<-0	13
	4/7/2022	ND<-0	13
	8/2/2022	ND<-0	13
	11/16/2022	ND<-0	13
	2/14/2023	ND<-0	13
	5/25/2023	ND<-0	13
	8/7/2023	ND<-0	13
	12/12/2023	ND<-0	13
	1/10/2024	0.014	26

The Wilcoxon Statistic is 90
The Expected value is is 98
The Standard Deviation is 21.7639
The Z Score is -0.390555
The Standard Deviation adjusted for ties is 11.6889
The Z Score adjusted for ties is -0.727188
-0.390555 < 2.326 indicating no statistical significance at 1% level
-0.727188 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 5
Non detect rank is 3

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 5	12/17/2020	0.258	6
	3/18/2021	0.317	10
	5/5/2021	0.41	19
	9/2/2021	0.325	12
	11/23/2021	ND<-0	3
	1/11/2022	1.5	27
	4/7/2022	0.385	17
	8/2/2022	0.277	7
	11/16/2022	0.347	13
	2/14/2023	0.302	8
	5/25/2023	0.564	23
	8/7/2023	0.677	26
	12/12/2023	0.465	22
	1/10/2024	0.366	15
SME 6	12/17/2020	ND<-0	3
	3/18/2021	ND<-0	3
	5/5/2021	0.403	18
	9/2/2021	0.353	14
	11/23/2021	ND<-0	3
	1/11/2022	2.4	28
	4/7/2022	0.373	16
	8/2/2022	ND<-0	3
	11/16/2022	0.308	9
	2/14/2023	0.319	11
	5/25/2023	0.58	24
	8/7/2023	0.62	25
	12/12/2023	0.44	21
	1/10/2024	0.413	20

The Wilcoxon Statistic is 93
The Expected value is is 98
The Standard Deviation is 21.7639
The Z Score is -0.252712
The Standard Deviation adjusted for ties is 21.7042
The Z Score adjusted for ties is -0.253407
-0.252712 < 2.326 indicating no statistical significance at 1% level
-0.253407 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 18
Non detect rank is 9.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 5	12/17/2020	ND<-0	9.5
	3/18/2021	ND<-0	9.5
	5/5/2021	ND<-0	9.5
	9/2/2021	0.1	26
	11/23/2021	ND<-0	9.5
	1/11/2022	ND<-0	9.5
	4/7/2022	ND<-0	9.5
	8/2/2022	ND<-0	9.5
	11/16/2022	ND<-0	9.5
	2/14/2023	ND<-0	9.5
	5/25/2023	0.0593	22
	8/7/2023	0.122	27
	12/12/2023	0.037	19
	1/10/2024	0.0773	23
SME 6	12/17/2020	ND<-0	9.5
	3/18/2021	ND<-0	9.5
	5/5/2021	ND<-0	9.5
	9/2/2021	0.43	28
	11/23/2021	ND<-0	9.5
	1/11/2022	ND<-0	9.5
	4/7/2022	ND<-0	9.5
	8/2/2022	ND<-0	9.5
	11/16/2022	ND<-0	9.5
	2/14/2023	ND<-0	9.5
	5/25/2023	0.0424	20
	8/7/2023	0.095	25
	12/12/2023	0.0507	21
	1/10/2024	0.0849	24

The Wilcoxon Statistic is 98.5
The Expected value is is 98
The Standard Deviation is 21.7639
The Z Score is 0
The Standard Deviation adjusted for ties is 18.6562
The Z Score adjusted for ties is 0
0 < 2.326 indicating no statistical significance at 1% level
0 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 6

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 5	12/17/2020	17.7	18
	3/18/2021	23	20
	5/5/2021	60.6	27
	9/2/2021	31.8	23
	11/23/2021	14	13
	1/11/2022	16.6	15
	4/7/2022	25.4	21
	8/2/2022	7.3	1
	11/16/2022	11.1	7
	2/14/2023	12.3	11
	5/25/2023	11.4	10
	8/7/2023	8.6	3
	12/12/2023	8.93	4
	1/10/2024	51.5	26
SME 6	12/17/2020	16.7	16
	3/18/2021	47.2	25
	5/5/2021	82.8	28
	9/2/2021	19	19
	11/23/2021	11.2	8
	1/11/2022	16.9	17
	4/7/2022	28.8	22
	8/2/2022	8.4	2
	11/16/2022	11.3	9
	2/14/2023	14.9	14
	5/25/2023	10	5
	8/7/2023	12.4	12
	12/12/2023	10.1	6
	1/10/2024	39.5	24

The Wilcoxon Statistic is 102
The Expected value is is 98
The Standard Deviation is 21.7639
The Z Score is 0.160817
The Standard Deviation adjusted for ties is 21.7639
The Z Score adjusted for ties is 0.160817
0.160817 < 2.326 indicating no statistical significance at 1% level
0.160817 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: AT 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 7	12/17/2020	0.884	47
	3/18/2021	0.429	7
	5/5/2021	1.09	54
	9/2/2021	0.491	9
	11/23/2021	0.367	5
	1/10/2022	0.832	43
	4/7/2022	0.549	13
	8/3/2022	0.742	33
	11/16/2022	0.424	6
	2/13/2023	0.737	32
	5/24/2023	0.749	34
	8/7/2023	0.916	49
	12/12/2023	0.584	15
	1/10/2024	0.729	31
AT 5	3/12/2013	0.61	17
	5/8/2013	0.31	1
	9/23/2013	1.3	56
	12/10/2013	0.79	37
	2/6/2014	0.8	38
	6/26/2014	0.77	36
	9/30/2014	0.94	51
	11/19/2014	1.3	57
	3/23/2015	0.71	29
	4/22/2015	0.69	25
	9/30/2015	1.82	58
	11/19/2015	0.666	24
	3/15/2016	0.578	14
	6/29/2016	0.8	39
	8/9/2016	0.975	52
	12/7/2016	0.663	22
	3/2/2017	1.08	53
	6/21/2017	0.616	18
	8/17/2017	0.89	48
	10/26/2017	0.936	50
	3/27/2018	0.849	45
	6/26/2018	0.849	46
	8/1/2018	0.51	11
	12/11/2018	1.09	55
	4/17/2019	0.638	19
	6/11/2019	0.822	40
	8/28/2019	0.534	12
	10/28/2019	0.665	23
	3/31/2020	0.657	21
	6/10/2020	0.825	41

9/21/2020	0.603	16
12/17/2020	0.831	42
3/18/2021	0.31	2
5/5/2021	6.86	59
9/2/2021	0.482	8
11/23/2021	0.343	3
1/10/2022	0.769	35
4/7/2022	0.509	10
8/3/2022	0.715	30
11/16/2022	0.366	4
2/13/2023	0.699	28
5/24/2023	0.697	27
8/7/2023	0.832	44
12/12/2023	0.696	26
1/10/2024	0.642	20

The Wilcoxon Statistic is 357
The Expected value is is 315
The Standard Deviation is 56.1249
The Z Score is 0.739423
The Standard Deviation adjusted for ties is 56.1249
The Z Score adjusted for ties is 0.739423
0.739423 < 2.326 indicating no statistical significance at 1% level
0.739423 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: AT 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 3
Non detect rank is 2

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 7	12/17/2020	0.094	12
	3/18/2021	0.093	11
	5/5/2021	0.112	16
	9/2/2021	0.179	27
	11/23/2021	0.472	50
	1/10/2022	0.14	23
	4/7/2022	ND<-0	2
	8/3/2022	0.314	40
	11/16/2022	0.49	52
	2/13/2023	ND<-0	2
	5/24/2023	0.143	24
	8/7/2023	0.403	45
	12/12/2023	0.705	58
	1/10/2024	0.32	41
AT 5	3/12/2013	0.15	25
	5/8/2013	0.099	13
	9/23/2013	0.4	44
	12/10/2013	0.29	38
	2/6/2014	0.13	20
	6/26/2014	0.34	42
	9/30/2014	0.49	53
	11/19/2014	0.41	47
	3/23/2015	0.13	21
	4/22/2015	0.11	15
	9/30/2015	0.664	57
	11/19/2015	0.261	34
	3/15/2016	0.068	8
	6/29/2016	0.598	56
	8/9/2016	0.482	51
	12/7/2016	0.45	49
	3/2/2017	0.267	35
	6/21/2017	0.226	29
	8/17/2017	0.258	33
	10/26/2017	0.226	30
	3/27/2018	0.162	26
	6/26/2018	0.23	31
	8/1/2018	0.285	37
	12/11/2018	0.066	7
	4/17/2019	0.061	6
	6/11/2019	0.206	28
	8/28/2019	0.404	46
	10/28/2019	0.523	55
	3/31/2020	0.032	4
	6/10/2020	0.248	32

9/21/2020	0.491	54
12/17/2020	0.087	10
3/18/2021	0.05	5
5/5/2021	0.121	17
9/2/2021	0.131	22
11/23/2021	ND<-0	2
1/10/2022	0.126	18
4/7/2022	0.101	14
8/3/2022	0.271	36
11/16/2022	0.448	48
2/13/2023	0.081	9
5/24/2023	0.127	19
8/7/2023	0.373	43
12/12/2023	0.752	59
1/10/2024	0.299	39

The Wilcoxon Statistic is 332
The Expected value is is 315
The Standard Deviation is 56.1249
The Z Score is 0.293987
The Standard Deviation adjusted for ties is 56.1216
The Z Score adjusted for ties is 0.294005
0.293987 < 2.326 indicating no statistical significance at 1% level
0.294005 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: AT 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 18
Non detect rank is 9.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 7	12/17/2020	0.541	39
	3/18/2021	0.407	33
	5/5/2021	1.24	55
	9/2/2021	2.49	59
	11/23/2021	ND<-0	9.5
	1/10/2022	0.805	49
	4/7/2022	1.37	56
	8/3/2022	0.844	50
	11/16/2022	ND<-0	9.5
	2/13/2023	1.01	53
	5/24/2023	0.474	35
	8/7/2023	0.393	32
	12/12/2023	0.262	19
	1/10/2024	0.548	41
AT 5	3/12/2013	0.37	28
	5/8/2013	0.56	42
	9/23/2013	0.37	29
	12/10/2013	0.97	52
	2/6/2014	0.35	27
	6/26/2014	0.38	30
	9/30/2014	ND<-0	9.5
	11/19/2014	0.5	37
	3/23/2015	0.27	21
	4/22/2015	ND<-0	9.5
	9/30/2015	ND<-0	9.5
	11/19/2015	1.47	58
	3/15/2016	0.772	48
	6/29/2016	ND<-0	9.5
	8/9/2016	0.268	20
	12/7/2016	ND<-0	9.5
	3/2/2017	0.529	38
	6/21/2017	0.544	40
	8/17/2017	0.69	45
	10/26/2017	ND<-0	9.5
	3/27/2018	ND<-0	9.5
	6/26/2018	0.411	34
	8/1/2018	0.68	44
	12/11/2018	0.579	43
	4/17/2019	ND<-0	9.5
	6/11/2019	0.486	36
	8/28/2019	1.07	54
	10/28/2019	ND<-0	9.5
	3/31/2020	ND<-0	9.5
	6/10/2020	ND<-0	9.5

9/21/2020	ND<-0	9.5
12/17/2020	ND<-0	9.5
3/18/2021	ND<-0	9.5
5/5/2021	1.37	57
9/2/2021	0.969	51
11/23/2021	ND<-0	9.5
1/10/2022	0.279	22
4/7/2022	0.38	31
8/3/2022	0.702	46
11/16/2022	ND<-0	9.5
2/13/2023	0.301	24
5/24/2023	0.331	26
8/7/2023	0.291	23
12/12/2023	0.329	25
1/10/2024	0.732	47

The Wilcoxon Statistic is 195
The Expected value is is 315
The Standard Deviation is 56.1249
The Z Score is -2.147
The Standard Deviation adjusted for ties is 55.3245
The Z Score adjusted for ties is -2.17806
-2.147 < 2.326 indicating no statistical significance at 1% level
-2.17806 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: AT 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 6
Non detect rank is 3.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 7	12/17/2020	ND<-0	3.5
	3/18/2021	0.27	29
	5/5/2021	0.244	23
	9/2/2021	0.275	30
	11/23/2021	0.516	53
	1/10/2022	0.211	21
	4/7/2022	0.264	28
	8/3/2022	0.373	39
	11/16/2022	0.528	54
	2/13/2023	0.115	9
	5/24/2023	0.206	20
	8/7/2023	0.469	46
	12/12/2023	0.748	57
	1/10/2024	0.47	47
AT 5	3/12/2013	0.14	13
	5/8/2013	0.11	8
	9/23/2013	0.35	37
	12/10/2013	0.34	36
	2/6/2014	0.13	11
	6/26/2014	0.28	31
	9/30/2014	0.54	55
	11/19/2014	0.39	41
	3/23/2015	0.14	14
	4/22/2015	0.13	12
	9/30/2015	0.862	59
	11/19/2015	0.309	34
	3/15/2016	ND<-0	3.5
	6/29/2016	0.71	56
	8/9/2016	0.502	52
	12/7/2016	0.474	48
	3/2/2017	0.373	40
	6/21/2017	0.366	38
	8/17/2017	0.283	32
	10/26/2017	0.25	25
	3/27/2018	0.148	15
	6/26/2018	0.246	24
	8/1/2018	0.401	43
	12/11/2018	0.204	19
	4/17/2019	ND<-0	3.5
	6/11/2019	0.29	33
	8/28/2019	0.485	49
	10/28/2019	0.499	51
	3/31/2020	0.102	7
	6/10/2020	0.243	22

9/21/2020	0.399	42
12/17/2020	ND<-0	3.5
3/18/2021	ND<-0	3.5
5/5/2021	0.157	16
9/2/2021	0.262	27
11/23/2021	0.253	26
1/10/2022	0.184	18
4/7/2022	0.121	10
8/3/2022	0.323	35
11/16/2022	0.42	44
2/13/2023	ND<-0	3.5
5/24/2023	0.182	17
8/7/2023	0.43	45
12/12/2023	0.782	58
1/10/2024	0.498	50

The Wilcoxon Statistic is 275.5
The Expected value is is 315
The Standard Deviation is 56.1249
The Z Score is -0.712697
The Standard Deviation adjusted for ties is 56.0962
The Z Score adjusted for ties is -0.713061
-0.712697 < 2.326 indicating no statistical significance at 1% level
-0.713061 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: AT 5

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 1
Non detect rank is 1

Wilcoxon Ranks

Location	Date	Conc.	Rank
SME 7	12/17/2020	19.4	25
	3/18/2021	78.2	56
	5/5/2021	36.4	43
	9/2/2021	77.6	55
	11/23/2021	ND<-0	1
	1/10/2022	34.7	41
	4/7/2022	37.2	44
	8/3/2022	31	38
	11/16/2022	3.8	3
	2/13/2023	36.2	42
	5/24/2023	21	28
	8/7/2023	12.3	10
	12/12/2023	6.8	4
	1/10/2024	183	58
AT 5	3/12/2013	20	26
	5/8/2013	19	23
	9/23/2013	22	29
	12/10/2013	64	50
	2/6/2014	32	39
	6/26/2014	19	24
	9/30/2014	14	12
	11/19/2014	27	34
	3/23/2015	15	15
	4/22/2015	76	54
	9/30/2015	16.4	18
	11/19/2015	74.6	53
	3/15/2016	26.7	33
	6/29/2016	14.5	14
	8/9/2016	18.3	21
	12/7/2016	16.9	19
	3/2/2017	44.6	47
	6/21/2017	70	52
	8/17/2017	12	9
	10/26/2017	9.41	6
	3/27/2018	15.9	16
	6/26/2018	25.2	32
	8/1/2018	107	57
	12/11/2018	46.2	48
	4/17/2019	14.4	13
	6/11/2019	15.9	17
	8/28/2019	23.5	31
	10/28/2019	17	20
	3/31/2020	27.1	35
	6/10/2020	22.8	30

9/21/2020	11.3	8
12/17/2020	18.6	22
3/18/2021	55.6	49
5/5/2021	43.7	46
9/2/2021	67.4	51
11/23/2021	2.6	2
1/10/2022	29.7	36
4/7/2022	33.8	40
8/3/2022	30.8	37
11/16/2022	7.3	5
2/13/2023	38	45
5/24/2023	20	27
8/7/2023	12.4	11
12/12/2023	10.9	7
1/10/2024	220	59

The Wilcoxon Statistic is 287
The Expected value is is 315
The Standard Deviation is 56.1249
The Z Score is -0.507796
The Standard Deviation adjusted for ties is 56.1249
The Z Score adjusted for ties is -0.507796
-0.507796 < 2.326 indicating no statistical significance at 1% level
-0.507796 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-nitrite

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 30
Non detect rank is 15.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
GD 5	3/13/2013	0.26	51
	5/20/2013	ND<-0	15.5
	9/23/2013	ND<-0	15.5
	12/10/2013	0.1	33
	2/6/2014	0.17	47
	6/26/2014	ND<-0	15.5
	9/30/2014	ND<-0	15.5
	11/19/2014	0.11	34
	3/23/2015	0.12	37
	4/22/2015	0.14	43
	9/30/2015	ND<-0	15.5
	11/19/2015	0.168	46
	3/15/2016	ND<-0	15.5
	6/29/2016	ND<-0	15.5
	8/9/2016	ND<-0	15.5
	12/7/2016	ND<-0	15.5
	3/2/2017	0.118	35
	7/5/2017	ND<-0	15.5
	8/16/2017	ND<-0	15.5
	10/25/2017	ND<-0	15.5
	3/28/2018	0.127	39
	6/29/2018	ND<-0	15.5
	8/2/2018	ND<-0	15.5
	12/10/2018	ND<-0	15.5
	4/15/2019	0.128	41
	6/12/2019	ND<-0	15.5
	8/27/2019	ND<-0	15.5
	10/29/2019	ND<-0	15.5
	3/30/2020	0.13	42
	6/16/2020	ND<-0	15.5
	9/21/2020	ND<-0	15.5
	12/17/2020	0.122	38
	3/18/2021	0.127	40
	5/5/2021	0.204	49
	9/2/2021	ND<-0	15.5
	11/23/2021	ND<-0	15.5
	1/11/2022	0.3	52
	4/7/2022	0.157	45
	8/2/2022	ND<-0	15.5
	11/16/2022	ND<-0	15.5
	2/14/2023	0.255	50
	5/24/2023	0.0534	31
	8/7/2023	ND<-0	15.5
	12/12/2023	0.082	32
	1/10/2024	0.118	36

SME 10	4/7/2022	ND<-0	15.5
	8/3/2022	ND<-0	15.5
	11/16/2022	ND<-0	15.5
	2/13/2023	0.185	48
	5/24/2023	0.143	44
	8/7/2023	ND<-0	15.5
	12/12/2023	ND<-0	15.5
	1/10/2024	0.433	53

The Wilcoxon Statistic is 186.5
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is 0.149071
The Standard Deviation adjusted for ties is 36.4201
The Z Score adjusted for ties is 0.164744
0.149071 < 2.326 indicating no statistical significance at 1% level
0.164744 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ortho-phosphate

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 44
Non detect rank is 22.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
GD 5	3/13/2013	ND<-0	22.5
	5/20/2013	ND<-0	22.5
	9/23/2013	0.027	47
	12/10/2013	0.088	53
	2/6/2014	0.038	48
	6/26/2014	ND<-0	22.5
	9/30/2014	ND<-0	22.5
	11/19/2014	0.051	51
	3/23/2015	ND<-0	22.5
	4/22/2015	ND<-0	22.5
	9/30/2015	ND<-0	22.5
	11/19/2015	0.042	49
	3/15/2016	ND<-0	22.5
	6/29/2016	0.074	52
	8/9/2016	ND<-0	22.5
	12/7/2016	ND<-0	22.5
	3/2/2017	ND<-0	22.5
	7/5/2017	ND<-0	22.5
	8/16/2017	ND<-0	22.5
	10/25/2017	ND<-0	22.5
	3/28/2018	ND<-0	22.5
	6/29/2018	ND<-0	22.5
	8/2/2018	ND<-0	22.5
	12/10/2018	ND<-0	22.5
	4/15/2019	ND<-0	22.5
	6/12/2019	ND<-0	22.5
	8/27/2019	ND<-0	22.5
	10/29/2019	ND<-0	22.5
	3/30/2020	ND<-0	22.5
	6/16/2020	ND<-0	22.5
	9/21/2020	ND<-0	22.5
	12/17/2020	ND<-0	22.5
	3/18/2021	ND<-0	22.5
	5/5/2021	ND<-0	22.5
	9/2/2021	ND<-0	22.5
	11/23/2021	ND<-0	22.5
	1/11/2022	ND<-0	22.5
	4/7/2022	ND<-0	22.5
	8/2/2022	ND<-0	22.5
	11/16/2022	ND<-0	22.5
	2/14/2023	ND<-0	22.5
	5/24/2023	0.025	46
	8/7/2023	ND<-0	22.5
	12/12/2023	ND<-0	22.5
	1/10/2024	0.045	50

SME 10	4/7/2022	ND<-0	22.5
	8/3/2022	ND<-0	22.5
	11/16/2022	ND<-0	22.5
	2/13/2023	ND<-0	22.5
	5/24/2023	ND<-0	22.5
	8/7/2023	ND<-0	22.5
	12/12/2023	ND<-0	22.5
	1/10/2024	0.017	45

The Wilcoxon Statistic is 166.5
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is -0.347833
The Standard Deviation adjusted for ties is 26.3291
The Z Score adjusted for ties is -0.531731
-0.347833 < 2.326 indicating no statistical significance at 1% level
-0.531731 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: TKN

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 8
Non detect rank is 4.5

Wilcoxon Ranks

Location	Date	Conc.	Rank
GD 5	3/13/2013	0.34	14
	5/20/2013	0.62	45
	9/23/2013	0.45	27
	12/10/2013	0.47	30
	2/6/2014	0.37	19
	6/26/2014	0.34	15
	9/30/2014	ND<-0	4.5
	11/19/2014	0.43	25
	3/23/2015	0.34	16
	4/22/2015	0.65	47
	9/30/2015	0.557	41
	11/19/2015	ND<-0	4.5
	3/15/2016	0.435	26
	6/29/2016	0.49	33
	8/9/2016	0.412	22
	12/7/2016	0.337	13
	3/2/2017	0.491	34
	7/5/2017	0.73	49
	8/16/2017	0.404	20
	10/25/2017	0.347	17
	3/28/2018	ND<-0	4.5
	6/29/2018	0.689	48
	8/2/2018	0.332	12
	12/10/2018	0.523	40
	4/15/2019	0.411	21
	6/12/2019	ND<-0	4.5
	8/27/2019	0.506	36
	10/29/2019	0.477	31
	3/30/2020	0.32	11
	6/16/2020	0.561	42
	9/21/2020	ND<-0	4.5
	12/17/2020	0.422	23
	3/18/2021	0.6	43
	5/5/2021	ND<-0	4.5
	9/2/2021	0.51	37
	11/23/2021	ND<-0	4.5
	1/11/2022	0.51	38
	4/7/2022	0.3	9
	8/2/2022	ND<-0	4.5
	11/16/2022	0.312	10
	2/14/2023	0.606	44
	5/24/2023	10	53
	8/7/2023	0.499	35
	12/12/2023	0.468	28
	1/10/2024	0.424	24

SME 10	4/7/2022	0.477	32
	8/3/2022	0.94	52
	11/16/2022	0.516	39
	2/13/2023	0.773	50
	5/24/2023	0.349	18
	8/7/2023	0.903	51
	12/12/2023	0.633	46
	1/10/2024	0.468	29

The Wilcoxon Statistic is 281
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is 2.49694
The Standard Deviation adjusted for ties is 40.181
The Z Score adjusted for ties is 2.50118
2.49694 > 2.326 indicating statistical significance at 1% level
2.50118 > 2.326 indicating statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Phosphorus

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 41
Non detect rank is 21

Wilcoxon Ranks

Location	Date	Conc.	Rank
GD 5	3/13/2013	ND<-0	21
	5/20/2013	ND<-0	21
	9/23/2013	ND<-0	21
	12/10/2013	0.1	47
	2/6/2014	ND<-0	21
	6/26/2014	ND<-0	21
	9/30/2014	ND<-0	21
	11/19/2014	ND<-0	21
	3/23/2015	ND<-0	21
	4/22/2015	ND<-0	21
	9/30/2015	0.115	50
	11/19/2015	ND<-0	21
	3/15/2016	ND<-0	21
	6/29/2016	ND<-0	21
	8/9/2016	ND<-0	21
	12/7/2016	ND<-0	21
	3/2/2017	ND<-0	21
	7/5/2017	ND<-0	21
	8/16/2017	ND<-0	21
	10/25/2017	ND<-0	21
	3/28/2018	ND<-0	21
	6/29/2018	ND<-0	21
	8/2/2018	ND<-0	21
	12/10/2018	0.19	52
	4/15/2019	1.2	53
	6/12/2019	ND<-0	21
	8/27/2019	0.17	51
	10/29/2019	ND<-0	21
	3/30/2020	ND<-0	21
	6/16/2020	ND<-0	21
	9/21/2020	ND<-0	21
	12/17/2020	0.113	49
	3/18/2021	ND<-0	21
	5/5/2021	ND<-0	21
	9/2/2021	ND<-0	21
	11/23/2021	ND<-0	21
	1/11/2022	ND<-0	21
	4/7/2022	ND<-0	21
	8/2/2022	ND<-0	21
	11/16/2022	ND<-0	21
	2/14/2023	ND<-0	21
	5/24/2023	0.0462	43
	8/7/2023	0.103	48
	12/12/2023	ND<-0	21
	1/10/2024	0.0681	45

SME 10	4/7/2022	ND<-0	21
	8/3/2022	ND<-0	21
	11/16/2022	ND<-0	21
	2/13/2023	ND<-0	21
	5/24/2023	0.0371	42
	8/7/2023	0.0918	46
	12/12/2023	0.0471	44
	1/10/2024	ND<-0	21

The Wilcoxon Statistic is 201
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is 0.509327
The Standard Deviation adjusted for ties is 29.4995
The Z Score adjusted for ties is 0.694928
0.509327 < 2.326 indicating no statistical significance at 1% level
0.694928 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Total Suspended Solids

Location: SME 10

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 0
Non detect rank is 0

Wilcoxon Ranks

Location	Date	Conc.	Rank
GD 5	3/13/2013	9.6	19
	5/20/2013	9	16
	9/23/2013	8	13
	12/10/2013	18	39
	2/6/2014	17	37
	6/26/2014	12	25
	9/30/2014	18	40
	11/19/2014	26	47
	3/23/2015	15	33
	4/22/2015	13	28
	9/30/2015	17.3	38
	11/19/2015	42.8	53
	3/15/2016	13.2	30
	6/29/2016	15	34
	8/9/2016	11	22
	12/7/2016	6.8	8
	3/2/2017	13	29
	7/5/2017	22.7	45
	8/16/2017	9	17
	10/25/2017	14.6	32
	3/28/2018	6.06	6
	6/29/2018	19.6	41
	8/2/2018	26.4	48
	12/10/2018	22.3	44
	4/15/2019	29	49
	6/12/2019	9.33	18
	8/27/2019	10.9	21
	10/29/2019	21	43
	3/30/2020	12.1	26
	6/16/2020	7.4	10
	9/21/2020	7.9	12
	12/17/2020	19.8	42
	3/18/2021	30.6	50
	5/5/2021	36.8	52
	9/2/2021	16.1	36
	11/23/2021	8.8	15
	1/11/2022	12.1	27
	4/7/2022	14.4	31
	8/2/2022	6.4	7
	11/16/2022	8.67	14
	2/14/2023	11.5	24
	5/24/2023	24.3	46
	8/7/2023	7.54	11
	12/12/2023	11.3	23
	1/10/2024	32	51

SME 10	4/7/2022	2.8	1
	8/3/2022	4.1	3
	11/16/2022	4.6	5
	2/13/2023	4	2
	5/24/2023	15	35
	8/7/2023	4.4	4
	12/12/2023	10.6	20
	1/10/2024	7.3	9

The Wilcoxon Statistic is 43
The Expected value is is 180
The Standard Deviation is 40.2492
The Z Score is -3.41621
The Standard Deviation adjusted for ties is 40.2492
The Z Score adjusted for ties is -3.41621
-3.41621 < 2.326 indicating no statistical significance at 1% level
-3.41621 < 2.326 indicating no statistical significance at 1% level when adjusted for ties

Appendix C – Monitoring Reports

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

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Appendices

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, E.I.
Staff Professional

Deborah J. Jones, P.E.
Senior Engineer

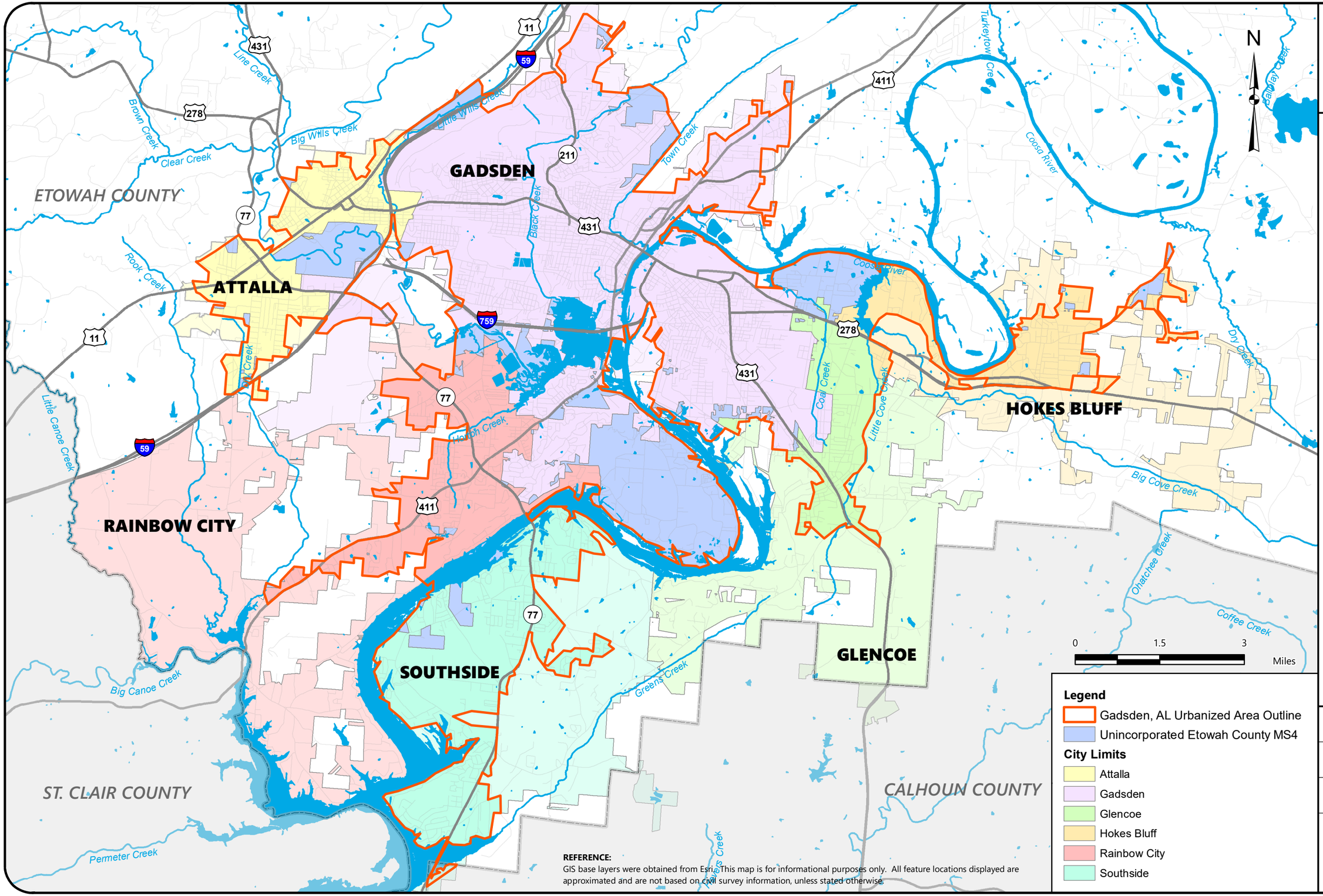
Appendices

Appendix I – Figures

Figure 1 – Gadsden, Alabama Urbanized Area

Figure 2 – Rain Gauge Locations

Figure 3 – MS4 Monitoring Locations



GADSDEN, AL URBANIZED AREA

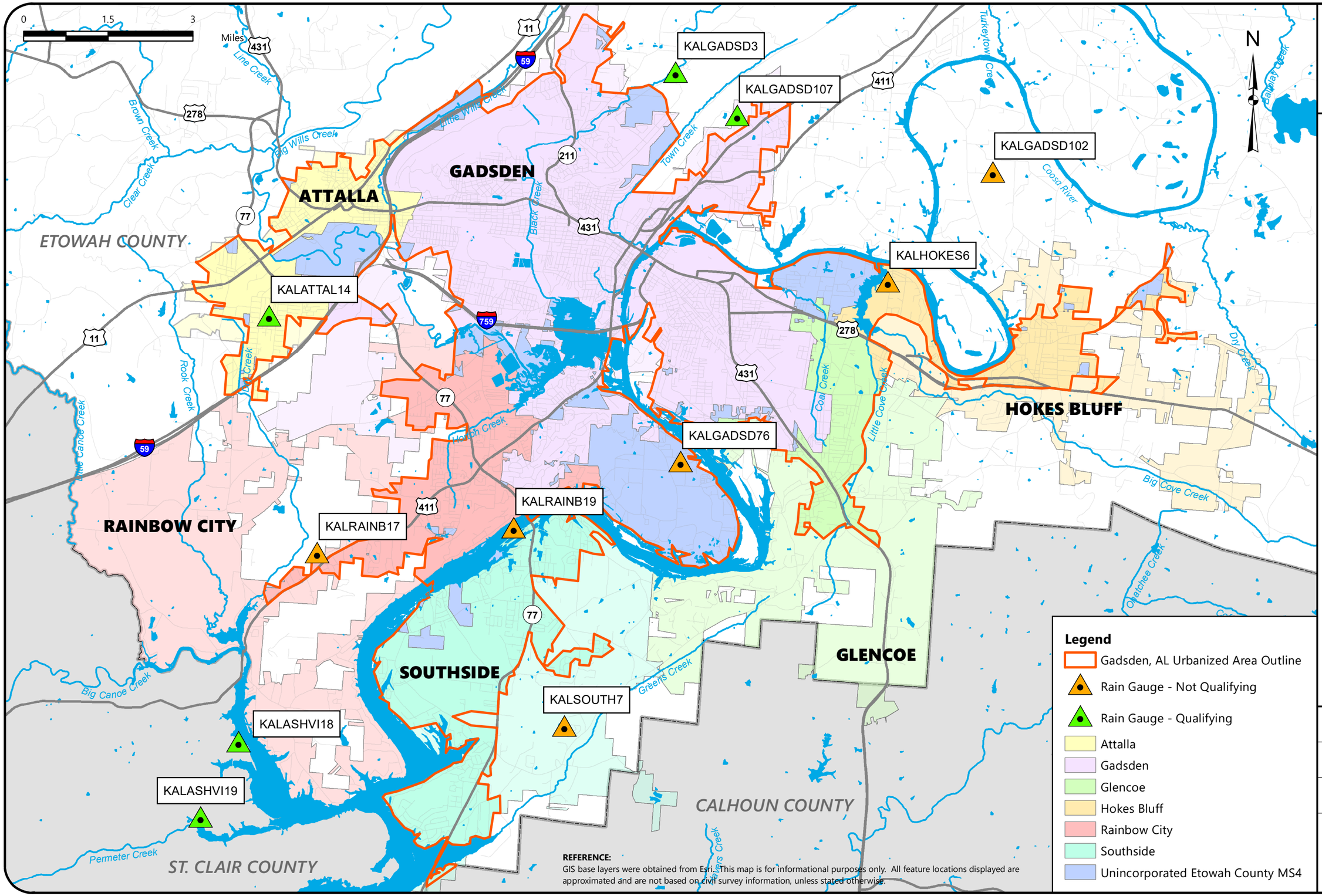
GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM
NPDES GENERAL PERMIT ALR040009

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.

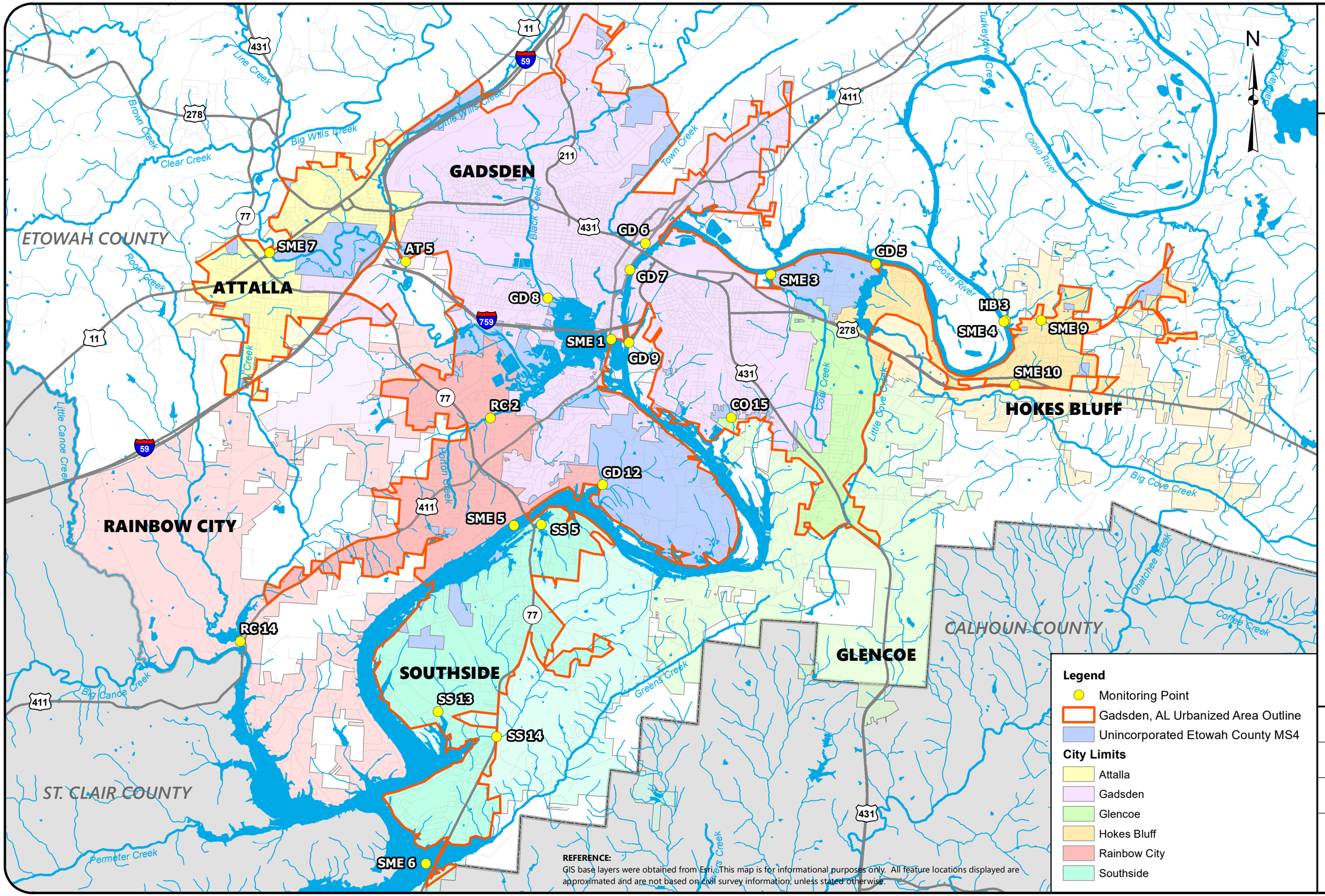
MAY 23, 2023 RAIN EVENT

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



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.

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

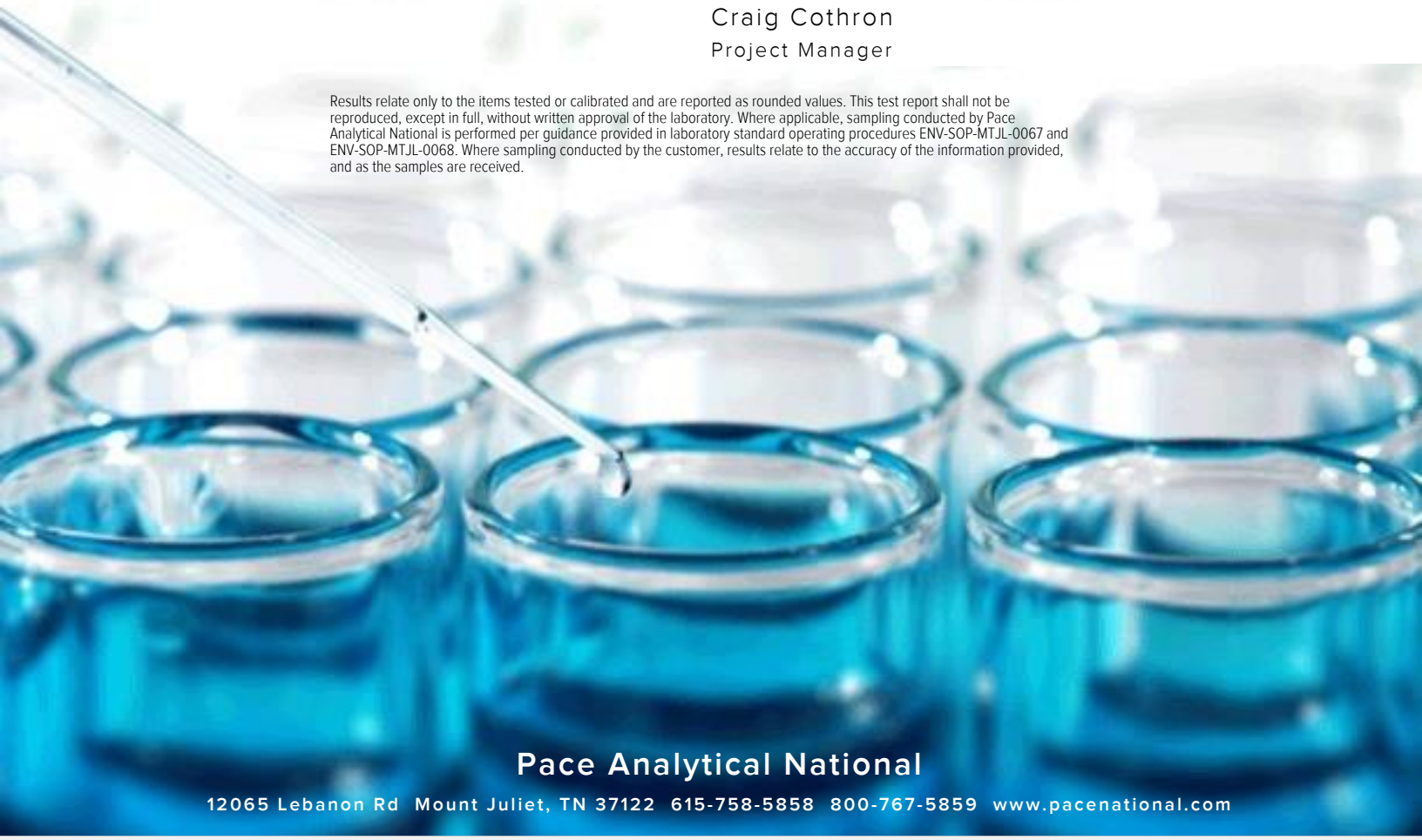


TABLE OF CONTENTS

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

CASE NARRATIVE

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 4500P E-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 4500P E-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 4500P E-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 4500P E-2011

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

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	

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

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

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

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

GLOSSARY OF TERMS

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.

ACCREDITATIONS & LOCATIONS

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	LA000356
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

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'		1135	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

Analysis / Container / Preservative

* 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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	05-24-23	14:00	FedEx
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / (No) HCL / MeoH TBR

Temp: °C Bottles Received:
NSAT 2.4 +0 = 2.4

Date: 5/25/23 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

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

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
J181

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

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 Crown

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	PORTHO 100ml Amb NoPres	PT 250mlHDPE-H2SO4	TKN / NO2NO3 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres								
								N	N										
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								

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

Remarks | Sample # (lab only)

* 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)
	05-24-23	14:00	FedEx
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: 5/25/23 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

U1619857

Tracking Numbers	Temperature
6357 9925	2.4
6357 9925 6699	4.3

ANALYTICAL REPORT

June 02, 2023

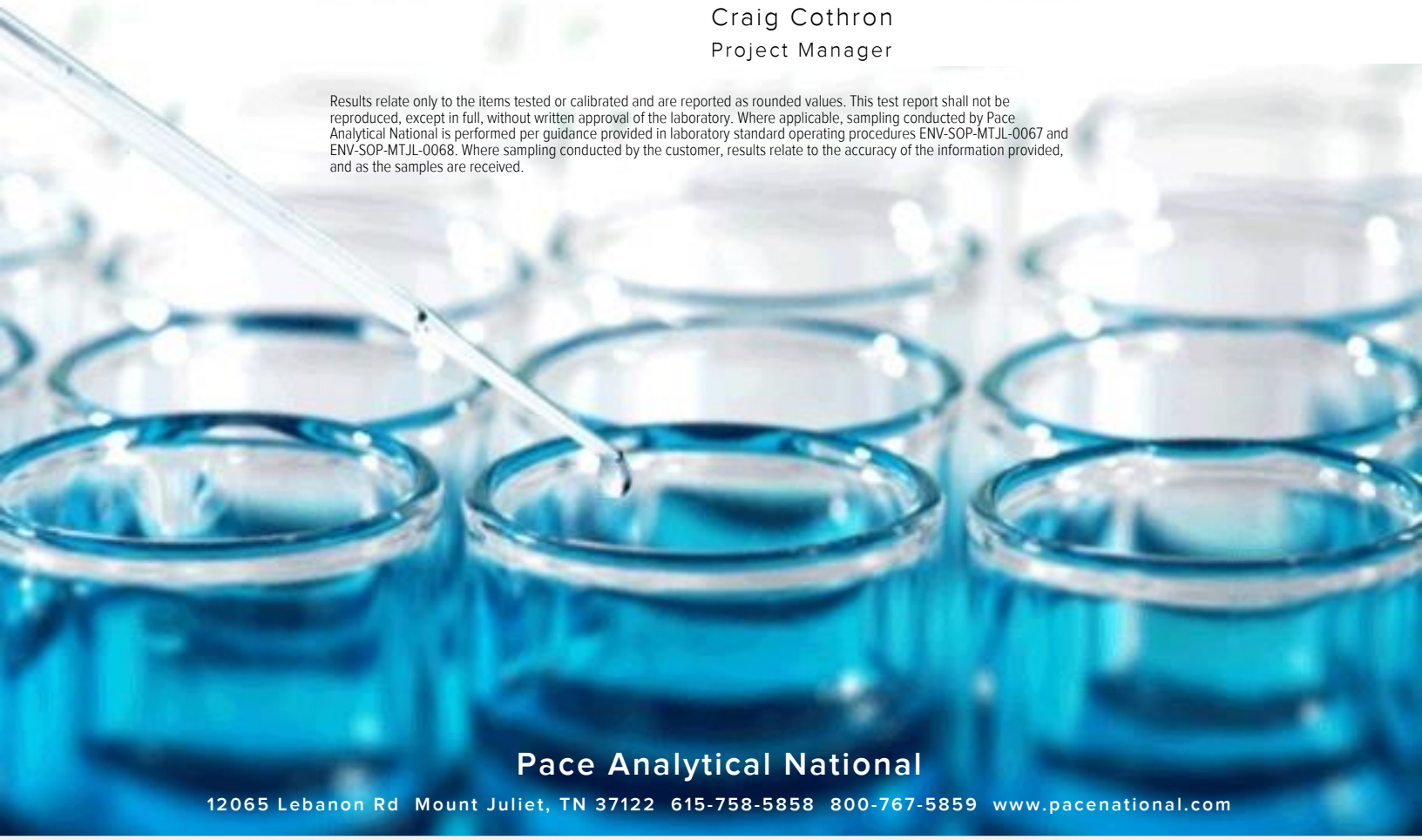
S&ME - Huntsville

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.



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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

SAMPLE SUMMARY

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

CASE NARRATIVE

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 4500P E-2011

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 365.4

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 365.4

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

Gravimetric Analysis by Method 2540 D-2011

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 365.4

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

Wet Chemistry by Method 351.2

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

Wet Chemistry by Method 353.2

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

Wet Chemistry by Method 365.4

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

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	

Method Blank (MB)

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

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	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	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
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	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
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	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
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.

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

GLOSSARY OF TERMS

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.

ACCREDITATIONS & LOCATIONS

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):

Quote #

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

No. of Cntrs

Analysis / Container / Preservative

Pres Chk

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

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 1.5/1.7 °C Bottles Received: 48

Relinquished by : (Signature) — Date: 5-25 — Time: 1430 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature) — Date: 5/26/23 — Time: 0900

If preservation required by Login: Date/Time

Hold: — Condition: NCF / OK

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

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 # L620768

Table #

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

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

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 #	

SDG # L1620368

Table #

Acctnum: **QOREHAL**

Template: **T203454**

Prelogin: **P989880**

PM: **034 - Craig Cothron**

PB: **BF 3/28/23**

Shipped Via: **FedEX Ground**

Analysis / Container / Preservative

Pres Chk		n2	H									
		PORTHO 100ml Amb NoPres	PT 250mlHDPE-H2SO4	TKN / NO2NO3 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres							

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs										Remarks	Sample # (lab only)
RC 14	G	WW	5'	5-25	1305	4	X	X	X	X							11
SME 11	G	WW	5'	5-25	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
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/26/23 Time: 0900

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Tracking Numbers	Temperature
6337 2240 5612	4.6
5623	2.3

Wet-Weather Monitoring Report
Third 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

September 12, 2023

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List of Tables

Appendices

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 August 3 through August 4, 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 August 3 & 4, 2023 Qualifying Rain Event Measurements

Gauge Name	Location	Latitude	Longitude	Precipitation Aug. 3	Precipitation Aug. 4
KALATTAL14	Attalla, AL	34.047°	-85.969°	2.06 in	0.57 in
KALHOKES6	Hokes Bluff, AL	34.01°	-85.92°	0.50 in	0.39 in
KALASHVI19	Ashville, AL	33.86°	-86.12°	0.38 in	0.51 in

Gauge Name	Location	Latitude	Longitude	Precipitation Aug. 3	Precipitation Aug. 4
KALASHVI18	Ashville, AL	33.88°	-86.11°	0.34 in	0.50 in
KALGADSD102	Gadsden, AL	34.04°	-85.89°	0.00 in	0.75 in
KALGADSD76	Gadsden, AL	33.96°	-85.98°	0.29 in	0.55 in
KALSOUTH7	Southside, AL	33.89°	-86.01°	0.38 in	0.60 in

3.0 Monitoring Event

On August 7, 2023, S&ME personnel mobilized to conduct storm water monitoring for the third 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

Outfall ID	Latitude	Longitude	Access	Waterbody Evaluated
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
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.

Monitoring point GD 8 was not sampled during the 2023 third quarter sampling event due to a widespread road closure that impeded access to the monitoring point.

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 August 7, 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.com
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.

Abigail Harris
Staff Scientist

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

GADSDEN-ETOWAH MS4 BOUNDARIES

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

ETOWAH COUNTY
ST. CLAIR COUNTY
CALHOUN COUNTY

GADSDEN
ATTALLA
HOKES BLUFF
RAINBOW CITY
SOUTHSIDE
GLENCOE

Line Creek
Brown Creek
Clear Creek
Big Wills Creek
Little Wills Creek
Town Creek
Black Creek
Rook Creek
Dry Creek
Little Canoe Creek
Hurricane Creek
Coal Creek
Little Cove Creek
Big Cove Creek
Turkeytown Creek
Coosa River
Dry Creek
Ohatchee Creek
Coffee Creek
Greens Creek
Big Canoe Creek
Permeter Creek
Terrys Creek

11 59 431 278 411 211 77 759

N

0 1.5 3 Miles

Legend

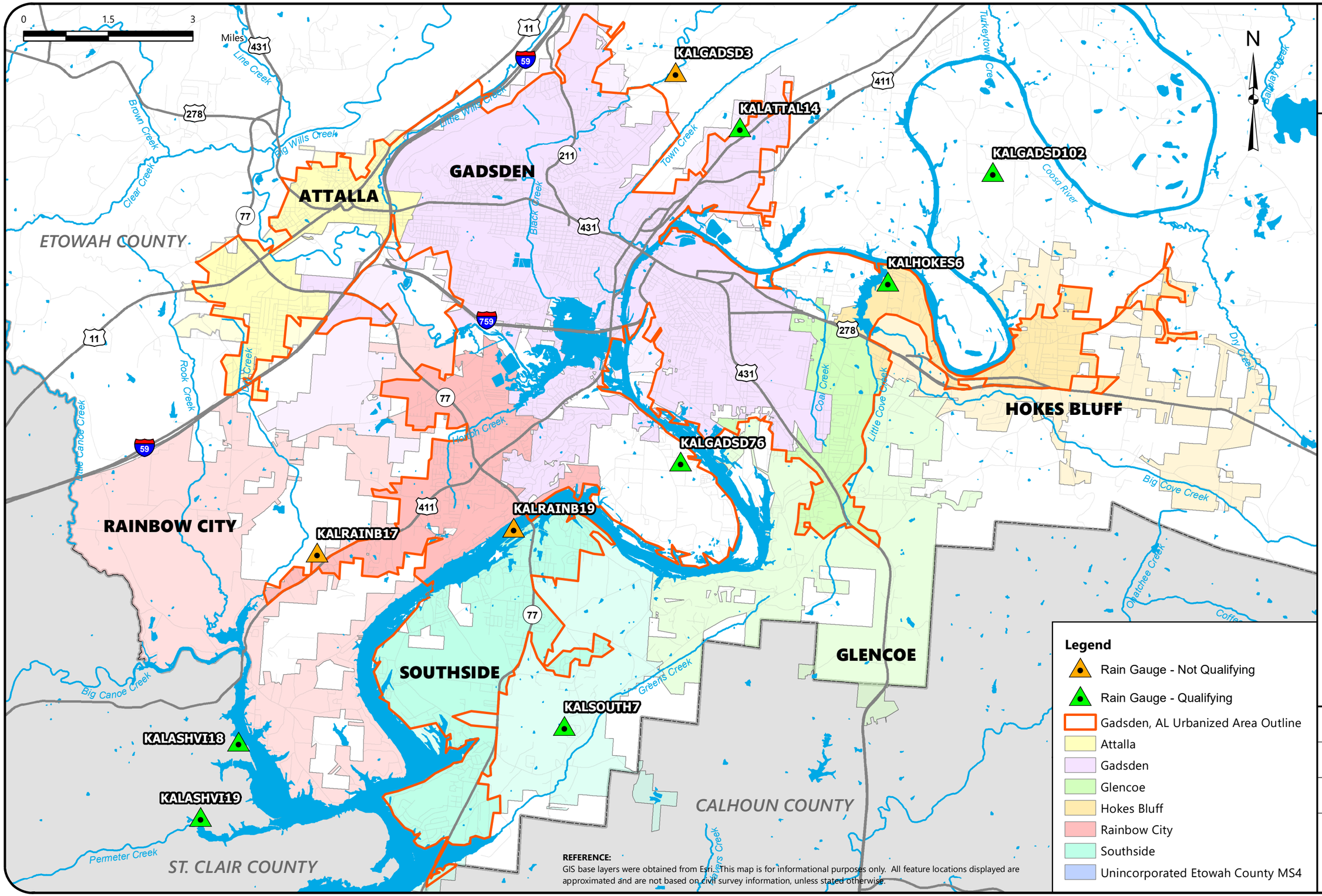
- Gadsden, AL Urbanized Area Outline
- Unincorporated Etowah County MS4

City Limits

- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside

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.

SCALE: 1:100,000
DATE: 02/18/2022
PROJECT NUMBER 215660
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.

AUGUST 3 & 4, 2023 RAIN EVENT

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

SCALE: 1:100,000

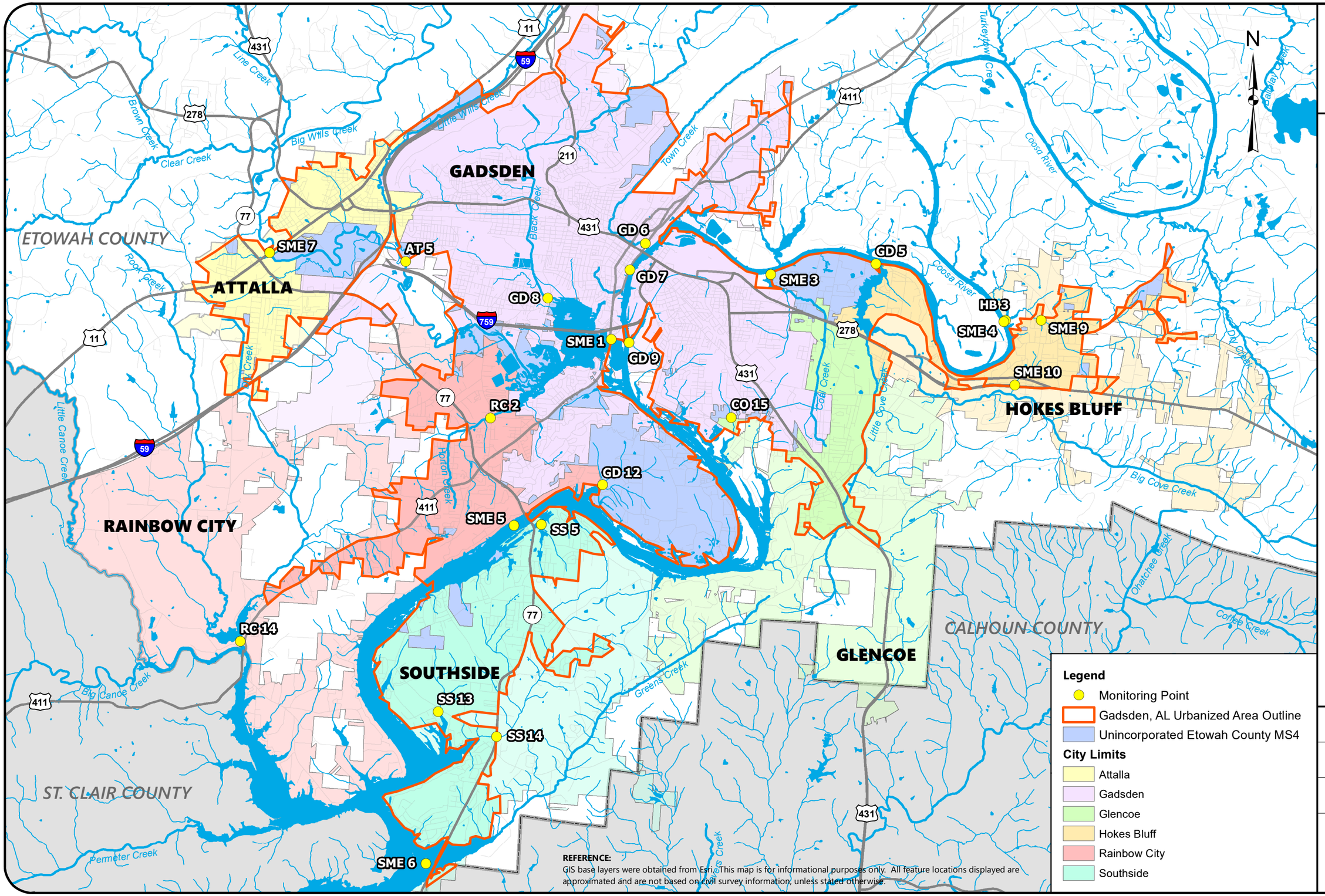
DATE: 08/24/2023

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



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.

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	8/7/2023	14:10	-2'	AH/EK	Sunny	Smooth
CO 15	8/7/2023	11:05	-2'	AH/EK	Sunny	Smooth
SME 9	8/7/2023	10:40	-2'	AH/EK	Sunny	Smooth
SME 10	8/7/2023	10:50	-2'	AH/EK	Sunny	Smooth
GD 6	8/7/2023	11:25	-2'	AH/EK	Sunny	Smooth
SS 13	8/7/2023	11:55	-2'	AH/EK	Sunny	Smooth
SS 14	8/7/2023	12:05	-2'	AH/EK	Sunny	Smooth
GD 12	8/7/2023	11:40	-2'	AH/EK	Sunny	Smooth
RC 2	8/7/2023	12:25	-2'	AH/EK	Sunny	Smooth
GD 8	**NOT SAMPLED DUE TO ROAD CLOSURE**					
AT 5	8/7/2023	13:45	-2'	AH/EK	Sunny	Fast Flowing
HB 3	8/7/2023	9:30	-5'	NW	Sunny	Smooth
SME 4	8/7/2023	9:35	-5'	NW	Sunny	Smooth
GD 5	8/7/2023	9:50	-5'	NW	Sunny	Smooth
SME 3	8/7/2023	9:55	-5'	NW	Sunny	Smooth
GD 7	8/7/2023	10:10	-5'	NW	Sunny	Smooth
GD 9	8/7/2023	10:20	-5'	NW	Sunny	Smooth
SME 1	8/7/2023	10:25	-5'	NW	Sunny	Smooth
SS 5	8/7/2023	11:05	-5'	NW	Sunny	Smooth
SME 5	8/7/2023	11:20	-5'	NW	Sunny	Smooth
SME 6	8/7/2023	11:30	-5'	NW	Sunny	Rough
RC 14	8/7/2023	11:45	-5'	NW	Sunny	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	8/7/2023	11.40	7.93	8.93	25.8	12.3	0.393	0.916	0.469	0.403
SME 13	8/7/2023	DUPLICATE OF SME 7				12.8	0.535	0.907	0.449	0.410
CO 15	8/7/2023	12.60	7.54	8.05	26.1	13.9	0.589	<0.100	0.0719	<0.0300
SME 9	8/7/2023	10.39	7.10	7.41	24.58	5.60	1.36	<0.100	0.0873	<0.0300
SME 10	8/7/2023	13.32	7.59	6.69	25.8	4.40	0.903	<0.100	0.0918	<0.0300
GD 6	8/7/2023	5.10	7.86	9.10	29.7	4.30	0.914	<0.100	0.0929	<0.0300
SS 13	8/7/2023	4.90	7.85	9.14	31.2	4.00	0.825	<0.100	0.111	<0.0300
SS 14	8/7/2023	6.56	8.02	10.73	31.6	8.20	0.903	<0.100	0.124	0.032
GD 12	8/7/2023	8.17	7.85	8.85	31.0	5.20	0.813	<0.100	0.0945	<0.0300
RC 2	8/7/2023	5.75	7.80	6.55	28.2	6.20	0.676	<0.100	0.0662	<0.0300
GD 8	8/7/2023	NS	NS	NS	NS	NS	NS	NS	NS	NS
AT 5	8/7/2023	10.54	7.87	9.13	26.5	12.4	0.291	0.832	0.430	0.373
SME 12	8/7/2023	DUPLICATE OF AT 5				9.60	0.587	0.835	0.439	0.383
HB 3	8/7/2023	10.9	7.49	6.16	29.3	6.80	0.578	<0.100	0.0895	<0.0300
SME 4	8/7/2023	3.2	7.44	6.51	29.7	7.00	0.436	<0.100	0.0866	<0.0300
GD 5	8/7/2023	3.0	7.36	6.27	29.5	7.54	0.499	<0.100	0.103	<0.0300
SME 3	8/7/2023	9.9	7.46	6.74	29.7	14.4	0.424	<0.100	0.0912	<0.0300
GD 7	8/7/2023	3.2	7.42	6.16	29.8	6.53	0.399	<0.100	0.0711	<0.0300
GD 9	8/7/2023	7.2	7.46	6.50	29.8	9.40	0.483	<0.100	0.0864	<0.0300
SME 1	8/7/2023	11.7	8.01	7.58	30.2	13.9	0.552	<0.100	0.170	0.0670
SS 5	8/7/2023	9.1	7.91	7.70	30.7	11.5	0.636	<0.100	0.0971	<0.0300
SME 5	8/7/2023	5.6	7.71	7.47	30.6	8.60	0.677	0.0568	0.122	<0.0300
SME 6	8/7/2023	9.2	7.66	7.19	30.6	12.4	0.620	<0.100	0.095	<0.0300
RC 14	8/7/2023	19.1	7.20	6.63	29.1	15.0	0.604	<0.100	0.150	0.0360
SME 11	8/7/2023	DUPLICATE OF SME 4				7.23	0.633	<0.100	0.0801	<0.0300

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

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
SME 7	8/7/2023	11.40	7.93	8.93	25.8	12.3	0.393	0.916	0.469	0.403

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

* - meter malfunctioned in field

NS - Not Sampled

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
CO 15	8/7/2023	12.6	7.54	8.05	26.1	13.9	0.589	<0.100	0.0719	<0.0300

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
SME 9	8/7/2023	10.39	7.10	7.41	24.58	5.60	1.36	<0.100	0.0873	<0.0300

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
SME 10	8/7/2023	13.32	7.59	6.69	25.8	4.40	0.903	<0.100	0.0918	<0.0300

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
GD 6	8/7/2023	5.10	7.86	9.10	29.7	4.30	0.914	<0.100	0.0929	<0.0300

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
SS 13	8/7/2023	4.90	7.85	9.14	31.2	4.00	0.825	<0.100	0.111	<0.0300

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
SS 14	8/7/2023	6.56	8.02	10.73	31.6	8.20	0.903	<0.100	0.124	0.032

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
GD 12	8/7/2023	8.17	7.85	8.85	31.0	5.20	0.813	<0.100	0.0945	<0.0300

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
RC 2	8/7/2023	5.75	7.80	6.55	28.2	6.20	0.676	<0.100	0.0662	<0.0300

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
GD 8	8/7/2023	NS	NS	NS	NS	NS	NS	NS	NS	NS

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
AT 5	8/7/2023	10.54	7.87	9.13	26.5	12.4	0.291	0.832	0.430	0.373

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
HB 3	8/7/2023	10.9	7.49	6.16	29.3	6.80	0.578	<0.100	0.0895	<0.0300

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
SME 4	8/7/2023	3.2	7.44	6.51	29.7	7.00	0.436	<0.100	0.0866	<0.0300

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
GD 5	8/7/2023	3.0	7.36	6.27	29.5	7.54	0.499	<0.100	0.103	<0.0300

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
SME 3	8/7/2023	9.9	7.46	6.74	29.7	14.4	0.424	<0.100	0.0912	<0.0300

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
GD 7	8/7/2023	3.2	7.42	6.16	29.8	6.53	0.399	<0.100	0.0711	<0.0300

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
GD 9	8/7/2023	7.2	7.46	6.50	29.8	9.40	0.483	<0.100	0.0864	<0.0300

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
SME 1	8/7/2023	11.7	8.01	7.58	30.2	13.9	0.552	<0.100	0.170	0.0670

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
SS 5	8/7/2023	9.1	7.91	7.70	30.7	11.5	0.636	<0.100	0.0971	<0.0300

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
SME 5	8/7/2023	5.6	7.71	7.47	30.6	8.60	0.677	0.0568	0.122	<0.0300

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
SME 6	8/7/2023	9.2	7.66	7.19	30.6	12.4	0.620	<0.100	0.095	<0.0300

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
RC 14	8/7/2023	19.1	7.20	6.63	29.1	15.0	0.604	<0.100	0.150	0.0360

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

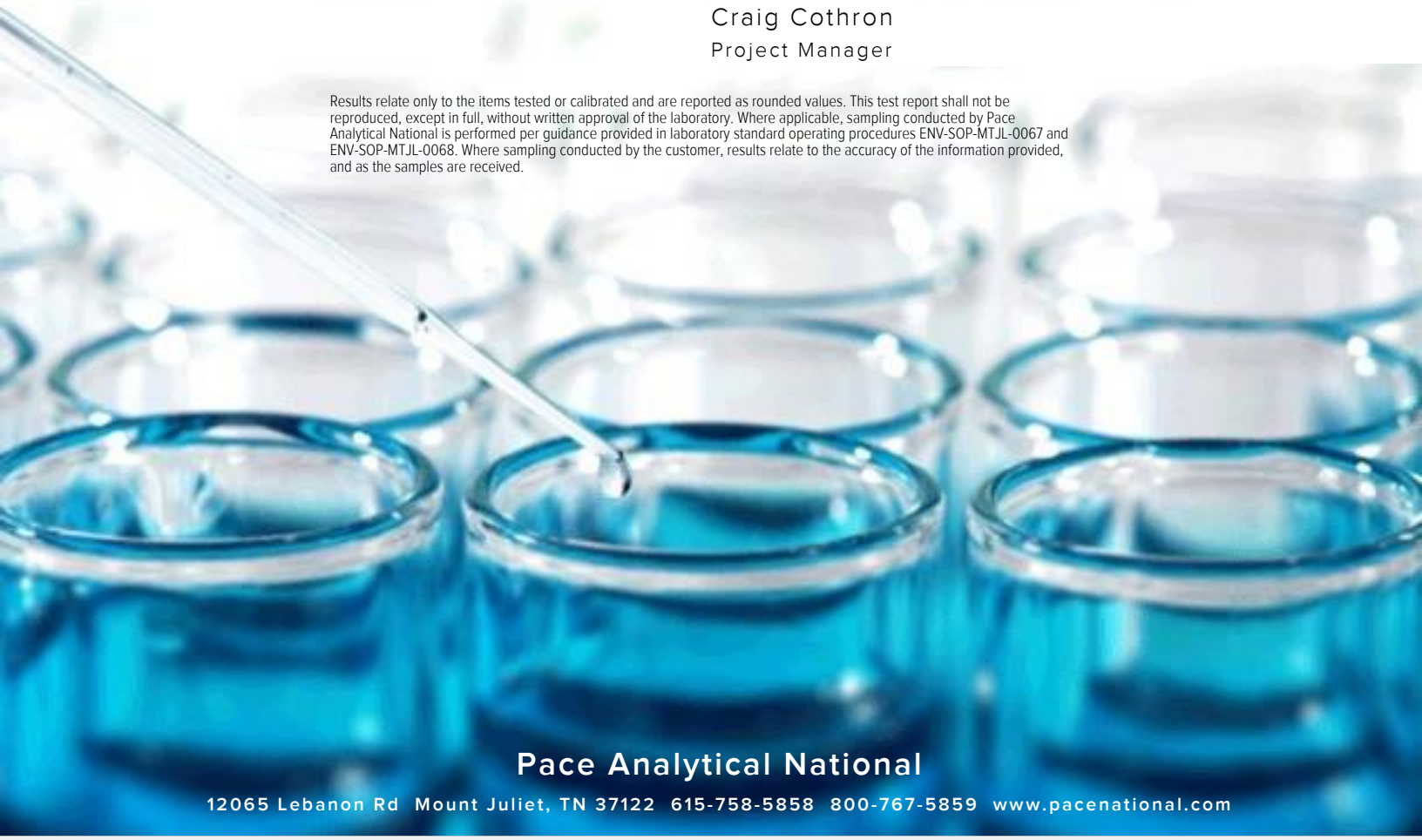
August 16, 2023

S&ME - Huntsville

Sample Delivery Group:	L1643357
Samples Received:	08/08/2023
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



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

TABLE OF CONTENTS

SME 7 L1643357-01 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 14:10 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:44	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:52	08/08/23 20:52	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 18:55	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:42	08/08/23 12:42	JAS	Mt. Juliet, TN

CO 15 L1643357-02 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 11:05 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:48	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:53	08/08/23 20:53	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 18:56	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:42	08/08/23 12:42	JAS	Mt. Juliet, TN

SME 9 L1643357-03 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 10:40 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:50	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:11	08/08/23 21:11	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:00	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:43	08/08/23 12:43	JAS	Mt. Juliet, TN

SME 10 L1643357-04 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 10:50 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:51	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:12	08/08/23 21:12	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:01	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:43	08/08/23 12:43	JAS	Mt. Juliet, TN

GD 6 L1643357-05 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 11:28 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:52	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:13	08/08/23 21:13	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:02	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:43	08/08/23 12:43	JAS	Mt. Juliet, TN

SS 13 L1643357-06 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 11:55 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:57	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:15	08/08/23 21:15	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:07	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:44	08/08/23 12:44	JAS	Mt. Juliet, TN

SS 14 L1643357-07 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 12:05 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:58	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:16	08/08/23 21:16	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:09	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:44	08/08/23 12:44	JAS	Mt. Juliet, TN

GD 12 L1643357-08 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 11:40 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 19:00	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:17	08/08/23 21:17	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:10	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:44	08/08/23 12:44	JAS	Mt. Juliet, TN

RC 2 L1643357-09 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 12:25 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 19:04	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:18	08/08/23 21:18	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:11	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:45	08/08/23 12:45	JAS	Mt. Juliet, TN

AT 5 L1643357-11 WW

Collected by: Abigail Harris | Collected date/time: 08/07/23 13:45 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 19:05	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:24	08/08/23 21:24	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:15	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:46	08/08/23 12:46	JAS	Mt. Juliet, TN

SME 12 L1643357-12 WW

Collected by: Abigail Harris
Collected date/time: 08/07/23 13:45
Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 19:06	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:25	08/08/23 21:25	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:16	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:46	08/08/23 12:46	JAS	Mt. Juliet, TN

SME 13 L1643357-13 WW

Collected by: Abigail Harris
Collected date/time: 08/07/23 12:10
Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110954	1	08/14/23 13:13	08/14/23 14:17	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 19:07	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2110094	1	08/08/23 21:26	08/08/23 21:26	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 19:18	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109870	1	08/08/23 12:46	08/08/23 12:46	JAS	Mt. Juliet, TN

CASE NARRATIVE

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	12.3	J4	3.33	1	08/14/2023 14:17	WG2110954

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	0.393		0.140	0.250	1	08/10/2023 18:44	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.916		0.0500	0.100	1	08/08/2023 20:52	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.469		0.0350	0.100	1	08/10/2023 18:55	WG2111835

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	0.403		0.0140	0.0300	1	08/08/2023 12:42	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	13.9	J4	2.50	1	08/14/2023 14:17	WG2110954

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	0.589		0.140	0.250	1	08/10/2023 18:48	WG2110099

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	08/08/2023 20:53	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0719	B J	0.0350	0.100	1	08/10/2023 18:56	WG2111835

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	08/08/2023 12:42	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	5.60	J4	2.50	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	1.36		0.140	0.250	1	08/10/2023 18:50	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 21:11	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0873	B J	0.0350	0.100	1	08/10/2023 19:00	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:43	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	4.40	J4	3.33	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.903		0.140	0.250	1	08/10/2023 18:51	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 21:12	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0918	B J	0.0350	0.100	1	08/10/2023 19:01	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:43	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	4.30	J4	2.50	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.914		0.140	0.250	1	08/10/2023 18:52	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 21:13	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0929	B J	0.0350	0.100	1	08/10/2023 19:02	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:43	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	4.00	J4	3.33	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.825		0.140	0.250	1	08/10/2023 18:57	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 21:15	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.111	B	0.0350	0.100	1	08/10/2023 19:07	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:44	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	8.20	J4 P1	5.00	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.903		0.140	0.250	1	08/10/2023 18:58	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 21:16	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.124	B	0.0350	0.100	1	08/10/2023 19:09	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0320		0.0140	0.0300	1	08/08/2023 12:44	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	5.20	J4	5.00	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.813		0.140	0.250	1	08/10/2023 19:00	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 21:17	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0945	B J	0.0350	0.100	1	08/10/2023 19:10	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:44	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	6.20	J4	5.00	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.676		0.140	0.250	1	08/10/2023 19:04	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 21:18	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0662	B J	0.0350	0.100	1	08/10/2023 19:11	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:45	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	12.4	J4	3.33	1	08/14/2023 14:17	WG2110954

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.291		0.140	0.250	1	08/10/2023 19:05	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.832		0.0500	0.100	1	08/08/2023 21:24	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.430		0.0350	0.100	1	08/10/2023 19:15	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.373		0.0140	0.0300	1	08/08/2023 12:46	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	9.60	J4	2.50	1	08/14/2023 14:17	WG2110954

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	0.587		0.140	0.250	1	08/10/2023 19:06	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.835		0.0500	0.100	1	08/08/2023 21:25	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.439		0.0350	0.100	1	08/10/2023 19:16	WG2111835

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	0.383		0.0140	0.0300	1	08/08/2023 12:46	WG2109870

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	12.8	J4	3.33	1	08/14/2023 14:17	WG2110954

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	0.535		0.140	0.250	1	08/10/2023 19:07	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.907		0.0500	0.100	1	08/08/2023 21:26	WG2110094

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.449		0.0350	0.100	1	08/10/2023 19:18	WG2111835

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	0.410		0.0140	0.0300	1	08/08/2023 12:46	WG2109870

Method Blank (MB)

(MB) R3961020-1 08/14/23 14:17

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

L1643357-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-07 08/14/23 14:17 • (DUP) R3961020-3 08/14/23 14:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	8.20	7.00	1	15.8	P1	5

L1643650-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1643650-01 08/14/23 14:17 • (DUP) R3961020-4 08/14/23 14:17

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

Laboratory Control Sample (LCS)

(LCS) R3961020-2 08/14/23 14:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	888	115	85.7-114	J4

Method Blank (MB)

(MB) R3959237-1 08/10/23 18:33

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

L1643343-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-09 08/10/23 18:36 • (DUP) R3959237-3 08/10/23 18:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.677	0.631	1	7.03		20

L1643357-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-05 08/10/23 18:52 • (DUP) R3959237-5 08/10/23 18:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.914	0.912	1	0.219		20

Laboratory Control Sample (LCS)

(LCS) R3959237-2 08/10/23 18:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	13.0	109	75.2-120	

L1643343-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1643343-09 08/10/23 18:36 • (MS) R3959237-4 08/10/23 18:38

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	0.677	6.37	114	1	90.0-110	J5

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

L1643357-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-05 08/10/23 18:52 • (MS) R3959237-6 08/10/23 18:55 • (MSD) R3959237-7 08/10/23 18:56

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	0.914	6.25	6.40	107	110	1	90.0-110			2.37	20

Method Blank (MB)

(MB) R3958265-1 08/08/23 20:16

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

L1643343-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-05 08/08/23 20:34 • (DUP) R3958265-3 08/08/23 20:36

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

L1643357-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-02 08/08/23 20:53 • (DUP) R3958265-5 08/08/23 20:55

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) R3958265-2 08/08/23 20:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.51	100	90.0-110	

L1643343-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1643343-05 08/08/23 20:34 • (MS) R3958265-4 08/08/23 20:37

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	

L1643357-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-02 08/08/23 20:53 • (MS) R3958265-6 08/08/23 20:56 • (MSD) R3958265-7 08/08/23 20:57

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	2.52	2.50	101	100	1	90.0-110			0.797	20

Method Blank (MB)

(MB) R3958269-1 08/08/23 21:08

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

L1643357-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-13 08/08/23 21:26 • (DUP) R3958269-3 08/08/23 21:27

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.907	0.907	1	0.000		20

L1643484-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1643484-03 08/08/23 21:47 • (DUP) R3958269-6 08/08/23 21:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.167	0.165	1	1.20		20

Laboratory Control Sample (LCS)

(LCS) R3958269-2 08/08/23 21:10

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	

L1643357-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-13 08/08/23 21:26 • (MS) R3958269-4 08/08/23 21:29 • (MSD) R3958269-5 08/08/23 21:30

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	0.907	3.38	3.44	98.9	101	1	90.0-110			1.76	20

L1643484-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1643484-03 08/08/23 21:47 • (MS) R3958269-7 08/08/23 21:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.167	2.69	101	1	90.0-110	

Method Blank (MB)

(MB) R3959239-1 08/10/23 18:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	0.0412	J	0.0350	0.100

L1643343-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-09 08/10/23 18:47 • (DUP) R3959239-3 08/10/23 18:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.112	0.104	1	7.41		20

L1643357-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-05 08/10/23 19:02 • (DUP) R3959239-4 08/10/23 19:04

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0929	0.102	1	9.34		20

Laboratory Control Sample (LCS)

(LCS) R3959239-2 08/10/23 18:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.31	96.8	83.2-116	

L1643357-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-05 08/10/23 19:02 • (MS) R3959239-5 08/10/23 19:05 • (MSD) R3959239-6 08/10/23 19:06

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 %
Phosphorus,Total	2.50	0.0929	2.46	2.41	94.7	92.7	1	90.0-110			2.05	20

Method Blank (MB)

(MB) R3958034-1 08/08/23 12:41

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

L1643357-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-02 08/08/23 12:42 • (DUP) R3958034-3 08/08/23 12:42

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

L1643357-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-09 08/08/23 12:45 • (DUP) R3958034-6 08/08/23 12:46

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) R3958034-2 08/08/23 12:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.245	100	85.0-115	

L1643357-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-06 08/08/23 12:44 • (MS) R3958034-4 08/08/23 12:44 • (MSD) R3958034-5 08/08/23 12:44

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	U	0.522	0.521	104	104	1	80.0-120			0.192	20

GLOSSARY OF TERMS

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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.
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.

ACCREDITATIONS & LOCATIONS

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: **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):
Abigail Harris

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

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							
									L2								
SME 7	G	WW	3ft	8/7/23	1510	4	X	X	X	X							-01
CO 15		WW			1105	4	X	X	X	X							-02
SME 9		WW			1046	4	X	X	X	X							-03
SME 10		WW			1050	4	X	X	X	X							-04
GD 6		WW			1125	4	X	X	X	X							-05
SS 13		WW			1155	4	X	X	X	X							-06
SS 14		WW			1205	4	X	X	X	X							-07
GD 12		WW			1140	4	X	X	X	X							-08
RC 2		WW			1225	4	X	X	X	X							-09
GD 8		WW				4	X	X	X	X							

Chain of Custody Page 1 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 # 1643357
H229
T

Acctnum: **QOREHAL**
Template: **T181690**
Prelogin: **P1008942**
PM: **034 - Craig Cothron**
PB: **4/27/23**

Shipped Via: **FedEX Ground**

Remarks	Sample # (lab only)

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

Remarks: 2 coolers sent
GD8 not sampled

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: __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: __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
	8/7/23	1430		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) (18)	Date: 8/8/23 Time: 0900

If pr... by Login: Date/Time
PH-10BDH4321 TRC 2144141
CR6-20221V

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

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Collected by (print):
Abigail Harris

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

Pres Chk

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	G	WW	3ft	8/7/23	1315	4	X	X	X	X		-10
SME 12	↓	WW	↓	↓	1315	4	X	X	X	X		-12
SME 13	↓	WW	↓	↓	1210	4	X	X	X	X		-14
		WW	↓	↓		4	X	X	X	X		

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 # L1643357

Table #

Acctnum: **QOREHAL**
Template: **T181690**
Prelogin: **P1008942**
PM: **034 - Craig Cothron**
PB: 8/6/23

Shipped Via: **FedEX Ground**

* 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: X Y __N
Preservation Correct/Checked: __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	If preservation required by Login: Date/Time
	8/7/23	1430			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/8/23 Time: 0900	Hold: / Condition: NCF / OK

1643357

Tracking Numbers	GBA8 Temperature
6525.5571 2810	5.0
" " 2820	0.1

ANALYTICAL REPORT

August 14, 2023

S&ME - Huntsville

Sample Delivery Group:	L1643343
Samples Received:	08/08/2023
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.

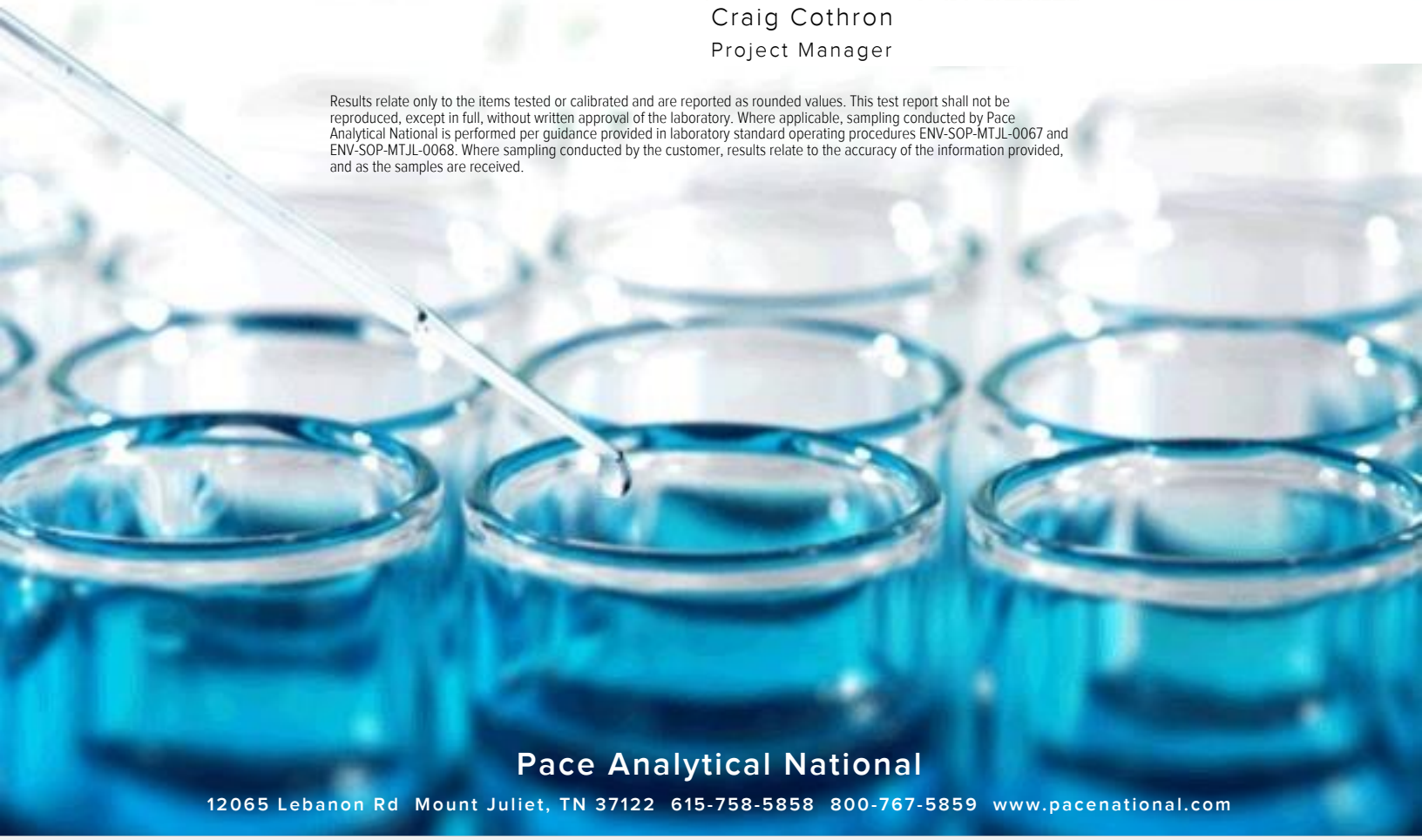

TABLE OF CONTENTS

HB 3 L1643343-01 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 09:30 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2109255	1	08/10/23 08:50	08/10/23 14:39	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:25	08/08/23 20:25	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111616	1	08/10/23 08:50	08/10/23 14:53	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109822	1	08/08/23 12:01	08/08/23 12:01	JAS	Mt. Juliet, TN

SME 4 L1643343-02 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 09:35 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110749	1	08/09/23 13:14	08/09/23 14:21	JAC	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2109255	1	08/10/23 08:50	08/10/23 14:43	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:27	08/08/23 20:27	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111616	1	08/10/23 08:50	08/10/23 14:56	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109822	1	08/08/23 12:01	08/08/23 12:01	JAS	Mt. Juliet, TN

GD 5 L1643343-03 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 09:50 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2109255	1	08/10/23 08:50	08/10/23 14:44	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:32	08/08/23 20:32	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111616	1	08/10/23 08:50	08/10/23 14:57	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109822	1	08/08/23 12:01	08/08/23 12:01	JAS	Mt. Juliet, TN

SME 3 L1643343-04 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 09:55 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2109255	1	08/10/23 08:50	08/10/23 14:45	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:33	08/08/23 20:33	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111616	1	08/10/23 08:50	08/10/23 14:58	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109822	1	08/08/23 12:02	08/08/23 12:02	JAS	Mt. Juliet, TN

GD 7 L1643343-05 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 10:10 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2109255	1	08/10/23 08:50	08/10/23 14:49	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:34	08/08/23 20:34	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111616	1	08/10/23 08:50	08/10/23 15:00	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:51	08/08/23 12:51	JAS	Mt. Juliet, TN

GD 9 L1643343-06 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 10:20 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2109255	1	08/10/23 08:50	08/10/23 14:50	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:38	08/08/23 20:38	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111616	1	08/10/23 08:50	08/10/23 15:01	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:52	08/08/23 12:52	JAS	Mt. Juliet, TN

SME 1 L1643343-07 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 10:25 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2109255	1	08/10/23 08:50	08/10/23 14:51	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:39	08/08/23 20:39	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111616	1	08/10/23 08:50	08/10/23 15:05	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:53	08/08/23 12:53	JAS	Mt. Juliet, TN

SS 5 L1643343-08 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 11:05 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110914	1	08/11/23 08:17	08/11/23 13:21	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:41	08/08/23 20:41	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2112328	1	08/11/23 08:17	08/11/23 14:23	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:53	08/08/23 12:53	JAS	Mt. Juliet, TN

SME 5 L1643343-09 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 11:10 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:36	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:42	08/08/23 20:42	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 18:47	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:54	08/08/23 12:54	JAS	Mt. Juliet, TN

SME 6 L1643343-10 WW

Collected by: Nathanael Wade | Collected date/time: 08/07/23 11:30 | Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:39	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:43	08/08/23 20:43	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 18:50	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:54	08/08/23 12:54	JAS	Mt. Juliet, TN

RC 14 L1643343-11 WW

Collected by: Nathanael Wade
Collected date/time: 08/07/23 11:45
Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110948	1	08/10/23 08:35	08/10/23 10:07	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:41	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:48	08/08/23 20:48	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 18:51	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:54	08/08/23 12:54	JAS	Mt. Juliet, TN

SME 11 L1643343-12 WW

Collected by: Nathanael Wade
Collected date/time: 08/07/23 09:40
Received date/time: 08/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2110749	1	08/09/23 13:14	08/09/23 14:21	JAC	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2110099	1	08/10/23 13:22	08/10/23 18:42	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2109256	1	08/08/23 20:50	08/08/23 20:50	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2111835	1	08/10/23 13:22	08/10/23 18:52	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2109853	1	08/08/23 12:55	08/08/23 12:55	JAS	Mt. Juliet, TN

CASE NARRATIVE

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	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	6.80		3.33	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.578		0.140	0.250	1	08/10/2023 14:39	WG2109255

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:25	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0895	B J	0.0350	0.100	1	08/10/2023 14:53	WG2111616

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:01	WG2109822

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	7.00		5.00	1	08/09/2023 14:21	WG2110749

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.436		0.140	0.250	1	08/10/2023 14:43	WG2109255

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:27	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0866	B J	0.0350	0.100	1	08/10/2023 14:56	WG2111616

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:01	WG2109822

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	7.54		3.85	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.499		0.140	0.250	1	08/10/2023 14:44	WG2109255

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:32	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.103	B	0.0350	0.100	1	08/10/2023 14:57	WG2111616

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:01	WG2109822

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	14.4		5.00	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.424		0.140	0.250	1	08/10/2023 14:45	WG2109255

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:33	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0912	B J	0.0350	0.100	1	08/10/2023 14:58	WG2111616

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:02	WG2109822

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	6.53		3.33	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.399		0.140	0.250	1	08/10/2023 14:49	WG2109255

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:34	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0711	B J	0.0350	0.100	1	08/10/2023 15:00	WG2111616

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:51	WG2109853

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	9.40		5.00	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.483		0.140	0.250	1	08/10/2023 14:50	WG2109255

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:38	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0864	B J	0.0350	0.100	1	08/10/2023 15:01	WG2111616

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:52	WG2109853

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	13.9	P1	6.95	1	08/10/2023 10:07	WG2110948

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	0.552		0.140	0.250	1	08/10/2023 14:51	WG2109255

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	08/08/2023 20:39	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.170	B	0.0350	0.100	1	08/10/2023 15:05	WG2111616

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	08/08/2023 12:53	WG2109853

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	11.5	P1	6.40	1	08/10/2023 10:07	WG2110948

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	0.636		0.140	0.250	1	08/11/2023 13:21	WG2110914

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	08/08/2023 20:41	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0971	B J	0.0350	0.100	1	08/11/2023 14:23	WG2112328

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	08/08/2023 12:53	WG2109853

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	8.60		5.00	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.677	J5	0.140	0.250	1	08/10/2023 18:36	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.0568	J	0.0500	0.100	1	08/08/2023 20:42	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.112	B	0.0350	0.100	1	08/10/2023 18:47	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:54	WG2109853

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	12.4		5.95	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.620		0.140	0.250	1	08/10/2023 18:39	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:43	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0950	B J	0.0350	0.100	1	08/10/2023 18:50	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:54	WG2109853

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	15.0		5.00	1	08/10/2023 10:07	WG2110948

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.604		0.140	0.250	1	08/10/2023 18:41	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:48	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.150	B	0.0350	0.100	1	08/10/2023 18:51	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0360		0.0140	0.0300	1	08/08/2023 12:54	WG2109853

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	7.23		3.85	1	08/09/2023 14:21	WG2110749

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.633		0.140	0.250	1	08/10/2023 18:42	WG2110099

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	08/08/2023 20:50	WG2109256

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0801	B J	0.0350	0.100	1	08/10/2023 18:52	WG2111835

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	08/08/2023 12:55	WG2109853

Method Blank (MB)

(MB) R3959106-1 08/09/23 14:21

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

L1642624-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1642624-01 08/09/23 14:21 • (DUP) R3959106-3 08/09/23 14:21

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	205	222	1	7.96	J3	5

L1642878-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1642878-01 08/09/23 14:21 • (DUP) R3959106-4 08/09/23 14:21

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	57.6	64.4	1	11.1	J3	5

Laboratory Control Sample (LCS)

(LCS) R3959106-2 08/09/23 14:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	672	86.9	85.7-114	

Method Blank (MB)

(MB) R3960205-1 08/10/23 10:07

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

L1643343-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-07 08/10/23 10:07 • (DUP) R3960205-3 08/10/23 10:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	13.9	12.2	1	12.8	P1	5

L1643343-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-08 08/10/23 10:07 • (DUP) R3960205-4 08/10/23 10:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	11.5	15.9	1	31.8	P1	5

Laboratory Control Sample (LCS)

(LCS) R3960205-2 08/10/23 10:07

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

L1643343-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R3959085-1 08/10/23 14:18

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

L1642134-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1642134-01 08/10/23 14:21 • (DUP) R3959085-3 08/10/23 14:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	2.07	1.78	1	15.1		20

L1643343-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-01 08/10/23 14:39 • (DUP) R3959085-6 08/10/23 14:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.578	0.592	1	2.39		20

Laboratory Control Sample (LCS)

(LCS) R3959085-2 08/10/23 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	12.3	103	75.2-120	

L1642469-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1642469-01 08/10/23 14:25 • (MS) R3959085-4 08/10/23 14:26 • (MSD) R3959085-5 08/10/23 14:27

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	1.11	6.71	7.50	112	128	1	90.0-110	J5	J5	11.1	20

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

MSD: Matrix spike failure due to matrix interference.

L1643343-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1643343-01 08/10/23 14:39 • (MS) R3959085-7 08/10/23 14:41

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	0.578	6.00	108	1	90.0-110	

Method Blank (MB)

(MB) R3959237-1 08/10/23 18:33

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

L1643343-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-09 08/10/23 18:36 • (DUP) R3959237-3 08/10/23 18:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.677	0.631	1	7.03		20

L1643357-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-05 08/10/23 18:52 • (DUP) R3959237-5 08/10/23 18:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.914	0.912	1	0.219		20

Laboratory Control Sample (LCS)

(LCS) R3959237-2 08/10/23 18:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	13.0	109	75.2-120	

L1643343-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1643343-09 08/10/23 18:36 • (MS) R3959237-4 08/10/23 18:38

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	0.677	6.37	114	1	90.0-110	J5

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

L1643357-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-05 08/10/23 18:52 • (MS) R3959237-6 08/10/23 18:55 • (MSD) R3959237-7 08/10/23 18:56

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	0.914	6.25	6.40	107	110	1	90.0-110			2.37	20

Method Blank (MB)

(MB) R3959546-1 08/11/23 13:17

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

L1643677-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1643677-02 08/11/23 13:27 • (DUP) R3959546-3 08/11/23 13:28

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	1.21	1.29	1	6.40		20

L1643680-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1643680-01 08/11/23 13:35 • (DUP) R3959546-6 08/11/23 13:36

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	1.92	2.43	1	23.4	J3	20

Laboratory Control Sample (LCS)

(LCS) R3959546-2 08/11/23 13:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	12.7	106	75.2-120	

L1643677-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643677-02 08/11/23 13:27 • (MS) R3959546-4 08/11/23 13:30 • (MSD) R3959546-5 08/11/23 13:33

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 %
Kjeldahl Nitrogen, TKN	5.00	1.21	7.32	6.71	122	110	1	90.0-110	J5		8.70	20

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

L1643680-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1643680-01 08/11/23 13:35 • (MS) R3959546-7 08/11/23 13:37

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	1.92	7.36	109	1	90.0-110	

QUALITY CONTROL SUMMARY

L1643343-01,02,03,04,05,06,07,08,09,10,11,12

Method Blank (MB)

(MB) R3958265-1 08/08/23 20:16

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

L1643343-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-05 08/08/23 20:34 • (DUP) R3958265-3 08/08/23 20:36

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

L1643357-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-02 08/08/23 20:53 • (DUP) R3958265-5 08/08/23 20:55

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) R3958265-2 08/08/23 20:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.51	100	90.0-110	

L1643343-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1643343-05 08/08/23 20:34 • (MS) R3958265-4 08/08/23 20:37

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	

L1643357-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-02 08/08/23 20:53 • (MS) R3958265-6 08/08/23 20:56 • (MSD) R3958265-7 08/08/23 20:57

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	2.52	2.50	101	100	1	90.0-110			0.797	20

Method Blank (MB)

(MB) R3959089-1 08/10/23 14:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	0.0528	J	0.0350	0.100

L1642134-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1642134-01 08/10/23 14:37 • (DUP) R3959089-3 08/10/23 14:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.477	0.448	1	6.27		20

L1643343-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-01 08/10/23 14:53 • (DUP) R3959089-6 08/10/23 14:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0895	0.0867	1	3.18	J	20

Laboratory Control Sample (LCS)

(LCS) R3959089-2 08/10/23 14:35

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.20	93.6	83.2-116	

L1642469-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1642469-01 08/10/23 14:40 • (MS) R3959089-4 08/10/23 14:42 • (MSD) R3959089-5 08/10/23 14:43

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	0.206	2.57	2.72	94.6	101	1	90.0-110			5.67	20

Method Blank (MB)

(MB) R3959239-1 08/10/23 18:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	0.0412	J	0.0350	0.100

L1643343-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-09 08/10/23 18:47 • (DUP) R3959239-3 08/10/23 18:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.112	0.104	1	7.41		20

L1643357-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1643357-05 08/10/23 19:02 • (DUP) R3959239-4 08/10/23 19:04

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0929	0.102	1	9.34		20

Laboratory Control Sample (LCS)

(LCS) R3959239-2 08/10/23 18:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.31	96.8	83.2-116	

L1643357-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643357-05 08/10/23 19:02 • (MS) R3959239-5 08/10/23 19:05 • (MSD) R3959239-6 08/10/23 19:06

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 %
Phosphorus,Total	2.50	0.0929	2.46	2.41	94.7	92.7	1	90.0-110			2.05	20

Method Blank (MB)

(MB) R3959559-1 08/11/23 14:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	0.0699	J	0.0350	0.100

L1643677-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1643677-02 08/11/23 14:08 • (DUP) R3959559-3 08/11/23 14:09

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.658	0.682	1	3.58		20

Laboratory Control Sample (LCS)

(LCS) R3959559-2 08/11/23 14:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.21	93.9	83.2-116	

L1643677-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643677-02 08/11/23 14:08 • (MS) R3959559-4 08/11/23 14:11 • (MSD) R3959559-5 08/11/23 14:12

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	0.658	3.10	2.98	97.7	92.9	1	90.0-110			3.95	20

Method Blank (MB)

(MB) R3958022-1 08/08/23 12:00

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

L1643343-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-01 08/08/23 12:01 • (DUP) R3958022-3 08/08/23 12:01

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) R3958022-2 08/08/23 12:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.245	100	85.0-115	

L1643343-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643343-03 08/08/23 12:01 • (MS) R3958022-4 08/08/23 12:01 • (MSD) R3958022-5 08/08/23 12:02

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	U	0.490	0.496	98.0	99.2	1	80.0-120			1.22	20

Method Blank (MB)

(MB) R3958037-1 08/08/23 12:49

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

L1643343-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1643343-05 08/08/23 12:51 • (DUP) R3958037-4 08/08/23 12:52

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) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3958037-2 08/08/23 12:50 • (LCSD) R3958037-3 08/08/23 12:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Phosphate,Ortho	0.245	0.242	0.240	99.0	98.2	85.0-115			0.830	20

L1643343-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1643343-06 08/08/23 12:52 • (MS) R3958037-5 08/08/23 12:52 • (MSD) R3958037-6 08/08/23 12:52

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	U	0.517	0.477	103	95.4	1	80.0-120			8.05	20

GLOSSARY OF TERMS

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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
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.

ACCREDITATIONS & LOCATIONS

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: **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 Weldo

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

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)
HB 3	G	WW	-5'	8/7	0930	4	X	X	X	X								-01
SME 4		WW			0935	4	X	X	X	X								-02
GD 5		WW			0950	4	X	X	X	X								-03
SME 3		WW			0955	4	X	X	X	X								-04
GD 7		WW			1010	4	X	X	X	X								-05
GD 9		WW			1020	4	X	X	X	X								-06
SME 1		WW			1025	4	X	X	X	X								-07
SS 5		WW			1105	4	X	X	X	X								-08
SME 5		WW			1110	4	X	X	X	X								-09
SME 6		WW			1130	4	X	X	X	X								-10

Chain of Custody Page 1 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 # L1643343

A063

Acctnum: QOREHAL
Template: T203454
Prelogin: P1008954
PM: 034 - Craig Cothron
PB: CB 8/27/23

Shipped Via: FedEX Ground

* 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	PH-10BDH4321 TRC-2144141 CR6-20221V PH-10BDH4321 TRC-2144141 CR6-20221V Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/8/23 Time: 0900	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

Quote #

Date Results Needed

Chain of Custody Page 2 of 2

Pace
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MT JULIET, TN
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SDG # L1633343

Table #

Acctnum: **QOREHAL**
Template: **T203454**
Prelogin: **P1008954**
PM: **034 - Craig Cothron**
PB: 6/27/23

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	Pres Chk									Remarks	Sample # (lab only)
												C2	C2								
RC 14	G	WW	-5'	6/7	1145	4	X	X	X	X											-11
SME 11	1	WW			0940	4	X	X	X	X											-12
		WW				4	X	X	X	X											

Analysis / Container / Preservative

* 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	
				0	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C	Bottles Received: 48
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6/27/23	Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

L1413343

Tracking Numbers	Temperature
6525 557 2886	3.8+0=3.8GIBAS
2875	5.8+0=5.8GIBAS

Monitoring Report Fourth Quarter 2023
Gadsden, Alabama Urbanized Area
Phase II Small MS4s
S&ME Project No. 23820129

PREPARED FOR:

City of Attalla
City of Glencoe
City of Hokes Bluff
City of Rainbow City
City of Southside
Etowah County

PREPARED BY:

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

January 19, 2023

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Appendices

1.0 Introduction

S&ME, Inc. has prepared this Quarterly Wet-Weather Monitoring Report on behalf of Etowah County and the cities of Attalla, Glencoe, Hokes Bluff, Rainbow City, and Southside. Our work was conducted in general accordance with the proposals issued to each entity.

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 the City of Attalla, City of Gadsden, City of Glencoe, City of Hokes Bluff, City of Rainbow City, City of Southside, and portions of 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	Robert Nail, Engineer

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.

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 each MS4's BMPs in achieving the required phosphorous reduction as established in the TMDL and to generally evaluate overall water quality using a watershed approach.

On March 24, 2015, the cities of Attalla, Gadsden, Glencoe, Hokes Bluff, Rainbow City, and Southside and Etowah County entered into a Cooperative Agreement to jointly perform the quarterly monitoring. As of October 1, 2023, the City of Gadsden has elected to separate from the joint monitoring agreement and perform their own monitoring. As of the date of this report, the 2022 Monitoring Program has not been revised, nor has the City of Gadsden prepared a separate monitoring plan.

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.

From December 9 to December 10, 2023, a rain event was observed in the vicinity of the urbanized area. Table 2-1 lists the observed rain gauges and the recorded precipitation amounts for the rain event. The locations of the weather stations are identified on Figure 2 in Appendix I.

Table 2-1 Quarterly Rainfall Data

Gauge Name	Location	Latitude	Longitude	Precip 12/09/23	Precip 12/10/23
KALASHVI18	Ashville, AL	33.88	-86.11	1.33 in	1.01 in
KALASHVI19	Ashville, AL	33.84	-86.25	1.07 in	1.35 in
KALATTAL14	Attala, AL	34.09	-86.12	1.01 in	0.63 in
KALGADSD102	Gadsden, AL	34.04	-85.89	1.46 in	1.07 in

Gauge Name	Location	Latitude	Longitude	Precip 12/09/23	Precip 12/10/23
KALGADSD3	Gadsden, AL	34.06	-85.99	0.74 in	0.45 in
KALGADSD76	Gadsden, AL	33.96	-85.98	1.37 in	1.21 in
KALGLENC5	Glencoe, AL	33.94	-85.95	0.69 in	0.75 in
KALHOKES6	Hokes Bluff, AL	34.01	-85.92	1.16 in	0.93 in
KALRAINB19	Rainbow City, AL	33.94	-86.03	1.19 in	0.74 in
KALSOUTH7	Southside, AL	33.89	-86.01	0.90 in	1.19 in

3.0 Monitoring Event

On December 12, 2023, S&ME personnel mobilized to conduct storm water monitoring for the fourth 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 monitoring locations for the six MS4s remaining in the joint monitoring program 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 12	33.952567°	-86.003495°	LAND	U.T. to Neely Henry Lake
RC 2	33.967683°	-86.039476°	LAND	Horton Creek
SME 10	33.985669°	-85.878605°	LAND	U.T. to Big Cove Creek (exiting Hokes Bluff)
SME 7	34.006225°	-86.111277°	LAND	Big Wills Creek
SME 9	34.002807°	-85.871879°	LAND	U.T. to Neely Henry Lake
SS 13	33.891352°	-86.049229°	LAND	Neely Henry Lake
SS 14	33.885921°	-86.030683°	LAND	U.T. to Neely Henry Lake
GD 5	34.014324°	-85.924013°	BOAT	Big Cove Creek / Little Cove Creek
HB 3	34.002129°	-85.882808°	BOAT	U.T. to Neely Henry Lake
RC 14	33.905786°	-86.111656°	BOAT	Rook Creek / Dry Creek
SME 1	33.990184°	-86.004048°	BOAT	Big Wills Creek / Black Creek
SME 3	34.009698°	-85.956230°	BOAT	Coal Creek
SME 4	34.001667°	-85.883342°	BOAT	Coosa River channel at north end of MS4
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
SS 5	33.941329°	-86.021569°	BOAT	U.T. to Coosa River

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 2022 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.

Following the City of Gadsden's separation from the joint monitoring program, S&ME has discontinued monitoring at points CO 15, GD 6, GD 7, GD8, and GD9. The changes to the monitoring program were implemented beginning with the 2023 fourth quarter sampling event. It is expected that the City of Gadsden will continue to monitor these five locations until the 2022 Monitoring Program is revised.

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 to safeguard the quality of the collected samples.

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	48 hours
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

Two duplicate samples were submitted to the laboratory. One duplicate sample of monitoring point SME 7 was collected by the land team during the sampling event and labeled as SME 12. 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.

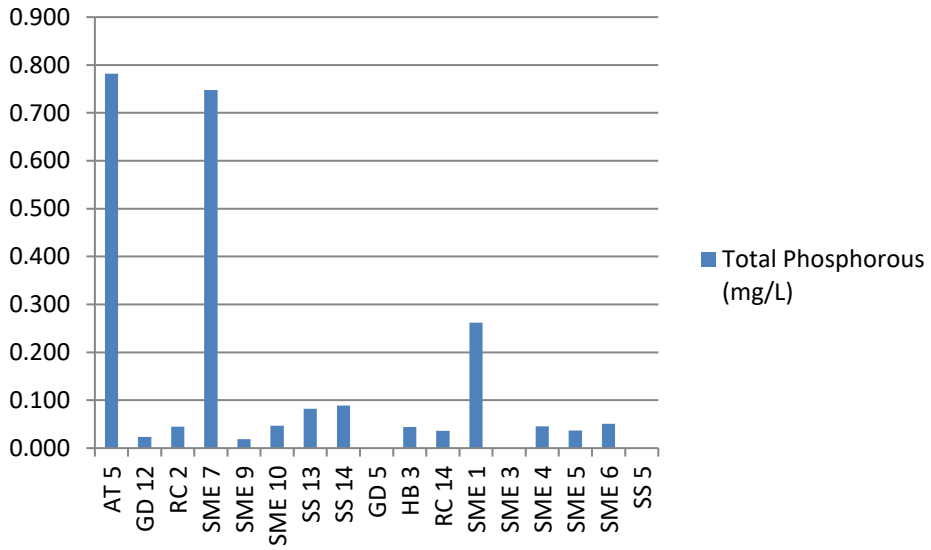
4.0 Analytical Results

The laboratory analytical results for the December 12, 2023 quarterly monitoring event are included on Table B.2 in Appendix II. Historical monitoring data for each of the active monitoring points is included in Appendix II as Tables B.3 to B.19. The laboratory reports and Chain of Custody are included in Appendix III.

4.1 Total Phosphorous

Total phosphorous was detected at 14 of the 17 monitoring points evaluated during the 2023 Q4 monitoring event. As shown in Figure 4-1 below, the concentration of total phosphorous was highest at monitoring point AT-5 (0.782 mg/L), followed by point SME 7 (0.748 mg/L) and point SME 1 (0.262 mg/L). Each of the three points is located in Big Wills Creek.

Figure 4-1 2023 Q4 Total Phosphorous Concentrations



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 three years.

The Storm Water Steering Committee is responsible for the coordination and implementation of the 2022 *Gadsden-Etowah Wet-Weather Monitoring Program*. 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

S&ME certifies that the information provided in this monitoring report reflects the conditions reported, encountered, and discovered at the time of report preparation. 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 Etowah County and the cities of Attalla, Glencoe, Hokes Bluff, Rainbow City, and Southside. Should questions remain or if additional information is required, please do not hesitate to contact the undersigned.

S&ME, Inc.

Sarah L. Yeldell, P.E.
Project Manager

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

GADSDEN-ETOWAH MS4 BOUNDARIES

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

ETOWAH COUNTY
ST. CLAIR COUNTY
CALHOUN COUNTY

GADSDEN
ATTALLA
HOKES BLUFF
RAINBOW CITY
SOUTHSIDE
GLENCOE

Line Creek
Brown Creek
Clear Creek
Big Wills Creek
Little Wills Creek
Rook Creek
Black Creek
Town Creek
Turkeytown Creek
Coosa River
Sandlap Creek
Dry Creek
Coal Creek
Little Cove Creek
Big Cove Creek
Ohatchee Creek
Coffee Creek
Little Canoe Creek
Big Canoe Creek
Permeter Creek
Greens Creek
Hurricane Creek

N

0 1.5 3 Miles

Legend

- Gadsden, AL Urbanized Area Outline
- Unincorporated Etowah County MS4

City Limits

- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside

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.

SCALE:
1:100,000

DATE:
12/21/2023

PROJECT NUMBER
23820129

FIGURE NO.
1

DECEMBER 9-10, 2023 RAIN EVENT

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

0 1.5 3 Miles

N

ETOWAH COUNTY

CALHOUN COUNTY

ST. CLAIR COUNTY

ATTALLA

GADSDEN

RAINBOW CITY

SOUTHSIDE

HOKES BLUFF

GLENCOE

KALGADSD3

KALGADSD107

KALGADSD102

KALHOKES6

KALHOKES2

KALATTAL14

KALGADSD76

KALRAINB19

KALRAINB17

KALGLENC5

KALSOUTH7

KALASHVI18

KALASHVI19

Line Creek
Brown Creek
Clear Creek
Big Wills Creek
Little Wills Creek
Black Creek
Town Creek
Turkeytown Creek
Coosa River
Big Canoe Creek
Rook Creek
Dail Creek
Hurricane Creek
Coal Creek
Little Cove Creek
Big Cove Creek
Dry Creek
Greens Creek
Permeter Creek
Peters Creek

Legend

- Gadsden, AL Urbanized Area Outline
- Rain Gauge - Not Qualifying
- Rain Gauge - Qualifying
- Rain Gauge - Not Reporting
- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside
- Unincorporated Etowah County MS4

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.

SCALE: 1:100,000

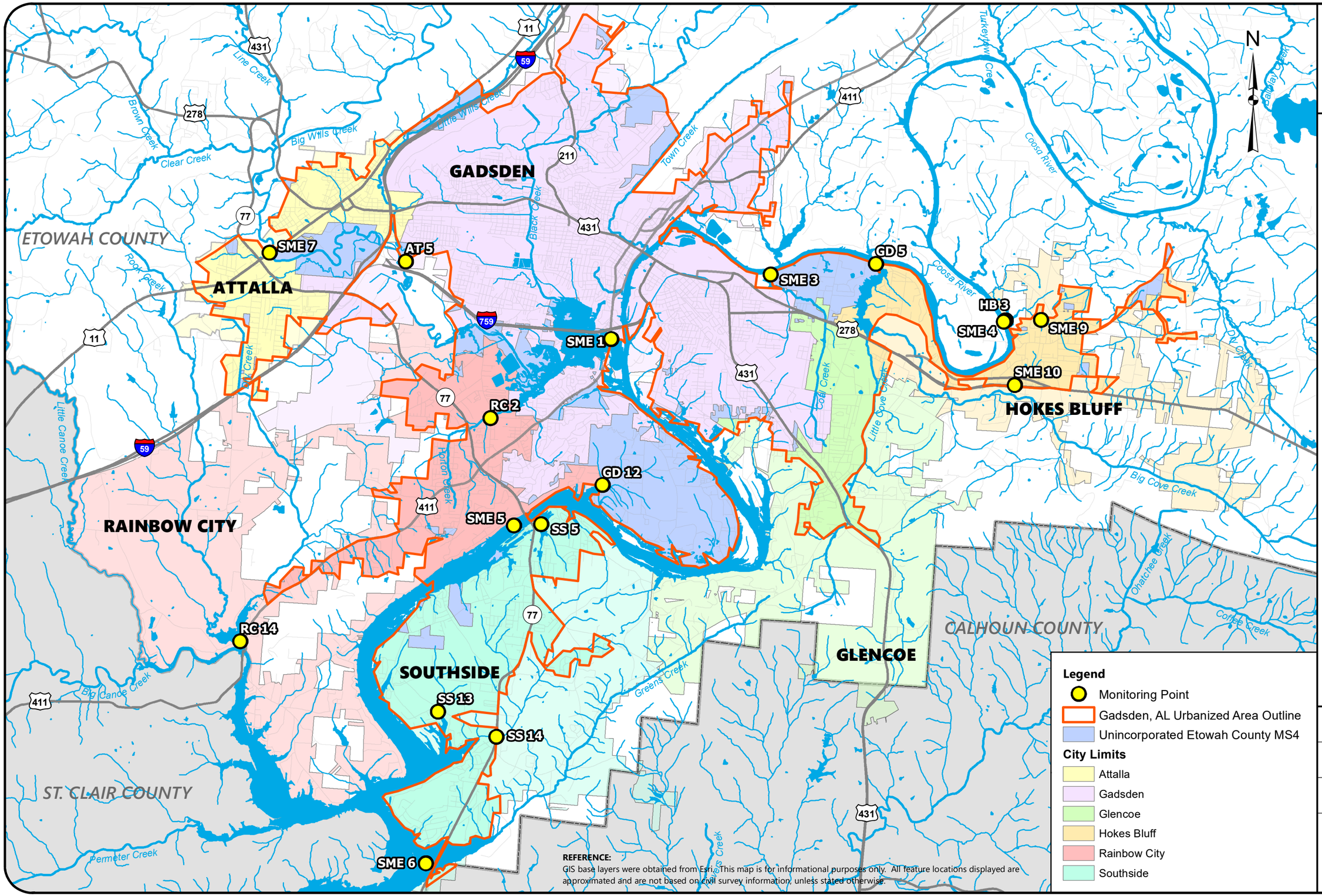
DATE: 01/18/2024

PROJECT NUMBER 23820129

FIGURE NO. 2

WET-WEATHER MONITORING LOCATIONS

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



Legend

- Monitoring Point
- Gadsden, AL Urbanized Area Outline
- Unincorporated Etowah County MS4

City Limits

- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside

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.

SCALE:	1:100,000
DATE:	11/17/2023
PROJECT NUMBER	22820261
FIGURE NO.	3

Appendix II – Tables

Table B.1 – Field Observations

Table B.2 – Analytical Data

Tables B.3 to B.26 – Historical Analytical Data

TABLE B.1 - FIELD OBSERVATIONS
2023 Q4 MS4 WET-WEATHER MONITORING

Monitoring Point	Date	Time	Sample Depth (ft)	Personnel	Weather Conditions	Waterbody Conditions
AT 5	12/12/2023	11:15	-2	AH/GK	Sunny	Smooth
GD 12	12/12/2023	13:05	-2	AH/GK	Sunny	Smooth
RC 2	12/12/2023	13:30	-2	AH/GK	Sunny	Smooth
SME 7	12/12/2023	10:35	-2	AH/GK	Sunny	Smooth
SME 9	12/12/2023	11:45	-2	AH/GK	Sunny	Smooth
SME 10	12/12/2023	11:55	-2	AH/GK	Sunny	Smooth
SS 13	12/12/2023	12:45	-2	AH/GK	Sunny	Smooth
SS 14	12/12/2023	12:30	-2	AH/GK	Sunny	Smooth
GD 5	12/12/2023	10:40	-5	NW	Sunny	Smooth
HB 3	12/12/2023	10:15	-5	NW	Sunny	Smooth
RC 14	12/12/2023	12:40	-5	NW	Sunny	Smooth
SME 1	12/12/2023	11:10	-5	NW	Sunny	Smooth
SME 3	12/12/2023	10:50	-5	NW	Sunny	Smooth
SME 4	12/12/2023	10:25	-5	NW	Sunny	Smooth
SME 5	12/12/2023	12:05	-5	NW	Sunny	Smooth
SME 6	12/12/2023	12:20	-5	NW	Sunny	Smooth
SS 5	12/12/2023	11:55	-5	NW	Sunny	Smooth

TABLE B.2 - ANALYTICAL DATA
2023 Q4 MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	**Date**	**Turbidity (NTU)**	**pH**	**DO (mg/L)**	**Sample Temp (°C)**	**TSS (mg/L)**	**TKN (mg/L)**	**Nitrate-Nitrite (mg/L)**	**Total Phosphorous (mg/L)**	**Ortho-Phosphate (mg/L)**
AT 5	12/12/2023	22.78	7.77	8.71	9.1	10.9	0.329	0.696	0.782	0.752
GD 12	12/12/2023	4.80	7.44	7.67	9.8	<2.50	0.412	0.164	0.0233	<0.0140
RC 2	12/12/2023	21.62	7.58	7.25	8.9	6.60	0.634	0.166	0.0448	<0.0140
SME 7	8/7/2023	23.45	8.01	8.85	9.6	6.80	0.262	0.584	0.748	0.705
SME 12	*12/12/2023*	*DUPLICATE OF SME 7*				*11.6*	*0.473*	*0.694*	*0.793*	*0.733*
SME 9	8/7/2023	8.07	7.57	7.44	8.9	<2.50	0.345	<0.0500	0.0188	<0.0140
SME 10	12/12/2023	18.09	7.57	5.63	10.5	10.6	0.633	<0.0500	0.0471	<0.0140
SS 13	12/12/2023	14.46	7.62	8.32	12.3	5.50	0.744	0.0980	0.0822	<0.0140
SS 14	12/12/2023	10.06	7.66	8.00	8.1	<2.50	0.573	0.352	0.0890	0.0410
GD 5	12/12/2023	13.5	7.32	8.45	10.3	11.3	0.468	0.0820	<0.0350	<0.0140
HB 3	12/12/2023	41.3	7.71	8.45	10.6	36.8	0.383	0.126	0.0444	<0.0140
RC 14	12/12/2023	19.8	7.64	8.64	9.8	38.2	0.451	<0.0500	0.0358	<0.0140
SME 1	12/12/2023	17.2	7.36	8.99	9.2	10.4	0.434	0.172	0.262	0.219
SME 3	12/12/2023	32.5	7.01	8.06	10.2	13.4	0.502	0.103	<0.0350	<0.0140
SME 4	12/12/2023	14.0	7.57	8.33	10.8	13.8	0.497	0.140	0.0454	<0.0140
SME 11	*12/12/2023*	*DUPLICATE OF SME 4*				*18.8*	*0.518*	*0.137*	*0.0374*	*<0.0140*
SME 5	12/12/2023	9.1	7.58	8.67	10.9	8.93	0.465	0.127	0.0370	<0.0140
SME 6	12/12/2023	10.3	7.57	8.62	11.4	10.1	0.440	0.110	0.0507	<0.0140
SS 5	12/12/2023	8.7	7.85	9.72	11.2	6.80	0.573	<0.0500	<0.0350	<0.0140

NTU - Nephelometric Turbidity Units
mg/L - milligrams per liter
NS - Not Sampled

Bold - maximum reading for constituent
NA - not availabe at this time
* - value unknown due to equipment malfuction

TABLE B.3 - HISTORICAL ANALYTICAL DATA - AT 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.3 - HISTORICAL ANALYTICAL DATA - AT 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
AT 5	8/7/2023	10.54	7.87	9.13	26.5	12.4	0.291	0.832	0.430	0.373
AT 5	12/12/2023	22.78	7.77	8.71	9.1	10.9	0.329	0.696	0.782	0.752

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.4 - HISTORICAL ANALYTICAL DATA - GD 12
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.4 - HISTORICAL ANALYTICAL DATA - GD 12
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
GD 12	8/7/2023	8.17	7.85	8.85	31.0	5.20	0.813	<0.100	0.0945	<0.0300
GD 12	12/12/2023	4.80	7.44	7.67	9.8	<2.50	0.412	0.164	0.0233	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.5 - HISTORICAL ANALYTICAL DATA - RC 2
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.5 - HISTORICAL ANALYTICAL DATA - RC 2
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
RC 2	8/7/2023	5.75	7.80	6.55	28.2	6.20	0.676	<0.100	0.0662	<0.0300
RC 2	12/12/2023	21.62	7.58	7.25	8.9	6.60	0.634	0.166	0.0448	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.6 - HISTORICAL ANALYTICAL DATA - SME 7
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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	EF	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
SME 7	8/7/2023	11.40	7.93	8.93	25.8	12.3	0.393	0.916	0.469	0.403
SME 7	12/12/2023	23.45	8.01	8.85	9.6	6.80	0.262	0.584	0.748	0.705

NTU - Nephelometric Turbidity Units

EF - meter malfunctioned in field

mg/L - milligrams per liter

NS - Not Sampled

TABLE B.7 - HISTORICAL ANALYTICAL DATA - SME 9
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (mg/L)	Ortho-Phosphate (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
SME 9	8/7/2023	10.39	7.10	7.41	24.58	5.60	1.36	<0.100	0.0873	<0.0300
SME 9	12/12/2023	8.07	7.57	7.44	8.9	<2.50	0.345	<0.0500	0.0188	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.8 - HISTORICAL ANALYTICAL DATA - SME 10
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 10	8/7/2023	13.32	7.59	6.69	25.8	4.40	0.903	<0.100	0.0918	<0.0300
SME 10	12/12/2023	18.09	7.57	5.63	10.5	10.6	0.633	<0.0500	0.0471	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.9 - HISTORICAL ANALYTICAL DATA - SS 13
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.9 - HISTORICAL ANALYTICAL DATA - SS 13
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
SS 13	8/7/2023	4.90	7.85	9.14	31.2	4.00	0.825	<0.100	0.111	<0.0300
SS 13	12/12/2023	14.46	7.62	8.32	12.3	5.50	0.744	0.0980	0.0822	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.10 - HISTORICAL ANALYTICAL DATA - SS 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.10 - HISTORICAL ANALYTICAL DATA - SS 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
SS 14	8/7/2023	6.56	8.02	10.73	31.6	8.20	0.903	<0.100	0.124	0.032
SS 14	12/12/2023	10.06	7.66	8.00	8.1	<2.50	0.573	0.352	0.0890	0.0410

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.11 - HISTORICAL ANALYTICAL DATA - GD 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.11 - HISTORICAL ANALYTICAL DATA - GD 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
GD 5	8/7/2023	3.0	7.36	6.27	29.5	7.54	0.499	<0.100	0.103	<0.0300
GD 5	12/12/2023	13.5	7.32	8.45	10.3	11.3	0.468	0.0820	<0.0350	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.12 - HISTORICAL ANALYTICAL DATA - HB 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.12 - HISTORICAL ANALYTICAL DATA - HB 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
HB 3	8/7/2023	10.9	7.49	6.16	29.3	6.80	0.578	<0.100	0.0895	<0.0300
HB 3	12/12/2023	41.3	7.71	8.45	10.6	36.8	0.383	0.126	0.0444	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.13 - HISTORICAL ANALYTICAL DATA - RC 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.13 - HISTORICAL ANALYTICAL DATA - RC 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
RC 14	8/7/2023	19.1	7.20	6.63	29.1	15.0	0.604	<0.100	0.150	0.0360
RC 14	12/12/2023	19.8	7.64	8.64	9.8	38.2	0.451	<0.0500	0.0358	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.14 - HISTORICAL ANALYTICAL DATA - SME 1
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.14 - HISTORICAL ANALYTICAL DATA - SME 1
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 1	8/7/2023	11.7	8.01	7.58	30.2	13.9	0.552	<0.100	0.170	0.0670
SME 1	12/12/2023	17.2	7.36	8.99	9.2	10.4	0.434	0.172	0.262	0.219

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.15 - HISTORICAL ANALYTICAL DATA - SME 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	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.15 - HISTORICAL ANALYTICAL DATA - SME 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 3	8/7/2023	9.9	7.46	6.74	29.7	14.4	0.424	<0.100	0.0912	<0.0300
SME 3	12/12/2023	32.5	7.01	8.06	10.2	13.4	0.502	0.103	<0.0350	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.16 - HISTORICAL ANALYTICAL DATA - SME 4
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 4	8/7/2023	3.2	7.44	6.51	29.7	7.00	0.436	<0.100	0.0866	<0.0300
SME 4	12/12/2023	14.0	7.57	8.33	10.8	13.8	0.497	0.140	0.0454	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.17 - HISTORICAL ANALYTICAL DATA - SME 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 5	8/7/2023	5.6	7.71	7.47	30.6	8.60	0.677	0.0568	0.122	<0.0300
SME 5	12/12/2023	9.1	7.58	8.67	10.9	8.93	0.465	0.127	0.0370	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.18 - HISTORICAL ANALYTICAL DATA - SME 6
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 6	8/7/2023	9.2	7.66	7.19	30.6	12.4	0.620	<0.100	0.095	<0.0300
SME 6	12/12/2023	10.3	7.57	8.62	11.4	10.1	0.440	0.110	0.0507	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.19 - HISTORICAL ANALYTICAL DATA - SS 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.19 - HISTORICAL ANALYTICAL DATA - SS 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SS 5	8/7/2023	9.1	7.91	7.70	30.7	11.5	0.636	<0.100	0.0971	<0.0300
SS 5	12/12/2023	8.7	7.85	9.72	11.2	6.80	0.573	<0.0500	<0.0350	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

Appendix III – Laboratory Reports

Laboratory Report No. L1687417, dated December 26, 2023

Laboratory Report No. L1687416, dated December 26, 2023

ANALYTICAL REPORT

December 26, 2023

S&ME - Huntsville

Sample Delivery Group:	L1687417
Samples Received:	12/13/2023
Project Number:	23820129
Description:	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

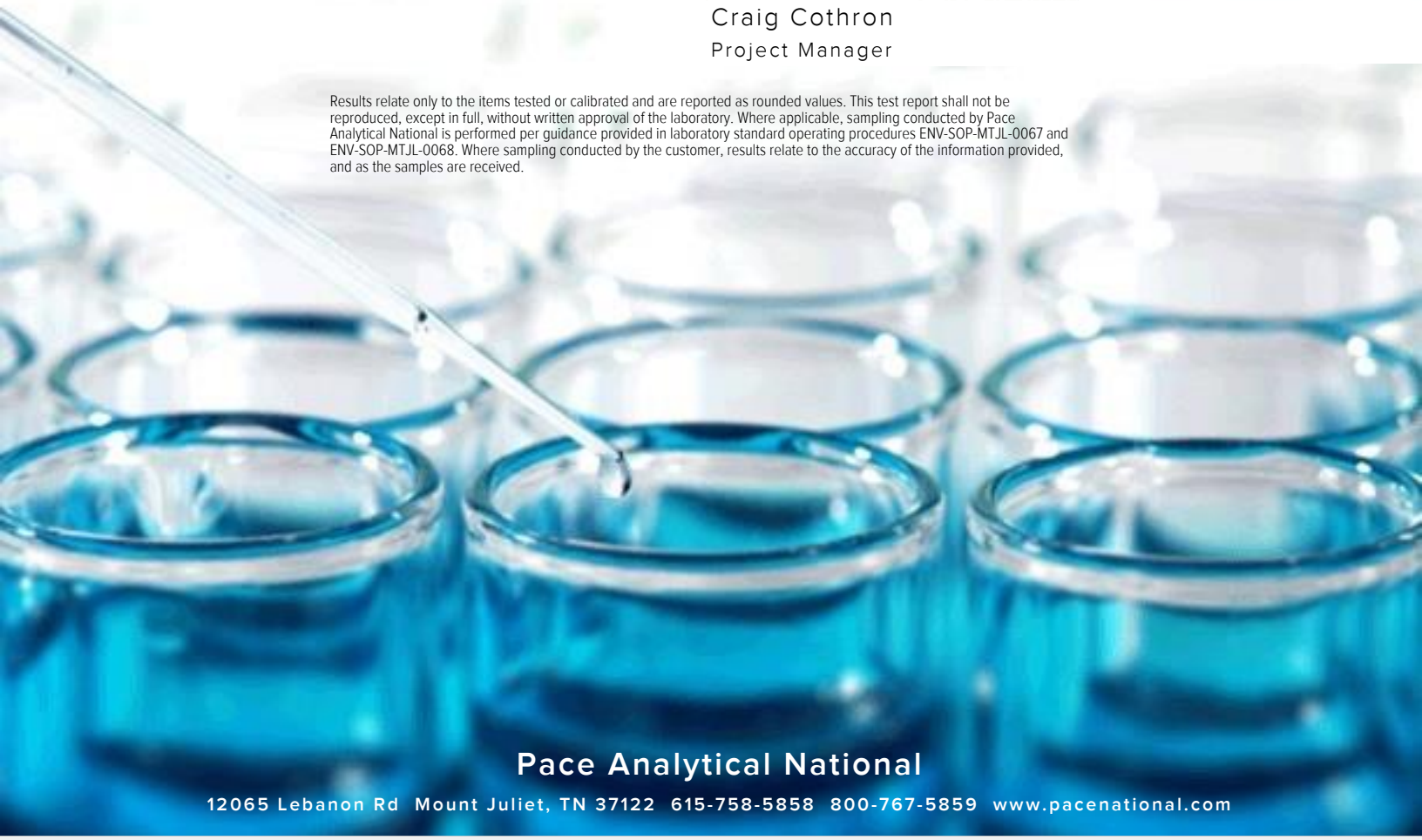


TABLE OF CONTENTS

SME 7 L1687417-01 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 10:35 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 17:53	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 19:00	12/17/23 19:00	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:12	12/13/23 18:12	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194846	1	12/23/23 12:43	12/23/23 12:43	KCM	Allen, TX

SME 9 L1687417-02 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 11:45 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 17:54	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 19:14	12/17/23 19:14	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:15	12/13/23 18:15	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194846	1	12/23/23 12:43	12/23/23 12:43	KCM	Allen, TX

SME 10 L1687417-03 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 11:55 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 17:56	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 19:15	12/17/23 19:15	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:15	12/13/23 18:15	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194846	1	12/23/23 12:43	12/23/23 12:43	KCM	Allen, TX

SS 13 L1687417-04 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 12:45 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 17:57	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 19:17	12/17/23 19:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:15	12/13/23 18:15	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194846	1	12/23/23 12:44	12/23/23 12:44	KCM	Allen, TX

SS 14 L1687417-05 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 12:30 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 17:58	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 19:20	12/17/23 19:20	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:15	12/13/23 18:15	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194847	1	12/23/23 11:43	12/23/23 11:43	KCM	Allen, TX

GD 12 L1687417-06 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 13:05 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 18:02	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 19:22	12/17/23 19:22	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:16	12/13/23 18:16	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194847	1	12/23/23 11:43	12/23/23 11:43	KCM	Allen, TX

RC 2 L1687417-07 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 13:30 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 18:04	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190819	1	12/17/23 19:44	12/17/23 19:44	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:16	12/13/23 18:16	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194847	1	12/23/23 11:43	12/23/23 11:43	KCM	Allen, TX

AT 5 L1687417-08 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 11:15 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 18:05	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190819	1	12/17/23 19:46	12/17/23 19:46	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:16	12/13/23 18:16	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194847	1	12/23/23 11:43	12/23/23 11:43	KCM	Allen, TX

SME 12 L1687417-09 WW

Collected by: Abigail Harris | Collected date/time: 12/12/23 10:35 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 18:06	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190819	1	12/17/23 19:49	12/17/23 19:49	CAT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:17	12/13/23 18:17	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500P-E	WG2194847	1	12/23/23 11:43	12/23/23 11:43	KCM	Allen, TX

CASE NARRATIVE

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	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	6.80	J4	2.50	1	12/18/2023 20:02	WG2191689

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.262		0.140	0.250	1	12/25/2023 17:53	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.584		0.0500	0.100	1	12/17/2023 19:00	WG2190818

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.705		0.0140	0.0300	1	12/13/2023 18:12	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.748		0.0152	0.0500	1	12/23/2023 12:43	WG2194846

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	ND		2.50	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.345		0.140	0.250	1	12/25/2023 17:54	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	12/17/2023 19:14	WG2190818

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:15	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0188	J	0.0152	0.0500	1	12/23/2023 12:43	WG2194846

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	10.6		2.50	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.633		0.140	0.250	1	12/25/2023 17:56	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	12/17/2023 19:15	WG2190818

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:15	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0471	J	0.0152	0.0500	1	12/23/2023 12:43	WG2194846

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	5.50		2.50	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.744		0.140	0.250	1	12/25/2023 17:57	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.0980	J	0.0500	0.100	1	12/17/2023 19:17	WG2190818

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:15	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0822		0.0152	0.0500	1	12/23/2023 12:44	WG2194846

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	ND		2.50	1	12/18/2023 17:22	WG2191687

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	0.573		0.140	0.250	1	12/25/2023 17:58	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.352		0.0500	0.100	1	12/17/2023 19:20	WG2190818

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	0.0410		0.0140	0.0300	1	12/13/2023 18:15	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0890		0.0152	0.0500	1	12/23/2023 11:43	WG2194847

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	ND	J4	2.50	1	12/18/2023 20:02	WG2191689

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	0.412		0.140	0.250	1	12/25/2023 18:02	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.164		0.0500	0.100	1	12/17/2023 19:22	WG2190818

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	12/13/2023 18:16	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0233	J	0.0152	0.0500	1	12/23/2023 11:43	WG2194847

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	6.60		2.50	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.634		0.140	0.250	1	12/25/2023 18:04	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.166		0.0500	0.100	1	12/17/2023 19:44	WG2190819

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:16	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0448	J	0.0152	0.0500	1	12/23/2023 11:43	WG2194847

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	10.9		2.50	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.329		0.140	0.250	1	12/25/2023 18:05	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.696		0.0500	0.100	1	12/17/2023 19:46	WG2190819

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.752		0.0140	0.0300	1	12/13/2023 18:16	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.782		0.0152	0.0500	1	12/23/2023 11:43	WG2194847

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	11.6	J4	5.00	1	12/18/2023 20:02	WG2191689

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.473		0.140	0.250	1	12/25/2023 18:06	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.694		0.0500	0.100	1	12/17/2023 19:49	WG2190819

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.733		0.0140	0.0300	1	12/13/2023 18:17	WG2188901

Wet Chemistry by Method 4500P-E

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.793	J6	0.0152	0.0500	1	12/23/2023 11:43	WG2194847

Method Blank (MB)

(MB) R4014310-1 12/18/23 17:22

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

L1687720-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687720-01 12/18/23 17:22 • (DUP) R4014310-3 12/18/23 17:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	13.2	14.4	1	8.70	P1	5

L1687720-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1687720-02 12/18/23 17:22 • (DUP) R4014310-4 12/18/23 17:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	14.0	13.2	1	5.88	P1	5

Laboratory Control Sample (LCS)

(LCS) R4014310-2 12/18/23 17:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	720	93.1	85.0-115	

QUALITY CONTROL SUMMARY

L1687417-01,06,09

Method Blank (MB)

(MB) R4014316-1 12/18/23 20:02

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

L1687204-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687204-01 12/18/23 20:02 • (DUP) R4014316-3 12/18/23 20:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	20.3	19.7	1	3.30		5

L1687417-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1687417-09 12/18/23 20:02 • (DUP) R4014316-4 12/18/23 20:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	11.6	12.0	1	3.39		5

Laboratory Control Sample (LCS)

(LCS) R4014316-2 12/18/23 20:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	616	79.7	85.0-115	J4

QUALITY CONTROL SUMMARY

L1687417-01,02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R4016448-1 12/25/23 17:47

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

Laboratory Control Sample (LCS)

(LCS) R4016448-2 12/25/23 17:48

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Kjeldahl Nitrogen, TKN	4.00	4.07	102	90.0-110	

L1687416-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-10 12/25/23 17:52 • (MS) R4016448-3 12/25/23 18:34 • (MSD) R4016448-4 12/25/23 18:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Kjeldahl Nitrogen, TKN	4.00	0.518	4.81	4.69	107	104	1	90.0-110			2.53	20

L1687417-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687417-01 12/25/23 17:53 • (MS) R4016448-5 12/25/23 18:36 • (MSD) R4016448-6 12/25/23 18:38

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Kjeldahl Nitrogen, TKN	4.00	0.262	4.46	4.68	105	110	1	90.0-110			4.81	20

Method Blank (MB)

(MB) R4013564-1 12/17/23 18:07

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

L1687416-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1687416-06 12/17/23 18:42 • (DUP) R4013564-3 12/17/23 18:44

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

L1687417-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1687417-06 12/17/23 19:22 • (DUP) R4013564-6 12/17/23 19:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.164	0.160	1	2.47		20

Laboratory Control Sample (LCS)

(LCS) R4013564-2 12/17/23 18:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.46	98.2	90.0-110	

L1687416-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-06 12/17/23 18:42 • (MS) R4013564-4 12/17/23 18:46 • (MSD) R4013564-5 12/17/23 18:48

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	2.65	2.65	106	106	1	90.0-110			0.264	20

L1687417-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1687417-06 12/17/23 19:22 • (MS) R4013564-7 12/17/23 19:26

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.164	2.77	104	1	90.0-110	

QUALITY CONTROL SUMMARY

L1687417-07,08,09

Method Blank (MB)

(MB) R4013565-1 12/17/23 19:41

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

L1687659-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1687659-02 12/17/23 19:53 • (DUP) R4013565-3 12/17/23 19:55

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

L1687737-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687737-01 12/17/23 20:24 • (DUP) R4013565-5 12/17/23 20:27

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.0870	0.0650	1	28.9	J P1	20

Sample Narrative:

OS: [sample ran for Dup/MS/MSD]

Laboratory Control Sample (LCS)

(LCS) R4013565-2 12/17/23 19:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.43	97.0	90.0-110	

L1687659-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1687659-02 12/17/23 19:53 • (MS) R4013565-4 12/17/23 19:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	U	2.48	99.1	1	90.0-110	

L1687737-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687737-01 12/17/23 20:24 • (MS) R4013565-6 12/17/23 20:29 • (MSD) R4013565-7 12/17/23 20:31

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	0.0870	2.49	2.56	96.3	99.0	1	90.0-110			2.65	20

Sample Narrative:

OS: [sample ran for Dup/MS/MSD]

Method Blank (MB)

(MB) R4012125-1 12/13/23 18:07

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

L1687416-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687416-01 12/13/23 18:09 • (DUP) R4012125-3 12/13/23 18:09

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

L1687417-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687417-01 12/13/23 18:12 • (DUP) R4012125-6 12/13/23 18:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.705	0.672	1	4.79		20

Laboratory Control Sample (LCS)

(LCS) R4012125-2 12/13/23 18:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.220	90.0	85.0-115	

L1687416-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-10 12/13/23 18:12 • (MS) R4012125-4 12/13/23 18:12 • (MSD) R4012125-5 12/13/23 18:12

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	U	0.484	0.473	96.8	94.6	1	80.0-120			2.30	20

Method Blank (MB)

(MB) R4016234-1 12/23/23 12:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	U		0.0152	0.0500

Laboratory Control Sample (LCS)

(LCS) R4016234-2 12/23/23 12:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	0.500	0.508	102	80.0-120	

L1687416-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-01 12/23/23 12:42 • (MS) R4016234-3 12/23/23 12:44 • (MSD) R4016234-4 12/23/23 12:44

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	0.500	0.0777	0.560	0.556	96.5	95.6	1	80.0-120			0.812	20

L1687417-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687417-04 12/23/23 12:44 • (MS) R4016234-5 12/23/23 12:44 • (MSD) R4016234-6 12/23/23 12:44

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	0.500	0.0822	0.586	0.578	101	99.2	1	80.0-120			1.36	20

Method Blank (MB)

(MB) R4016232-1 12/23/23 11:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	U		0.0152	0.0500

Laboratory Control Sample (LCS)

(LCS) R4016232-2 12/23/23 11:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	0.500	0.503	101	80.0-120	

L1687417-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687417-05 12/23/23 11:43 • (MS) R4016232-3 12/23/23 11:44 • (MSD) R4016232-4 12/23/23 11:44

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	0.500	0.0890	0.587	0.590	99.7	100	1	80.0-120			0.385	20

L1687417-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687417-09 12/23/23 11:43 • (MS) R4016232-5 12/23/23 11:44 • (MSD) R4016232-6 12/23/23 11:44

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	0.500	0.793	1.08	1.11	57.3	63.0	1	80.0-120	J6	J6	2.59	20

GLOSSARY OF TERMS

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
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.
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.

ACCREDITATIONS & LOCATIONS

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	LAO00356
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		

Pace Analytical Services, LLC -Dallas 400 W. Bethany Drive Suite 190 Allen, TX 75013

Arkansas	88-0647	Kansas	E10388
Florida	E871118	Texas	T104704232-23-39
Iowa	408	Oklahoma	8727
Louisiana	30686		

[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:
Etowah MS4

City/State Collected:

Please Circle: PT MT CT ET

Phone: **256-837-8882**

Client Project #
23820129

Lab Project #
QOREHAL-ETOWAHMS4

Collected by (print):
Abigail Harris

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NO2NO3,PT 250mlHDPE-H2SO4	PORTHO 100ml Amb NoPres	TKN 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres							Remarks	Sample # (lab only)
Pres Chk							L2		L2									
SME 7	C	WW	2'	12/12/23	1035	4	X	X	X	X								01
SME 9	C	WW			1145	4	X	X	X	X								02
SME 10	C	WW			1155	4	X	X	X	X								03
SS 13	C	WW			1245	4	X	X	X	X								04
SS 14	C	WW			1230	4	X	X	X	X								05
GD 12	C	WW			1305	4	X	X	X	X								06
RC 2	C	WW			1330	4	X	X	X	X								07
AT 5	C	WW			1115	4	X	X	X	X								08
SME 12	G	WW			1035	4	X	X	X	X								09
																		tbs 12/13/23

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 # L1687417
A141

Acctnum: **QOREHAL**
Template: **T238641**
Prelogin: **P1027223**
PM: **034 - Craig Cothron**
PB: 9/27/23 CAM
Shipped Via: **FedEX Ground**

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

Remarks:
SME 10 is duplicate of SME 7, 2 coolers

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)
Abigail Harris	12/12/23	1400	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received: 63

Date: 12/13/23 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Tracking Numbers		MSAB Temperature
7074 8787 6302		.9 to -.9
6298		1.5 to -1.5

Name

Date

ANALYTICAL REPORT

December 26, 2023

S&ME - Huntsville

Sample Delivery Group:	L1687416
Samples Received:	12/13/2023
Project Number:	23820129
Description:	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

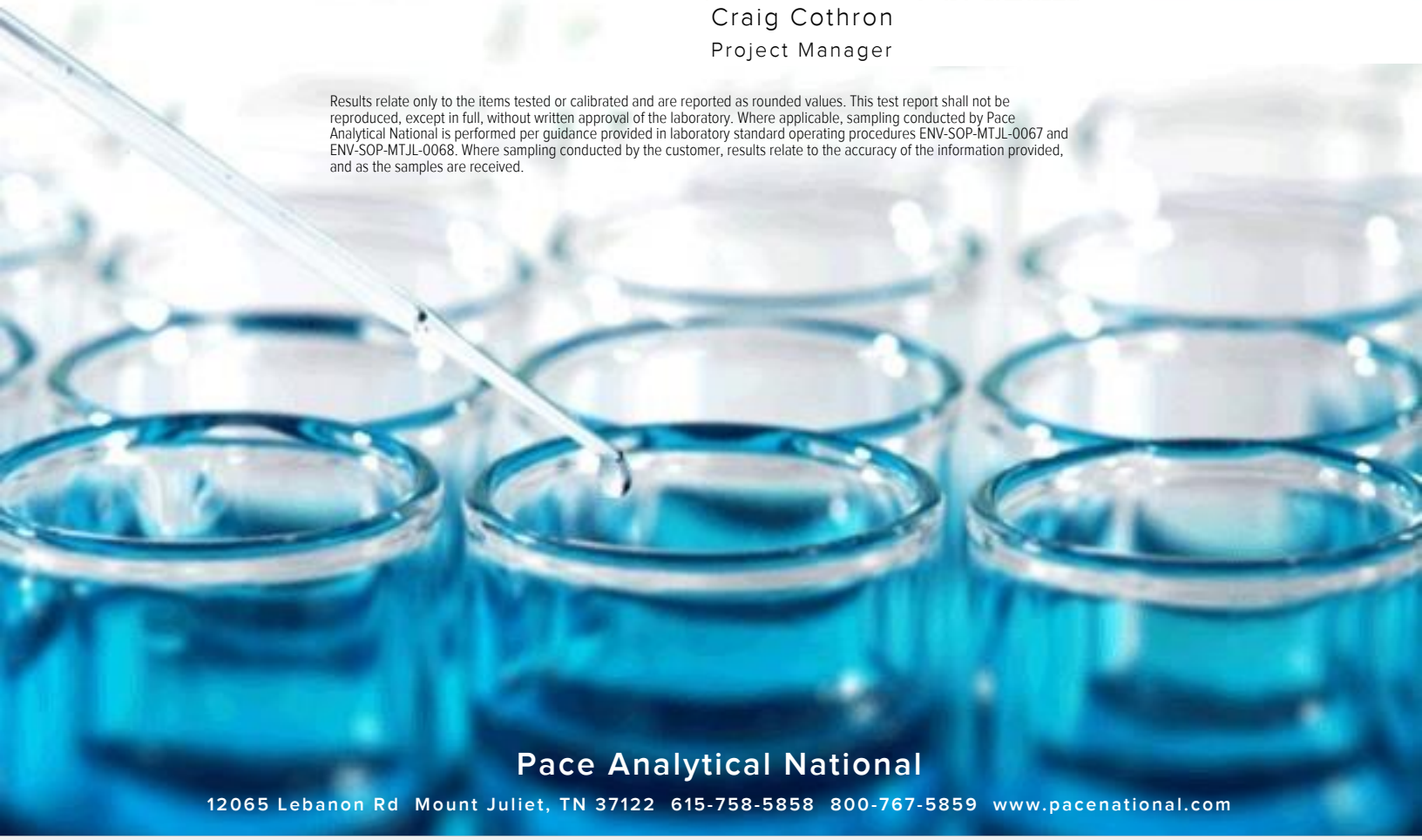


TABLE OF CONTENTS

HB 3 L1687416-01 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 10:15 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:17	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:19	12/17/23 18:19	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:25	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:09	12/13/23 18:09	ARV	Mt. Juliet, TN

SME 4 L1687416-02 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 10:25 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:18	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:22	12/17/23 18:22	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:27	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:09	12/13/23 18:09	ARV	Mt. Juliet, TN

GD 5 L1687416-03 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 10:40 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:20	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:24	12/17/23 18:24	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:30	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:10	12/13/23 18:10	ARV	Mt. Juliet, TN

SME 3 L1687416-04 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 10:50 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:21	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:26	12/17/23 18:26	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:34	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:10	12/13/23 18:10	ARV	Mt. Juliet, TN

SME 1 L1687416-05 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 11:10 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:22	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:40	12/17/23 18:40	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:37	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:10	12/13/23 18:10	ARV	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SS5 L1687416-06 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 11:55 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:26	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:42	12/17/23 18:42	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:39	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:11	12/13/23 18:11	ARV	Mt. Juliet, TN

SME 5 L1687416-07 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 12:05 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:28	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:51	12/17/23 18:51	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:40	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:11	12/13/23 18:11	ARV	Mt. Juliet, TN

SME 6 L1687416-08 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 12:20 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:29	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:53	12/17/23 18:53	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:41	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:11	12/13/23 18:11	ARV	Mt. Juliet, TN

RC 14 L1687416-09 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 12:40 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191687	1	12/18/23 16:38	12/18/23 17:22	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2194696	1	12/22/23 12:22	12/22/23 20:30	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:55	12/17/23 18:55	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:42	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:11	12/13/23 18:11	ARV	Mt. Juliet, TN

SME 11 L1687416-10 WW

Collected by: Nathanael Wade | Collected date/time: 12/12/23 10:30 | Received date/time: 12/13/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2191689	1	12/18/23 19:08	12/18/23 20:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2195657	1	12/25/23 10:09	12/25/23 17:52	EIG	Allen, TX
Wet Chemistry by Method 353.2	WG2190818	1	12/17/23 18:57	12/17/23 18:57	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2194347	1	12/20/23 19:10	12/21/23 21:44	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2188901	1	12/13/23 18:12	12/13/23 18:12	ARV	Mt. Juliet, TN

CASE NARRATIVE

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	36.8	J4	5.00	1	12/18/2023 20:02	WG2191689

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	0.383		0.140	0.250	1	12/22/2023 20:17	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.126		0.0500	0.100	1	12/17/2023 18:19	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0444	J P1	0.0350	0.100	1	12/21/2023 21:25	WG2194347

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	12/13/2023 18:09	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	13.8	J4	5.00	1	12/18/2023 20:02	WG2191689

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.497		0.140	0.250	1	12/22/2023 20:18	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.140		0.0500	0.100	1	12/17/2023 18:22	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0454	J	0.0350	0.100	1	12/21/2023 21:27	WG2194347

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:09	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	11.3	J4	3.33	1	12/18/2023 20:02	WG2191689

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	12/22/2023 20:20	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.0820	J	0.0500	0.100	1	12/17/2023 18:24	WG2190818

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	12/21/2023 21:30	WG2194347

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	12/13/2023 18:10	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	13.4	J4	5.00	1	12/18/2023 20:02	WG2191689

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.502		0.140	0.250	1	12/22/2023 20:21	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.103		0.0500	0.100	1	12/17/2023 18:26	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	U		0.0350	0.100	1	12/21/2023 21:34	WG2194347

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:10	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	10.4	J4	3.33	1	12/18/2023 20:02	WG2191689

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.434		0.140	0.250	1	12/22/2023 20:22	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.172		0.0500	0.100	1	12/17/2023 18:40	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.262		0.0350	0.100	1	12/21/2023 21:37	WG2194347

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.219		0.0140	0.0300	1	12/13/2023 18:10	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	6.80		5.00	1	12/18/2023 17:22	WG2191687

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	0.573		0.140	0.250	1	12/22/2023 20:26	WG2194696

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	12/17/2023 18:42	WG2190818

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	12/21/2023 21:39	WG2194347

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	12/13/2023 18:11	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	8.93		3.33	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.465		0.140	0.250	1	12/22/2023 20:28	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.127		0.0500	0.100	1	12/17/2023 18:51	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0370	J	0.0350	0.100	1	12/21/2023 21:40	WG2194347

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:11	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	10.1		3.33	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.440		0.140	0.250	1	12/22/2023 20:29	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.110		0.0500	0.100	1	12/17/2023 18:53	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0507	J	0.0350	0.100	1	12/21/2023 21:41	WG2194347

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:11	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	38.2		5.00	1	12/18/2023 17:22	WG2191687

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.451		0.140	0.250	1	12/22/2023 20:30	WG2194696

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	12/17/2023 18:55	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0358	J	0.0350	0.100	1	12/21/2023 21:42	WG2194347

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:11	WG2188901

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	18.8	J4	5.00	1	12/18/2023 20:02	WG2191689

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.518		0.140	0.250	1	12/25/2023 17:52	WG2195657

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.137		0.0500	0.100	1	12/17/2023 18:57	WG2190818

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0374	J	0.0350	0.100	1	12/21/2023 21:44	WG2194347

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	U		0.0140	0.0300	1	12/13/2023 18:12	WG2188901

Method Blank (MB)

(MB) R4014310-1 12/18/23 17:22

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

L1687720-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687720-01 12/18/23 17:22 • (DUP) R4014310-3 12/18/23 17:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	13.2	14.4	1	8.70	P1	5

L1687720-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1687720-02 12/18/23 17:22 • (DUP) R4014310-4 12/18/23 17:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	14.0	13.2	1	5.88	P1	5

Laboratory Control Sample (LCS)

(LCS) R4014310-2 12/18/23 17:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	720	93.1	85.0-115	

Method Blank (MB)

(MB) R4014316-1 12/18/23 20:02

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

L1687204-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687204-01 12/18/23 20:02 • (DUP) R4014316-3 12/18/23 20:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	20.3	19.7	1	3.30		5

L1687417-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1687417-09 12/18/23 20:02 • (DUP) R4014316-4 12/18/23 20:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	11.6	12.0	1	3.39		5

Laboratory Control Sample (LCS)

(LCS) R4014316-2 12/18/23 20:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	616	79.7	85.0-115	J4

Method Blank (MB)

(MB) R4016145-1 12/22/23 20:11

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

Laboratory Control Sample (LCS)

(LCS) R4016145-2 12/22/23 20:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	4.00	4.10	103	90.0-110	

L1687366-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687366-02 12/22/23 20:51 • (MS) R4016145-3 12/22/23 20:46 • (MSD) R4016145-4 12/22/23 20:47

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	4.00	12.8	17.1	17.0	108	106	2	90.0-110			0.468	20

L1687416-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-01 12/22/23 20:17 • (MS) R4016145-5 12/22/23 20:48 • (MSD) R4016145-6 12/22/23 20:50

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	4.00	0.383	4.66	4.53	107	104	1	90.0-110			2.83	20

Method Blank (MB)

(MB) R4016448-1 12/25/23 17:47

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

Laboratory Control Sample (LCS)

(LCS) R4016448-2 12/25/23 17:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	4.00	4.07	102	90.0-110	

L1687416-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-10 12/25/23 17:52 • (MS) R4016448-3 12/25/23 18:34 • (MSD) R4016448-4 12/25/23 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 %
Kjeldahl Nitrogen, TKN	4.00	0.518	4.81	4.69	107	104	1	90.0-110			2.53	20

L1687417-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687417-01 12/25/23 17:53 • (MS) R4016448-5 12/25/23 18:36 • (MSD) R4016448-6 12/25/23 18:38

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	4.00	0.262	4.46	4.68	105	110	1	90.0-110			4.81	20

Method Blank (MB)

(MB) R4013564-1 12/17/23 18:07

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

L1687416-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1687416-06 12/17/23 18:42 • (DUP) R4013564-3 12/17/23 18:44

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

L1687417-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1687417-06 12/17/23 19:22 • (DUP) R4013564-6 12/17/23 19:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.164	0.160	1	2.47		20

Laboratory Control Sample (LCS)

(LCS) R4013564-2 12/17/23 18:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.46	98.2	90.0-110	

L1687416-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-06 12/17/23 18:42 • (MS) R4013564-4 12/17/23 18:46 • (MSD) R4013564-5 12/17/23 18:48

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	2.65	2.65	106	106	1	90.0-110			0.264	20

L1687417-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1687417-06 12/17/23 19:22 • (MS) R4013564-7 12/17/23 19:26

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.164	2.77	104	1	90.0-110	

Method Blank (MB)

(MB) R4015635-1 12/21/23 21:22

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

L1687416-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687416-01 12/21/23 21:25 • (DUP) R4015635-3 12/21/23 21:26

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0444	0.0667	1	40.1	J P1	20

L1687416-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1687416-02 12/21/23 21:27 • (DUP) R4015635-4 12/21/23 21:28

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0454	0.0453	1	0.221	J	20

Laboratory Control Sample (LCS)

(LCS) R4015635-2 12/21/23 21:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.42	100	85.0-115	

L1687416-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-03 12/21/23 21:30 • (MS) R4015635-5 12/21/23 21:31 • (MSD) R4015635-6 12/21/23 21:32

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	U	2.55	2.63	102	105	1	90.0-110			3.09	20

Method Blank (MB)

(MB) R4012125-1 12/13/23 18:07

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

L1687416-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687416-01 12/13/23 18:09 • (DUP) R4012125-3 12/13/23 18:09

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

L1687417-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1687417-01 12/13/23 18:12 • (DUP) R4012125-6 12/13/23 18:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.705	0.672	1	4.79		20

Laboratory Control Sample (LCS)

(LCS) R4012125-2 12/13/23 18:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.220	90.0	85.0-115	

L1687416-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1687416-10 12/13/23 18:12 • (MS) R4012125-4 12/13/23 18:12 • (MSD) R4012125-5 12/13/23 18:12

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	U	0.484	0.473	96.8	94.6	1	80.0-120			2.30	20

GLOSSARY OF TERMS

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.
J4	The associated batch QC was outside the established quality control range for accuracy.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

ACCREDITATIONS & LOCATIONS

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	LA000356
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		

Pace Analytical Services, LLC -Dallas 400 W. Bethany Drive Suite 190 Allen, TX 75013

Arkansas	88-0647	Kansas	E10388
Florida	E871118	Texas	T104704232-23-39
Iowa	408	Oklahoma	8727
Louisiana	30686		

[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: **Etowah MS4**

City/State Collected: Gadsden, AL

Please Circle: PT MT CT ET

Phone: **256-837-8882**

Client Project # **23820129**

Lab Project # **QOREHAL-ETOWAHMS4**

Collected by (print): Nathaniel Wilson

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NO2NO3,PT 250mlHDPE-H2SO4	PORTHO 100ml Amb NoPres	TKN 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres							Remarks	Sample # (lab only)
HB 3	G	WW	-5'	12-12-23	1015	4	X	X	X	X								01
SME 4		WW			1025	4	X	X	X	X								02
GD 5		WW			1040	4	X	X	X	X								03
SME 3		WW			1050	4	X	X	X	X								04
SME 1		WW			1110	4	X	X	X	X								05
SS5		WW			1155	4	X	X	X	X								06
SME 5		WW			1205	4	X	X	X	X								07
SME 6		WW			1220	4	X	X	X	X								08
RC 14		WW			1240	4	X	X	X	X								09
SME 11		WW			1030	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 #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	12-12-23	1400	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received: 40

Date: 12/13/23 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

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

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 # 468746

A142

Acctnum: **QOREHAL**

Template: **T238643**

Prelogin: **P1027224**

PM: **034 - Craig Cothron**

PB: 9/27/23

Shipped Via: **FedEX Ground**

Tracking Numbers		MSA's Temperature
6643 4306 4650		4.0 to 4.0
4640		.8 to .8

Name

Date

Monitoring Report First Quarter 2024
Gadsden, Alabama Urbanized Area
Phase II Small MS4s
S&ME Project No. 23820129

PREPARED FOR:

City of Attalla
City of Glencoe
City of Hokes Bluff
City of Rainbow City
City of Southside
Etowah County

PREPARED BY:

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

May 28, 2024

Table of Contents

List of Tables

Appendices

1.0 Introduction

S&ME, Inc. has prepared this Quarterly Wet-Weather Monitoring Report on behalf of Etowah County and the cities of Attalla, Glencoe, Hokes Bluff, Rainbow City, and Southside. Our work was conducted in general accordance with the proposals issued to each entity.

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 the City of Attalla, City of Gadsden, City of Glencoe, City of Hokes Bluff, City of Rainbow City, City of Southside, and portions of 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	Robert Nail, Engineer

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 Phosphorus), 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.

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 each MS4's BMPs in achieving the required phosphorus reduction as established in the TMDL and to generally evaluate overall water quality using a watershed approach.

On March 24, 2015, the cities of Attalla, Gadsden, Glencoe, Hokes Bluff, Rainbow City, and Southside and Etowah County entered into a Cooperative Agreement to jointly perform the quarterly monitoring. As of October 1, 2023, the City of Gadsden has elected to separate from the joint monitoring agreement and perform their own monitoring. As of the date of this report, the 2022 Monitoring Program has not been revised, nor has the City of Gadsden prepared a separate monitoring plan.

2.0 Rainfall Data

The largest loading of phosphorus 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.

From January 8 to January 9, 2024, a rain event was observed in the vicinity of the urbanized area. Table 2-1 lists the observed rain gauges and the recorded precipitation amounts for the rain event. The locations of the weather stations are identified on Figure 2 in Appendix I.

Table 2-1 Quarterly Rainfall Data

Gauge Name	Location	Latitude	Longitude	Precip 1/8/24	Precip 1/9/24
KALASHVI18	Ashville, AL	33.88	-86.11	1.19 in	3.11 in
KALASHVI19	Ashville, AL	33.84	-86.25	1.48 in	3.68 in
KALATTAL12	Attala, AL	34.09	-86.12	0.79 in	2.64 in
KALGADSD102	Gadsden, AL	34.04	-85.89	1.21 in	3.13 in

Gauge Name	Location	Latitude	Longitude	Precip 1/8/24	Precip 1/9/24
KALGADSD3	Gadsden, AL	34.06	-85.99	0.79 in	1.78 in
KALGADSD76	Gadsden, AL	33.96	-85.98	1.41 in	3.94 in
KALGLENC5	Glencoe, AL	33.94	-85.95	1.21 in	3.54 in
KALHOKES6	Hokes Bluff, AL	34.01	-85.92	1.07 in	2.92 in
KALRAINB17	Rainbow City, AL	33.93	-86.09	0.88 in	2.45 in
KALRAINB19	Rainbow City, AL	33.94	-86.03	1.26 in	3.53 in
KALSOUTH7	Southside, AL	33.89	-86.01	1.31 in	3.41 in

3.0 Monitoring Event

On January 10, 2024, S&ME personnel mobilized to conduct storm water monitoring for the first quarter of 2024 in general accordance with Section 3 of the *Gadsden-Etowah MS4 Wet-Weather Monitoring Program*, dated April 2022.

3.1 Monitoring Locations

The monitoring locations for the six MS4s remaining in the joint monitoring program 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 12	33.952567°	-86.003495°	LAND	U.T. to Neely Henry Lake
RC 2	33.967683°	-86.039476°	LAND	Horton Creek
SME 10	33.985669°	-85.878605°	LAND	U.T. to Big Cove Creek (exiting Hokes Bluff)
SME 7	34.006225°	-86.111277°	LAND	Big Wills Creek
SME 9	34.002807°	-85.871879°	LAND	U.T. to Neely Henry Lake
SS 13	33.891352°	-86.049229°	LAND	Neely Henry Lake
SS 14	33.885921°	-86.030683°	LAND	U.T. to Neely Henry Lake
GD 5	34.014324°	-85.924013°	BOAT	Big Cove Creek / Little Cove Creek
HB 3	34.002129°	-85.882808°	BOAT	U.T. to Neely Henry Lake
RC 14	33.905786°	-86.111656°	BOAT	Rook Creek / Dry Creek
SME 1	33.990184°	-86.004048°	BOAT	Big Wills Creek / Black Creek
SME 3	34.009698°	-85.956230°	BOAT	Coal Creek
SME 4	34.001667°	-85.883342°	BOAT	Coosa River channel at north end of MS4

Outfall ID	Latitude	Longitude	Access	Waterbody Evaluated
SME 5	33.940514°	-86.029885°	BOAT	Coosa River channel at center of MS4
SME 6	33.852125°	-86.049695°	BOAT	Confluence of Greens Creek and Coosa River
SS 5	33.941329°	-86.021569°	BOAT	U.T. to Coosa River

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 2022 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.

Following the City of Gadsden's separation from the joint monitoring program, S&ME has discontinued monitoring at points CO 15, GD 6, GD 7, GD8, and GD9. The changes to the monitoring program were implemented beginning with the 2023 fourth quarter sampling event. It is expected that the City of Gadsden will continue to monitor these five locations until the 2022 Monitoring Program is revised.

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 to safeguard the quality of the collected samples.

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 Phosphorus	HDPE - 250 mL	H_2SO_4	48 hours
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

Two 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 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.

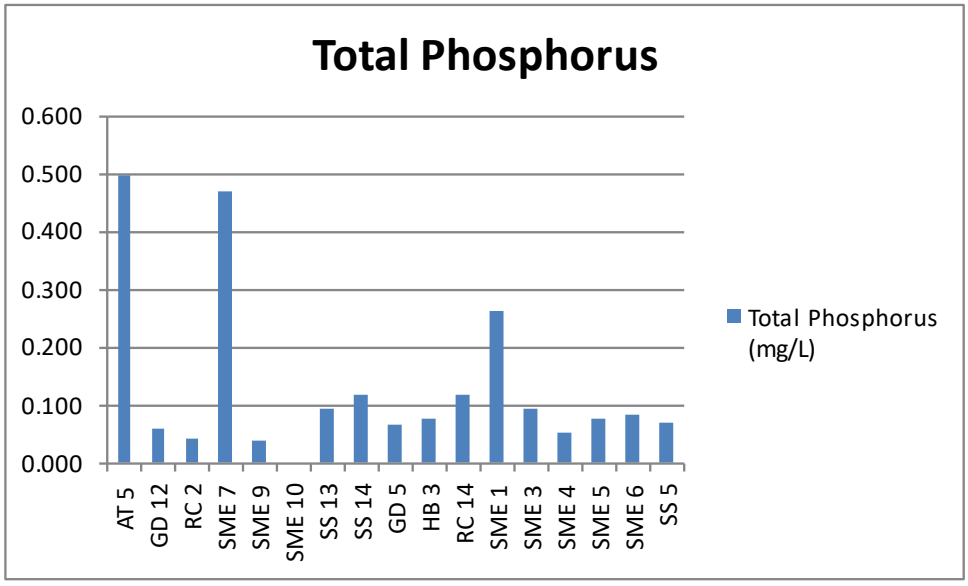
4.0 Analytical Results

The laboratory analytical results for the January 10, 2024 quarterly monitoring event are included on Table B.2 in Appendix II. Historical monitoring data for each of the active monitoring points is included in Appendix II as Tables B.3 to B.19. The laboratory reports and Chain of Custody are included in Appendix III.

4.1 Total Phosphorus

Total phosphorus was detected at 16 of the 17 monitoring points evaluated during the 2024 Q1 monitoring event. As shown in Figure 4-1 below, the concentration of total phosphorus was highest at monitoring point AT-5 (0.498 mg/L), followed by point SME 7 (0.470 mg/L) and point SME 1 (0.264 mg/L). Each of the three points is located in Big Wills Creek.

Figure 4-1 2024 Q1 Total Phosphorus Concentrations



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 three years.

The Storm Water Steering Committee is responsible for the coordination and implementation of the 2022 *Gadsden-Etowah Wet-Weather Monitoring Program*. 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	lisa.lowman@cityofhokesbluff.com
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

S&ME certifies that the information provided in this monitoring report reflects the conditions reported, encountered, and discovered at the time of report preparation. 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.

Sarah L. Yeldell, P.E.
Project Manager

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

GADSDEN-ETOWAH MS4 BOUNDARIES

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

ETOWAH COUNTY
ST. CLAIR COUNTY
CALHOUN COUNTY

GADSDEN
ATTALLA
HOKES BLUFF
RAINBOW CITY
SOUTHSIDE
GLENCOE

Line Creek
Brown Creek
Clear Creek
Big Wills Creek
Little Wills Creek
Rook Creek
Black Creek
Town Creek
Turkeytown Creek
Coosa River
Sandlap Creek
Dry Creek
Coal Creek
Little Cove Creek
Big Cove Creek
Ohatchee Creek
Coffee Creek
Little Canoe Creek
Big Canoe Creek
Permeter Creek
Greens Creek
Hurricane Creek

N

0 1.5 3 Miles

Legend

- Gadsden, AL Urbanized Area Outline
- Unincorporated Etowah County MS4

City Limits

- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside

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.

SCALE:
1:100,000

DATE:
12/21/2023

PROJECT NUMBER
23820129

FIGURE NO.
1

JANUARY 8-9, 2024 RAIN EVENT

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

0 1.5 3 Miles

N

GADSDEN
ATTALLA
RAINBOW CITY
SOUTHSIDE
GLENCOE
HOKES BLUFF

ETOWAH COUNTY
CALHOUN COUNTY
ST. CLAIR COUNTY

KALGADSD3
KALGADSD107
KALGADSD102
KALHOKES6
KALHOKES2
KALATTAL14
KALGADSD76
KALRAINB19
KALRAINB17
KALGLENC5
KALSOUTH7
KALASHVI18
KALASHVI19

Line Creek, Brown Creek, Clear Creek, Big Wills Creek, Little Wills Creek, Black Creek, Town Creek, Turkeytown Creek, Coosa River, Dry Creek, Rook Creek, Little Canoe Creek, Big Canoe Creek, Hurricane Creek, Coal Creek, Little Cove Creek, Big Cove Creek, Chatchee Creek, Greens Creek, Permeter Creek, Easters Creek

Legend

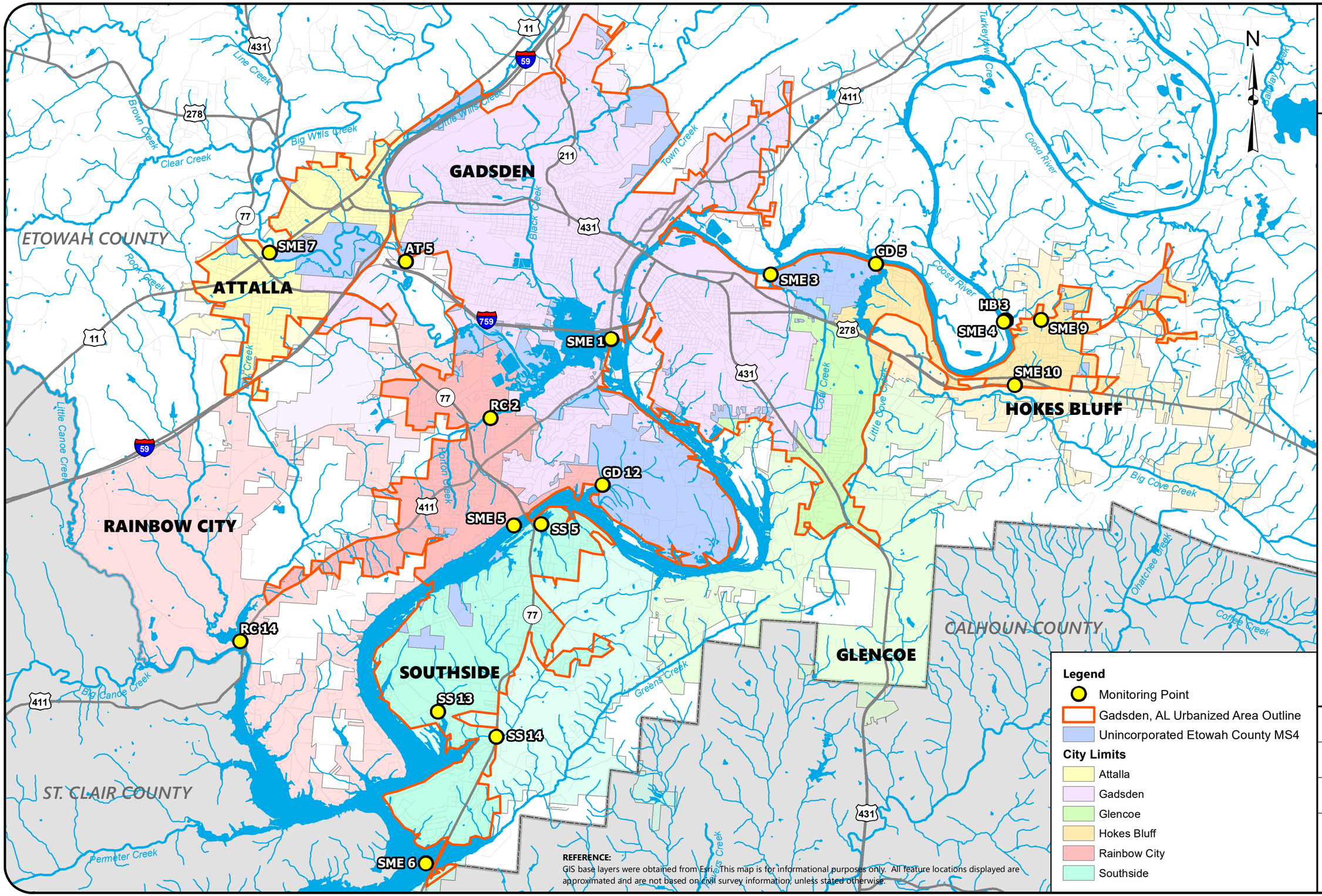
- Gadsden, AL Urbanized Area Outline
- Rain Gauge - Qualifying
- Rain Gauge - Not Reporting
- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside
- Unincorporated Etowah County MS4

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.

SCALE: 1:100,000
DATE: 03/08/2024
PROJECT NUMBER 23820129
FIGURE NO. **2**

WET-WEATHER MONITORING LOCATIONS

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



Legend

- Monitoring Point
- Gadsden, AL Urbanized Area Outline
- Unincorporated Etowah County MS4

City Limits

- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Southside

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.

SCALE:	1:100,000
DATE:	11/17/2023
PROJECT NUMBER	22820261
FIGURE NO.	3

Appendix II – Tables

Table B.1 – Field Observations

Table B.2 – Analytical Data

Tables B.3 to B.26 – Historical Analytical Data

TABLE B.1 - FIELD OBSERVATIONS
2024 Q1 MS4 WET-WEATHER MONITORING

Monitoring Point	Date	Time	Sample Depth (ft)	Personnel	Weather Conditions	Waterbody Conditions
AT 5	1/10/2024	10:36	-2	AH/GK	Sunny	Smooth
GD 12	1/10/2024	12:30	-2	AH/GK	Sunny	Smooth
RC 2	1/10/2024	10:53	-2	AH/GK	Sunny	Smooth
SME 7	1/10/2024	10:20	-2	AH/GK	Sunny	Fast Flowing
SME 9	1/10/2024	11:25	-2	AH/GK	Sunny	Smooth
SME 10	1/10/2024	11:35	-2	AH/GK	Sunny	Smooth
SS 13	1/10/2024	12:20	-2	AH/GK	Sunny	Smooth
SS 14	1/10/2024	12:00	-2	AH/GK	Sunny	Smooth
GD 5	1/10/2024	11:05	-5	NW	Sunny	Smooth, Fast Flowing
HB 3	1/10/2024	10:40	-5	NW	Sunny	Smooth, Fast Flowing
RC 14	1/10/2024	13:10	-5	NW	Sunny	Smooth
SME 1	1/10/2024	11:35	-5	NW	Sunny	Rough
SME 3	1/10/2024	11:15	-5	NW	Sunny	Rough
SME 4	1/10/2024	10:45	-5	NW	Sunny	Smooth, Fast Flowing
SME 5	1/10/2024	12:30	-5	NW	Sunny	Rough
SME 6	1/10/2024	12:55	-5	NW	Sunny	Rough
SS 5	1/10/2024	12:20	-5	NW	Sunny	Smooth

TABLE B.2 - ANALYTICAL DATA
2024 Q1 MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	**Date**	**Turbidity (NTU)**	**pH**	**DO (mg/L)**	**Sample Temp (°C)**	**TSS (mg/L)**	**TKN (mg/L)**	**Nitrate-Nitrite (mg/L)**	**Total Phosphorus (mg/L)**	**Ortho-Phosphate (mg/L)**
AT 5	1/10/2024	185.14	7.45	8.57	8.8	220.0	0.732	0.642	0.498	0.299
GD 12	1/10/2024	15.55	7.21	8.93	9.0	5.60	0.437	0.389	0.0611	0.0410
RC 2	1/10/2024	32.58	7.56	8.81	8.3	15.2	0.816	0.511	0.0428	0.0150
SME 7	1/10/2024	194.24	7.45	8.84	9.1	183	0.548	0.729	0.470	0.320
SME 12	1/10/2024	*DUPLICATE OF AT 5*				*200*	*0.774*	*0.640*	*0.512*	*0.304*
SME 9	1/10/2024	15.74	7.33	8.58	8.9	4.70	1.87	0.152	0.0388	0.0160
SME 10	1/10/2024	20.90	7.68	8.60	9.1	7.30	0.468	0.433	<0.0350	0.0170
SS 13	1/10/2024	14.16	7.33	8.43	9.2	6.71	1.72	0.426	0.0934	0.0570
SS 14	1/10/2024	25.10	7.40	8.91	9.0	9.60	1.08	0.693	0.117	0.0870
GD 5	1/10/2024	53.3	7.32	8.56	8.4	32.0	0.424	0.118	0.0681	0.0450
HB 3	1/10/2024	30.5	7.74	9.14	8.5	31.7	0.305	0.354	0.0752	0.0250
RC 14	1/10/2024	46.4	6.97	8.53	8.1	50.0	0.785	0.294	0.117	0.0420
SME 1	1/10/2024	60.2	7.27	9.03	7.9	53.0	0.542	0.511	0.264	0.224
SME 3	1/10/2024	33.1	7.27	9.25	7.6	44.8	0.392	0.348	0.0956	0.0270
SME 4	1/10/2024	30.4	7.65	9.21	7.5	34.4	0.327	0.354	0.0532	0.0200
SME 11	1/10/2024	*DUPLICATE OF SME 4*				*70.8*	*0.498*	*0.401*	*0.0991*	*0.0210*
SME 5	1/10/2024	31.4	7.12	9.53	7.9	51.5	0.366	0.488	0.0773	0.0170
SME 6	1/10/2024	31.0	7.24	9.50	7.9	39.5	0.413	0.344	0.0849	0.0140
SS 5	1/10/2024	19.5	7.46	9.56	9.1	20.4	0.576	0.166	0.0715	<0.0140

NTU - Nephelometric Turbidity Units
mg/L - milligrams per liter
NS - Not Sampled

Bold - maximum reading for constituent
NA - not availabe at this time
* - value unknown due to equipment malfuction

TABLE B.3 - HISTORICAL ANALYTICAL DATA - AT 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.3 - HISTORICAL ANALYTICAL DATA - AT 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	0.032
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	EF	EF	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	0.081
AT 5	5/24/2023	14.4	7.80	8.94	20.0	20.0	0.331	0.697	0.182	0.127
AT 5	8/7/2023	10.54	7.87	9.13	26.5	12.4	0.291	0.832	0.430	0.373
AT 5	12/12/2023	22.78	7.77	8.71	9.1	10.9	0.329	0.696	0.782	0.752
AT 5	1/10/2024	185.14	7.45	8.57	8.8	220.0	0.732	0.642	0.498	0.299

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.4 - HISTORICAL ANALYTICAL DATA - GD 12
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.4 - HISTORICAL ANALYTICAL DATA - GD 12
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
GD 12	8/7/2023	8.17	7.85	8.85	31.0	5.20	0.813	<0.100	0.0945	<0.0300
GD 12	12/12/2023	4.80	7.44	7.67	9.8	<2.50	0.412	0.164	0.0233	<0.0140
GD 12	1/10/2024	15.55	7.21	8.93	9.0	5.60	0.437	0.389	0.0611	0.0410

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.5 - HISTORICAL ANALYTICAL DATA - RC 2
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.5 - HISTORICAL ANALYTICAL DATA - RC 2
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
RC 2	8/7/2023	5.75	7.80	6.55	28.2	6.20	0.676	<0.100	0.0662	<0.0300
RC 2	12/12/2023	21.62	7.58	7.25	8.9	6.60	0.634	0.166	0.0448	<0.0140
RC 2	1/10/2024	32.58	7.56	8.81	8.3	15.2	0.816	0.511	0.0428	0.0150

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.6 - HISTORICAL ANALYTICAL DATA - SME 7
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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	EF	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
SME 7	8/7/2023	11.40	7.93	8.93	25.8	12.3	0.393	0.916	0.469	0.403
SME 7	12/12/2023	23.45	8.01	8.85	9.6	6.80	0.262	0.584	0.748	0.705
SME 7	1/10/2024	194.24	7.45	8.84	9.1	183	0.548	0.729	0.470	0.320

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.7 - HISTORICAL ANALYTICAL DATA - SME 9
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (mg/L)	Ortho-Phosphate (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
SME 9	8/7/2023	10.4	7.10	7.41	24.6	5.60	1.360	<0.100	0.087	<0.0300
SME 9	12/12/2023	8.1	7.57	7.44	8.9	<2.50	0.345	<0.0500	0.019	<0.0140
SME 9	1/10/2024	15.7	7.33	8.58	8.9	4.70	1.870	0.152	0.039	0.0160

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.8 - HISTORICAL ANALYTICAL DATA - SME 10
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (mg/L)	Ortho-Phosphate (mg/L)
SME 10	4/7/2022	4.94	7.82	9.16	18.0	2.800	0.477	<0.100	<0.100	<0.0300
SME 10	8/3/2022	10.3	8.08	6.35	25.5	4.1	0.9400	<0.100	<0.100	<0.0300
SME 10	11/16/2022	9.80	7.18	8.03	12.2	4.6	0.5160	<0.100	<0.100	<0.0300
SME 10	2/13/2023	19.1	7.32	11.34	9.7	4.000	0.773	0.185	<0.100	<0.0300
SME 10	5/24/2023	13.4	7.42	7.50	15.5	15.0	0.349	0.143	0.0371	<0.0140
SME 10	8/7/2023	13.32	7.59	6.69	25.8	4.40	0.903	<0.100	0.0918	<0.0300
SME 10	12/12/2023	18.09	7.57	5.63	10.5	10.6	0.633	<0.0500	0.0471	<0.0140
SME 10	1/10/2024	20.90	7.68	8.60	9.1	7.30	0.468	0.433	<0.0350	0.0170

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.9 - HISTORICAL ANALYTICAL DATA - SS 13
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.9 - HISTORICAL ANALYTICAL DATA - SS 13
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
SS 13	8/7/2023	4.90	7.85	9.14	31.2	4.00	0.825	<0.100	0.111	<0.0300
SS 13	12/12/2023	14.46	7.62	8.32	12.3	5.50	0.744	0.0980	0.0822	<0.0140
SS 13	1/10/2024	14.16	7.33	8.43	9.2	6.71	1.72	0.426	0.0934	0.0570

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.10 - HISTORICAL ANALYTICAL DATA - SS 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.10 - HISTORICAL ANALYTICAL DATA - SS 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	EF	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
SS 14	8/7/2023	6.56	8.02	10.73	31.6	8.20	0.903	<0.100	0.124	0.032
SS 14	12/12/2023	10.06	7.66	8.00	8.1	<2.50	0.573	0.352	0.0890	0.0410
SS 14	1/10/2024	25.10	7.40	8.91	9.0	9.60	1.08	0.693	0.117	0.0870

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.11 - HISTORICAL ANALYTICAL DATA - GD 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.11 - HISTORICAL ANALYTICAL DATA - GD 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
GD 5	8/7/2023	3.0	7.36	6.27	29.5	7.54	0.499	<0.100	0.103	<0.0300
GD 5	12/12/2023	13.5	7.32	8.45	10.3	11.3	0.468	0.0820	<0.0350	<0.0140
GD 5	1/10/2024	53.3	7.32	8.56	8.4	32.0	0.424	0.118	0.0681	0.0450

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.12 - HISTORICAL ANALYTICAL DATA - HB 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.12 - HISTORICAL ANALYTICAL DATA - HB 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
HB 3	8/7/2023	10.9	7.49	6.16	29.3	6.80	0.578	<0.100	0.0895	<0.0300
HB 3	12/12/2023	41.3	7.71	8.45	10.6	36.8	0.383	0.126	0.0444	<0.0140
HB 3	1/10/2024	30.5	7.74	9.14	8.5	31.7	0.305	0.354	0.0752	0.0250

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.13 - HISTORICAL ANALYTICAL DATA - RC 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.13 - HISTORICAL ANALYTICAL DATA - RC 14
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
RC 14	8/7/2023	19.1	7.20	6.63	29.1	15.0	0.604	<0.100	0.150	0.0360
RC 14	12/12/2023	19.8	7.64	8.64	9.8	38.2	0.451	<0.0500	0.0358	<0.0140
RC 14	1/10/2024	46.4	6.97	8.53	8.1	50.0	0.785	0.294	0.117	0.0420

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.14 - HISTORICAL ANALYTICAL DATA - SME 1
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.14 - HISTORICAL ANALYTICAL DATA - SME 1
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 1	8/7/2023	11.7	8.01	7.58	30.2	13.9	0.552	<0.100	0.170	0.0670
SME 1	12/12/2023	17.2	7.36	8.99	9.2	10.4	0.434	0.172	0.262	0.219
SME 1	1/10/2024	60.2	7.27	9.03	7.9	53.0	0.542	0.511	0.264	0.224

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.15 - HISTORICAL ANALYTICAL DATA - SME 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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	EF	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.15 - HISTORICAL ANALYTICAL DATA - SME 3
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 3	8/7/2023	9.9	7.46	6.74	29.7	14.4	0.424	<0.100	0.0912	<0.0300
SME 3	12/12/2023	32.5	7.01	8.06	10.2	13.4	0.502	0.103	<0.0350	<0.0140
SME 3	1/10/2024	33.1	7.27	9.25	7.6	44.8	0.392	0.348	0.0956	0.0270

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.16 - HISTORICAL ANALYTICAL DATA - SME 4
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 4	8/7/2023	3.2	7.44	6.51	29.7	7.00	0.436	<0.100	0.0866	<0.0300
SME 4	12/12/2023	14.0	7.57	8.33	10.8	13.8	0.497	0.140	0.0454	<0.0140
SME 4	1/10/2024	30.4	7.65	9.21	7.5	34.4	0.327	0.354	0.0532	0.0200

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.17 - HISTORICAL ANALYTICAL DATA - SME 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 5	8/7/2023	5.6	7.71	7.47	30.6	8.60	0.677	0.0568	0.122	<0.0300
SME 5	12/12/2023	9.1	7.58	8.67	10.9	8.93	0.465	0.127	0.0370	<0.0140
SME 5	1/10/2024	31.4	7.12	9.53	7.9	51.5	0.366	0.488	0.0773	0.0170

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.18 - HISTORICAL ANALYTICAL DATA - SME 6
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SME 6	8/7/2023	9.2	7.66	7.19	30.6	12.4	0.620	<0.100	0.095	<0.0300
SME 6	12/12/2023	10.3	7.57	8.62	11.4	10.1	0.440	0.110	0.0507	<0.0140
SME 6	1/10/2024	31.0	7.24	9.50	7.9	39.5	0.413	0.344	0.0849	0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

TABLE B.19 - HISTORICAL ANALYTICAL DATA - SS 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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.19 - HISTORICAL ANALYTICAL DATA - SS 5
MS4 WET-WEATHER MONITORING

		FIELD PARAMETERS				LABORATORY ANALYSIS				
Monitoring Point	Date	Turbidity (NTU)	pH	DO (mg/L)	Sample Temp (°C)	TSS (mg/L)	TKN (mg/L)	Nitrate-Nitrite (mg/L)	Total Phosphorous (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
SS 5	8/7/2023	9.1	7.91	7.70	30.7	11.5	0.636	<0.100	0.0971	<0.0300
SS 5	12/12/2023	8.7	7.85	9.72	11.2	6.80	0.573	<0.0500	<0.0350	<0.0140
SS 5	1/10/2024	19.5	7.46	9.56	9.1	20.4	0.576	0.166	0.0715	<0.0140

NTU - Nephelometric Turbidity Units

mg/L - milligrams per liter

NS - Not Sampled

EF - meter malfunctioned in field

Appendix III – Laboratory Reports

Laboratory Report No. L1695380, dated January 17, 2024

Laboratory Report No. L1695383, dated January 21, 2024

ANALYTICAL REPORT

January 21, 2024

S&ME - Huntsville

Sample Delivery Group:	L1695383
Samples Received:	01/11/2024
Project Number:	23820129
Description:	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.

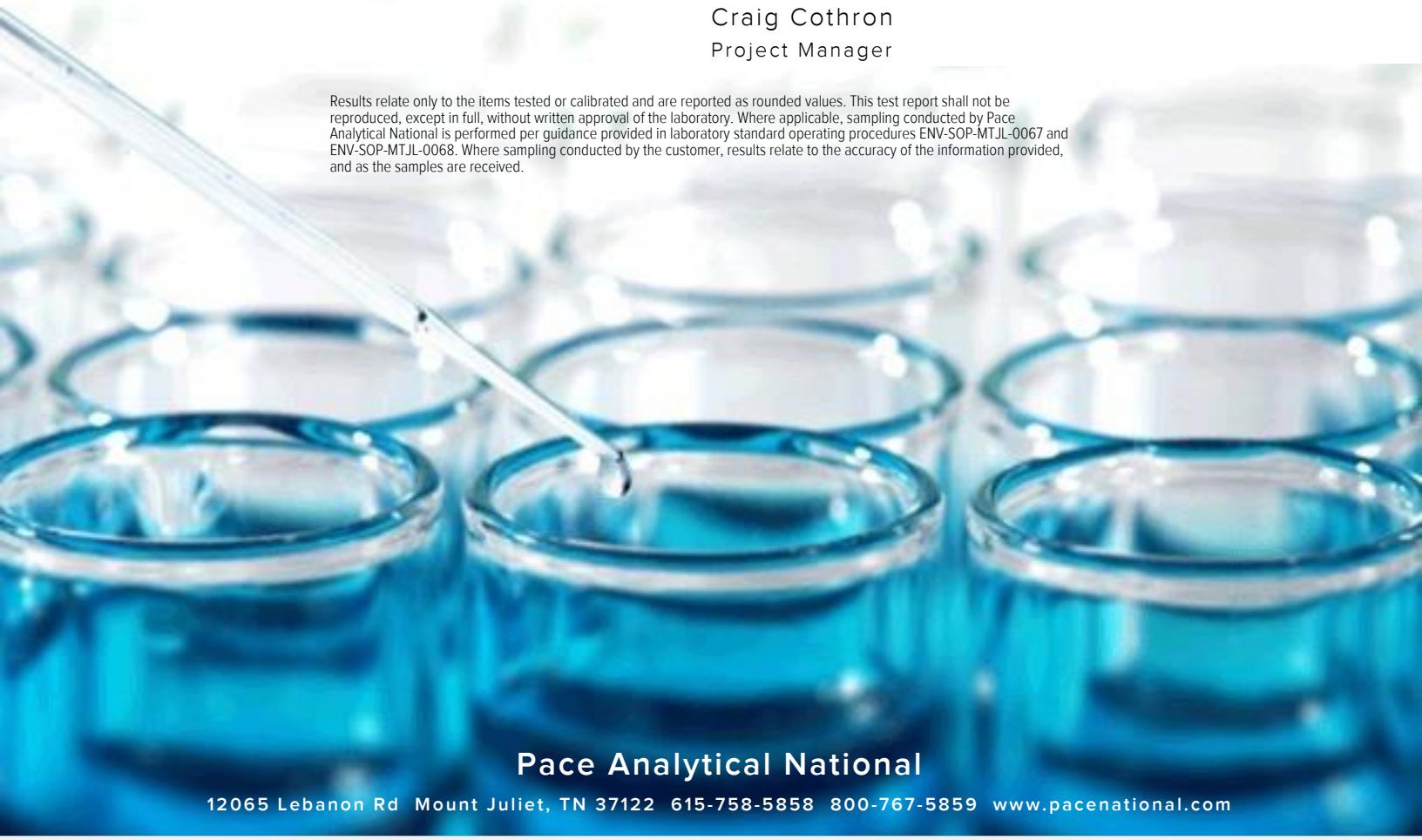


TABLE OF CONTENTS

HB 3 L1695383-01 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 10:40 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 20:04	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:15	01/13/24 20:15	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:13	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:13	01/11/24 16:13	BJM	Mt. Juliet, TN

SME 4 L1695383-02 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 10:49 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 20:05	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:17	01/13/24 20:17	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:14	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:13	01/11/24 16:13	BJM	Mt. Juliet, TN

GD 5 L1695383-03 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 11:05 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 20:07	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:32	01/13/24 20:32	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:15	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:14	01/11/24 16:14	BJM	Mt. Juliet, TN

SME 3 L1695383-04 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 11:19 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206033	1	01/12/24 10:00	01/14/24 19:20	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:37	01/13/24 20:37	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207378	1	01/12/24 10:00	01/14/24 19:29	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:15	01/11/24 16:15	BJM	Mt. Juliet, TN

SME 1 L1695383-05 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 11:35 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206033	1	01/12/24 10:00	01/14/24 19:22	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2204878	1	01/14/24 00:30	01/14/24 00:30	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207378	1	01/12/24 10:00	01/14/24 19:31	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:15	01/11/24 16:15	BJM	Mt. Juliet, TN

SS5 L1695383-06 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 12:20 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206033	1	01/12/24 10:00	01/14/24 19:24	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2204878	1	01/14/24 00:32	01/14/24 00:32	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207378	1	01/12/24 10:00	01/14/24 19:33	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:17	01/11/24 16:17	BJM	Mt. Juliet, TN

SME 5 L1695383-07 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 12:30 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206033	1	01/12/24 10:00	01/14/24 19:25	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2204562	1	01/19/24 20:21	01/19/24 20:21	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207378	1	01/12/24 10:00	01/14/24 19:34	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:17	01/11/24 16:17	BJM	Mt. Juliet, TN

SME 6 L1695383-08 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 12:55 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206033	1	01/12/24 10:00	01/14/24 19:26	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2204562	1	01/19/24 20:26	01/19/24 20:26	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207378	1	01/12/24 10:00	01/14/24 19:35	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:19	01/11/24 16:19	BJM	Mt. Juliet, TN

RC 14 L1695383-09 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 13:10 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206033	1	01/12/24 10:00	01/14/24 19:28	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2204562	1	01/19/24 20:27	01/19/24 20:27	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207378	1	01/12/24 10:00	01/14/24 19:37	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:19	01/11/24 16:19	BJM	Mt. Juliet, TN

SME 11 L1695383-10 WW

Collected by: Nathanael Wade | Collected date/time: 01/10/24 10:50 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207349	1	01/16/24 21:15	01/16/24 22:34	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206033	1	01/12/24 10:00	01/14/24 19:29	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2204562	1	01/19/24 20:28	01/19/24 20:28	CAT	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207378	1	01/12/24 10:00	01/14/24 19:40	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:20	01/11/24 16:20	BJM	Mt. Juliet, TN

CASE NARRATIVE

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	31.7		8.33	1	01/16/2024 21:07	WG2207021

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	0.305		0.140	0.250	1	01/12/2024 20:04	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.354		0.0500	0.100	1	01/13/2024 20:15	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0752	J	0.0350	0.100	1	01/12/2024 20:13	WG2206453

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	01/11/2024 16:13	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	34.4		5.00	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.327		0.140	0.250	1	01/12/2024 20:05	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.354		0.0500	0.100	1	01/13/2024 20:17	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0532	J	0.0350	0.100	1	01/12/2024 20:14	WG2206453

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0200	J	0.0140	0.0300	1	01/11/2024 16:13	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	32.0		6.25	1	01/16/2024 21:07	WG2207021

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	0.424		0.140	0.250	1	01/12/2024 20:07	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.118		0.0500	0.100	1	01/13/2024 20:32	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0681	J	0.0350	0.100	1	01/12/2024 20:15	WG2206453

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	0.0450		0.0140	0.0300	1	01/11/2024 16:14	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	44.8		10.0	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.392		0.140	0.250	1	01/14/2024 19:20	WG2206033

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.348		0.0500	0.100	1	01/13/2024 20:37	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0956	B J	0.0350	0.100	1	01/14/2024 19:29	WG2207378

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0270	J	0.0140	0.0300	1	01/11/2024 16:15	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	53.0		12.5	1	01/16/2024 21:07	WG2207021

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	01/14/2024 19:22	WG2206033

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.511		0.0500	0.100	1	01/14/2024 00:30	WG2204878

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.264	B	0.0350	0.100	1	01/14/2024 19:31	WG2207378

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	0.224		0.0140	0.0300	1	01/11/2024 16:15	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	20.4		5.00	1	01/16/2024 21:07	WG2207021

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	0.576		0.140	0.250	1	01/14/2024 19:24	WG2206033

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.166	J6	0.0500	0.100	1	01/14/2024 00:32	WG2204878

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0715	B J	0.0350	0.100	1	01/14/2024 19:33	WG2207378

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	01/11/2024 16:17	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	51.5		12.5	1	01/16/2024 21:07	WG2207021

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	0.366		0.140	0.250	1	01/14/2024 19:25	WG2206033

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.488		0.0500	0.100	1	01/19/2024 20:21	WG2204562

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0773	B J	0.0350	0.100	1	01/14/2024 19:34	WG2207378

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	0.0170	J	0.0140	0.0300	1	01/11/2024 16:17	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	39.5		5.83	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.413		0.140	0.250	1	01/14/2024 19:26	WG2206033

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.344		0.0500	0.100	1	01/19/2024 20:26	WG2204562

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0849	B J	0.0350	0.100	1	01/14/2024 19:35	WG2207378

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0140	J	0.0140	0.0300	1	01/11/2024 16:19	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	50.0		8.33	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.785		0.140	0.250	1	01/14/2024 19:28	WG2206033

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.294		0.0500	0.100	1	01/19/2024 20:27	WG2204562

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.117	B	0.0350	0.100	1	01/14/2024 19:37	WG2207378

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0420		0.0140	0.0300	1	01/11/2024 16:19	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	70.8		10.0	1	01/16/2024 22:34	WG2207349

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	0.498	J5	0.140	0.250	1	01/14/2024 19:29	WG2206033

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.401		0.0500	0.100	1	01/19/2024 20:28	WG2204562

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0991	B J	0.0350	0.100	1	01/14/2024 19:40	WG2207378

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	0.0210	J	0.0140	0.0300	1	01/11/2024 16:20	WG2205568

Method Blank (MB)

(MB) R4023624-1 01/16/24 21:07

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

L1695370-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1695370-04 01/16/24 21:07 • (DUP) R4023624-3 01/16/24 21:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	31.2	39.2	1	22.7	J3	5

L1695380-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-01 01/16/24 21:07 • (DUP) R4023624-4 01/16/24 21:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	183	191	1	4.28		5

Laboratory Control Sample (LCS)

(LCS) R4023624-2 01/16/24 21:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	756	97.8	85.0-115	

Method Blank (MB)

(MB) R4023612-1 01/16/24 22:34

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

L1695383-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-10 01/16/24 22:34 • (DUP) R4023612-3 01/16/24 22:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	70.8	74.4	1	4.96		5

L1695394-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695394-01 01/16/24 22:34 • (DUP) R4023612-4 01/16/24 22:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	88.0	100	1	12.8	P1	5

Laboratory Control Sample (LCS)

(LCS) R4023612-2 01/16/24 22:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	784	101	85.0-115	

QUALITY CONTROL SUMMARY

L1695383-01,02,03

Method Blank (MB)

(MB) R4022653-1 01/12/24 19:32

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

L1695380-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-03 01/12/24 19:48 • (DUP) R4022653-3 01/12/24 19:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Kjeldahl Nitrogen, TKN	0.468	0.605	1	25.5	P1	20

L1695380-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-08 01/12/24 19:56 • (DUP) R4022653-6 01/12/24 19:58

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Kjeldahl Nitrogen, TKN	0.732	1.13	1	42.7	P1	20

Laboratory Control Sample (LCS)

(LCS) R4022653-2 01/12/24 19:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Kjeldahl Nitrogen, TKN	12.0	12.3	103	80.0-120	

L1695380-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695380-03 01/12/24 19:48 • (MS) R4022653-4 01/12/24 19:50 • (MSD) R4022653-5 01/12/24 19:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Kjeldahl Nitrogen, TKN	5.00	0.468	7.63	7.51	143	141	1	90.0-110	J5	J5	1.59	20

L1695380-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695380-08 01/12/24 19:56 • (MS) R4022653-7 01/12/24 19:59

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Kjeldahl Nitrogen, TKN	5.00	0.732	6.28	111	1	90.0-110	J5

Method Blank (MB)

(MB) R4022953-1 01/14/24 19:17

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

L1695383-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-04 01/14/24 19:20 • (DUP) R4022953-3 01/14/24 19:21

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.392	0.473	1	18.7		20

Laboratory Control Sample (LCS)

(LCS) R4022953-2 01/14/24 19:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	12.5	105	80.0-120	

L1695383-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695383-10 01/14/24 19:29 • (MS) R4022953-4 01/14/24 19:33 • (MSD) R4022953-5 01/14/24 19:34

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	0.498	7.59	7.50	142	140	1	90.0-110	J5	J5	1.19	20

Method Blank (MB)

(MB) R4024441-1 01/19/24 20:10

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

L1695674-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695674-01 01/19/24 20:33 • (DUP) R4024441-3 01/19/24 20:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.0892	0.0913	1	2.33	J	20

L1695895-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695895-01 01/19/24 20:49 • (DUP) R4024441-6 01/19/24 20:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.356	0.359	1	0.839		20

Laboratory Control Sample (LCS)

(LCS) R4024441-2 01/19/24 20:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.47	98.8	90.0-110	

L1695674-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695674-01 01/19/24 20:33 • (MS) R4024441-4 01/19/24 20:36 • (MSD) R4024441-5 01/19/24 20:37

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	0.0892	2.66	2.66	103	103	1	90.0-110			0.000	20

L1695895-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695895-01 01/19/24 20:49 • (MS) R4024441-7 01/19/24 20:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.356	2.94	103	1	90.0-110	

QUALITY CONTROL SUMMARY

L1695383-05,06

Method Blank (MB)

(MB) R4022847-1 01/13/24 23:21

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

L1694975-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1694975-01 01/13/24 23:29 • (DUP) R4022847-3 01/13/24 23:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.0900	0.0890	1	1.12	J	20

L1695383-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-06 01/14/24 00:32 • (DUP) R4022847-6 01/14/24 00:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.166	0.160	1	3.68		20

Laboratory Control Sample (LCS)

(LCS) R4022847-2 01/13/24 23:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.57	103	90.0-110	

L1694975-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1694975-01 01/13/24 23:29 • (MS) R4022847-4 01/13/24 23:34 • (MSD) R4022847-5 01/13/24 23:36

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	0.0900	2.39	2.47	91.8	95.3	1	90.0-110			3.58	20

L1695383-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695383-06 01/14/24 00:32 • (MS) R4022847-7 01/14/24 00:37

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.166	2.35	87.5	1	90.0-110	J6

L1695383-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695383-06 01/14/24 00:32 • (MS) R4022847-7 01/14/24 00:37

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier

Sample Narrative:

MS: spike failed due to sample matrix

Method Blank (MB)

(MB) R4022838-1 01/13/24 19:24

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

L1695383-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-03 01/13/24 20:32 • (DUP) R4022838-3 01/13/24 20:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.118	0.117	1	0.851		20

L1695383-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-04 01/13/24 20:37 • (DUP) R4022838-5 01/13/24 20:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.348	0.340	1	2.33		20

Laboratory Control Sample (LCS)

(LCS) R4022838-2 01/13/24 19:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.59	104	90.0-110	

L1695383-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695383-03 01/13/24 20:32 • (MS) R4022838-4 01/13/24 20:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.118	2.60	99.2	1	90.0-110	

L1695383-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695383-04 01/13/24 20:37 • (MS) R4022838-6 01/13/24 20:42 • (MSD) R4022838-7 01/13/24 20:44

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	0.348	2.85	2.76	100	96.4	1	90.0-110			3.31	20

Method Blank (MB)

(MB) R4022649-1 01/12/24 19:49

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

L1695380-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-03 01/12/24 19:58 • (DUP) R4022649-3 01/12/24 19:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	U	0.0368	1	200	J P1	20

L1695380-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-08 01/12/24 20:09 • (DUP) R4022649-6 01/12/24 20:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.498	0.519	1	4.13		20

Laboratory Control Sample (LCS)

(LCS) R4022649-2 01/12/24 19:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.23	94.4	85.0-115	

L1695380-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695380-03 01/12/24 19:58 • (MS) R4022649-4 01/12/24 20:00 • (MSD) R4022649-5 01/12/24 20:01

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	U	2.53	2.47	101	98.8	1	90.0-110			2.40	20

Method Blank (MB)

(MB) R4022956-1 01/14/24 19:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	0.0594	J	0.0350	0.100

L1695383-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-04 01/14/24 19:29 • (DUP) R4022956-3 01/14/24 19:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0956	0.108	1	12.2		20

Laboratory Control Sample (LCS)

(LCS) R4022956-2 01/14/24 19:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.34	97.7	85.0-115	

L1695383-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695383-10 01/14/24 19:40 • (MS) R4022956-4 01/14/24 19:42 • (MSD) R4022956-5 01/14/24 19:43

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	0.0991	2.63	2.55	101	98.0	1	90.0-110			3.09	20

QUALITY CONTROL SUMMARY

L1695383-01,02,03,04,05,06,07,08,09,10

Method Blank (MB)

(MB) R4022203-1 01/11/24 16:05

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

L1695380-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-01 01/11/24 16:06 • (DUP) R4022203-3 01/11/24 16:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.320	0.331	1	3.38		20

L1695383-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-10 01/11/24 16:20 • (DUP) R4022203-6 01/11/24 16:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.0210	0.0210	1	0.000	J	20

Laboratory Control Sample (LCS)

(LCS) R4022203-2 01/11/24 16:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.242	99.0	85.0-115	

L1695383-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695383-05 01/11/24 16:15 • (MS) R4022203-4 01/11/24 16:16 • (MSD) R4022203-5 01/11/24 16:16

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 %
Phosphate,Ortho	0.500	0.224	0.729	0.700	101	95.2	1	80.0-120			4.06	20

GLOSSARY OF TERMS

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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
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.

ACCREDITATIONS & LOCATIONS

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:
Etowah MS4

City/State Collected: Gadsden, AL

Please Circle: PT MT CT ET

Phone: **256-837-8882**

Client Project #
23820129

Lab Project #
QOREHAL-ETOWAHMS4

Collected by (print): Nathaniel Wise

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NO2NO3,PT 250mlHDPE-H2SO4	PORTHO 100ml Amb NoPres	TKN 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres							
HB 3	G	WW	-5'	1-10-24	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
SME 1		WW			1135	4	X	X	X	X							05
SS5		WW			1220	4	X	X	X	X							06
SME 5		WW			1230	4	X	X	X	X							07
SME 6		WW			1255	4	X	X	X	X							08
RC 14		WW			1310	4	X	X	X	X							09
SME 11		WW			1050	4	X	X	X	X							10

1/10/24

PH-10BDH5021 TRC-235236
CR6-20221V

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

Remarks:

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

_____ Temp _____

Flow _____ Other _____

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 # L695383
D084

Acctnum: **QOREHAL**
Template: **T238643**
Prelogin: **P1040602**
PM: **034 - Craig Cothron**
PB: NR 1/15/24
Shipped Via: **FedEx Ground**

Remarks | Sample # (lab only)

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	If preservation required by Login: Date/Time
	1-10-24	1430		Ø	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 39	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/11/24 Time: 0900	Hold: / Condition: NCF / OK

Tracking Numbers		Temperature
6643 4316 0555		1.3
7019 5685 9809		2.6
7074 8787 9918		1.2

Name

Date

ANALYTICAL REPORT

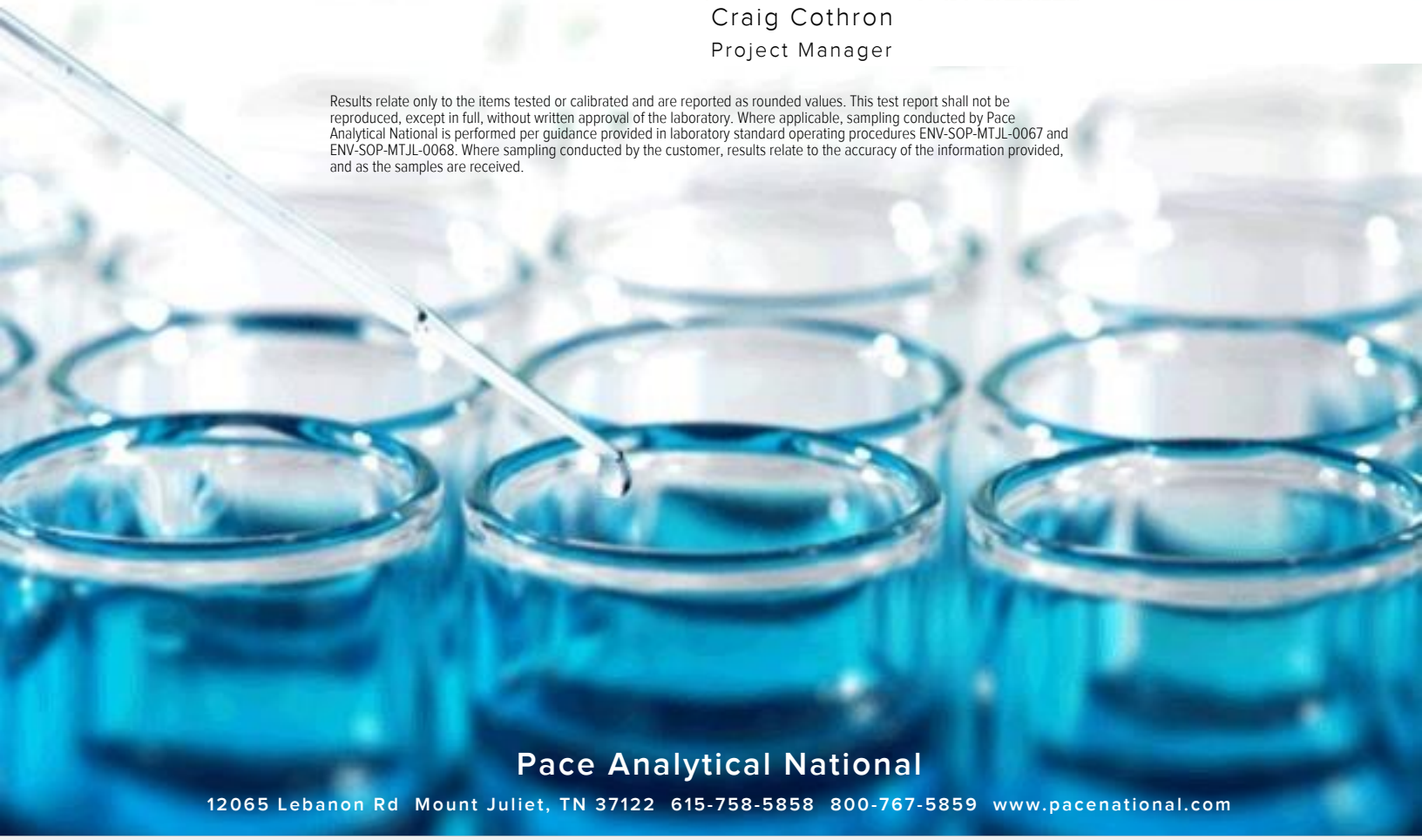
January 17, 2024

S&ME - Huntsville

Sample Delivery Group:	L1695380
Samples Received:	01/11/2024
Project Number:	23820129
Description:	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



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

TABLE OF CONTENTS

SME 7 L1695380-01 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 10:20 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2205784	1	01/11/24 21:06	01/14/24 18:16	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 19:44	01/13/24 19:44	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207374	1	01/11/24 21:06	01/14/24 18:10	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:06	01/11/24 16:06	BJM	Mt. Juliet, TN

SME 9 L1695380-02 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 11:25 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 19:44	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 19:58	01/13/24 19:58	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 19:56	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:07	01/11/24 16:07	BJM	Mt. Juliet, TN

SME 10 L1695380-03 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 11:35 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 19:48	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 19:59	01/13/24 19:59	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 19:58	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:07	01/11/24 16:07	BJM	Mt. Juliet, TN

SS 13 L1695380-04 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 12:10 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 19:53	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:02	01/13/24 20:02	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:05	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:09	01/11/24 16:09	BJM	Mt. Juliet, TN

SS 14 L1695380-05 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 12:00 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 19:54	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:04	01/13/24 20:04	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:07	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:10	01/11/24 16:10	BJM	Mt. Juliet, TN

GD 12 L1695380-06 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 12:30 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206344	1	01/13/24 10:00	01/14/24 20:52	LDT	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:06	01/13/24 20:06	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2207385	1	01/13/24 10:00	01/14/24 21:02	LDT	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:10	01/11/24 16:10	BJM	Mt. Juliet, TN

RC 2 L1695380-07 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 10:53 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 19:55	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:08	01/13/24 20:08	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:08	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:11	01/11/24 16:11	BJM	Mt. Juliet, TN

AT 5 L1695380-08 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 10:36 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 19:56	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:11	01/13/24 20:11	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:09	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:11	01/11/24 16:11	BJM	Mt. Juliet, TN

SME 12 L1695380-09 WW

Collected by: Abigail Harris | Collected date/time: 01/10/24 10:36 | Received date/time: 01/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 D-2011	WG2207021	1	01/16/24 20:00	01/16/24 21:07	CAT	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2206019	1	01/12/24 11:46	01/12/24 20:03	UNP	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2205736	1	01/13/24 20:13	01/13/24 20:13	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2206453	1	01/12/24 11:46	01/12/24 20:12	UNP	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2205568	1	01/11/24 16:12	01/11/24 16:12	BJM	Mt. Juliet, TN

CASE NARRATIVE

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	183		25.0	1	01/16/2024 21:07	WG2207021

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	0.548		0.140	0.250	1	01/14/2024 18:16	WG2205784

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.729		0.0500	0.100	1	01/13/2024 19:44	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.470		0.0350	0.100	1	01/14/2024 18:10	WG2207374

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	0.320		0.0140	0.0300	1	01/11/2024 16:06	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	4.70		2.50	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	1.87		0.140	0.250	1	01/12/2024 19:44	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.152		0.0500	0.100	1	01/13/2024 19:58	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0388	J	0.0350	0.100	1	01/12/2024 19:56	WG2206453

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0160	J	0.0140	0.0300	1	01/11/2024 16:07	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	7.30		2.50	1	01/16/2024 21:07	WG2207021

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	J5 P1	0.140	0.250	1	01/12/2024 19:48	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.433		0.0500	0.100	1	01/13/2024 19:59	WG2205736

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	P1	0.0350	0.100	1	01/12/2024 19:58	WG2206453

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	0.0170	J	0.0140	0.0300	1	01/11/2024 16:07	WG2205568

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	01/16/2024 21:07	WG2207021

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	1.72		0.140	0.250	1	01/12/2024 19:53	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.426		0.0500	0.100	1	01/13/2024 20:02	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0934	J	0.0350	0.100	1	01/12/2024 20:05	WG2206453

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	0.0570		0.0140	0.0300	1	01/11/2024 16:09	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	9.60		2.50	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	1.08		0.140	0.250	1	01/12/2024 19:54	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.693		0.0500	0.100	1	01/13/2024 20:04	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.117		0.0350	0.100	1	01/12/2024 20:07	WG2206453

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0870		0.0140	0.0300	1	01/11/2024 16:10	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	5.60		2.50	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.437		0.140	0.250	1	01/14/2024 20:52	WG2206344

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.389		0.0500	0.100	1	01/13/2024 20:06	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.0611	J	0.0350	0.100	1	01/14/2024 21:02	WG2207385

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.0410		0.0140	0.0300	1	01/11/2024 16:10	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Suspended Solids	15.2		2.50	1	01/16/2024 21:07	WG2207021

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	0.816		0.140	0.250	1	01/12/2024 19:55	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.511		0.0500	0.100	1	01/13/2024 20:08	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.0428	J	0.0350	0.100	1	01/12/2024 20:08	WG2206453

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	0.0150	J	0.0140	0.0300	1	01/11/2024 16:11	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	220		25.0	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.732	J5 P1	0.140	0.250	1	01/12/2024 19:56	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.642		0.0500	0.100	1	01/13/2024 20:11	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.498		0.0350	0.100	1	01/12/2024 20:09	WG2206453

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.299		0.0140	0.0300	1	01/11/2024 16:11	WG2205568

Gravimetric Analysis by Method 2540 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Suspended Solids	200		25.0	1	01/16/2024 21:07	WG2207021

Wet Chemistry by Method 351.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Kjeldahl Nitrogen, TKN	0.774		0.140	0.250	1	01/12/2024 20:03	WG2206019

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.640		0.0500	0.100	1	01/13/2024 20:13	WG2205736

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus,Total	0.512		0.0350	0.100	1	01/12/2024 20:12	WG2206453

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphate,Ortho	0.304		0.0140	0.0300	1	01/11/2024 16:12	WG2205568

Method Blank (MB)

(MB) R4023624-1 01/16/24 21:07

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

L1695370-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1695370-04 01/16/24 21:07 • (DUP) R4023624-3 01/16/24 21:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	31.2	39.2	1	22.7	J3	5

L1695380-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-01 01/16/24 21:07 • (DUP) R4023624-4 01/16/24 21:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	183	191	1	4.28		5

Laboratory Control Sample (LCS)

(LCS) R4023624-2 01/16/24 21:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	756	97.8	85.0-115	

Method Blank (MB)

(MB) R4022942-1 01/14/24 17:49

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

L1695166-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695166-01 01/14/24 17:52 • (DUP) R4022942-3 01/14/24 17:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.267	0.161	1	49.5	J P1	20

L1695270-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695270-01 01/14/24 17:57 • (DUP) R4022942-4 01/14/24 17:58

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	10.8	11.0	1	1.83		20

Laboratory Control Sample (LCS)

(LCS) R4022942-2 01/14/24 17:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	12.6	105	80.0-120	

L1695270-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695270-02 01/14/24 18:00 • (MS) R4022942-5 01/14/24 18:01 • (MSD) R4022942-6 01/14/24 18:05

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	2.57	10.1	10.5	151	159	1	90.0-110	J5	J5	3.88	20

L1695372-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695372-01 01/14/24 18:09 • (MS) R4022942-7 01/14/24 18:10

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	0.607	5.91	106	1	90.0-110	

QUALITY CONTROL SUMMARY

L1695380-02,03,04,05,07,08,09

Method Blank (MB)

(MB) R4022653-1 01/12/24 19:32

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

L1695380-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-03 01/12/24 19:48 • (DUP) R4022653-3 01/12/24 19:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Kjeldahl Nitrogen, TKN	0.468	0.605	1	25.5	P1	20

L1695380-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-08 01/12/24 19:56 • (DUP) R4022653-6 01/12/24 19:58

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Kjeldahl Nitrogen, TKN	0.732	1.13	1	42.7	P1	20

Laboratory Control Sample (LCS)

(LCS) R4022653-2 01/12/24 19:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Kjeldahl Nitrogen, TKN	12.0	12.3	103	80.0-120	

L1695380-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695380-03 01/12/24 19:48 • (MS) R4022653-4 01/12/24 19:50 • (MSD) R4022653-5 01/12/24 19:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Kjeldahl Nitrogen, TKN	5.00	0.468	7.63	7.51	143	141	1	90.0-110	J5	J5	1.59	20

L1695380-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695380-08 01/12/24 19:56 • (MS) R4022653-7 01/12/24 19:59

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Kjeldahl Nitrogen, TKN	5.00	0.732	6.28	111	1	90.0-110	J5

Method Blank (MB)

(MB) R4022972-1 01/14/24 20:50

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

L1695380-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-06 01/14/24 20:52 • (DUP) R4022972-3 01/14/24 20:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	0.437	0.500	1	13.4		20

L1696135-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1696135-01 01/14/24 21:20 • (DUP) R4022972-7 01/14/24 21:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	2.99	2.83	1	5.50		20

Laboratory Control Sample (LCS)

(LCS) R4022972-2 01/14/24 20:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.0	12.8	107	80.0-120	

L1695841-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695841-01 01/14/24 21:05 • (MS) R4022972-4 01/14/24 21:06 • (MSD) R4022972-5 01/14/24 21:08

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 %
Kjeldahl Nitrogen, TKN	5.00	4.69	11.4	11.2	134	130	1	90.0-110	J5	J5	1.77	20

L1695846-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695846-01 01/14/24 21:13 • (MS) R4022972-6 01/14/24 21:14

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	0.367	5.80	109	1	90.0-110	

Method Blank (MB)

(MB) R4022838-1 01/13/24 19:24

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

L1695383-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-03 01/13/24 20:32 • (DUP) R4022838-3 01/13/24 20:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.118	0.117	1	0.851		20

L1695383-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-04 01/13/24 20:37 • (DUP) R4022838-5 01/13/24 20:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.348	0.340	1	2.33		20

Laboratory Control Sample (LCS)

(LCS) R4022838-2 01/13/24 19:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.59	104	90.0-110	

L1695383-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1695383-03 01/13/24 20:32 • (MS) R4022838-4 01/13/24 20:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.118	2.60	99.2	1	90.0-110	

L1695383-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695383-04 01/13/24 20:37 • (MS) R4022838-6 01/13/24 20:42 • (MSD) R4022838-7 01/13/24 20:44

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	0.348	2.85	2.76	100	96.4	1	90.0-110			3.31	20

Method Blank (MB)

(MB) R4022649-1 01/12/24 19:49

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

L1695380-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-03 01/12/24 19:58 • (DUP) R4022649-3 01/12/24 19:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	U	0.0368	1	200	J P1	20

L1695380-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-08 01/12/24 20:09 • (DUP) R4022649-6 01/12/24 20:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.498	0.519	1	4.13		20

Laboratory Control Sample (LCS)

(LCS) R4022649-2 01/12/24 19:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.23	94.4	85.0-115	

L1695380-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695380-03 01/12/24 19:58 • (MS) R4022649-4 01/12/24 20:00 • (MSD) R4022649-5 01/12/24 20:01

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	U	2.53	2.47	101	98.8	1	90.0-110			2.40	20

Method Blank (MB)

(MB) R4022944-1 01/14/24 17:45

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

L1695166-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695166-01 01/14/24 17:50 • (DUP) R4022944-3 01/14/24 17:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.859	1.01	1	16.2		20

L1695270-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695270-01 01/14/24 17:54 • (DUP) R4022944-4 01/14/24 17:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	2.62	2.68	1	2.26		20

Laboratory Control Sample (LCS)

(LCS) R4022944-2 01/14/24 17:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.29	96.2	85.0-115	

L1695270-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695270-02 01/14/24 17:56 • (MS) R4022944-5 01/14/24 18:00 • (MSD) R4022944-6 01/14/24 18:01

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	1.28	3.85	3.82	103	102	1	90.0-110			0.782	20

Method Blank (MB)

(MB) R4022974-1 01/14/24 20:59

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

L1695380-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-06 01/14/24 21:02 • (DUP) R4022974-3 01/14/24 21:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.0611	0.0681	1	10.8	J	20

L1696135-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1696135-01 01/14/24 21:23 • (DUP) R4022974-6 01/14/24 21:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	2.61	2.64	1	1.14		20

Laboratory Control Sample (LCS)

(LCS) R4022974-2 01/14/24 21:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	3.42	3.44	101	85.0-115	

L1695841-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695841-01 01/14/24 21:10 • (MS) R4022974-4 01/14/24 21:14 • (MSD) R4022974-5 01/14/24 21:16

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	0.260	2.64	2.63	95.2	94.8	1	90.0-110			0.380	20

QUALITY CONTROL SUMMARY

L1695380-01,02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R4022203-1 01/11/24 16:05

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

L1695380-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1695380-01 01/11/24 16:06 • (DUP) R4022203-3 01/11/24 16:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.320	0.331	1	3.38		20

L1695383-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1695383-10 01/11/24 16:20 • (DUP) R4022203-6 01/11/24 16:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate,Ortho	0.0210	0.0210	1	0.000	J	20

Laboratory Control Sample (LCS)

(LCS) R4022203-2 01/11/24 16:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.242	99.0	85.0-115	

L1695383-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1695383-05 01/11/24 16:15 • (MS) R4022203-4 01/11/24 16:16 • (MSD) R4022203-5 01/11/24 16:16

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 %
Phosphate,Ortho	0.500	0.224	0.729	0.700	101	95.2	1	80.0-120			4.06	20

GLOSSARY OF TERMS

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.
J3	The associated batch QC was outside the established quality control range for precision.
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.

ACCREDITATIONS & LOCATIONS

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:
Etowah MS4

City/State Collected:

Please Circle:
PT MT CT ET

Phone: **256-837-8882**

Client Project #
23820129

Lab Project #
QOREHAL-ETOWAHMS4

Collected by (print):
Abigail Harris

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

Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NO2NO3,PT 250mlHDPE-H2SO4	PORTHO 100ml Amb NoPres	TKN 250mlHDPE-H2SO4	TSS 1L-HDPE NoPres						Remarks	Sample # (lab only)
SME 7	C	WW	2'	1/10/24	1020	4	X	X	X	X							01
SME 9		WW			1125	4	X	X	X	X							02
SME 10		WW			1135	4	X	X	X	X							03
SS 13		WW			1210	4	X	X	X	X							04
SS 14		WW			1200	4	X	X	X	X							05
GD 12		WW			1230	4	X	X	X	X							06
RC 2		WW			1053	4	X	X	X	X							07
AT 5		WW			1036	4	X	X	X	X							08
SME 12		WW			1036	4	X	X	X	X							09

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

Remarks:

PH-10BDH5021 TRC-2352362
CR6-20221V

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature) — Date: 1/10/24 — Time: 1300 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / (No)
HCL / MeoH
TBR

Temp: °C Bottles Received: 32

Date: 1/11/24 Time: 0900

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

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

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 # L1695780
D085

Acctnum: **QOREHAL**
Template: **T238641**
Prelogin: **P1040601**
PM: **034 - Craig Cothron**
PB: NG 12/4/23

Shipped Via: **FedEX Ground**

Tracking Numbers		Temperature
6643 4316 0555		1.3
7019 5685 9809		2.6
7074 8787 9918		1.2

Name

Date

Appendix D – Public Education and Involvement

City of Southside, Alabama is in **Southside**.
January 3 ·

♻ In 2023, the #CityofSouthside applied and received an ADEM grant for recycling trailers in order to collect and recycle cardboard. The program began in October and has many benefits. On top of minimizing the extra garbage that goes into landfills, we are also saving the wear and tear on our garbage trucks.

♻ There are plans to apply for another ADEM grant this coming year to hopefully purchase our own compactor. We would like to extend a thank Mayor Joe Taylor and the City of Rainbow City for allowing us to bring our cardboard to their city for compacting at no charge.

♻ You can utilize these recycling trailers located in the parking lot next to City Hall. Please break down all cardboard boxes to a flat position and remove any styrofoam. #WeAreSouthside

17 1 comment 2 shares

SURFACE RUNOFF

Stormwater Management

Details

For more detailed information on storm-water management and each control measure please visit:

Link

https://www.epa.gov/npdes/npdes-stormwater-program

HAVE QUESTION?

The City of Rainbow City is required by the Alabama Department of Environmental Management (ADEM) to comply with the General Phase II Municipal Separate Storm Sewer System (MS4) Permit No. ALR040056. One of the conditions of the permit is to develop, implement, and enforce a Storm Water Management Program (SWMP).

The SWMP must be designed to reduce the discharge of pollutants from our MS4 to the maximum extent practicable (MEP) to protect the water quality and to satisfy the appropriate water quality requirements of the Clean Water Act. The City of Rainbow City entered into a cooperative agreement with the City of Gadsden, the City of Hokes Bluff, the City of Glencoe, the City of Attalla, the City of Southside, and Etowah County to develop an overall SWMP for each entity to implement as required to comply with the permit referenced above.

An MS4 is defined by the EPA as a conveyance or system of conveyances that is owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.; designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.); not a combined sewer; and not part of a Publicly Owned Treatment Works (sewage treatment plant).

Our SWMP contains five minimum control measures that must be included as required by the referenced permit. The City is currently in the process of taking the necessary steps to implement each control measure. The control measures are as follows:

Public Education and Outreach

The City's goal is to have a comprehensive and effective public education and outreach program, the intent of which is to:

- Generate awareness of storm water pollution prevention by educating people about the storm drain system and its relationship to the health of local waterways.
- Change behavior patterns through education and encouragement of active participation in water pollution prevention.
- Inform the public of steps they can take to reduce pollutants in storm water runoff.

Illicit Discharge Detection and Elimination

Rainbow City's Illicit Discharge Detection and Elimination (IDDE) program will be primarily designed to locate, identify, and correct illicit discharges to the MS4. Program emphasis will be placed on identifying and correcting pollutant discharges which could influence compliance with the Neely Henry Lake TMDL's and the Gadsden-Etowah pollutant monitoring program (as outlined in complete SWMP document).

Construction Site Storm Water Runoff

The City's construction site storm water runoff control program is primarily designed to address storm water pollution due to off-site sedimentation by insuring the implementation of properly designed erosion and sedimentation control plans during regulated construction activities.

Post-Construction Storm Water Management

Post-Construction runoff can significantly impact a water body by increasing the type and quantity of pollutants in storm water runoff and by increasing the quantity of water delivered to the water body during storms. As runoff flows over areas altered by development, it collects sediment and chemicals such as oil, grease, pesticides, heavy metals, and nutrients. Instead of infiltrating, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff are delivered to the nearest receiving water. Both impacts can be mitigated by proper post-construction planning.

Pollution Prevention and Good Housekeeping for Municipal Operations

Rainbow City will develop and utilize BMP's designed to minimize pollution related to municipal operations and maintenance. These BMP's are intended to address storm water pollution from nutrients, sediments, petroleum products, and other common pollutants.

HAVE QUESTION?

For questions about the City of Rainbow City Storm-water Management Program and its implementation or to report a non-compliant construction site, illicit discharge (including spills or illegal dumping), impaired waterways, or any possible violation of ordinances relating to stormwater pollution please contact the **Rainbow City & Utilities Board Engineering Department at 256-413-1230.**

If immediate assistance is required outside of the normal operating hours of City Hall which is Monday through Friday from 8 am to 4 pm, please call the **Rainbow City Dispatch Office available 24/7 at 256-442-2511.**

City Engineer / Street Superintendent

Call us today
(256) 413 - 1230
(256) 413 - 1237

Address
3700 Rainbow Drive
Rainbow City, AL 35906

DOWNLOAD PDF FILES

Rainbow City 2022-2023 Annual Report	DOWNLOAD
Illicit Discharge Detection & Elimination Complaint Form	DOWNLOAD
SWMPP 2022	DOWNLOAD
Site Plan Review – SOP	DOWNLOAD
Construction Inspection – SOP	DOWNLOAD
Revisions to the Storm Water Management Program – 2014	DOWNLOAD
Rainbow City Storm Water System Map – Doc 10	DOWNLOAD
NPDES Permit ALR040056	DOWNLOAD
Stormwater-Management-Program_ALR040056	DOWNLOAD
Stormwater-H-1	DOWNLOAD
Stormwater H-2-1	DOWNLOAD
Stormwater H-2-2	DOWNLOAD
Stormwater H-2-3	DOWNLOAD
Stormwater H-2-4	DOWNLOAD
Stormwater H-2-5	DOWNLOAD

How can we help?
Call us or drop us a line.

Address:
3700 Rainbow Drive Rainbow City, AL 35906-6324

Call Us:
(256) 442-2511

Email:
mayor@rbcalabama.com

RAINBOW CITY ALABAMA

Reports snapshot
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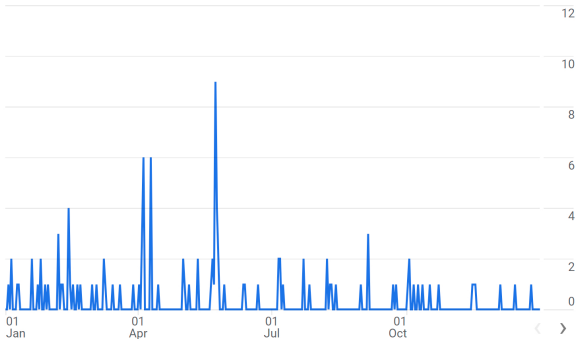

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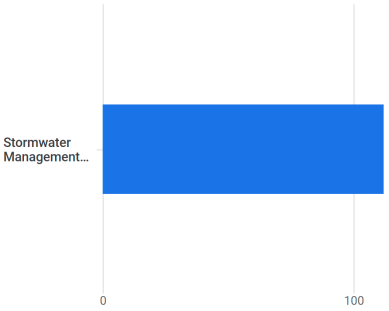


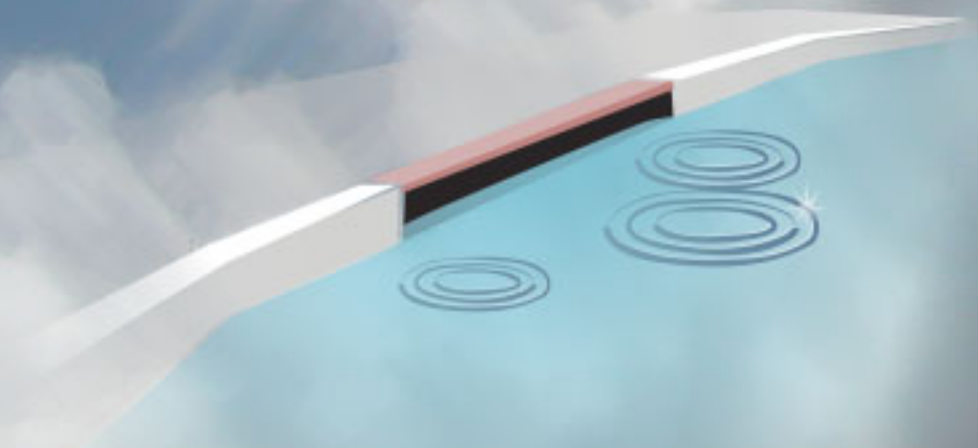
stormwater

Rows per page: 10 | 1-1 of 1

	Page title and screen class	Views	Users	Views per user	Average engagement time	Event count All events	Conversions All events
		112 0.11% of total	80 0.22% of total	1.40 Avg -50.81%	55s Avg -18.7%	320 0.12% of total	112.00 0.15% of total
1	Stormwater Management - City of Rainbow City	112	80	1.40	55s	320	112.00

WHEN IT RAINS IT DRAINS

After the Storm



For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

EPA United States Environmental Protection Agency

EPA 833-B-03-002

January 2003

Internet Address (URL) • HTTP://www.epa.gov
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THE YEAR OF CLEAN WATER
Celebration & Recommitment

A Citizen's Guide to Understanding Stormwater

WHEN IT RAINS IT DRAINS

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is stormwater runoff a problem?

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.

- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

Stormwater Pollution Solutions

Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

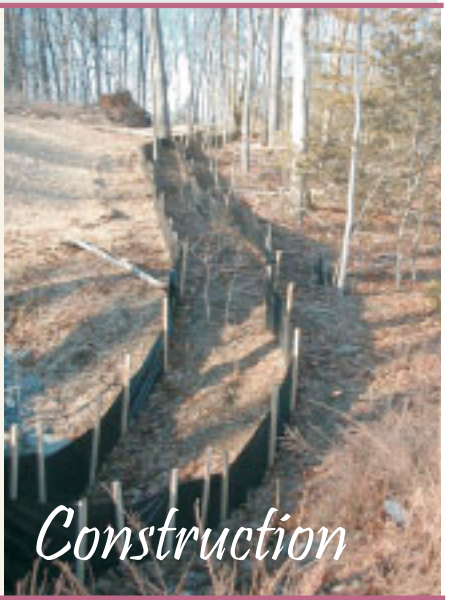
Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

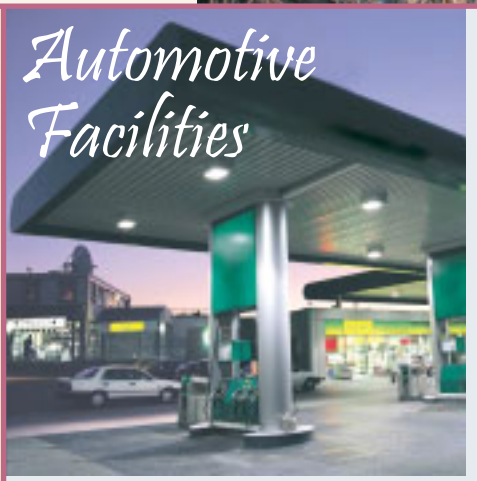


Construction

Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

EPA
United States
Environmental Protection
Agency

EPA 841-F-03-003

Protecting Water Quality *from* URBAN RUNOFF

Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?

How Urbanized Areas Affect Water Quality

Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (nonporous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall and snowmelt remains above the surface, where it runs off rapidly in unnaturally large amounts.

Storm sewer systems concentrate runoff into smooth, straight conduits. This runoff gathers speed and erosional power as it travels underground. When this runoff leaves the storm drains and empties into a stream, its excessive volume and power blast out streambanks, damaging streamside vegetation and wiping out aquatic habitat. These increased storm flows carry sediment loads from construction sites and other denuded surfaces and eroded streambanks. They often carry higher water temperatures from streets, roof tops, and parking lots, which are harmful to the health and reproduction of aquatic life.

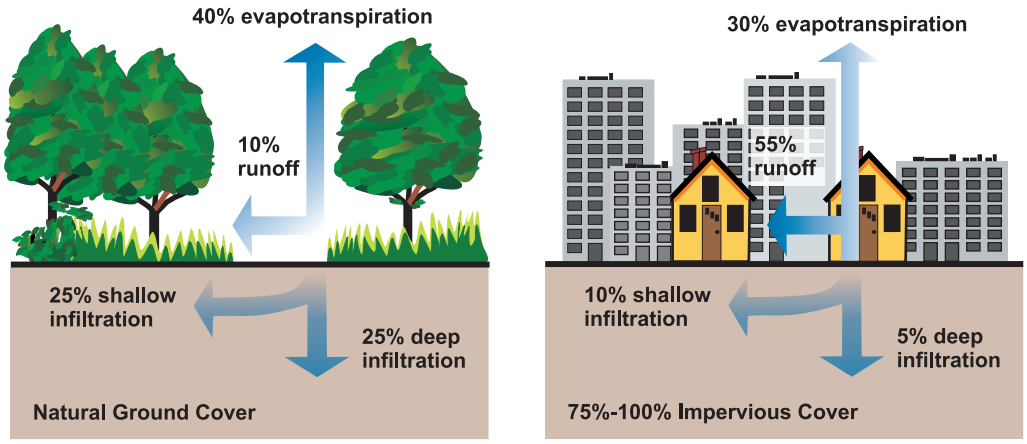
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.



Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface ruunoff. As little as 10 percent impervious cover in a watershed can result in stream degradation.

Managing Urban Runoff

What Homeowners Can Do

To decrease polluted runoff from paved surfaces, households can develop alternatives to areas traditionally covered by impervious surfaces. Porous pavement materials are available for driveways and sidewalks, and native vegetation and mulch can replace high maintenance grass lawns. Homeowners can use fertilizers sparingly and sweep driveways, sidewalks, and roads instead of using a hose. Instead of disposing of yard waste, they can use the materials to start a compost pile. And homeowners can learn to use Integrated Pest Management (IPM) to reduce dependence on harmful pesticides.

In addition, households can prevent polluted runoff by picking up after pets and using, storing, and disposing of chemicals properly. Drivers should check their cars for leaks and recycle their motor oil and antifreeze when these fluids are changed. Drivers can also avoid impacts from car wash runoff (e.g., detergents, grime, etc.) by using car wash facilities that do not generate runoff. Households served by septic systems should have them professionally inspected and pumped every 3 to 5 years. They should also practice water conservation measures to extend the life of their septic systems.

Controlling Impacts from New Development

Developers and city planners should attempt to control the volume of runoff from new development by using low impact development, structural controls, and pollution prevention strategies. Low impact development includes measures that conserve natural areas (particularly sensitive hydrologic areas like riparian buffers and infiltrable soils); reduce development impacts; and reduce site runoff rates by maximizing surface roughness, infiltration opportunities, and flow paths.

Controlling Impacts from Existing Development

Controlling runoff from existing urban areas is often more costly than controlling runoff from new developments. Economic efficiencies are often realized through approaches that target "hot spots" of runoff pollution or have multiple benefits, such as high-efficiency street sweeping (which addresses aesthetics, road safety, and water quality). Urban planners and others responsible for managing urban and suburban areas can first identify and implement pollution prevention strategies and examine source control opportunities. They should seek out priority pollutant reduction opportunities, then protect natural areas that help control runoff, and finally begin ecological restoration and retrofit activities to clean up degraded water bodies. Local governments are encouraged to take lead roles in public education efforts through public signage, storm drain marking, pollution prevention outreach campaigns, and partnerships with citizen groups and businesses. Citizens can help prioritize the clean-up strategies, volunteer to become involved in restoration efforts, and mark storm drains with approved "don't dump" messages.

Related Publications

Turn Your Home into a Stormwater Pollution Solution!

www.epa.gov/nps

This web site links to an EPA homeowner's guide to healthy habits for clean water that provides tips for better vehicle and garage care, lawn and garden techniques, home improvement, pet care, and more.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas

www.epa.gov/owow/nps/urbanmm

This technical guidance and reference document is useful to local, state, and tribal managers in implementing management programs for polluted runoff. Contains information on the best available, economically achievable means of reducing pollution of surface waters and groundwater from urban areas.

Onsite Wastewater Treatment System Resources

www.epa.gov/owm/onsite

This web site contains the latest brochures and other resources from EPA for managing onsite wastewater treatment systems (OWTS) such as conventional septic systems and alternative decentralized systems. These resources provide basic information to help individual homeowners, as well as detailed, up-to-date technical guidance of interest to local and state health departments.

Low Impact Development Center

www.lowimpactdevelopment.org

This center provides information on protecting the environment and water resources through integrated site design techniques that are intended to replicate preexisting hydrologic site conditions.

Stormwater Manager's Resource Center (SMRC)

www.stormwatercenter.net

Created and maintained by the Center for Watershed Protection, this resource center is designed specifically for stormwater practitioners, local government officials, and others that need technical assistance on stormwater management issues.

Strategies: Community Responses to Runoff Pollution

www.nrdc.org/water/pollution/storm/stoinx.asp

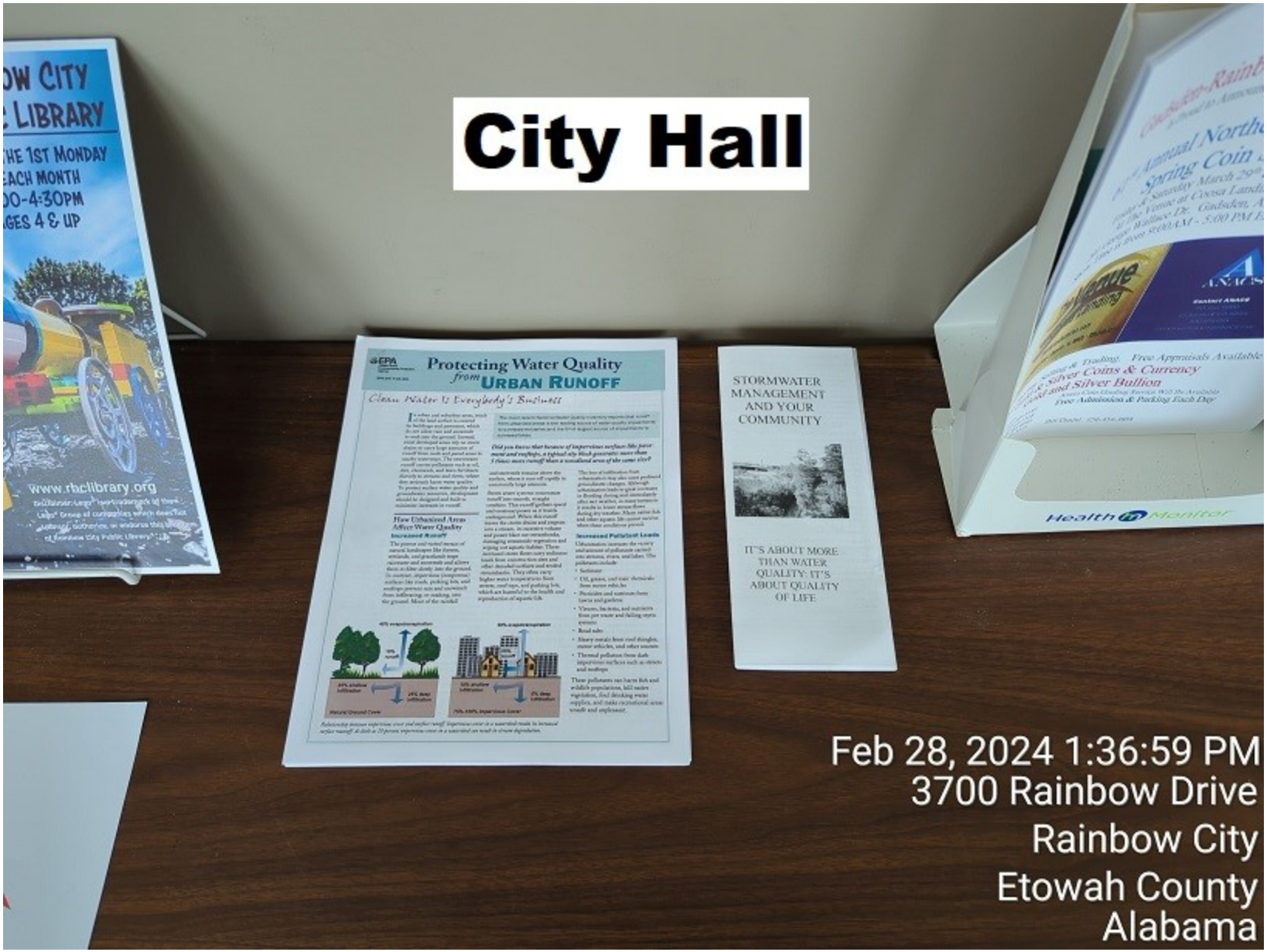
The Natural Resources Defense Council developed this interactive web document to explore some of the most effective strategies that communities are using around the nation to control urban runoff pollution. The document is also available in print form and as an interactive CD-ROM.

For More Information

U.S. Environmental Protection Agency
Nonpoint Source Control Branch (4503T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

www.epa.gov/nps

February 2003


City Hall
Protecting Water Quality from URBAN RUNOFF
Clean Water Is Everybody's Business
STORMWATER MANAGEMENT AND YOUR COMMUNITY
IT'S ABOUT MORE THAN WATER QUALITY: IT'S ABOUT QUALITY OF LIFE
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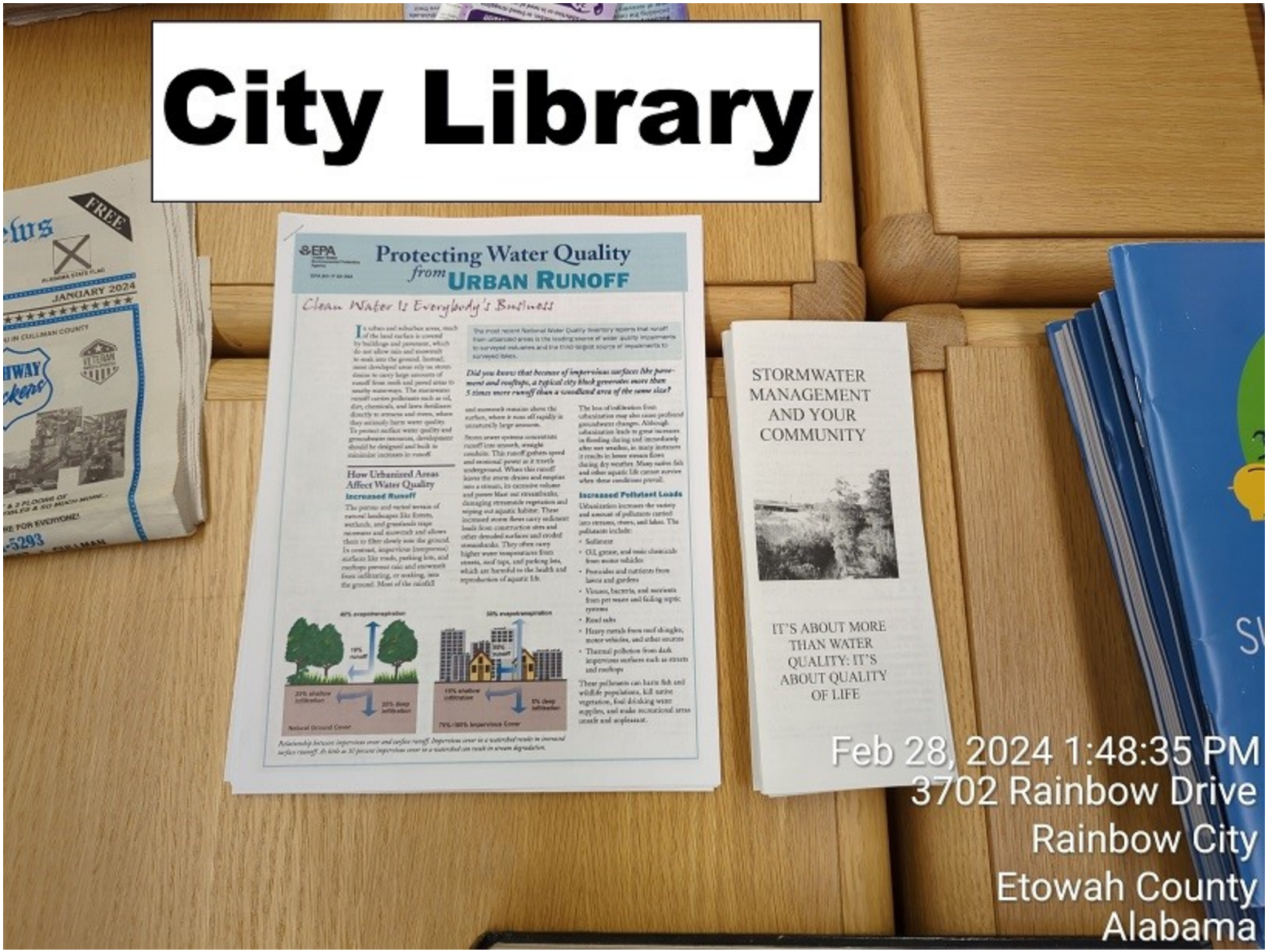


Stormwater and the **Construction Industry**

Protect Natural Features

Bad

Good

- Minimize clearing.
- Minimize the amount of exposed soil.
- Identify and protect areas where existing vegetation, such as trees, will not be disturbed by construction activity.
- Protect streams, stream buffers, wild woodlands, wetlands, or other sensitive areas from any disturbance or construction activity by fencing or otherwise clearly marking these areas.

Construction Phasing

Bad

Good

- Sequence construction activities so that the soil is not exposed for long periods of time.
- Schedule or limit grading to small areas.
- Install key sediment control practices before site grading begins.
- Schedule site stabilization activities, such as landscaping, to be completed immediately after the land has been graded to its final contour.

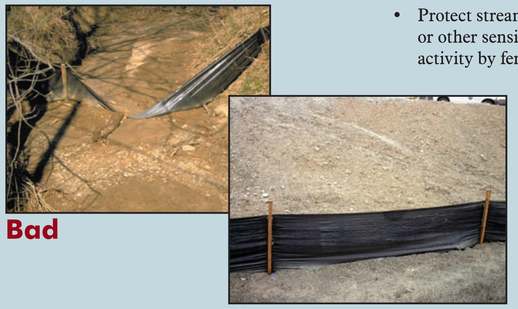
Vegetative Buffers

Bad

Good

- Protect and install vegetative buffers along waterbodies to slow and filter stormwater runoff.
- Maintain buffers by mowing or replanting periodically to ensure their effectiveness.

Silt Fencing



Bad

Good

- Inspect and maintain silt fences after each rainstorm.
- Make sure the bottom of the silt fence is buried in the ground.
- Securely attach the material to the stakes.
- Don't place silt fences in the middle of a waterway or use them as a check dam.
- Make sure stormwater is not flowing around the silt fence.

Maintain your BMPs!

www.epa.gov/npdes/menuofbmps

Site Stabilization

Bad

Good

- Vegetate, mulch, or otherwise stabilize all exposed areas as soon as land alterations have been completed.

Construction Entrances

Bad

Good

- Remove mud and dirt from the tires of construction vehicles before they enter a paved roadway.
- Properly size entrance BMPs for all anticipated vehicles.
- Make sure that the construction entrance does not become buried in soil.

Slopes

Bad

Good

- Rough grade or terrace slopes.
- Break up long slopes with sediment barriers, or under drain, or divert stormwater away from slopes.

Dirt Stockpiles

Bad

Good

- Cover or seed all dirt stockpiles.

Storm Drain Inlet Protection

Bad

Good

- Use rock or other appropriate material to cover the storm drain inlet to filter out trash and debris.
- Make sure the rock size is appropriate (usually 1 to 2 inches in diameter).
- If you use inlet filters, maintain them regularly.

Costs of Low Impact Development

LID Saves Money and Protects Your Community's Resources

LID Barrier Busters Fact Sheet Series

Are Low Impact Development (LID) Practices More Economical Than Conventional Practices?

In many cases, the answer is yes. LID typically includes a variety of low-cost elements such as bioswales that retain rain water and encourage it to soak into the ground rather than allowing it to run off into storm drains where it would otherwise contribute to flooding and pollution problems. LID projects typically include smaller overall development footprints, reduce the amount of runoff generated and increase the amount of natural areas on a site, thereby reducing costs when compared to traditional stormwater management and flood control.

FAQ

Isn't LID too costly?

Barrier Busted!

Communities recognize that using LID can save money.

EPA's LID Barrier Busters fact sheet series…helping to overcome misperceptions that can block adoption of LID in your community

Example Economic Benefits of LID Elements

- Adding roadside bioswales, making roads narrower and designing smaller or porous parking lots with on-site runoff retention **saves money by reducing the amount of pavement, curbs and gutters needed**.
- Installing green roofs, disconnecting roof downspouts from impervious surfaces (driveways or streets), and incorporating bioretention areas to capture on-site runoff **saves money by eliminating the need for costly runoff detention basins and pipe delivery systems**.
- Designing more compact residential lots **saves money by reducing site grading and building preparation costs, and can increase the number of lots available for sale**.
- Preserving natural features in the neighborhood **can increase the value and sale price of residential lots**.
- Using existing trees and vegetation **saves money by reducing landscaping costs and decreasing stormwater volume**.

This 4-acre grassed overflow parking lot at a mall in West Hartford, CT cost $500,000—half the cost of a traditional parking lot.

Cost-Savings Nationwide: LID Case Studies

A U.S. Environmental Protection Agency study of 17 LID case studies around the country found that, in the majority of cases, total capital cost savings ranged from 15 to 80 percent when LID methods were used. (For details, see **www.epa.gov/nps/lid/costs07**.)

- **Sherwood, Arkansas:** Gap Creek subdivision included 23.5 acres of open, buffered natural drainage areas and traffic-calming circles that allowed the developer to reduce street widths. Results? The lots sold for $3,000 more and cost $4,800 less to develop than comparable conventional lots. The LID design required less land for stormwater control features, which allowed the developer to create and sell 17 additional lots.

Street drainage flows into this roadside bioswale in Lenexa, Kansas. The city found that on-site detention with LID practices cost 25 percent less than traditional stormwater management retrofits.

- **Seattle, Washington:** Seattle's 2nd Avenue Street Edge Alternative project redesigned an entire block with LID techniques such as bioswales in the rights-of-way. Results? Reducing street widths and sidewalks lowered paving costs by 49 percent. Overall, incorporating LID techniques cost $651,548—a savings of $217,255 compared to a conventional retrofit of the block, which would have cost an estimated $868,803.
- **Naperville, Illinois**: Developers at the 55-acre Tellabs corporate campus preserved much of the site's natural drainage features and topography, reducing grading and earthwork costs. They used bioswales and other infiltration techniques in parking lots to manage stormwater. They maximized the amount of natural areas, eliminating the need for irrigation systems and lowering maintenance costs when compared to turf grass. Results? As seen in the table below, total LID project costs were $461,510 less than a conventional design would have been.

Sample Costs: Comparing Conventional Stormwater Controls with LID Techniques in a Corporate Development (Tellabs) in Naperville, Illinois

Construction Item	Cost of Conventional Development	Cost When Using LID Practices	Dollars Saved with LID
Site preparation	$2,178,500	$1,966,000	$212,500
Stormwater management	$480,910	$418,000	$62,910
Landscape development	$502,750	$316,650	$186,100
Total	**$3,162,160**	**$2,700,650**	**$461,510**

LID Provides Added Value for Communities

Besides reducing the capital and other actual costs, using LID practices provides numerous additional economic benefits, some of which are difficult to quantify, including:

- Improved aesthetics for communities
- Expanded recreational opportunities
- Increased property values due to the desirability of the lots and their proximity to open space
- Increased marketing potential and faster sales for residential and commercial properties
- Reduced stream channel damage and pollutant loadings in downstream waters
- Reduced drinking water treatment costs
- Reduced costs associated with combined sewer overflows, where applicable

LID offers great flexibility for developing and re-developing properties. A wide range of LID technology choices are available to match the needs of individual sites and the desires of the parties developing or buying the property.

A roadside swale captures and retains runoff in Seattle, Washington. The city saves money with LID by avoiding costly stormwater infrastructure and reducing paving costs.

This bioretention pond in Wilsonville, Oregon collects runoff from the rooftops, sidewalks and yards. The pond offers valuable aesthetic and wildlife habitat benefits while also reducing stormwater control costs.

Philadelphia has been expanding its use of LID by implementing new policies and demonstration projects, such as this roadside bioswale that treats runoff from an adjacent parking lot. The city's use of LID has reduced stormwater runoff volume, saving approximately $170 million in combined sewer overflow costs since 2006.

United States Environmental Protection Agency • Office of Wetlands, Oceans, and Watersheds
1200 Pennsylvania Avenue, NW, Washington, DC 20460
EPA 841-N-12-003C • March 2012

Effectiveness of Low Impact Development

Proven LID Technologies Can Work for Your Community

LID Barrier Busters Fact Sheet Series

Low Impact Development (LID) includes a variety of practices such as bioswales and porous paving that mimic natural processes by retaining rain water and allowing it to soak into the ground. Studies have shown that LID practices offer significant environmental benefits over conventional stormwater management practices (where runoff is shunted quickly into detention basins or directly to streams). By holding water onsite, LID practices reduce the amount of runoff generated during a rainstorm, alleviating downstream erosion and stream habitat damage. In addition, LID practices filter out pollutants such as oil, bacteria, sediment and nutrients as the collected water seeps through vegetation and soil. The water that eventually reaches groundwater and surface water is much cleaner.

This fact sheet highlights the environmental benefits of several LID projects across the country. Separate fact sheets in EPA's *LID Barrier Busters* series focus on cost and aesthetic benefits achieved by LID.

FAQ

Isn't LID less effective than conventional stormwater management?

Barrier Busted!

LID successfully controls polluted runoff across the nation.

EPA's LID Barrier Busters fact sheet series… helping to overcome misperceptions that can block adoption of LID in your community

Case Studies: LID Environmental Successes Span the United States

Seattle, Washington

Seattle launched its Street Edge Alternatives (SEA Street) neighborhood demonstration project in 2000. The city incorporated LID practices to improve stormwater management on 600 linear feet of street (comprising a drainage area of 2.3 acres). The project reduced impervious surfaces by 11 percent when compared to a traditional street, provided surface detention in roadside swales, and added more than 1,200 new trees and shrubs.

Results? The volume of stormwater leaving the street declined by 99 percent. LID practices absorbed all dry season flow and 98 percent of wet season flow.

Seattle's SEA Street project (top of photo) uses numerous LID practices including rain gardens, vegetated swales and a narrow, winding street. A typical Seattle street (bottom of photo), by comparison, has a broad, wide street and flat yards with few natural depressions to capture and store stormwater runoff.

In 2003 Seattle implemented the Northwest 110th Cascade project, replacing 1,400 linear feet of existing ditches and culverts with a series of stair-stepped natural pools that slow damaging stormwater flows, encourage infiltration and trap pollutants from a 28-acre basin.

Results? The LID practices significantly reduce the amount of runoff that reaches a nearby creek. Discharge volumes declined between 48 and 74 percent. In fact, the basin released water into the creek in only 49 of 235 measurable storms. Monitoring showed that the LID practices also filtered out a lot of the pollution carried in the stormwater (Table 1).

For more information about the Seattle projects (including virtual tours), go to **www.seattle.gov** and type "natural drainage" into the search box.

Table 1. NW 110th Cascade Project: Pollutant Removal (2004–2006)

Pollutant	Pollutant Mass Loading Reductions[1]
Total suspended solids	84%
Total nitrogen	63%
Total phosphorus	63%
Total copper	83%
Dissolved copper	67%
Total zinc	76%
Dissolved zinc	55%
Total lead	90%
Motor oil	92%

[1] As compared to traditional street drainage

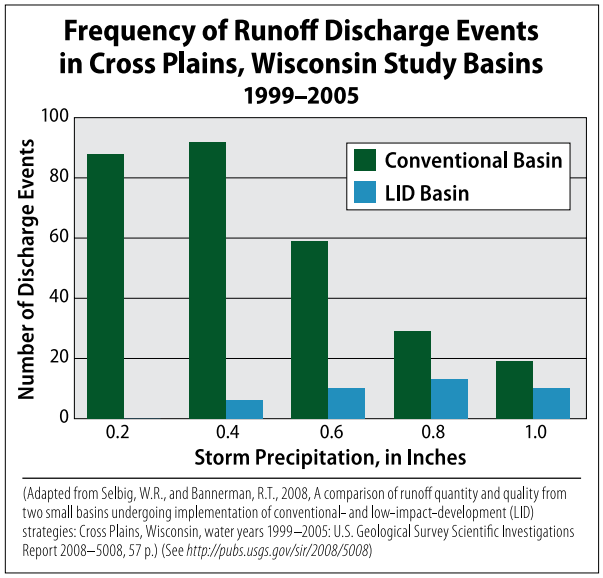
Source: Horner and Chapman, 2007. NW 110th Street Natural Drainage System Performance Monitoring (www.seattle.gov)

A stair-stepped pool slows runoff in Seattle's NW 110th Cascade project.

Cross Plains, Wisconsin

Between 1999 and 2005, the U.S. Geological Survey monitored water quality from two similar developments—one fitted with conventional drainage (wide streets, curbs, gutters and storm sewers leading to a detention basin) and the other with LID practices (grass swales, small detention areas followed by a large infiltration basin, infiltration trenches and narrow street widths).

Results? The LID basin reduced the frequency of discharge, runoff volume and peak flows for most storms, which also greatly reduced pollutant loads. Data show that for storms with precipitation depths of 0.4 inches or less, the LID basin discharged runoff only six times, compared to 180 times in the conventional basin (see chart). Overall, the LID basin released a total discharge volume roughly one-tenth that of the conventional basin.



(Adapted from Selbig, W.R., and Bannerman, R.T., 2008, A comparison of runoff quantity and quality from two small basins undergoing implementation of conventional- and low-impact-development (LID) strategies: Cross Plains, Wisconsin, water years 1999–2005: U.S. Geological Survey Scientific Investigations Report 2008–5008, 57 p.) (See *http://pubs.usgs.gov/sir/2008/5008*)

Philadelphia, Pennsylvania

The city's sewer collection system includes 40 percent municipal separate storm sewer system (a pipe that carries stormwater runoff and empties into a local waterway) and 60 percent combined sewer (a pipe that carries both raw sewage and runoff to a treatment facility). In times of heavy rain, the runoff introduced into the combined sewer can overwhelm the collection system and lead to discharge of untreated sewage directly into surface waters. To reduce the amount of stormwater runoff reaching the combined sewer, Philadelphia is implementing LID practices such as stormwater planters, stormwater bump-outs, stormwater wetlands, rain gardens and porous paving, among others (see **www.phillywatersheds.org/BigGreenMap** for project locations).

Results? Over a two-year period the city replaced an estimated two square miles of impervious cover (e.g., parking lots, roads) with LID practices, reducing runoff during this time by a half billion gallons. Storing an equivalent amount of combined sewer overflow would have cost the city an estimated $340 million. One project, the Saylor Grove stormwater wetland, was designed by the Philadelphia Water Department to capture and filter the first 0.7 inch of every rainfall event falling over a 156-acre urban watershed—treating 70 million gallons of runoff and preventing approximately 13 tons of sediment from reaching the local creek each year. For a comprehensive look at benefits gained through Philadelphia's LID approach, see **http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_philadelphia_bottomline.pdf**.

Need More Information to Share with Others?

The University of New Hampshire's Stormwater Center offers online presentations about the effectiveness of various types of LID practices (**www.unh.edu/unhsc/presentations**). For links to more LID resources, see **www.epa.gov/nps/lid**.

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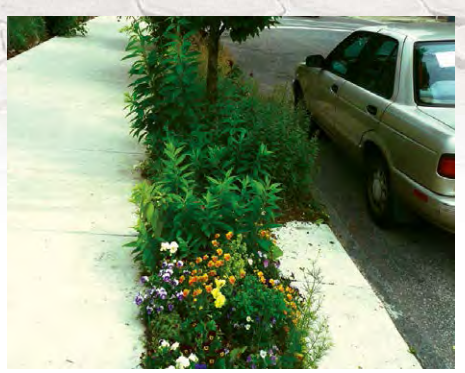


Stormwater planters in Philadelphia capture and filter stormwater runoff from an adjacent roadway.

A green roof on Philadelphia's Thin Flats housing units offers private green space for urban residents while also capturing rainwater.

Philadelphia constructed the one-acre Saylor Grove stormwater wetland in a park area to collect and treat 70 million gallons of urban stormwater generated in the storm sewershed each year.

An educational sign at Philadelphia's Saylor Grove stormwater wetland provides a diagram of the wetland and explains the benefits of natural stormwater management.

CITY OF RAINBOW CITY LAND DISTURBANCE PERMIT APPLICATION

Name of Applicant: Joseph D. Barone (Bon 1 LLC)

Address: 3817 Landon Lane
Fort Payne, AL 35968

Name, address and telephone of property owner of record:
Same

Address of subject property: 214 East Grand Ave. Rainbow City, AL 35906

Legal description and tax parcel numbers of subject property:
Attached.

Size of property being disturbed (acres): ~~7t~~ 3.95 acres

Name, address and telephone number of any engineers, contractors or subcontractors:
Heritage Outdoors, LLC – 256-312-4777 (Silt fence)
Whitley Grading & Development – 205-559-0822 (Clear site)

Statement of intent:
To clear building, trees and debris on site. Then build a pizza buffet/arcade with turn lane, sewer road and parking lot.

List of state or federal permits:
ADEM - General NPDES Permit number ALR10C3PP

Refer to Ordinance No. 490 Storm Water Management Regulation for explanation of required information.

APPLICANTS CERTIFICATION

"I certify, under penalty of law, that this document and any attachments were prepared under my direction or supervision and that I have personally examined, and I am familiar with, the information in this document and any such attachments. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and civil penalty."

Applicant's Signature

7/9/23
Date

ETOWAH COUNTY MS4 STEERING COMMITTEE MEETING

SIGN IN SHEET

WEDNESDAY, SEPTEMBER 13, 2023, 10:00 A.M.

NAME	REPRESENTING	TELEPHONE/EMAIL
Heath Williamson	City of Gadsden	256-504-9436 / hwilliamson@cityofgadsden.com
Jason Nicholson	City of Attalla	256-441-9200 jnicholson@attallacity.org
Judd Rich	City of Southside	256-613-9161 juddrich@cityofsouthside.com
Jason Rose	City of Southside	256-458-1011 jasonrose@cityofsoutside.com
ROBERT NAEL	ETOWAH COUNTY	
Mel Smith	Etowah County	256-548-5358 msmith@etowahcounty.org
Lisa Lowman	Hokes Bluff	256-490-1352 lisa.lowman@cityofhokesbluff.com
Todd Means	City of Glencoe	256-492-1424 toddmeans@cityofglencoe.org
Keener Morris	City of Attalla	256 545 4524 kmorris@cityofa
Joel Garmon	City of Rainbow City	256-413-1230 jgarmon@rbcalabama.com

SOIL & WATER CONSERVATION COMMITTEE

Alabama Soil and Water Conservation Committee and Alabama Erosion and Sediment Control Partnership

Certificate of Training
Alabama Stormwater Association Symposium and Clear Water Alabama$_{TN}$ 2023, Seminar
Marriott Convention Center
September 20, 2023

This certifies that

Joel Garmon

Participated in today's program that involved technical training in erosion and sediment control with 6.5 Contact hours = 0.65 CEUs, 6.5 PDHs or 6.5 PDUs

This certificate and the Seminar Program can be used to document professional development.

Perry L Oakes

Perry L. Oakes
Erosion and Sediment Control Program Coordinator
Alabama Soil and Water Conservation Committee

Signature of participant

SOIL & WATER CONSERVATION COMMITTEE

Alabama Soil and Water Conservation Committee and Alabama Erosion and Sediment Control Partnership

Certificate of Training
Clear Water Alabama™ 2023, Field Site Visits
Florence Area
September 21, 2023

This certifies that

Joel Garmon

Participated in today's program that involved technical training in erosion and sediment control with 2 Contact hours = 0.2 CEUs, 2 PDHs or 2 PDUs

This certificate and the Field Day Program can be used to document professional development. The Field Day plus the 2 hour QCI session completes the mandatory 4-hour continuing education requirement for individuals possessing existing QCI certification from the Home Builders Association of AL

Perry L Oakes

Perry L. Oakes
Erosion and Sediment Control Program Coordinator
Alabama Soil and Water Conservation Committee

Signature of participant

City of Rainbow City is in **Rainbow City**.
May 3, 2023 ·

Hey, Rainbow City! It's time to roll up our sleeves for some spring cleaning. Join us this Saturday (May 6th) from 8am to 11am for the city-wide CleanUp Day!

We will meet at the City Hall fire bay behind the building. All cleaning gear (gloves, bags, vests, etc.) will be provided.

Don't miss out on the door prizes AND a free lunch at 11am for all of your hard work!

Thanks for helping keep our amazing city clean.

6

3 shares

City of Rainbow City
May 6, 2023 ·

⚠⚠⚠ Please be aware of people cleaning up on our roadways today during our cleanup day. ⚠⚠⚠

#CityOfPromise

5 4 shares

City of Rainbow City
May 8, 2023 ·

Over a hundred volunteers participated in our Community-wide CleanUp Day. We are humbled and grateful to every person and organization that showed up. Thank you to everyone who was involved.

Clean Up Day resulted in over 274 bags of trash and litter, the equivalent of 2.5 tons.

53 3 comments 5 shares

City of Rainbow City
October 9, 2023 ·

Join us this Saturday!

SAT, OCT 14, 2023

RBC Fall Cleanup Day

2 people went

☆ Interested

1

City of Rainbow City is in **Rainbow City**.
October 11, 2023 ·

Spread the word! The weather this Saturday is going to be perfect for a day spent outside in RBC!

Fall City-Wide CleanUp Day
-Saturday, October 14th
-from 8am to 11am
-All cleaning gear will be provided
-Door prizes AND a free lunch at 11am

For more information, check out our Facebook Event Page: https://facebook.com/events/s/rbc-fall-cleanup-day/271926975822553

#CityofPromise #ComeGrowWithUS #ItsTime

2

1 share

City of Rainbow City is in **Rainbow City**.
October 13, 2023 ·

TOMORROW MORNING! It will only take three hours in beautiful weather to help keep our city clean!

Fall City-Wide CleanUp Day
-Saturday, October 14th
-from 8am to 11am
-All cleaning gear will be provided
-Door prizes AND a free lunch at 11am

For more information, check out our Facebook Event Page: https://facebook.com/events/s/rbc-fall-cleanup-day/271926975822553

#CityofPromise #ComeGrowWithUS #ItsTime

3 1 share

KEEP ETOWAH BEAUTIFUL, INC.
COMMUNITY PROGRAMS FOR
2023-2024

GAC: Volunteers: 535 Tons: 9.87

RENEW OUR RIVERS:
Volunteers: 423 Tons: 6.19

CLEAN CAMPUS CERTIFICATION AND PROGRAM:
In the process of being revamped

WATER FESTIVAL: Held virtual with activities and supplies
Adult Volunteers: 58
High School & College Presenters: 162
4th Grade Teachers: 64
4th Grade Students: 1212

INFLUENCE PROGRAM:

Days – 145 Miles 385.6 Tons: 34.97

Recyclable Litter: 59.9 tons

Illicit Discharge Detection & Elimination Complaint Form

1. Initial Complaint Info:

a. Date:

b. Time:

c. Location:

d. Observation:

e. Contact:

i. Name:

ii. Address:

iii. Phone:

2. Complaint Investigation:

a. Investigated by:

b. Date:

c. Observation:

d. Pictures: (Yes / No)

e. Recommended action:

3. Complaint Resolution:

a. Action Taken:

b. Resolved: (Yes / No):

Illicit Discharge Detection & Elimination Complaint Form

1. Initial Complaint Info:

a. Date: 3-5-24

b. Time: 12:30 PM

c. Location: 765 Township Rd.

d. Observation: Asphalt Blocking Drain Pipe

e. Contact:

i. Name: Same

ii. Address:

iii. Phone:

2. Complaint Investigation:

a. Investigated by: Michael Stevens

b. Date: 3-6-24

c. Observation:

d. Pictures: (Yes / (No))

e. Recommended action:

3. Complaint Resolution:

a. Action Taken: Cleaned out ditch of leaves and Asphalt

b. Resolved: ((Yes) / No):


clean up day
Saturday, May 6th
8:00am-11:00am
Meet Behind
Fire Bay
DAKTRONICS
GALAXY
3700
RAINBOW CITY
UNICIPAL BUILDING

Oct 5, 2023 10:47:02 AM
3700 Rainbow Drive
Rainbow City
Etowah County
Alabama

8. Jeff Prince presented Resolution No. 23-10 – Rainbow City enters into an agreement with the State of Alabama through ALDOT to maintain the storm sewer system at Milepost 102.75 to 102.86 on East Grand Avenue for a prospective new business. Anita Bedwell made a motion to adopt Resolution No. 23-10. Randy Vice seconded the motion. Jeff Prince stated all in favor say aye. All ayes. Jeff Prince declared the motion carried.

9. Jeff Prince presented a sponsorship request – Talk Derby To Me benefiting the Family Success Center to be held Saturday, May 6, 2023 at Brunson Farms. Anita Bedwell made a motion to be a Triple Crown sponsor for $1,200.00. Jameson Jenkins seconded the motion. Jeff Prince stated all in favor say aye. All ayes. Jeff Prince declared the motion carried.

10. Jeff Prince presented Proclamation No. 23-03 – honoring Louise Gibson on her 100th birthday. Many of her family members were here to honor her.

11. Jeff Prince stated that the Police Dept. received a $23,000.00 JAG grant for rifle rated body armor. Captain Scott Holderfield and Karen Frost wrote this grant.

Announcements:

- Saturday, May 6, 2023 – Rainbow City Clean Up Day begins at 8:00 a.m.

There being no further business to come before the Council, Anita Bedwell made a motion to adjourn. Jameson Jenkins seconded the motion. Time Adjourned: 5:32 p.m.

_____
Beth Lee, City Clerk

_____
Jeff Prince, Mayor Pro-Tempore

Invoice

Noble Hill Landfill

DEPT# 6453
NOBLE HILL LANDFILL
PO BOX 11407
BIRMINGHAM, AL 35246-6453
256-960-7426

V1546
01-480-270

Date	Invoice #
05/31/2023	1847
	Invoice Total
	4,654.16

Bill To:

PURCHASE@RBCALAMBAMA.COM
CITY OF RAINBOW CITY
3700 RAINBOW DR
RAINBOW CITY AL 35906

Service Address:

CITY OF RAINBOW CITY
3700 RAINBOW DR
RAINBOW CITY AL 35906

Account No. 01-20 7
Due Date 06/30/2023

For proper credit please return this portion.

DATE	DESCRIPTION		QUANTITY	AMOUNT	TOTAL
05/01/23	TONS-MSW	TKT# 0013953	3.50	29.550	103.43
05/01/23	TONS-MSW	TKT# 0013955	2.41	29.550	71.22
05/01/23	TONS-MSW	TKT# 0013987	5.53	29.550	163.41
05/02/23	TONS-MSW	TKT# 0014030	3.63	29.550	107.27
05/02/23	TONS-C & D	TKT# 0014072	3.74	29.550	110.52
05/02/23	TONS-MSW	TKT# 0014073	4.92	29.550	145.39
05/03/23	TONS-MSW	TKT# 0014106	3.18	29.550	93.97
05/03/23	TONS-MSW	TKT# 0014111	7.79	29.550	230.19
05/03/23	TONS-MSW	TKT# 0014130	3.08	29.550	91.01
05/03/23	TONS-MSW	TKT# 0014140	5.21	29.550	153.96
05/03/23	TONS-MSW	TKT# 0014143	3.13	29.550	92.49
05/04/23	TONS-MSW	TKT# 0014164	2.61	29.550	77.13
05/04/23	TONS-MSW	TKT# 0014199	3.09	29.550	91.31
05/04/23	TONS-C & D	TKT# 0014200	3.19	29.550	94.26
05/05/23	TONS-MSW	TKT# 0014230	1.22	29.550	36.05
05/08/23	TONS-MSW	TKT# 0014297	2.14	29.550	63.24
05/08/23	TONS-MSW	TKT# 0014304	2.84	29.550	83.92
05/08/23	TONS-MSW	TKT# 0014315	2.65	29.550	78.31
05/09/23	TONS-MSW	TKT# 0014355	2.45	29.550	72.40
05/09/23	TONS-MSW	TKT# 0014356	3.43	29.550	101.36
05/09/23	TONS-MSW	TKT# 0014378	2.44	29.550	72.10
05/10/23	TONS-MSW	TKT# 0014416	2.87	29.550	84.81
05/10/23	TONS-MSW	TKT# 0014438	2.36	29.550	69.74
05/10/23	TONS-MSW	TKT# 0014442	1.42	29.550	41.96
05/11/23	TONS-MSW	TKT# 0014468	1.97	29.550	58.21
05/11/23	TONS-MSW	TKT# 0014486	6.09	29.550	179.96
05/12/23	TONS-MSW	TKT# 0014518	3.15	29.550	93.08
05/15/23	TONS-MSW	TKT# 0014583	5.66	29.550	167.25
05/15/23	TONS-MSW	TKT# 0014600	3.43	29.550	101.36

AGE	CURRENT	31-60 DAYS	61-90 DAYS	91+ DAYS	Account Balance
AMOUNT					(CONT.)

NOBLE HILL LANDFILL

Account No.: 01-20 7
Billing Name: CITY OF RAINBOW CITY **Due Date:** 06/30/2023 **Invoice #:** 1847

Invoice

Noble Hill Landfill

DEPT# 6453
NOBLE HILL LANDFILL
PO BOX 11407
BIRMINGHAM, AL 35246-6453
256-960-7426

Date	Invoice #
05/31/2023	1847
	Invoice Total
	4,654.16

Bill To:

PURCHASE@RBCALAMBAMA.COM
CITY OF RAINBOW CITY
3700 RAINBOW DR
RAINBOW CITY AL 35906

Service Address:

CITY OF RAINBOW CITY
3700 RAINBOW DR
RAINBOW CITY AL 35906

Account No. 01-20 7
Due Date 06/30/2023

For proper credit please return this portion.

DATE	DESCRIPTION		QUANTITY	AMOUNT	TOTAL
05/15/23	TONS-MSW	TKT# 0014605	3.01	29.550	88.95
05/15/23	TONS-MSW	TKT# 0014625	3.69	29.550	109.04
05/15/23	TONS-MSW	TKT# 0014635	3.25	29.550	96.04
05/16/23	TONS-MSW	TKT# 0014658	3.70	29.550	109.34
05/16/23	TONS-MSW	TKT# 0014664	3.35	29.550	98.99
05/16/23	TONS-MSW	TKT# 0014680	4.34	29.550	128.25
05/16/23	TONS-MSW	TKT# 0014686	4.33	29.550	127.95
05/16/23	TONS-MSW	TKT# 0014720	2.48	29.550	73.28
05/16/23	TONS-MSW	TKT# 0014723	2.13	29.550	62.94
05/16/23	TONS-MSW	TKT# 0014761	3.95	29.550	116.72
05/18/23	TONS-MSW	TKT# 0014839	2.81	29.550	83.04
05/22/23	TONS-MSW	TKT# 0014987	1.95	29.550	57.62
05/22/23	TONS-MSW	TKT# 0014988	2.16	29.550	63.83
05/22/23	TONS-MSW	TKT# 0015017	2.24	29.550	66.19
05/23/23	TONS-MSW	TKT# 0015044	0.83	29.550	24.53
05/23/23	TONS-MSW	TKT# 0015053	4.32	29.550	127.66
05/23/23	TONS-MSW	TKT# 0015070	2.14	29.550	63.24
05/24/23	TONS-MSW	TKT# 0015091	4.00	29.550	118.20
05/30/23	TONS-MSW	TKT# 0015278	3.69	29.550	109.04

Invoice is Due Upon Receipt
Please remit payment to:
Dept #6453
Noble Hill Landfill
PO Box 11407
Birmingham, AL 35246-6453

Total Invoice: 4,654.16

AGE	CURRENT	31-60 DAYS	61-90 DAYS	91+ DAYS	Account Balance
AMOUNT	4,654.16	0.00	0.00	0.00	4,654.16

NOBLE HILL LANDFILL

Account No.: 01-20 7
Billing Name: CITY OF RAINBOW CITY **Due Date:** 06/30/2023 **Invoice #:** 1847

Miscellaneous Receipt Transaction Listing

Code: RECYC RECYCLE REVENUE

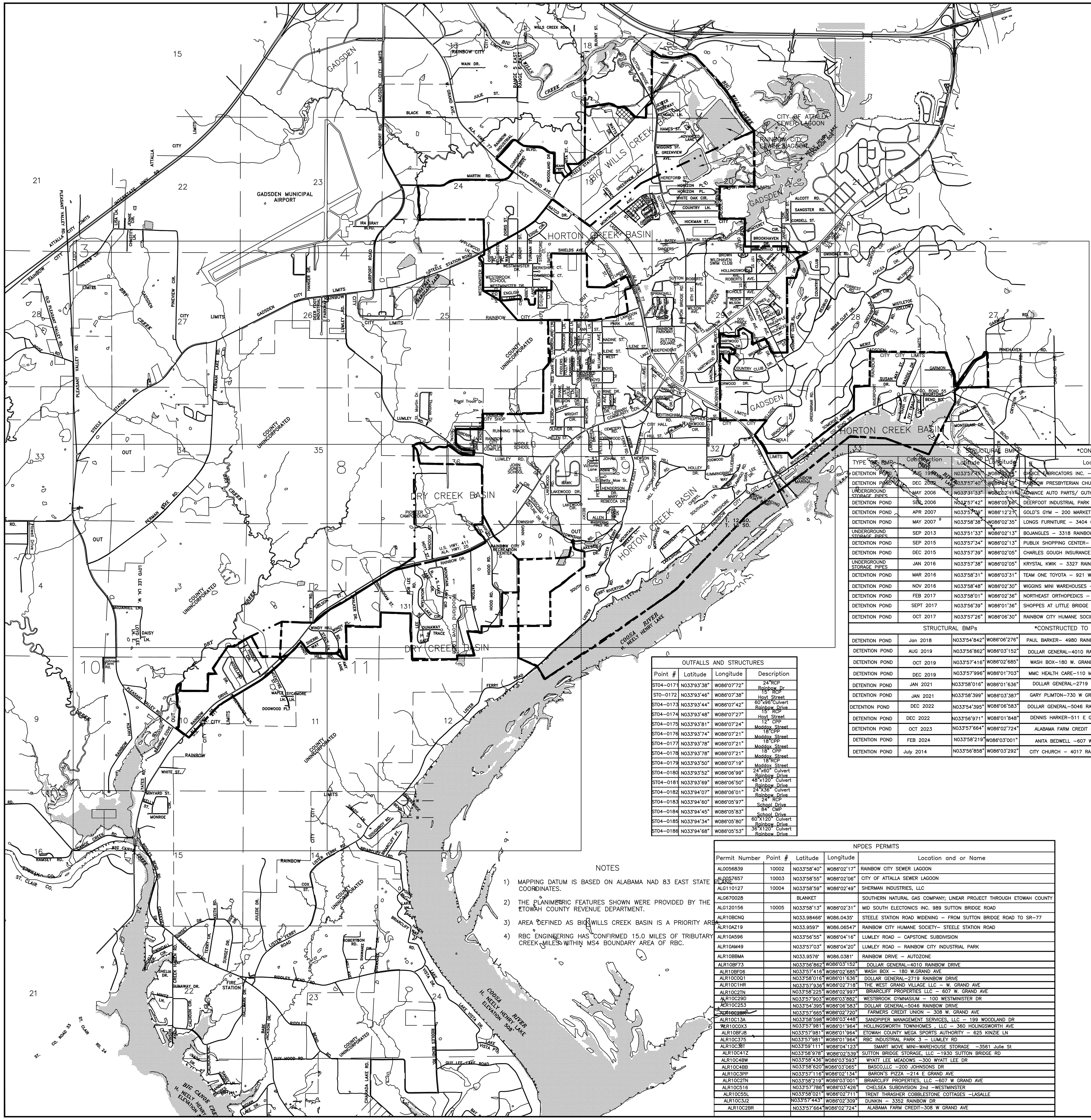
Txp ID	Loc #	Taxpayer Name	Name	Date Paid	Pmt Type	Receipt No.	Reference	Debit Account	Credit Account	Amount
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	04/26/2023	Check	2023-1805	9272	01-110-106	01-340-326	$422.00
Notes : RECYCLE REVENUE - OLD CORRUG 21,000 TON @ 20.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING IN	05/09/2023	Check	2023-1856	9380	01-110-106	01-340-326	$265.00
Notes : RECYCLE REVENUE OLD CORRUG 13.2500 TON @ 20.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	06/06/2023	Check		10776	01-110-106	01-340-326	$465.00
Notes : RECYCLE REVENUE - OLD CORRUG 15.5000 TON @ 30.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING, IN	06/30/2023	Check	2023-2093	11169	01-110-106	01-340-326	$489.65
Notes : RECYCLE REVENUE										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING, IN	07/13/2023	Check	2023-2185	11372	01-110-106	01-340-326	$460.25
Notes : RECYCLE REVENUE - OLD CORRUG 13.1500 TON @ 35.00										
999999975	1	RECYCLE REVENUE	Jim Steward / WinSouth	07/19/2023	Check	2023-2204	186915	01-110-106	01-340-326	$4,460.16
Notes : RECYCLE REVENUE - The recycle Company made check to Jim Steward so he had to deposit into his bank and then once posted he got WinSouth to write RBC a check. He said he told										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	08/25/2023	Check	2023-2426	12668	01-110-106	01-340-326	$762.30
Notes : RECYCLE REVENUE - OLD CORRUG 16.94 TON @ 45.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING, IN	09/08/2023	Check	2023-2493	12926	01-110-106	01-340-326	$810.00
Notes : RECYCLE REVENUE - OLD CORRUG 18.00 TON @45.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING, IN	10/05/2023	Check	2023-2649	13669	01-110-106	01-340-326	$1,157.20
Notes : RECYCLE REVENUE - OLD CORRUG 21.0400 TON @ 55.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	10/17/2023	Check	2023-2696	13956	01-110-106	01-340-326	$1,190.80
Notes : RECYCLE REVENUE - OLD CORRUG. 18.32 TON @ 65.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	11/09/2023	Check	2023-2837	14517	01-110-106	01-340-326	$1,022.45
Notes : RECYCLE REVENUE - OLD CORRUG 15.7300 TON @ $65.00										

Code: RECYC RECYCLE REVENUE

Txp ID	Loc #	Taxpayer Name	Name	Date Paid	Pmt Type	Receipt No.	Reference	Debit Account	Credit Account	Amount
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	12/08/2023	Check	2023-2983	15130	01-110-106	01-340-326	$1,185.75
Notes : RECYCLE REVENUE - OLD CORRUG 15.8100 TON @ $75.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING IN	12/15/2023	Check	2023-3042	15444	01-110-106	01-340-326	$1,303.20
Notes : RECYCLE REVENUE - OLD CORRUG 16.2900 TON @ 80.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	01/18/2024	Check	2024-89	16527	01-110-206	01-340-326	$2,881.60
Notes : RECYCLE REVENUE - OLD CORRUG 18.1100 TON @80.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING, IN	01/25/2024	Check	2024-114	16790	01-110-206	01-340-326	$1,016.80
Notes : RECYCLE REVENUE - OLD CORRUG 12.7100 TON @80.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING, IN	02/13/2024	Check	2024-249	17568	01-110-206	01-340-326	$1,707.65
Notes : RECYCLE REVENUE - OLD CORRUG 20.0900 TON @ 85.00										
999999975	1	RECYCLE REVENUE	WASTE RECYCLING	03/13/2024	Check	2024-508	18264	01-110-206	01-340-326	$1,719.50
Notes : RECYCLE REVENUE - OLD CORRUG 18.1000 TON @ 95.00										
999999975	1	RECYCLE REVENUE	GARGUS RECYCLING/R	03/22/2024	Cash	2024-564	CASH	01-110-206	01-340-326	$162.00
Notes : RECYCLE REVENUE - OLD LIGHT FIXTURES										

Total MRC - RECYC	$21,481.31
Grand Total MRC Payments:	$21,481.31

Appendix E - Illicit Discharge Detection and Elimination



Point #	Latitude	Longitude	Description
11	N033°56'04"	W086°04'27"	8'X5' CULVERT
12	N033°56'07"	W086°04'12"	5'X2' CULVERT
13	N033°56'13"	W086°03'54"	10'X4' CULVERT
14	N033°56'37"	W086°03'29"	10'X6' CULVERT
15	N033°56'48"	W086°03'19"	10'X3' CULVERT
16	N033°56'57"	W086°03'04"	10'X4' CULVERT
17	N033°57'06"	W086°02'39"	2–72" RCP
18	N033°57'22"	W086°02'26"	36" RCP/30" RCP
19	N033°57'30"	W086°02'16"	2–42" RCP
20	N033°57'36"	W086°02'06"	2–54" CM
21	N033°57'11"	W086°00'17"	CL INT. WHORTON BEND RD
22	N033°58'42"	W086°03'50"	CL INT HWY. 77 & INDUSTRIAL PARKWAY
23	N033°59'22"	W086°02'23"	BLACK CREEK PKWY. BIG WILLS CREEK
24	N033°58'04"	W086°02'21"	WEST END BROWN AVE. AT CREEK
25	N033°57'45"	W086°02'12"	CL DITCH END OF WILSON AVE.
26	N033°58'03"	W086°01'33"	2–60"X36" CMAP
27	N033°58'05"	W086°01'54"	15" RCP/30" HDPE
28	N033°58'05"	W086°02'12"	2–60"X48" CMAP
29	N033°58'52"	W086°02'51"	48" RCP
30	N033°58'44"	W086°03'03"	2–48" RCP
31	N033°57'56"	W086°03'33"	2–30" HDPE
32	N033°58'33"	W086°03'36"	2–60"X36" RCAP
33	N033°57'52"	W086°02'46"	CREEK AT HWY. 77 CHRIST CENTRAL CHURCH
34	N033°57'22"	W086°02'39"	2–60"X36" RCAP
35	N033°57'38"	W086°02'21"	36" CM
36	N033°58'33"	W086°02'20"	3–36" RCP
37	N033°58'30"	W086°02'09"	2–24" RCP
38	N033°57'37"	W086°02'27"	36" RCP
39	N033°58'24"	W086°02'47"	42" RCP
40	N033°58'18"	W086°02'41"	4–24" HDPE

Point #	Latitude	Longitude	Description
51	N033°56'53"	W086°02'40"	30" HDPE/24" RCP
52	N033°56'46"	W086°02'41"	36" HDPE
53	N033°56'44"	W086°02'33"	36" RCP
54	N033°56'54"	W086°04'16"	5–36" RCP
55	N033°56'46"	W086°03'32"	54" CM
56	N033°55'32"	W086°05'47"	2–30" HDPE
57	N033°55'28"	W086°05'54"	42" RCP
58	N033°55'29"	W086°05'06"	36" CM
59	N033°55'38"	W086°05'10"	36" CM
60	N033°55'43"	W086°04'25"	42" RCP
61	N033°55'38"	W086°04'11"	CL BRANCH END OF DUNAWAY TRACE
62	N033°55'38"	W086°04'24"	3–30" RCP
63	N033°55'43"	W086°04'15"	48" RCP
64	N033°55'52"	W086°04'14"	60"X36" CM
65	N033°55'48"	W086°04'04"	48" RCP
66	N033°56'15"	W086°03'19"	42" CM
67	N033°56'12"	W086°03'14"	2–30" RCP (POND OUTLETS)
68	N033°57'25"	W086°01'37"	CL DITCH NW FROM INT. OF PALACE AVE AND COUNTRY CLUB DRIVE
69	N033°57'26"	W086°01'40"	48"X30" CMAP
70	N033°57'32"	W086°01'44"	24"RCP/2–18" RCP 3'X2' CULVERT
71	N033°57'30"	W086°02'06"	2–30" HDPE
72	N033°57'22"	W086°02'08"	24"X18" RCAP 36"X24" HDPE
73	N033°57'32"	W086°01'58"	CL DITCH END OF WINDEMERE DR.
74	N033°54'57"	W086°06'15"	CULVERT ON WB RD IVY TR & IVY PL
ST03–0001	N033°92'47"	W086°08'50"	36" CMP Windy Hill Rd
ST03–0002	N033°92'47"	W086°08'67"	24" CMP Windy Hill Rd
ST03–0003	N033°92'47"	W086°08'71"	15" CMP Windy Hill Rd
ST03–0004	N033°92'61"	W086°08'92"	15" CMP Windy Hill Rd
ST03–0005	N033°92'71"	W086°08'59"	36" CMP Windy Hill Rd

Point #	Latitude	Longitude	Description
ST03–0016	N033°92'00"	W086°09'08"	18" CMP Sycamore Lane
ST03–0017	N033°91'89"	W086°09'06"	15" HDPE Dogwood Place
ST03–0018	N033°91'78"	W086°09'60"	36" RCP Sweetwater Lane
ST03–0019	N033°92'02"	W086°09'81"	185" RCP Sweetwater Lane
ST03–0020	N033°90'91"	W086°10'64"	12" RCP Monroe Circle
ST03–0021	N033°90'90"	W086°10'78"	15" RCP Monroe Circle
ST03–0022	N033°90'77"	W086°10'82"	15" RCP Monroe Circle
ST03–0023	N033°89'94"	W086°08'97"	30" HDPE Cox Street
ST03–0024	N033°89'94"	W086°08'75"	15" RCP Cox Street
ST03–0025	N033°89'39"	W086°10'67"	15" RCP Swindall Circle
ST03–0026	N033°89'23"	W086°10'81"	18" HDPE Swindall Circle
ST03–0027	N033°89'26"	W086°10'71"	12" RCP Swindall Circle
ST03–0028	N033°89'29"	W086°10'61"	15" RCP Swindall Circle
ST03–0031	N033°90'00"	W086°10'76"	15" HDPE Creekview Drive
ST03–0032	N033°90'03"	W086°10'76"	15" HDPE Creekview Drive
ST03–0033	N033°89'52"	W086°10'70"	15" RCP Creekview Drive
ST03–0034	N033°90'01"	W086°10'75"	24" RCP Creekview Drive
ST03–0035	N033°88'56"	W086°10'36"	12" RCP Calhoun Circle
ST03–0036	N033°88'71"	W086°10'37"	12" RCP Calhoun Circle
ST03–0037	N033°88'73"	W086°10'55"	12" RCP Calhoun Circle
ST03–0038	N033°88'92"	W086°09'61"	24" RCP Hallmark Drive
ST03–0039	N033°88'65"	W086°09'66"	24" HDPE Hallmark Drive
ST03–0040	N033°88'23"	W086°10'12"	18" CMP_RCP Hallmark Drive.
ST03–0041	N033°88'38"	W086°10'29"	52"X120" Concrete Hallmark Drive
St03–0042	N033°88'41"	W086°10'50"	18" RCP Hallmark Drive
ST03–0043	N033°88'50"	W086°10'55"	12"_15" CMP Hallmark Drive
ST03–0044	N033°89'16"	W086°10'56"	48" HDPE Hallmark Drive
ST03–0045	N033°89'15"	W086°10'55"	48" HDPE Hallmark Drive
ST03–0048	N033°88'08"	W086°10'26"	15" RCP Vada Drive

Point #	Latitude	Longitude	Description
ST03–0059	N033°87'18"	W086°09'49"	12" CMP Indian Lake Drive
ST03–0060	N033°87'30"	W086°09'53"	15"RCP_CMP Indian Lake Drive
ST03–0061	N033°87'55"	W086°09'63"	24"CMP Indian Lake Drive
ST03–0062	N033°87'78"	W086°09'31"	18"RCP Indian Lake Drive
ST03–0063	N033°87'17"	W086°09'33"	18" HDPE_CMP Hiawatha Place
ST03–0064	N033°88'08"	W086°08'98"	15" CMP Guy Hood Road
ST03–0066	N033°87'14"	W086°09'07"	15"HDPE Carter Drive
ST03–0067	N033°87'34"	W086°08'99"	15"HDPE Carter Drive
ST03–0068	N033°87'05"	W086°08'70"	54"RCP Bluebird Lane
ST03–0069	N033°87'13"	W086°08'59"	12"RCP Bluebird Lane
ST03–0070	N033°86'93"	W086°08'51"	15" RCP_HDPE Merchant Drive
ST03–0071	N033°86'97"	W086°08'41"	12"RCP Merchant Drive
ST03–0072	N033°87'12"	W086°07'30"	15" HDPE Charada Lake Road
ST03–0073	N033°87'62"	W086°07'92"	24" CMP Charada Lake Road
ST03–0074	N033°88'00"	W086°07'99"	12"CMP Charada Lake Road
ST03–0075	N033°88'07"	W086°07'99"	15"RCP Charada Lake Road
ST03–0076	N033°87'12"	W086°07'33"	15"CMP Berry Lane
ST03–0077	N033°87'12"	W086°07'37"	12" CMP Berry Lane
ST03–0078	N033°88'00"	W086°07'07"	36" RCP_HDPE Guy Lake Road
ST03–0079	N033°88'03"	W086°06'79"	24"CMP Guy Lake Road
ST03–0080	N033°88'03"	W086°06'36"	15"RCP Guy Lake Road
ST03–0081	N033°87'96"	W086°06'11"	12"RCP Guy Lake Road
ST03–0082	N033°87'61"	W086°05'92"	15" CMP Guy Lake Road
ST03–0084	N033°87'66"	W086°06'32"	15"CMP Bay Point Drive
ST03–0085	N033°87'50"	W086°06'33"	12"RCP Bay Point Drive
ST03–0086	N033°87'38"	W086°06'47"	15" CMP Bay Point Drive
ST03–0087	N033°87'43"	W086°06'56"	24"CMP Bay Point Drive
ST03–0088	N033°87'52"	W086°06'70"	15"CMP Bay Point Drive
ST03–0089	N033°88'18"	W086°07'13"	24"RCP Lake Vista Drive
ST03–0090	N033°88'35"	W086°06'62"	18"CMP Lake Vista Drive

MONITORING POINT LOCATIONS

Point #	Latitude	Longitude	Raw Description
10000	N033°54'21"	W086°06'43"	RC14
10001	N033°58'04"	W086°02'22"	RC2

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST03–0091	N033°88'68"	W086°06'87"	18"CMP Lake Vista Drive
ST03–0092	N033°88'79"	W086°07'01"	18"CMP Lake Vista Drive
ST03–0093	N033°89'09"	W086°07'28"	18"RCP Lake Vista Drive
ST03–0094	N033°88'23"	W086°06'44"	24" CMP Lake Vista Drive
ST03–0095	N033°88'95"	W086°08'27"	15"HDPE Hill Avenue
ST03–0096	N033°89'52"	W086°09'40"	24"RCP Juledee Drive
ST03–0097	N033°89'37"	W086°09'38"	36"RCP Juledee Drive
ST03–0099	N033°90'73"	W086°08'17"	15"RCP Shady Lane
ST03–0100	N033°90'93"	W086°07'58"	12"RCP Horseshoe Bend Road
ST03–0101	N033°90'83"	W086°07'58"	15"RCP Horseshoe Bend Road
ST03–0102	N033°90'52"	W086°07'92"	15"HDPE Doughboy Road
ST03–0103	N033°90'52"	W086°07'92"	15"HDPE Doughboy Road
ST03–0104	N033°90'47"	W086°08'02"	18"RCP Doughboy Road
ST03–0106	N033°89'33"	W086°07'47"	18"RCP Briarcliff Road
ST03–0107	N033°89'38"	W086°07'50"	30"CMP Briarcliff Road
ST03–0108	N033°89'45"	W086°07'48"	15"RCP Briarcliff Road
ST03–0109	N033°89'47"	W086°07'47"	15"RCP Briarcliff Road
ST03–0110	N033°89'55"	W086°07'52"	15"RCP Briarcliff Road
ST03–0112	N033°89'69"	W086°07'63"	36"RCP Briarcliff Road
ST03–0113	N033°89'76"	W086°07'60"	24"RCP Briarcliff Road
ST03–0114	N033°89'88"	W086°07'61"	24"RCP Briarcliff Road
ST03–0115	N033°90'00"	W086°07'59"	15" RCP Briarcliff Road
ST03–0116	N033°90'23"	W086°07'66"	36" RCP Briarcliff Road
ST03–0117	N033°90'30"	W086°07'92"	12"RCP Briarcliff Road
ST03–0118	N033°90'40"	W086°07'70"	24"RCP Briarcliff Road
ST03–0111	N033°89'60"	W086°07'60"	15"RCP Briarcliff Road
ST03–0119	N033°90'30"	W086°07'78"	12" RCP Briarcliff Road
ST03–0121	N033°89'76"	W086°07'57"	24"RCP_CMP Lake Lane
ST03–0122	N033°88'08"	W086°07'77"	36"CMP Riddles Bend Road
ST03–0123	N033°88'08"	W086°07'77"	36"HDPE Riddles Bend Road
ST03–0124	N033°87'96"	W086°07'54"	15"CMP Riddles Bend Road
ST03–0125	N033°87'73"	W086°07'51"	36"CMP Riddles Bend Road
ST03–0126	N033°87'73"	W086°07'12"	15"RCP Riddles Bend Road
ST03–0127	N033°88'10"	W086°07'14"	24" HDPE Riddles Bend Road
ST03–0128	N033°88'10"	W086°07'14"	24" HDPE Riddles Bend Road
ST03–0129	N033°88'94"	W086°07'33"	15" HDPE Riddles Bend Road
ST03–0130	N033°89'00"	W086°07'38"	12" HDPE Riddles Bend Road
ST03–0131	N033°89'04"	W086°07'54"	15" RCP Riddles Bend Road
ST03–0132	N033°89'04"	W086°07'73"	12" RCP Riddles Bend Road

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST03–0133	N033°88'98"	W086°08'13"	24"_30"RCP_HDPE Riddles Bend Road
ST03–0134	N033°88'98"	W086°08'13"	30" HDPE Riddles Bend Road
ST03–0135	N033°88'90"	W086°08'49"	15"_18" RCP_HDPE Riddles Bend Road
ST03–0136	N033°88'91"	W086°08'80"	48" RCP Riddles Bend Road
ST03–0137	N033°88'91"	W086°08'81"	24"_30" CMP_CIP Riddles Bend Road
ST03–0138	N033°88'91"	W086°08'85"	24"RCP Riddles Bend Road
ST03–0139	N033°88'93"	W086°08'88"	18"CMP Riddles Bend Road
ST03–0140	N033°88'95"	W086°09'13"	15" HDPE Riddles Bend Road
ST03–0141	N033°88'96"	W086°09'22"	18"RCP Riddles Bend Road
ST03–0142	N033°88'47"	W086°09'05"	12'_30" Concrete Riddles Bend Road
ST03–0143	N033°88'55"	W086°09'14"	91"_168" Concrete Riddles Bend Road
ST03–0144	N033°89'16"	W086°10'18"	24" RCP Riddles Bend Road
ST03–0145	N033°89'16"	W086°10'19"	24" RCP Riddles Bend Road
ST03–0146	N033°89'30"	W086°10'40"	15" RCP Riddles Bend Road
ST03–0147	N033°89'40"	W086°10'54"	24" RCP Riddles Bend Road
ST03–0148	N033°89'75"	W086°10'85"	36" HDPE Riddles Bend Road
ST03–0149	N033°89'98"	W086°10'78"	24"_18" RCP Riddles Bend Road
ST03–0150	N033°90'07"	W086°10'75"	48" RCP Riddles Bend Road
ST03–0151	N033°90'19"	W086°10'81"	12"_15" RCP Riddles Bend Road
ST03–0152	N033°90'32"	W086°10'91"	24"_30"RCPConcrete Riddles Bend Road
ST03–0153	N033°90'47"	W086°11'01"	96"_96" Concrete Riddles Bend Road
ST03–0154	N033°89'02"	W086°09'81"	48" Concrete Riddles Bend Road
ST03–0155	N033°89'30"	W086°09'80"	48" Concrete Riddles Bend Road
ST03–0156	N033°88'95"	W086°09'59"	15" RCP Riddles Bend Road
ST03–0157	N033°88'97"	W086°09'48"	12" CMP Riddles Bend Road
ST03–0158	N033°88'96"	W086°09'68"	15" RCP Riddles Bend Road
ST03–0159	N033°86'84"	W086°08'25"	18" RCP Babe Jackson Road
ST03–0160	N033°86'98"	W086°08'40"	18" RCP Babe Jackson Road
ST03–0161	N033°87'05"	W086°08'50"	18" HDPE Babe Jackson Road
ST03–0162	N033°87'23"	W086°08'70"	84" HDPE Babe Jackson Road
ST03–0163	N033°87'30"	W086°08'78"	15" RCP Babe Jackson Road
ST03–0164	N033°87'52"	W086°09'04"	24"_30"RCP_HDPE Babe Jackson Road
ST03–0165	N033°87'74"	W086°09'19"	24" RCP Babe Jackson Road
ST03–0166	N033°87'91"	W086°09'24"	15" RCP Babe Jackson Road
ST03–0167	N033°87'97"	W086°09'24"	15" RCP Babe Jackson Road
ST03–0168	N033°88'06"	W086°09'25"	15" RCP Babe Jackson Road
ST03–0169	N033°84'42"	W086°09'35"	15"HDPE Babe Jackson Road
ST03–0170	N033°88'75"	W086°09'34"	15"RCP Babe Jackson Road
ST03–0174	N033°90'84"	W086°07'72"	18"RCP Lister Ferry Road

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST03–0175	N033°90'78"	W086°07'80"	36" HDPE Lister Ferry Road
ST03–0176	N033°90'62"	W086°08'00"	18" RCP Lister Ferry Road
ST03–0177	N033°90'46"	W086°08'12"	36" CMP Lister Ferry Road
ST03–0178	N033°90'36"	W086°08'35"	30" HDPE Lister Ferry Road
ST03–0179	N033°90'36"	W086°08'35"	30" HDPE Lister Ferry Road
ST03–0180	N033°90'26"	W086°08'56"	18" RCP Lister Ferry Road
ST03–0181	N033°90'12"	W086°08'76"	30"HDPE Lister Ferry Road
ST03–0182	N033°90'05"	W086°08'78"	15"HDPE Lister Ferry Road
ST03–0183	N033°89'72"	W086°08'71"	24" RCP Lister Ferry Road
ST03–0184	N033°89'68"	W086°08'72"	18" RCP Lister Ferry Road
ST03–0185	N033°89'49"	W086°08'82"	18" RCP Lister Ferry Road
ST03–0186	N033°89'44"	W086°08'93"	18" RCP Lister Ferry Road
ST03–0187	N033°89'11"	W086°09'43"	18" RCP Lister Ferry Road
ST03–0188	N033°88'97"	W086°09'47"	18"CMP_RCP Lister Ferry Road
ST03–0189	N033°89'18"	W086°10'08"	24" RCP Terry Lane
ST03–0190	N033°90'86"	W086°10'95"	15"RCP Kelly Street
ST03–0191	N033°91'22"	W086°10'73"	18" RCP White Street
ST03–0192	N033°93'13"	W086°08'20"	15" RCP Walker Drive
ST03–0193	N033°93'25"	W086°07'98"	15" RCP Winningham Street
ST03–0194	N033°88'44"	W086°10'56"	12" RCP Barbara's Point
ST03–0195	N033°88'86"	W086°10'47"	12" RCP Dunaway Drive
ST03–0196	N033°89'19"	W086°07'92"	18" RCP Shawanee Drive
ST03–0197	N033°89'19"	W086°07'92"	18" RCP Shawanee Drive
ST03–0198	N033°89'15"	W086°08'01"	48" HDPE Shawanee Circle
ST03–0199	N033°89'15"	W086°08'00"	24" CMP Shawanee Circle
ST04–0001	N033°94'52"	W086°16'23"	24" CMP Short Canoe Creek
ST04–0002	N033°94'15"	W086°15'61"	15" RCP Short Canoe Creek
ST04–0003	N033°93'94"	W086°15'52"	15" RCP Short Canoe Creek
ST04–0004	N033°93'71"	W086°15'50"	15" RCP Short Canoe Creek
ST04–0005	N033°93'36"	W086°15'36"	18" RCP Short Canoe Creek
ST04–0006	N033°94'08"	W086°16'08"	12" CPP Crosson Road
ST04–0007	N033°94'27"	W086°15'85"	15" CPP Crosson Road
ST04–0008	N033°95'35"	W086°13'88"	12" RCP Friendship Road
ST04–0009	N033°95'36"	W086°14'05"	12" RCP Friendship Road
ST04–0010	N033°95'23"	W086°14'28"	12" RCP Friendship Road
ST04–0011	N033°94'77"	W086°14'32"	30" CPP Friendship Road
ST04–0012	N033°94'77"	W086°14'32"	30" CPP Friendship Road
ST04–0013	N033°94'21"	W086°14'32"	24" CPP Friendship Road
ST04–0014	N033°94'13"	W086°14'0032"	30" CPP Friendship Road

TYPE OF BMP	Construction Date	Latitude	Longitude	Location and or Name	MAINT Agreement
STRUCTURAL BMPs				*CONSTRUCTED PRIOR TO RBC SWMP	
DETENTION POND	AUG. 1999	N033°57'45"	W086°[illegible]	CHOICE FABRICATORS INC. – 3155 STEELE STATION ROAD	NO*
DETENTION POND	DEC 2002	N033°57'40"	W086°01'59"	RAINBOW PRESBYTERIAN CHURCH – 3220 RAINBOW DRIVE	NO*
UNDERGROUND STORAGE PIPES	MAY 2006	N033°31'33"	W086°02'11"	ADVANCE AUTO PARTS/ GUTHRIES – 3333 RAINBOW DRIVE	NO*
DETENTION POND	SEP 2006	N033°57'42"	W086°05'06"	DEERFOOT INDUSTRIAL PARK – DEERFOOT INDUSTRIAL PARKWAY	NO*
DETENTION POND	APR 2007	N033°57'39"	W086°12'21"	GOLD'S GYM – 200 MARKET WAY	NO*
DETENTION POND	MAY 2007	N033°58'38"	W086°02'35"	LONGS FURNITURE – 3404 GREENVIEW AVENUE	NO*
UNDERGROUND STORAGE PIPES	SEP 2013	N033°51'33"	W086°02'13"	BOJANGLES – 3318 RAINBOW DRIVE	NO*
DETENTION POND	SEP 2015	N033°57'34"	W086°02'13"	PUBLIX SHOPPING CENTER– 128 WEST GRAND AVENUE	NO*
DETENTION POND	DEC 2015	N033°57'39"	W086°02'05"	CHARLES GOUGH INSURANCE OFFICE – 107 SUTTON BRIDGE ROAD	NO*
UNDERGROUND STORAGE PIPES	JAN 2016	N033°57'38"	W086°02'05"	KRYSTAL KWIK – 3327 RAINBOW DRIVE WITHIN RAINBOW PLAZA	NO*
DETENTION POND	MAR 2016	N033°58'31"	W086°03'31"	TEAM ONE TOYOTA – 921 WEST GRAND AVENUE	NO*
DETENTION POND	NOV 2016	N033°58'48"	W086°02'30"	WIGGINS MINI WAREHOUSES – 01 WIGGINS STREET	NO*
DETENTION POND	FEB 2017	N033°58'01"	W086°02'36"	NORTHEAST ORTHOPEDICS – 524 WEST GRAND AVENUE	NO*
DETENTION POND	SEPT 2017	N033°56'39"	W086°01'36"	SHOPPES AT LITTLE BRIDGE MARINA – 65 WHORTENS BEND ROAD	YES
DETENTION POND	OCT 2017	N033°57'26"	W086°06'30"	RAINBOW CITY HUMANE SOCIETY– 4450 STEELE STATION ROAD	YES
STRUCTURAL BMPs				*CONSTRUCTED TO RBC SWMP	
DETENTION POND	Jan 2018	N033°54'842"	W086°06'276"	PAUL BARKER– 4980 RAINBOW DRIVE	YES
DETENTION POND	AUG 2019	N033°56'862"	W086°03'152"	DOLLAR GENERAL–4010 RAINBOW DRIVE	NO
DETENTION POND	OCT 2019	N033°57'416"	W086°02'685"	WASH BOX–180 W. GRAND AVE	NO
DETENTION POND	DEC 2019	N033°57'996"	W086°01'703"	MMC HEALTH CARE–110 MMC PARKWAY	NO
DETENTION POND	JAN 2021	N033°58'016"	W086°01'636"	DOLLAR GENERAL–2719 RAINBOW DRIVE	NO
DETENTION POND	JAN 2021	N033°58'399"	W086°03'387"	GARY PLIMTON–730 W GRAND AVE	NO
DETENTION POND	DEC 2022	N033°54'395"	W086°06'583"	DOLLAR GENERAL–5046 RAINBOW DRIVE	NO
DETENTION POND	DEC 2022	N033°56'971"	W086°01'848"	DENNIS HARKER–511 E GRAND AVE	NO
DETENTION POND	OCT 2023	N033°57'664"	W086°02'724"	ALABAMA FARM CREDIT –308 W GRAND AVE	YES
DETENTION POND	FEB 2024	N033°58'219"	W086°03'001"	ANITA BEDWELL –607 W GRAND AVE	YES
DETENTION POND	July 2014	N033°56'858"	W086°03'292"	CITY CHURCH – 4017 RAINBOW DR	NO

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST04–0171	N033°93'38"	W086°07'72"	24"RCP Rainbow Dr
ST0–0172	N033°93'46"	W086°07'38"	15" RCP Hoyt Street
ST04–0173	N033°93'44"	W086°07'42"	60"x96"Culvert Rainbow Drive
ST04–0174	N033°93'48"	W086°07'27"	15" RCP Hoyt Street
ST04–0175	N033°93'81"	W086°07'24"	12" CPP Maddox Street
ST04–0176	N033°93'74"	W086°07'21"	18"CPP Maddox Street
ST04–0177	N033°93'78"	W086°07'21"	18"CPP Maddox Street
ST04–0178	N033°93'78"	W086°07'21"	18" CPP Maddox Street
ST04–0179	N033°93'50"	W086°07'19"	18"RCP Maddox Street
ST04–0180	N033°93'52"	W086°06'99"	24"x60" Culvert Rainbow Drive
ST04–0181	N033°93'69"	W086°06'50"	48"x120" Culvert Rainbow Drive
ST04–0182	N033°94'07"	W086°06'01"	24"X36" Culvert Rainbow Drive
ST04–0183	N033°94'60"	W086°05'97"	24" RCP School Drive
ST04–0184	N033°94'45"	W086°05'83"	84" CMP School Drive
ST04–0185	N033°94'34"	W086°05'80"	60"X120" Culvert Rainbow Drive
ST04–0186	N033°94'68"	W086°05'53"	36"X120" Culvert Rainbow Drive

NOTES

1) MAPPING DATUM IS BASED ON ALABAMA NAD 83 EAST STATE PLANE COORDINATES.

2) THE PLANIMETRIC FEATURES SHOWN WERE PROVIDED BY THE ETOWAH COUNTY REVENUE DEPARTMENT.

3) AREA DEFINED AS BIG WILLS CREEK BASIN IS A PRIORITY AREA.

4) RBC ENGINEERING HAS CONFIRMED 15.0 MILES OF TRIBUTARY CREEK MILES WITHIN MS4 BOUNDARY AREA OF RBC.

NPDES PERMITS

Permit Number	Point #	Latitude	Longitude	Location and or Name
AL0056839	10002	N033°58'40"	W086°02'17"	RAINBOW CITY SEWER LAGOON
AL0057657	10003	N033°58'55"	W086°02'06"	CITY OF ATTALLA SEWER LAGOON
ALG110127	10004	N033°58'59"	W086°02'49"	SHERMAN INDUSTRIES, LLC
ALG670028		BLANKET		SOUTHERN NATURAL GAS COMPANY; LINEAR PROJECT THROUGH ETOWAH COUNTY
ALG120156	10005	N033°58'13"	W086°02'31"	MID SOUTH ELECTONICS INC. 989 SUTTON BRIDGE ROAD
ALR10BCNQ		N033.98466°	W086.0435°	STEELE STATION ROAD WIDENING – FROM SUTTON BRIDGE ROAD TO SR–77
ALR10AZ19		N033.9597°	W086.06547°	RAINBOW CITY HUMANE SOCIETY– STEELE STATION ROAD
ALR10A596		N033°56'55"	W086°04'16"	LUMLEY ROAD – CAPSTONE SUBDIVISION
ALR10AM49		N033°57'03"	W086°04'20"	LUMLEY ROAD – RAINBOW CITY INDUSTRIAL PARK
ALR10BBMA		N033.9576°	W086.0381°	RAINBOW DRIVE – AUTOZONE
ALR10BF73		N033°56'862"	W086°03'152"	DOLLAR GENERAL–4010 RAINBOW DRIVE
ALR10BF06		N033°57'416"	W086°02'685"	WASH BOX – 180 W.GRAND AVE
ALR10C0Q1		N033°58'016"	W086°01'636"	DOLLAR GENERAL–2719 RAINBOW DRIVE
ALR10C1HR		N033°57'936"	W086°02'718"	THE WEST GRAND VILLAGE LLC – W. GRAND AVE
ALR10C2TN		N033°58'225"	W086°02'997"	BRIARCLIFF PROPERTIES LLC – 607 W. GRAND AVE
ALR10C29D		N033°57'903"	W086°03'882"	WESTBROOK GYMNASIUM – 100 WESTMINISTER DR
ALR10C253		N033°54'395"	W086°06'583"	DOLLAR GENERAL–5046 RAINBOW DRIVE
~~ALR10C2BR~~		N033°57'665"	W086°02'720"	FARMERS CREDIT UNION – 308 W. GRAND AVE
ALR10C13A		N033°58'598"	W086°03'448"	SANDPIPER MANAGEMENT SERVICES, LLC – 199 WOODLAND DR
ALR10C0X3		N033°57'981"	W086°01'964"	HOLLINGSWORTH TOWNHOMES , LLC – 360 HOLINGSWORTH AVE
ALR10BFJ8		N033°57'981"	W086°01'964"	ETOWAH COUNTY MEGA SPORTS AUTHORITY – 625 KINZIE LN
ALR10C375		N033°57'981"	W086°01'964"	RBC INDUSTRIAL PARK 3 – LUMLEY RD
ALR10C3[illegible]T		N033°59'111"	W086°04'123"	SMART MOVE MINI–WAREHOUSE STORAGE –3561 Julie St
ALR10C41Z		N033°58'978"	W086°02'539"	SUTTON BRIDGE STORAGE, LLC –1930 SUTTON BRIDGE RD
ALR10C4BW		N033°58'436"	W086°03'593"	WYATT LEE MEADOWS –300 WYATT LEE DR
ALR10C4BB		N033°58'620"	W086°03'065"	BASCO,LLC –200 JOHNSONS DR
ALR10C3PP		N033°57'116"	W086°02'134"	BARON'S PIZZA –214 E GRAND AVE
ALR10C2TN		N033°58'219"	W086°03'001"	BRIARCLIFF PROPERTIES, LLC –607 W GRAND AVE
ALR10C516		N033°57'786"	W086°03'426"	CHELSEA SUBDIVISION 2nd –WESTMINSTER
ALR10C55L		N033°58'021"	W086°02'711"	TRENT THRASHER COBBLESTONE COTTAGES –LASALLE
ALR10C3J2		N033°57'443"	W086°02'309"	DUNKIN – 3352 RAINBOW DR
ALR10C2BR		N033°57'664"	W086°02'724"	ALABAMA FARM CREDIT–308 W GRAND AVE

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST04–0015	N033°94'13"	W086°14'32"	30"CPP Friendship Road
ST04–0016	N033°94'13"	W086°14'32"	30"CPP Friendship Road
ST04–0017	N033°93'90"	W086°14'02"	30"RCP Friendship Road
ST04–0018	N033°93'43"	W086°11'66"	18" RCP Perman Lake Rd
ST04–0019	N033°93'50"	W086°11'46"	15" CMP Perman Lake Rd
ST04–0020	N033°93'57"	W086°11'34"	15" CMP Perman Lake Rd
ST04–0021	N033°93'76"	W086°11'03"	18" RCP Perman Lake Rd
ST04–0022	N033°93'87"	W086°10'86"	15" RCP Perman Lake Rd
ST04–0023	N033°94'52"	W086°10'14"	36" CPP Perman Lake Rd
ST04–0024	N033°94'52"	W086°10'14"	36" CPP Perman Lake Rd
ST04–0025	N033°95'84"	W086°10'01"	18" RCP Perman Lake Rd
ST04–0026	N033°93'12"	W086°15'19"	18" RCP Canoe Creek Rd
ST04–0027	N033°92'39"	W086°14'76"	15" RCP Canoe Creek Rd
ST04–0028	N033°92'03"	W086°14'55"	24" RCP Canoe Creek Rd
ST04–0029	N033°91'73"	W086°14'33"	15" CPP Canoe Creek Rd
ST04–0030	N033°91'62"	W086°14'28"	15" RCP Canoe Creek Rd
ST04–0031	N033°91'18"	W086°13'70"	12" RCP Canoe Creek Rd
ST04–0032	N033°91'03"	W086°13'47"	12" RCP Canoe Creek Rd
ST04–0033	N033°90'85"	W086°13'09"	15" RCP Canoe Creek Rd
ST04–0034	N033°90'61"	W086°12'16"	36" CMP Canoe Creek Rd
ST04–0035	N033°90'45"	W086°11'54"	15" RCP Canoe Creek Rd
ST04–0036	N033°91'02"	W086°14'26"	15" RCP Canoe Creek Rd
ST04–0037	N033°90'88"	W086°14'17"	15" RCP Canoe Creek Rd
ST04–0038	N033°90'88"	W086°14'17"	15" CMP Canoe Creek Rd
ST04–0039	N033°90'08"	W086°14'14"	15" CMP Canoe Creek Rd
ST04–0040	N033°90'81"	W086°14'14"	15" RCP Canoe Creek Rd
ST04–0041	N033°90'73"	W086°14'12"	15" CMP Canoe Creek Rd
ST04–0042	N033°90'68"	W086°14'10"	15" RCP Canoe Creek Rd
ST04–0043	N033°90'38"	W086°14'07"	12" RCP Canoe Creek Rd
ST04–0044	N033°90'22"	W086°13'99"	12" CMP Canoe Creek Rd
ST04–0045	N033°90'13"	W086°13'94"	15" RCP Canoe Creek Rd
ST04–0046	N033°89'92"	W086°13'69"	24" RCP Canoe Creek Rd
ST04–0047	N033°93'17"	W086°15'53"	42" CMP Canoe Creek Rd

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST04–0054	N033°94'08"	W086°13'69"	60" RCP Steele Station Road
ST04–0055	N033°93'91"	W086°13'10"	144"X180" Culvert Steele Station Road
ST04–0056	N033°93'91"	W086°13'11"	144"X180" Culvert Steele Station Road
ST04–0057	N033°93'91"	W086°13'11"	144"X180" Culvert Steele Station Road
ST04–0058	N033°93'91"	W086°13'12"	144"X180" Culvert Steele Station Road
ST04–0059	N033°93'89"	W086°12'37"	54" CMP Steele Station Road
ST04–0060	N033°93'88"	W086°12'06"	42" CPP Steele Station Road
ST04–0061	N033°94'60"	W086°11'78"	24" RCP Steele Station Road
ST04–0062	N033°95'07"	W086°11'31"	54" RCP Steele Station Road
ST04–0063	N033°95'60"	W086°10'53"	72"X108" Culvert Steele Station Road
ST04–0064	N033°95'60"	W086°10'54"	72"X108" Culvert Steele Station Road
ST04–0065	N033°95'88"	W086°09'93"	48" RCP Steele Station Road
ST04–0066	N033°95'89"	W086°09'92"	48" RCP Steele Station Road
ST04–0067	N033°95'89"	W086°09'92"	48" RCP Steele Station Road
ST04–0068	N033°96'30"	W086°08'84"	30" RCP Steele Station Road
ST04–0069	N033°96'33"	W086°08'66"	24" RCP Steele Station Road
ST04–0070	N033°96'35"	W086°08'47"	24" RCP Steele Station Road
ST04–0071	N033°92'68"	W086°10'99"	15" RCP Lloyd Lee Lane
ST04–0072	N033°92'14"	W086°09'60"	15" RCP Roseland Drive
ST04–0073	N033°92'23"	W086°09'66"	24" HDPE Roseland Drive
ST04–0074	N033°92'94"	W086°10'96"	15" RCP Lloyd Lee Lane
ST04–0075	N033°91'22"	W086°11'36"	12" RCP Rainbow Haven
ST04–0076	N033°91'47"	W086°11'16"	15" RCP Rainbow Haven
ST04–0077	N033°91'54"	W086°11'10"	15" RCP Rainbow Haven
ST04–0078	N033°91'39"	W086°10'74"	15" RCP Rainbow Cove
ST04–0079	N033°91'39"	W086°10'74"	15" RCP Rainbow Cove
ST04–0080	N033°91'49"	W086°10'67"	15" RCP Rainbow Cove
ST04–0081	N033°91'61"	W086°10'59"	15" RCP Rainbow Cove
ST04–0082	N033°91'63"	W086°10'57"	18" HDPE Rainbow Cove
ST04–0083	N033°91'63"	W086°10'57"	12" HDPE Rainbow Cove
ST04–0084	N033°91'65"	W086°10'55"	15" RCP Rainbow Cove
ST04–0085	N033°92'06"	W086°09'76"	24"RCP Roseland Drive
ST04–0086	N033°92'59"	W086°09'60"	24" CPP Hidden Circle

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST04–0093	N033°93'09"	W086°08'31"	12" RCP Nelson Street
ST04–0094	N033°93'10"	W086°08'42"	60"x24" Culvert Nelson Street
ST04–0095	N033°94'92"	W086°06'93"	18" RCP Royal Troon Drive
ST04–0096	N033°94'84"	W086°06'90"	15" RCP Royal Troon Drive
ST04–0097	N033°94'77"	W086°06'89"	22" RCP Royal Troon Drive
ST04–0098	N033°94'64"	W086°06'66"	15" RCP Saint Andrews Street
ST04–0099	N033°94'90"	W086°06'54"	15"CPP Kinzie Lane
ST04–0100	N033°94'91"	W086°06'54"	15"CPP Kinzie Lane
ST04–0101	N033°94'64"	W086°06'55"	18"x30" RCP Kinzie Lane
ST04–0102	N033°93'72"	W086°06'46"	18" RCP Franklin Street
ST04–0103	N033°94'27"	W086°05'96"	18" RCP Elan Circle
ST04–0104	N033°96'36"	W086°08'32"	18" RCP Lumley Road
ST04–0105	N033°96'13"	W086°08'32"	30" CPP Lumley Road
ST04–0106	N033°96'14"	W086°08'32"	30"CPP Lumley Road
ST04–0107	N033°95'42"	W086°07'86"	18" CPP Lumley Road
ST04–0108	N033°95'24"	W086°07'86"	18"RCP Lumley Road
ST04–0109	N033°95'00"	W086°07'70"	42" RCP Lumley Road
ST04–0110	N033°94'95"	W086°07'34"	18" RCP Lumley Road
ST04–0111	N033°94'83"	W086°07'10"	36" RCP Lumley Road
ST04–0112	N033°94'83"	W086°07'10"	36" RCP Lumley Road
ST04–0113	N033°94'83"	W086°07'10"	36" RCP Lumley Road
ST04–0114	N033°94'83"	W086°07'10"	36" RCP Lumley Road
ST04–0115	N033°94'82"	W086°07'11"	36" RCP Lumley Road
ST04–0116	N033°94'60"	W086°05'89"	60" CMP Shawanee Circle
ST04–0117	N033°94'60"	W086°05'62"	15" RCP Lumley Road
ST04–0118	N033°90'79"	W086°13'82"	15" CPP Smurf Lane
ST04–0119	N033°90'85"	W086°13'77"	15" CMP Smurf Lane
ST04–0120	N033°90'38"	W086°12'64"	15" RCP Ramsey Road
ST04–0121	N033°90'25"	W086°11'98"	12" RCP Ramsey Road
ST04–0122	N033°90'29"	W086°11'88"	15" RCP Ramsey Road
ST04–0123	N033°92'99"	W086°08'71"	15" RCP Ramsey Road
ST04–0124	N033°94'80"	W086°05'39"	18" RCP Helen Street
ST04–0125	N033°94'83"	W086°05'48"	12" RCP Wright Circle

OUTFALLS AND STRUCTURES

Point #	Latitude	Longitude	Description
ST04–0132	N033°95'22"	W086°05'51"	12" RCP Bill Jon Drive
ST04–0133	N033°95'22"	W086°05'50"	12" RCP Bill Jon Drive
ST04–0134	N033°95'23"	W086°05'61"	10" RCP Bill Jon Drive
ST04–0135	N033°95'22"	W086°05'23"	15" RCP Whorton Drive
ST04–0136	N033°95'01"	W086°05'23"	24" RCP Whorton Drive
ST04–0137	N033°96'44"	W086°11'92"	30"RCP Pleasant Valley Road
ST04–0138	N033°96'22"	W086°11'91"	30"RCP Pleasant Valley Road
ST04–0139	N033°95'72"	W086°11'88"	18"RCP Pleasant Valley Road
ST04–0140	N033°95'06"	W086°11'86"	42"RCP Pleasant Valley Road
ST04–0141			24"RCP Pleasant Valley Road
ST04–0142	N033°94'05"	W086°11'88"	60" RCP Pleasant Valley Road
ST04–0143	N033°93'76"	W086°11'76"	60" RCP Pleasant Valley Road
ST04–0144	N033°93'65"	W086°11'70"	18"RCP Pleasant Valley Road
ST04–0145	N033°93'04"	W086°11'39"	42"RCP Pleasant Valley Road
ST04–0146	N033°92'83"	W086°11'30"	24"RCP Pleasant Valley Road
ST04–0147	N033°91'78"	W086°10'74"	120"x120"Culvert Pleasant Valley Road
ST04–0148	N033°91'78"	W086°10'73"	120"x120"Culvert Pleasant Valley Road
ST04–0149	N033°91'77"	W086°10'73"	120"x120"Culvert PLeasant Valley Road
ST04–0150	N033°91'77"	W086°10'73"	120"x120"Culvert Pleasant Valley Road
ST04–0151	N033°60'83"	W086°12'67"	15"RCP Canoe Creek Road
ST04–0152	N033°92'99"	W086°08'71"	15"RCP Nelson Street
ST04–0153	N033°90'96"	W086°10'92"	72"x48" Culvert Rainbow Drive
ST04–0154	N033°91'09"	W086°10'83"	24" RCP Rainbow Drive
ST04–0155	N033°91'34"	W086°10'66"	36"x120"Culvert Rainbow Drive
ST04–0156	N033°91'52"	W086°10'47"	Rainbow Drive
ST04–0157	N033°95'13"	W086°05'23"	15"RCP Boone Road
ST04–0158	N033°94'93"	W086°05'64"	18" RCP Oliver Drive
ST04–0159	N033°94'90"	W086°05'23"	15"RCP Oliver Road
ST04–0160	N033°92'45"	W086°09'11"	30"RCP Rainbow Drive
ST04–0161	N033°91'61"	W086°10'36"	48"x20"Culvert Rainbow Drive
ST04–0162	N033°91'87"	W086°10'09"	36"x60"Culvert Rainbow Drive
ST04–0163	N033°91'87"	W086°10'09"	36"x60"Culvert Rainbow Drive
ST04–0164	N033°92'09"	W086°09'68"	36"x60"Culvert Rainbow Drive

BOOK: MS4

DATE:

DOCUMENTS/CITY/STORMWATER/MS4 MAP.DWG

RAINBOW CITY MS4 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM
OUTFALL INVENTORY

	OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE OF LAST INSPECTION
				CLOSED/OPEN	MATERIAL	MAJOR/MINOR			
	ZONE 1								
1	**Z1-001**	33.959564	-86.052137	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024
2	**Z1-002**	33.959544	-86.051952	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024
3	**Z1-003**	33.959418	-86.051957	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024
4	**Z1-004**	33.959408	-86.052201	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024
	Z1-005	*33.955236*	*-86.051590*	*OPEN DRAINAGE*	*EARTHEN*	*MINOR*	*HORTON CREEK*	*1/2020*	*REMOVED*
5	**Z1-006**	33.955223	-86.051522	CLOSED PIPE	RCP	MINOR	HORTON CREEK	1/2020	1/5/2024
6	**Z1-007**	33.960213	-86.048588	OPEN DRAINAGE	CONCRETE/EARTHEN	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
7	**Z1-008**	33.960080	-86.048646	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
8	**Z1-009**	33.960087	-86.048585	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
9	**Z1-010**	33.959944	-86.048613	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
10	**Z1-011**	33.959785	-86.048551	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	4/3/2020	1/31/2024
11	**Z1-012**	33.959547	-86.048314	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/31/2024
12	**Z1-013**	33.964223	-86.045606	CLOSED PIPE	RCP	**MAJOR**	HORTON CREEK	4/3/2020	1/31/2024
13	**Z1-014**	33.965435	-86.046039	CLOSED PIPE	CMP	**MAJOR**	HORTON CREEK	4/3/2020	3/7/2023
14	**Z1-015**	33.985078	-86.044079	CLOSED PIPE	RCP	MINOR	UT TO BIG WILLS CREEK	4/3/2020	3/22/2022
15	**Z1-016**	33.985147	-86.043932	OPEN DRAINAGE	RIP-RAP	MINOR	UT TO BIG WILLS CREEK	4/3/2020	3/22/2022
16	**Z1-017**	33.985518	-86.043231	OPEN DRAINAGE	RIP-RAP	MINOR	UT TO BIG WILLS CREEK	1/2020	3/22/2022
17	**Z1-018**	33.985846	-86.042363	OPEN DRAINAGE	EARTHEN & RIP-RAP	MINOR	UT TO BIG WILLS CREEK	1/2020	3/22/2022
18	**Z1-019**	33.985332	-86.044054	OPEN DRAINAGE	RIP-RAP	MINOR	UT TO BIG WILLS CREEK	4/3/2020	3/22/2022
19	**Z1-020**	33.967859	-86.039282	OPEN DRAINAGE	EARTHEN/RIP-RAP	MINOR	HORTON CREEK	4/3/2020	3/6/2023
20	**Z1-021**	33.967936	-86.039142	OPEN DRAINAGE	RIP-RAP	MINOR	HORTON CREEK	4/3/2020	3/6/2023
21	**Z1-022**	33.964884	-86.040840	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
22	**Z1-023**	33.963328	-86.040818	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
23	**Z1-024**	33.963210	-86.040755	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
24	**Z1-025**	33.962216	-86.040785	CLOSED PIPE	CMP	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
25	**Z1-026**	33.961454	-86.040976	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
26	**Z1-027**	33.960790	-86.040953	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
27	**Z1-028**	33.959988	-86.040751	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
28	**Z1-029**	33.960115	-86.040758	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
29	**Z1-030**	33.960117	-86.040701	OPEN DRAINAGE	CONCRETE/EARTHEN	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
30	**Z1-031**	33.949430	-86.051314	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	3/22/2022
31	**Z1-032**	33.951718	-86.051042	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
32	**Z1-033**	33.952934	-86.051040	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
33	**Z1-034**	33.953433	-86.051018	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
34	**Z1-035**	33.953936	-86.051354	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
35	**Z1-036**	33.954175	-86.051543	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
36	**Z1-037**	33.954561	-86.051549	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
37	**Z1-038**	33.954701	-86.051554	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
38	**Z1-039**	33.955150	-86.051570	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
39	**Z1-040**	33.955940	-86.051830	CLOSED PIPE	RCP	MINOR	HORTON CREEK	3/22/2022	3/22/2022
40	**Z1-041**	33.956212	-86.051586	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022

RAINBOW CITY MS4 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM
OUTFALL INVENTORY

	OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE OF LAST INSPECTION
				CLOSED/OPEN	MATERIAL	MAJOR/MINOR			
	ZONE 1								
41	**Z1-042**	33.956339	-86.051729	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
42	**Z1-043**	33.956310	-86.051596	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
43	**Z1-044**	33.956473	-86.051596	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
44	**Z1-045**	33.956610	-86.051530	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
45	**Z1-046**	33.956762	-86.051623	OPEN DRAINAGE	CONCRETE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
46	**Z1-047**	33.956778	-86.051625	OPEN DRAINAGE	CONCRETE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
47	**Z1-048**	33.956768	-86.051609	OPEN DRAINAGE	CONCRETE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
48	**Z1-049**	33.956785	-86.051574	OPEN DRAINAGE	CONCRETE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
49	**Z1-050**	33.957462	-86.051764	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	1/5/2024
50	**Z1-051**	33.957462	-86.051764	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
51	**Z1-052**	33.957536	-86.051680	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
52	**Z1-053**	33.957800	-86.052093	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2022	3/22/2022
53	**Z1-054**	33.959856	-86.052072	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
54	**Z1-055**	33.960091	-86.052158	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	1/5/2024
55	**Z1-056**	33.960697	-86.052174	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
56	**Z1-057**	33.961028	-86.052382	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
57	**Z1-058**	33.958752	-86.052564	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
58	**Z1-059**	33.958748	-86.052659	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
59	**Z1-060**	33.958240	-86.053430	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
60	**Z1-061**	33.957894	-86.054174	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
61	**Z1-062**	33.957789	-86.054227	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
62	**Z1-063**	33.957191	-86.054973	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
63	**Z1-064**	33.957184	-86.055309	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
64	**Z1-065**	33.956998	-86.055484	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
65	**Z1-066**	33.956951	-86.055997	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
66	**Z1-067**	33.956732	-86.056166	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
67	**Z1-068**	33.956598	-86.056340	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
68	**Z1-069**	33.956479	-86.056705	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
69	**Z1-070**	33.956102	-86.057137	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
70	**Z1-071**	33.955960	-86.057067	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
71	**Z1-072**	33.946930	-86.055326	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
72	**Z1-073**	33.947495	-86.055541	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
73	**Z1-074**	33.948065	-86.056934	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
74	**Z1-075**	33.948298	-86.057934	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
75	**Z1-076**	33.948440	-86.058159	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
76	**Z1-077**	33.947683	-86.059186	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
77	**Z1-078**	33.946030	-86.058940	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
78	**Z1-079**	33.946013	-86.059000	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
79	**Z1-080**	33.944443	-86.058409	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
80	**Z1-081**	33.937050	-86.065260	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/22/2022	3/22/2022
81	**Z1-082**	33.937070	-86.065160	OPEN DRAINAGE	CONCRETE	MINOR	UT TO DRY CREEK	3/22/2022	3/22/2022

RAINBOW CITY MS4 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM
OUTFALL INVENTORY

	OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE OF LAST INSPECTION
				CLOSED/OPEN	MATERIAL	MAJOR/MINOR			
	ZONE 1								
82	**Z1-083**	33.937780	-86.064990	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/22/2022	3/22/2022
83	**Z1-084**	33.951709	-86.044234	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
84	**Z1-085**	33.952049	-86.044330	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
85	**Z1-086**	33.952470	-86.044560	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
86	**Z1-087**	33.952827	-86.044383	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
87	**Z1-088**	33.955396	-86.044859	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
88	**Z1-089**	33.956004	-86.045018	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
89	**Z1-090**	33.956132	-86.043734	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
90	**Z1-091**	33.955169	-86.043086	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
91	**Z1-092**	33.954850	-86.042747	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
92	**Z1-093**	33.954818	-86.042636	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
93	**Z1-094**	33.954630	-86.042349	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
94	**Z1-095**	33.954630	-86.042349	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
95	**Z1-096**	33.954574	-86.042331	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
96	**Z1-097**	33.954474	-86.042138	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
97	**Z1-098**	33.954484	-86.042114	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
98	**Z1-099**	33.956281	-86.045220	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
99	**Z1-100**	33.956394	-86.045454	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
100	**Z1-101**	33.956928	-86.046376	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
101	**Z1-102**	33.957048	-86.046497	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
102	**Z1-103**	33.957289	-86.046596	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
103	**Z1-104**	33.957706	-86.046671	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
104	**Z1-105**	33.958355	-86.046908	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
105	**Z1-106**	33.958405	-86.046878	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
106	**Z1-107**	33.958629	-86.046750	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
107	**Z1-108**	33.958806	-86.046836	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
108	**Z1-109**	33.959016	-86.047430	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
109	**Z1-110**	33.959227	-86.048061	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
110	**Z1-111**	33.960734	-86.048273	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
111	**Z1-112**	33.961274	-86.048310	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/21/2022
112	**Z1-113**	33.958990	-86.040530	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/6/2023
113	**Z1-114**	33.959660	-86.040750	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/6/2023
114	**Z1-115**	33.960260	-86.040980	CLOSED PIPE	CMP	**MAJOR**	UT TO HORTON CREEK	3/21/2022	3/6/2023
115	**Z1-116**	33.965600	-86.040510	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/21/2022	3/7/2023
116	**Z1-117**	33.965750	-86.040990	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/21/2022	3/6/2023
117	**Z1-118**	33.964980	-86.045180	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/7/2023
118	**Z1-119**	33.966790	-86.046960	CLOSED PIPE	CMP	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
119	**Z1-120**	33.966650	-86.047390	CLOSED PIPE	CMP	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
120	**Z1-121**	33.966960	-86.047610	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
121	**Z1-122**	33.967290	-86.048680	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/7/2023
122	**Z1-123**	33.968830	-86.050690	CLOSED PIPE	CMP	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022

RAINBOW CITY MS4 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM
OUTFALL INVENTORY

	OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE OF LAST INSPECTION
				CLOSED/OPEN	MATERIAL	MAJOR/MINOR			
	ZONE 1								
123	**Z1-124**	33.978760	-86.050760	OPEN DRAINAGE	EARTHEN	MINOR	UT TO BIG WILLS CREEK	3/22/2022	3/22/2022
124	**Z1-125**	33.978760	-86.050760	OPEN DRAINAGE	EARTHEN	MINOR	UT TO BIG WILLS CREEK	3/22/2022	3/22/2022
125	**Z1-126**	33.965670	-86.059010	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
126	**Z1-127**	33.965710	-86.058240	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
127	**Z1-128**	33.968970	-86.025780	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/22/2022	3/6/2023
128	**Z1-129**	33.968690	-86.025880	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/22/2022	3/6/2023
129	**Z1-130**	33.968380	-86.025900	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/22/2022	3/6/2023
130	**Z1-131**	33.968230	-86.025840	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/6/2023
131	**Z1-132**	33.967790	-86.025120	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/22/2022	3/6/2023
132	**Z1-133**	33.957487	-86.054884	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
133	**Z1-134**	33.956460	-86.056721	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
134	**Z1-135**	33.956582	-86.056487	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
135	**Z1-136**	33.953088	-86.051123	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	3/22/2022
136	**Z1-137**	33.958230	-86.053590	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
137	**Z1-138**	33.958240	-86.053430	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	3/22/2022	3/22/2022
	ZONE 2								
138	**Z2-001**	33.945916	-86.036486	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
139	**Z2-002**	33.948070	-86.036691	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
140	**Z2-003**	33.948114	-86.036952	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
141	**Z2-005**	33.949156	-86.036520	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
142	**Z2-006**	33.949406	-86.036655	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
143	**Z2-007**	33.949416	-86.036720	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
144	**Z2-008**	33.950589	-86.036490	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
145	**Z2-009**	33.950738	-86.036481	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
146	**Z2-010**	33.950966	-86.036493	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
147	**Z2-011**	33.951071	-86.036968	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
148	**Z2-012**	33.950980	-86.037973	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
149	**Z2-014**	33.953583	-86.041169	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/6/2023
150	**Z2-015**	33.940036	-86.046635	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	3/22/2021
151	**Z2-016**	33.946168	-86.044796	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2021	3/22/2021
152	**Z2-017**	33.934474	-86.073906	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/22/2021	3/7/2023
153	**Z2-018**	33.947984	-86.044476	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024
154	**Z2-019**	33.949816	-86.042909	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024
155	**Z2-020**	33.950767	-86.043054	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024
156	**Z2-021**	33.950861	-86.043505	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024
157	**Z2-022**	33.950975	-86.043630	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024
158	**Z2-023**	33.951209	-86.043666	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024
159	**Z2-024**	33.945772	-86.048213	CLOSED PIPE	PVC	MINOR	HORTON CREEK	3/22/2021	1/5/2024
160	**Z2-025**	33.946129	-86.048859	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2021	1/5/2024
161	**Z2-026**	33.947910	-86.048839	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2021	1/5/2024
162	**Z2-027**	33.948844	-86.050428	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2021	1/5/2024

RAINBOW CITY MS4 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM
OUTFALL INVENTORY

	OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE OF LAST INSPECTION
				CLOSED/OPEN	MATERIAL	MAJOR/MINOR			
	ZONE 1								
163	**Z2-028**	33.948819	-86.050577	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2021	1/5/2024
164	**Z2-029**	33.948972	-86.050564	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2021	1/5/2024
165	**Z2-030**	33.948857	-86.050568	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2021	1/5/2024
166	**Z2-031**	33.952959	-86.039129	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	3/6/2023
167	**Z2-032**	33.953016	-86.039153	CLOSED PIPE	RCP	**MAJOR**	UT TO HORTON CREEK	4/3/2020	3/7/2023
168	**Z2-033**	33.950477	-86.042533	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
169	**Z2-034**	33.951408	-86.043996	CLOSED PIPE	PLASTIC	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
170	**Z2-035**	33.951377	-86.043763	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
171	**Z2-036**	33.951326	-86.043733	CLOSED PIPE	CLAY	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
172	**Z2-037**	33.951322	-86.043781	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
173	**Z2-038**	33.951353	-86.043968	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
174	**Z2-039**	33.951395	-86.044048	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
175	**Z2-040**	33.951430	-86.044170	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024
176	**Z2-041**	33.934258	-86.074246	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/23/2021	1/31/2024
177	**Z2-042**	33.949204	-86.051135	CLOSED PIPE	RCP	MINOR	HORTON CREEK	4/3/2020	1/5/2024
178	**Z2-043**	33.949074	-86.051560	CLOSED PIPE	RCP	MINOR	HORTON CREEK	4/3/2020	1/5/2024
179	**Z2-044**	33.933468	-86.073205	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
180	**Z2-045**	33.933003	-86.072888	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
181	**Z2-046**	33.928559	-86.070700	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
182	**Z2-047**	33.928464	-86.070765	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
	Z2-048	*33.928286*	*-86.070629*	*CLOSED PIPE*	*PVC*	*MINOR*	*UT TO DRY CREEK*	*3/23/2021*	*REMOVED*
183	**Z2-049**	33.928264	-86.070604	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
184	**Z2-050**	33.928252	-86.070591	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
185	**Z2-051**	33.928281	-86.070593	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
186	**Z2-052**	33.927904	-86.070705	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
187	**Z2-053**	33.927924	-86.070680	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
188	**Z2-054**	33.929307	-86.067495	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
189	**Z2-055**	33.929899	-86.067608	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
190	**Z2-056**	33.930059	-86.067657	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
191	**Z2-057**	33.931208	-86.070489	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
192	**Z2-058**	33.931403	-86.070548	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
193	**Z2-059**	33.931369	-86.071545	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
194	**Z2-060**	33.931419	-86.071659	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024
195	**Z2-061**	33.938300	-86.062438	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024
196	**Z2-062**	33.938144	-86.062622	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024
197	**Z2-063**	33.937768	-86.063208	OPEN DRAINAGE	CONCRETE	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024
198	**Z2-064**	33.93772256	-86.063307	OPEN DRAINAGE	CONCRETE	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024
199	**Z2-065**	33.937503	-86.063707	OPEN DRAINAGE	CONCRETE	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024
200	**Z2-066**	33.936933	-86.064895	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024
201	**Z2-067**	33.946709	-86.055234	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/24/2021	3/7/2023
202	**Z2-068**	33.946878	-86.054991	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/24/2021	3/7/2023

RAINBOW CITY MS4 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM
OUTFALL INVENTORY

	OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE OF LAST INSPECTION
				CLOSED/OPEN	MATERIAL	MAJOR/MINOR			
	ZONE 1								
203	**Z2-069**	33.925902	-86.072882	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
204	**Z2-070**	33.926224	-86.073042	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
205	**Z2-071**	33.926565	-86.073084	OPEN DRAINAGE	RIP-RAP	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
206	**Z2-072**	33.927069	-86.073245	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
207	**Z2-073**	33.928555	-86.073769	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
208	**Z2-074**	33.928582	-86.073743	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
209	**Z2-075**	33.928918	-86.074322	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
210	**Z2-076**	33.930798	-86.074535	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
211	**Z2-077**	33.931105	-86.074501	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
212	**Z2-078**	33.934136	-86.075953	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/29/2021	3/7/2023
213	**Z2-079**	33.932213	-86.064207	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024
214	**Z2-080**	33.941787	-86.057410	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	3/29/2021	3/7/2023
215	**Z2-081**	33.941807	-86.057394	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	3/29/2021	3/7/2023
216	**Z2-082**	33.942217	-86.057544	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/29/2021	3/7/2023
	ZONE 3								
217	**Z3-001**	33.923041	-86.093317	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/24/2021	3/24/2021
218	**Z3-002**	33.927556	-86.088117	CLOSED PIPE	STEEL	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024
219	**Z3-003**	33.926812	-86.088637	CLOSED PIPE	STEEL	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024
220	**Z3-004**	33.927307	-86.088005	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024
221	**Z3-005**	33.924875	-86.087176	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024
222	**Z3-006**	33.927229	-86.086201	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/24/2021	3/24/2021
223	**Z3-007**	33.927217	-86.085894	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	3/24/2021
224	**Z3-008**	33.927470	-86.087995	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/24/2021	3/24/2021
225	**Z3-009**	33.930312	-86.084111	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	3/7/2023
226	**Z3-010**	33.930521	-86.083713	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/24/2021	3/7/2023
227	**Z3-011**	33.931506	-86.081817	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/24/2021	3/7/2023
228	**Z3-012**	33.931456	-86.081929	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	3/7/2023
229	**Z3-013**	33.932571	-86.079783	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	3/7/2023
230	**Z3-014**	33.932810	-86.079314	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	3/24/2021

TABLE 1. RAINBOW CITY MS4 IDDE
ILLICIT DISCHARGE POTENTIAL (IDP)
CALCULATIONS FOR 2023-2024 REPORTING PERIOD

DRAINAGE ZONE	IDP CALCULATION	PRIORITY AREA
1*	9	YES
2*	9	YES
3	5	NO

*Total IDP > 9 = Priority Area

ILLICIT DISCHARGE POTENTIAL WORKSHEET

SUBWATERSHED: 1 DATE OF EVALUATION: 9/22/2023

COMMENTS: Drainage Zone 1 - Big Wills Creek

			IDP RANKING VALUES			
	CRITERION	RESULT	1	2	3	IDP SCORE
1	LAND USE / ZONING	Industrial	Residential	Business	Industrial	3
2	# OF ILLICIT DISCHARGE REPORTS IN PAST 2 YEARS	0	0 reports	1-5 reports	> 5 reports	1
3	# OF POTENTIAL GENERATING SITES	34	0 sites	1-5 sites	> 5 sites	3
4	AVERAGE AGE OF DEVELOPMENT	10-50 years	< 10 years	10-50 years	> 50 years	2
					TOTAL IDP	9

TOTAL IDP > 9 = PRIORITY AREA

ILLICIT DISCHARGE POTENTIAL WORKSHEET

SUBWATERSHED: 2 DATE OF EVALUATION: 9/22/2023

COMMENTS: Drainage Zone 2 - Horton Creek

			IDP RANKING VALUES			
	CRITERION	RESULT	1	2	3	IDP SCORE
1	LAND USE / ZONING	Business	Residential	Business	Industrial	2
2	# OF ILLICIT DISCHARGE REPORTS IN PAST 2 YEARS	0	0 reports	1-5 reports	> 5 reports	1
3	# OF POTENTIAL GENERATING SITES	8	0 sites	1-5 sites	> 5 sites	3
4	AVERAGE AGE OF DEVELOPMENT	>50 years	< 10 years	10-50 years	> 50 years	3
					TOTAL IDP	9

TOTAL IDP > 9 = PRIORITY AREA

ILLICIT DISCHARGE POTENTIAL WORKSHEET

SUBWATERSHED: 3 DATE OF EVALUATION: 9/22/2023

COMMENTS: Drainage Zone 3 - Dry Creek

			IDP RANKING VALUES			
	CRITERION	RESULT	1	2	3	IDP SCORE
1	LAND USE / ZONING	Residential	Residential	Business	Industrial	1
2	# OF ILLICIT DISCHARGE REPORTS IN PAST 2 YEARS	0	0 reports	1-5 reports	> 5 reports	1
3	# OF POTENTIAL GENERATING SITES	0	0 sites	1-5 sites	> 5 sites	1
4	AVERAGE AGE OF DEVELOPMENT	10-50 years	< 10 years	10-50 years	> 50 years	2
					TOTAL IDP	5

TOTAL IDP > 9 = PRIORITY AREA

REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM ARCMAP 10.8.1. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

N

Z2-041
Z2-044
Z2-045
Z2-059
Z2-058
Z2-057
Z2-060
Z2-077
Z2-076
Z2-055
Z2-056
Z2-054
Z2-075
Z2-073
Z2-074
Z2-047
Z2-046
Z2-051
Z2-050
Z2-049
Z2-048**
Z2-053
Z2-052
Z2-072
Z2-071
Z2-070
Z2-069
Z3-002
Z3-004
Z3-003
Z3-005

2

3

**Outfall Z2-048 was no longer present and was removed from the outfall inventory.

0 0.5 Miles

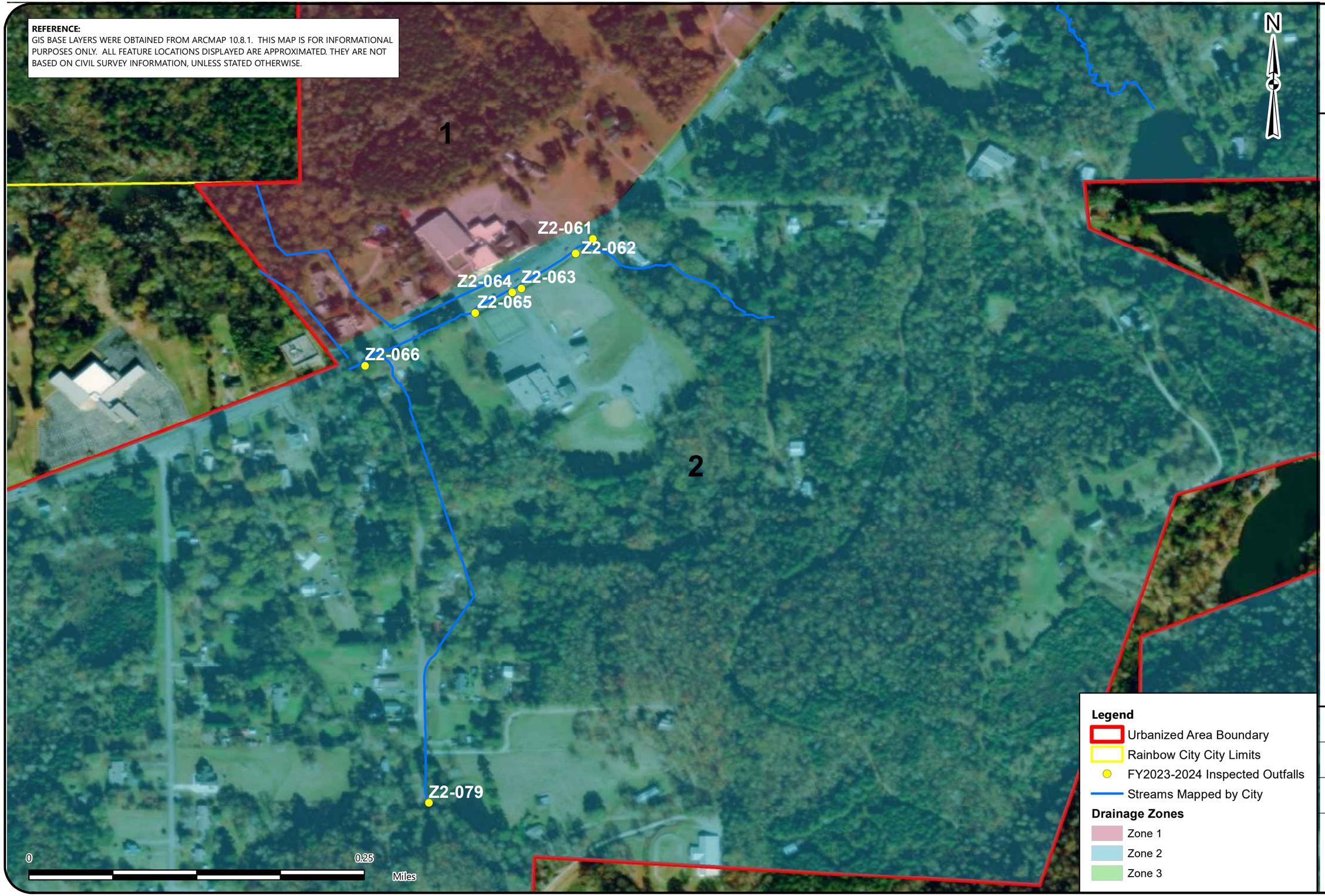
Legend
- Urbanized Area Boundary
- Rainbow City City Limits
- FY2023-2024 Inspected Outfalls
- Streams Mapped by City

Drainage Zones
- Zone 1
- Zone 2
- Zone 3

RAINBOW CITY MS4
FY2023-2024 INSPECTED OUTFALLS
GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:7,037
DATE: 2-20-24
PROJECT NUMBER 4482-19-068
FIGURE NO. **2a**

REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM ARCMAP 10.8.1. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



Legend
- Urbanized Area Boundary
- Rainbow City City Limits
- FY2023-2024 Inspected Outfalls
- Streams Mapped by City

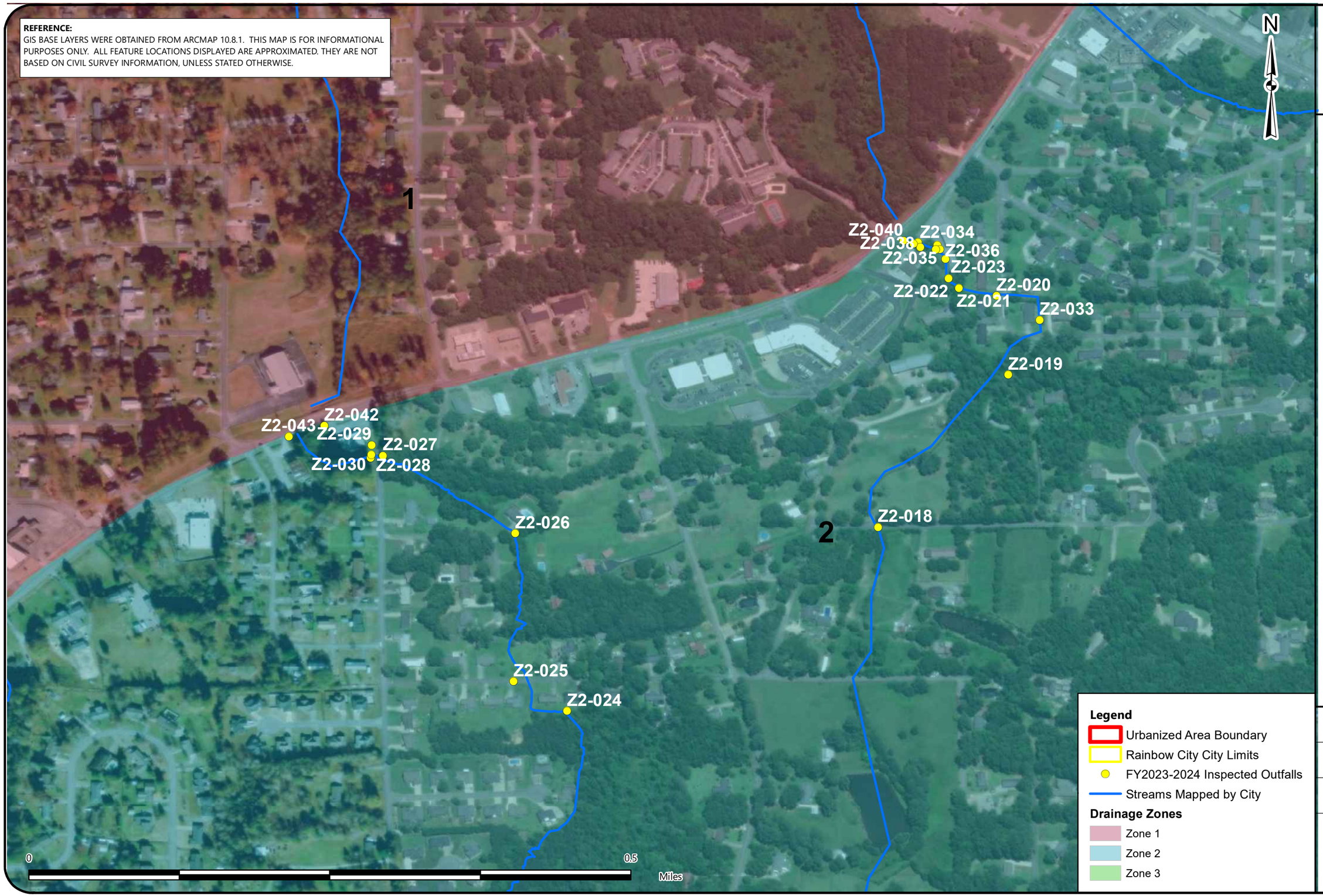
Drainage Zones
- Zone 1
- Zone 2
- Zone 3

RAINBOW CITY MS4
FY2023-2024 INSPECTED OUTFALLS

GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE:	1:4,201
DATE:	2-20-24
PROJECT NUMBER	4482-19-068
FIGURE NO.	2b

REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM ARCMAP 10.8.1. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



Legend

- Urbanized Area Boundary
- Rainbow City City Limits
- FY2023-2024 Inspected Outfalls
- Streams Mapped by City

Drainage Zones

- Zone 1
- Zone 2
- Zone 3

RAINBOW CITY MS4
FY2023-2024 INSPECTED OUTFALLS

GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE:	1:4,675
DATE:	2-20-24
PROJECT NUMBER	4482-19-068
FIGURE NO.	2c

REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM ARCMAP 10.8.1. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

N

Z1-013

Z1-007
Z1-009
Z1-008
Z1-011
Z1-010
Z1-012

Z1-001
Z1-003
Z1-002
Z1-004

Z1-050
Z1-051

Z1-005** **Outfall Z1-005 was no longer present and was removed from the outfall inventory.
Z1-006

1

0 0.5 Miles

Legend
- Urbanized Area Boundary
- Rainbow City City Limits
- 2023-2024 Inspected Outfalls
- Streams Mapped by City

Drainage Zones
- Zone 1
- Zone 2
- Zone 3

RAINBOW CITY MS4
FY2023-2024 INSPECTED OUTFALLS

GADSDEN ALABAMA URBANIZED AREA
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:5,023
DATE: 2-20-24
PROJECT NUMBER 4482-19-068
FIGURE NO. **2d**

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Drainage Basin: Drainage Zone 1		Outfall ID: Z1-001	
Today's Date: 1/5/2023		Time (Military): 1027	
Investigators: A. Harris % J. Jayroe		Form completed by: A. Harris	
Temperature (°F): 43	Rainfall (in.): Last 24 hours: 0	Last 48 hours: 0	
Latitude: 33.959564	Longitude: -86.052137	GPS Unit: Trimble Geo 7X	GPS LMK #: NA
Camera: Apple iPhone 11pro		Photo #s: one photo attached	

Land Use in Outfall Drainage Area (Check all that apply):

☐ Industrial	☐ Open Space
☐ Urban Residential	☐ Institutional
☑ Suburban Residential	Other: _____
☐ Commercial	Known Industries: _____

Notes (e.g.., origin of outfall, if known):

Conveyance of stormwater along Ann Street.

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☐ **Closed Pipe**	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☑ **Open drainage**	☐ Concrete ☑ Earthen ☐ Rip-rap ☐ Other: _____	☐ Trapezoid ☑ Parabolic ☐ Other: _____		Depth: 36" Top Width: 72" Bottom Width: 36"	
☐ **In-Stream**	**(applicable when collecting samples)**				
Flow Present?	☐ Yes ☑ No ***If No, Skip to Section 5***				
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☐Flow Method #1	Volume		Liter	Bottle
	Time to fill		Seconds	Stop watch
☐Flow Method #2	Flow depth		Inches	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		Seconds	Stop watch
Temperature			°F	Thermometer
pH			pH Standard Units	Test strip / probe
Ammonia			mg/L	Test strip

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET (CONTINUED)

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; Origin not obvious	☐ 2 – Some; Indications of origin (e.g., possible suds or oil sheen)	☐ 3 – Some; Origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☑ No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oil ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☑ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1.	Sample for the lab?	☐ Yes	☑ No	If Yes, what time was the sample collected?
2.	If yes, collected from:	☐ Flow	☐ Pool	
3.	Intermittent flow trap set?	☐ Yes	☑ No	If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Erosion within outfall. A pipe is showing within the outfall.

City of Rainbow City
IDDE MS4 Compliance
Rainbow City, Etowah County, Alabama
S&ME Project No. 4482-19-068

Outfall Number: Z1-001
GPS: 33.959564°, -86.052137°
Date of Photo: January 5, 2024
Receiving Water Body: Horton Creek

Photo 1 View of minor outfall Z1-001, facing west.

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Drainage Basin: Drainage Zone 2		Outfall ID: Z2-049	
Today's Date: 1/31/2024		Time (Military): 1041	
Investigators: A. Harris & J. Jayroe		Form completed by: A. Harris	
Temperature (°F): 45	Rainfall (in.): Last 24 hours: 0	Last 48 hours: 0	
Latitude: 33.928264	Longitude: -86.070604	GPS Unit: Trimble Geo 7X	GPS LMK #: NA
Camera: Apple iPhone 11pro		Photo #s: one photo attached	

Land Use in Outfall Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☑ Open Space
- ☐ Institutional
- Other: _____
- Known Industries: _____

Notes (e.g.., origin of outfall, if known):

Originates from residential property.

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☑ **Closed Pipe**	☑ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☑ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☑ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 4"	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ **Open drainage**	☐ Concrete ☐ Earthen ☐ Rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
☐ **In-Stream**	**(applicable when collecting samples)**				
Flow Present?	☒ Yes ☐ No	***If No, Skip to Section 5***			
Flow Description (If present)	☑ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☐ Flow Method #1	Volume	0.01	Liter	Bottle
	Time to fill	60	Seconds	Stop watch
☐ Flow Method #2	Flow depth		Inches	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		Seconds	Stop watch
Temperature		54.0	°F	Thermometer
pH		7.27	pH Standard Units	Test strip / probe
Ammonia			mg/L	Test strip

Z2-049

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET (CONTINUED)

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; Origin not obvious	☐ 2 – Some; Indications of origin (e.g., possible suds or oil sheen)	☐ 3 – Some; Origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☑ Yes ☐ No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oil ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☑	☐ Brown ☐ Orange ☑ Green ☐ Other:	Green algae observed.

Section 6: Overall Outfall Characterization

☑ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1.	Sample for the lab?	☐ Yes	☑ No	If Yes, what time was the sample collected?
2.	If yes, collected from:	☐ Flow	☐ Pool	
3.	Intermittent flow trap set?	☐ Yes	☑ No	If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

None observed.

City of Rainbow City
IDDE MS4 Compliance
Rainbow City, Etowah County, Alabama
S&ME Project No. 4482-19-068

Outfall Number: Z2-049
GPS: 33.928264°, -86.070604°
Date of Photo: January 31, 2024
Receiving Water Body: UT to Dry Creek

Photo 1 View of minor outfall Z2-049, facing east

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Drainage Basin: Drainage Zone 2		Outfall ID: Z2-052	
Today's Date: 1/31/2024		Time (Military): 1031	
Investigators: A. Harris & J. Jayroe		Form completed by: A. Harris	
Temperature (°F): 45	Rainfall (in.): Last 24 hours: 0	Last 48 hours: 0	
Latitude: 33.927904	Longitude: -86.070705	GPS Unit: Trimble Geo 7X	GPS LMK #: NA
Camera: Apple iPhone 11pro		Photo #s: one photo attached	

Land Use in Outfall Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☑ Open Space
- ☐ Institutional
- Other: _____
- Known Industries: _____

Notes (e.g.., origin of outfall, if known):

Conveyance of stormwater from residential properties.

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☑ **Closed Pipe**	☐ RCP ☐ CMP ☐ PVC ☑ HDPE ☐ Steel ☐ Other: _____	☑ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 15"	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ **Open drainage**	☐ Concrete ☐ Earthen ☐ Rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
☐ **In-Stream**	**(applicable when collecting samples)**				
Flow Present?	☒ Yes ☐ No	***If No, Skip to Section 5***			
Flow Description (If present)	☐ Trickle ☑ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☑ Flow Method #1	Volume	1	Liter	Bottle
	Time to fill	30	Seconds	Stop watch
☐ Flow Method #2	Flow depth		Inches	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		Seconds	Stop watch
Temperature		54.0	°F	Thermometer
pH		7.01	pH Standard Units	Test strip / probe
Ammonia		0	mg/L	Test strip

Z2-052

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET (CONTINUED)

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; Origin not obvious	☐ 2 – Some; Indications of origin (e.g., possible suds or oil sheen)	☐ 3 – Some; Origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oil ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☑	☐ Odors ☐ Colors ☑ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	Foaming in pool beneath outfall
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☑ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1.	Sample for the lab?	☐ Yes	☐ No	If Yes, what time was the sample collected?
2.	If yes, collected from:	☐ Flow	☐ Pool	
3.	Intermittent flow trap set?	☐ Yes	☐ No	If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

None observed.

City of Rainbow City
IDDE MS4 Compliance
Rainbow City, Etowah County, Alabama
S&ME Project No. 4482-19-068

Outfall Number: Z2-052
GPS: 33.927904°, -86.070705°
Date of Photo: January 31, 2024
Receiving Water Body: UT to Dry Creek

Photo 1 View of minor outfall Z2-052, facing west

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Drainage Basin: Drainage Zone 2		Outfall ID: Z2-072	
Today's Date: 1/31/2024		Time (Military): 1010	
Investigators: A. Harris & J. Jayroe		Form completed by: A. Harris	
Temperature (F): 45	Rainfall (in.): Last 24 hours: 0	Last 48 hours: 0	
Latitude: 33.927069	Longitude: -86.073245	GPS Unit: Trimble Geo 7X	GPS LMK #: NA
Camera: Apple iPhone 11pro		Photo #s: one photo attached	

Land Use in Outfall Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Open Space
- ☐ Institutional
- Other: _____
- Known Industries: _____

Notes (e.g.., origin of outfall, if known):

Conveyance of stormwater along residential development. Standing water.

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☑ **Closed Pipe**	☐ RCP ☐ CMP ☑ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☑ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☑ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 1 1/2"	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ **Open drainage**	☐ Concrete ☐ Earthen ☐ Rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
☐ **In-Stream**	**(applicable when collecting samples)**				
Flow Present?	☒ Yes ☐ No	***If No, Skip to Section 5***			
Flow Description (If present)	☑ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☒ Flow Method #1	Volume	0.01	Liter	Bottle
	Time to fill	120	Seconds	Stop watch
☐ Flow Method #2	Flow depth		Inches	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		Seconds	Stop watch
Temperature		57.0	°F	Thermometer
pH		7.47	pH Standard Units	Test strip / probe
Ammonia		0	mg/L	Test strip

OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET (CONTINUED)

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☑ No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; Origin not obvious	☐ 2 – Some; Indications of origin (e.g., possible suds or oil sheen)	☐ 3 – Some; Origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☑ No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oil ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☑ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1.	Sample for the lab?	☐ Yes	☑ No	If Yes, what time was the sample collected?
2.	If yes, collected from:	☐ Flow	☐ Pool	
3.	Intermittent flow trap set?	☐ Yes	☑ No	If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

None observed.

City of Rainbow City
IDDE MS4 Compliance
Rainbow City, Etowah County, Alabama
S&ME Project No. 4482-19-068

Outfall Number: Z2-072
GPS: 33.927069°, -86.073245°
Date of Photo: January 31, 2024
Receiving Water Body: UT to Dry Creek

Photo 1 View of minor outfall Z2-072, facing west

RAINBOW CITY ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

TABLE 3 - FY2023-2024 OUTFALL INSPECTIONS

OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE INSPECTED	FLOW (YES/NO)	OUTFALL CHARACTERIZATION
			CLOSED/OPEN	MATERIAL	MAJOR/MINOR					
ZONE 1										
Z1-001	33.959564	-86.052137	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-002	33.959544	-86.051952	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-003	33.959418	-86.051957	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-004	33.959408	-86.052201	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-005**	33.955236	-86.051590	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	1/2020	1/5/2024	NA	NA
Z1-006	33.955223	-86.051522	CLOSED PIPE	RCP	MINOR	HORTON CREEK	1/2020	1/5/2024	NO	UNLIKELY
Z1-007	33.960213	-86.048588	OPEN DRAINAGE	CONCRETE/EARTHEN	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-008	33.960080	-86.048646	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-009	33.960087	-86.048585	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-010	33.959944	-86.048613	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z1-011	33.959785	-86.048551	OPEN DRAINAGE	CONCRETE	MINOR	UT TO HORTON CREEK	4/3/2020	1/31/2024	NO	UNLIKELY
Z1-012	33.959547	-86.048314	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/31/2024	NO	UNLIKELY
Z1-013	33.964223	-86.045606	CLOSED PIPE	RCP	MAJOR	HORTON CREEK	4/3/2020	1/31/2024	NO	UNLIKELY
Z1-050	33.957462	-86.051764	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	1/5/2024	NO	UNLIKELY
Z1-055	33.960091	-86.052158	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2022	1/5/2024	NO	UNLIKELY
ZONE 2										
Z2-018	33.947984	-86.044476	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-019	33.949816	-86.042909	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-020	33.950767	-86.043054	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-021	33.950861	-86.043505	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-022	33.950975	-86.043630	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-023	33.951209	-86.043666	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-024	33.945772	-86.048213	CLOSED PIPE	PVC	MINOR	HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-025	33.946129	-86.048859	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-026	33.947910	-86.048839	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-027	33.948844	-86.050428	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-028	33.948819	-86.050577	OPEN DRAINAGE	EARTHEN	MINOR	HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-029	33.948972	-86.050564	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-030	33.948857	-86.050568	CLOSED PIPE	HDPE	MINOR	HORTON CREEK	3/22/2021	1/5/2024	NO	UNLIKELY
Z2-033	33.950477	-86.042533	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-034	33.951408	-86.043996	CLOSED PIPE	PLASTIC	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-035	33.951377	-86.043763	CLOSED PIPE	PVC	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-036	33.951326	-86.043733	CLOSED PIPE	CLAY	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-037	33.951322	-86.043781	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-038	33.951353	-86.043968	CLOSED PIPE	HDPE	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-039	33.951395	-86.044048	CLOSED PIPE	RCP	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-040	33.951430	-86.044170	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-041	33.934258	-86.074246	OPEN DRAINAGE	EARTHEN	MINOR	UT TO HORTON CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-042	33.949204	-86.051135	CLOSED PIPE	RCP	MINOR	HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-043	33.949074	-86.051560	CLOSED PIPE	RCP	MINOR	HORTON CREEK	4/3/2020	1/5/2024	NO	UNLIKELY
Z2-044	33.933468	-86.073205	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-045	33.933003	-86.072888	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-046	33.928559	-86.070700	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-047	33.928464	-86.070765	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-048**	33.928286	-86.070629	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NA	NA
Z2-049	33.928264	-86.070604	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	YES	UNLIKELY
Z2-050	33.928252	-86.070591	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-051	33.928281	-86.070593	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-052	33.927904	-86.070705	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	YES	UNLIKELY
Z2-053	33.927924	-86.070680	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-054	33.929307	-86.067495	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-055	33.929899	-86.067608	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-056	33.930059	-86.067657	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-057	33.931208	-86.070489	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY

RAINBOW CITY ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM
TABLE 3 - FY2023-2024 OUTFALL INSPECTIONS

OUTFALL ID #	LOCATION (LAT/LONG)		OUTFALL DESCRIPTION			RECEIVING WATER BODY	DATE IDENTIFIED	DATE INSPECTED	FLOW (YES/NO)	OUTFALL CHARACTERIZATION
			CLOSED/OPEN	MATERIAL	MAJOR/MINOR					
Z2-058	33.931403	-86.070548	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-059	33.931369	-86.071545	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-060	33.931419	-86.071659	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/23/2021	1/31/2024	NO	UNLIKELY
Z2-061	33.938300	-86.062438	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024	NO	UNLIKELY
Z2-062	33.938144	-86.062622	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024	NO	UNLIKELY
Z2-063	33.937768	-86.063208	OPEN DRAINAGE	CONCRETE	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024	NO	UNLIKELY
Z2-064	33.93772256	-86.063307	OPEN DRAINAGE	CONCRETE	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024	NO	UNLIKELY
Z2-065	33.937503	-86.063707	OPEN DRAINAGE	CONCRETE	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024	NO	UNLIKELY
Z2-066	33.936933	-86.064895	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/31/2024	NO	UNLIKELY
Z2-069	33.925902	-86.072882	CLOSED PIPE	HDPE	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-070	33.926224	-86.073042	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-071	33.926565	-86.073084	OPEN DRAINAGE	RIP-RAP	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-072	33.927069	-86.073245	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	YES	UNLIKELY
Z2-073	33.928555	-86.073769	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-074	33.928582	-86.073743	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-075	33.928918	-86.074322	CLOSED PIPE	PVC	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-076	33.930798	-86.074535	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-077	33.931105	-86.074501	OPEN DRAINAGE	EARTHEN	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
Z2-079	33.932213	-86.064207	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/29/2021	1/31/2024	NO	UNLIKELY
ZONE 3										
Z3-002	33.927556	-86.088117	CLOSED PIPE	STEEL	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024	NO	UNLIKELY
Z3-003	33.926812	-86.088637	CLOSED PIPE	STEEL	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024	NO	UNLIKELY
Z3-004	33.927307	-86.088005	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024	NO	UNLIKELY
Z3-005	33.924875	-86.087176	CLOSED PIPE	RCP	MINOR	UT TO DRY CREEK	3/24/2021	1/5/2024	NO	UNLIKELY

NA = Not Applicable

**Outfalls Z1-005 and Z2-048 were no longer present and removed from the outfall inventory.

RAINBOW CITY

MS4 ANNUAL AWARENESS TRAINING

GADSDEN-ETOWAH MS4

MARCH 20, 2024

	PRINT NAME	SIGNATURE
1	John Jayroe	
2	Tony Robinson	
3	Joel Gurmon	
4	Michael Stevens	
5		
6		
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9		
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11		
12		
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14		
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1

2

What is an MS4?

- **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem
- An MS4 is a system of conveyances that is:
  - Owned by a state, city, or other public entity
  - Designed or used to collect or convey storm water
  - Not a combined sewer
  - Not part of a Publicly Owned Treatment Works

3

NPDES Background

- National Pollutant Discharge Elimination System
- NPDES program created in 1972 by the Clean Water Act
- Some pollution sources exempted from 1972 law
- Water Quality Act of 1987 expanded coverage to industrial stormwater and MS4s

4

MS4 History – Phase I Rule

- Storm Water Phase I Final Rule issued by the EPA in 1990
- Requires coverage of medium and large cities with populations of **100,000 or more**
- Large: population ≥ 250,000
- Medium: population between 100,000 and 250,000
- Around 855 Phase I MS4s nationwide
- Currently 27 Phase I MS4s in Alabama

5

MS4 History – Phase II Rule

- Storm Water Phase II Final Rule issued by the USEPA in 1999
- Requires coverage of small MS4s
- Populations less than 100,000 but located in an "**urbanized area**" as defined by the Census
- Provides exemptions for very small communities
- Around 6,700 Phase II MS4s nationwide
- Currently 54 Phase II MS4s in Alabama

6

Why does the MS4 program exist?

- Municipal conveyances collect pollutants from users within the city
- Cities have the ability to regulate at the local level
- Addresses pollutants at their source

7

Common MS4 Pollutants

- Oil and grease from roadways
- Pesticides and fertilizers from lawns
- Sediment from construction sites
- Trash (cigarette butts, paper wrappers, plastic bottles)

8

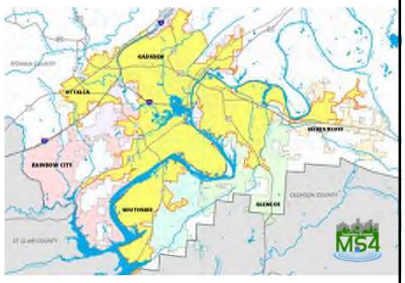
MS4

Urbanized Area

9

2010 Urbanized Area Definition

- Defined by the US Census Bureau
- **Urbanized area** Minimum population of 50,000
- **Core blocks** 1,000 people/sq mi
- **Surrounding blocks** 500 people/sq mi
- 497 Urbanized Areas in 2010 Census



10

2020 Census Changes

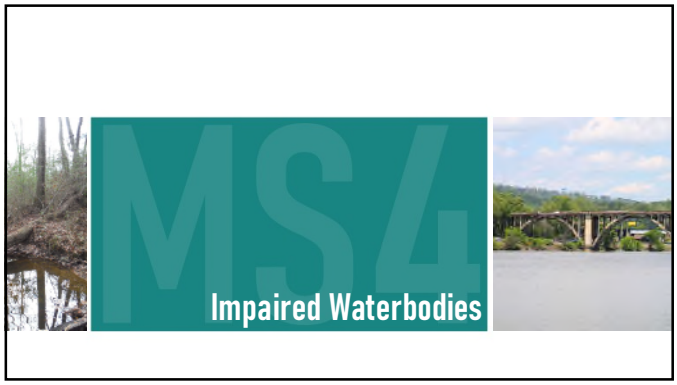
- **Urban area** Minimum population of 5,000 or 2,000 HUs
- **High-density nucleus** 1,275 HUs/sq mi
- **Initial urban core** 425 HUs/sq mi
- **Remainder of urban area** 200 HUs/sq mi
- 2,613 urban areas in 2020 census

11

Final Phase II Rule Clarification

- New urban area maps released in December 2022
- Significant differences in boundaries from 2010 maps
- EPA signed the *NPDES Small MS4 Urbanized Area Clarification* on June 7, 2023
- Replaces the term "urbanized area" with the phrase "urban areas with a population of at least 50,000"
- Does not address the issue of map changes
- **ADEM is still relying on the 2010 maps**

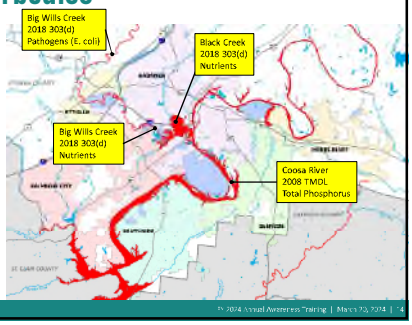
12



13

Impaired Waterbodies

- "Impaired" means the waterbody cannot be used for its designated purpose
- Neely Henry Lake
- Big Wills Creek
- Black Creek



14

Neely Henry Impairments

- Neely Henry Lake is the primary receiving water for the Gadsden-Etowah MS4
- Neely Henry Lake first identified on the **1996 303(d) list** as being impaired

15

Neely Henry Impairments

- Nutrients
- pH
- Organic Enrichment
- Priority Organics (PCBs)

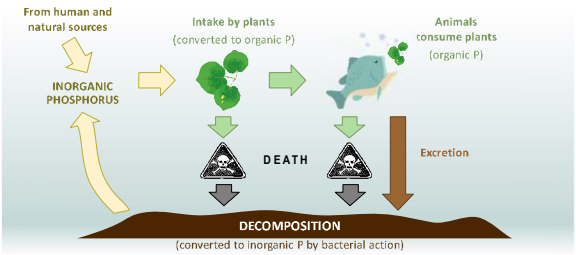
16

Neely Henry Total Maximum Daily Load

- TMDL established in 2008 for Nutrients and Dissolved Oxygen
- Specific distribution of discharges unknown
- How much from existing non-point sources?
- How much from MS4?
- The Gadsden-Etowah MS4 is required to achieve a **30% reduction in Total Phosphorus** discharge loading.

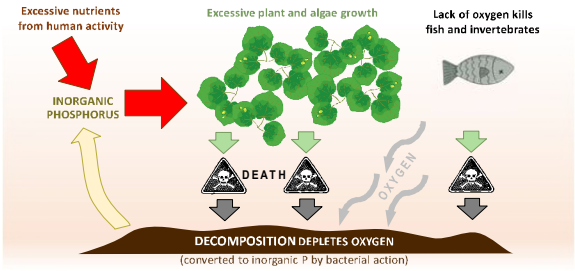
17

Aquatic Phosphorus Cycle



18

Eutrophication



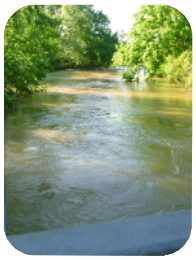
19

Sources of Phosphorus

- Construction runoff
- Lawn fertilizer
- Industrial sources
- Sanitary sewer overflows
- Failing septic systems
- Failing sewer infrastructure
- Cropland and pasture

20

Big Wills Creek Impairments



- Receives storm water from Attalla, Gadsden, and Rainbow City
- Big Wills Creek first identified on the **2018 303(d) list** as being impaired for pathogens
- Public health impacts
- E. coli can cause illness in people exposed to contaminated storm water

21

Sources of Pathogens

- Animal feeding operations
- Pasture grazing
- Collection system failure:
  - Failing septic systems
  - Sanitary sewer overflows
  - Aging sewer infrastructure

22

23

SWMPP

- Storm Water Management Program Plan
- Required by Part III of the Phase II General Permit
- Details the steps the permittee will take to implement the permit requirements
- SWMPPs revised in **2022**

24

5 Minimum Control Measures

1. Public Education, Outreach, Participation, and Involvement
2. **Illicit Discharge Detection and Elimination**
3. Construction Site Runoff Control
4. Post Construction Runoff Control
5. **Pollution Prevention/Good Housekeeping for Municipal Operations**

25

Required Municipal Training

- Pollution prevention
- Petroleum and chemical storage
- Waste management
- Illicit discharge identification
- Common illicit discharges

26

MS4

Municipal Pollution Prevention

27

Standard Operating Procedures

- Written SOPs are required by the MS4 permit
- Must detail good housekeeping practices for municipal facilities and operations
- Assess facilities and activities to determine pollution potential
- SOPs must be reviewed annually and updated if needed

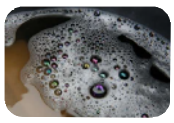
28

Vehicle Washing

29

Pollutants from Vehicle Washing

- Pollutants include detergents, oils, grease, grit, and heavy metals
- Soap can harm fish and other aquatic life
- Phosphates in detergent can contribute to algae blooms
- As the algae decays, the process uses up oxygen, killing fish



30

Control Vehicle Washing Discharges

- Only wash vehicles in designated areas
- **Do not direct the wash water to a storm sewer or waterbody!**
- Sanitary sewer is the best method of wash water disposal
- Commercial car washes have pre-treatment and sanitary sewer connections
- Commercial facilities use less water

31

Control Vehicle Washing Discharges

- If no sanitary connection is available, wash vehicles on grass or gravel
- If washing must take place on pavement, direct flows to grassed areas
- Infiltration will help remove pollutants
- **Do not wash undercarriage**

32

Inlet Protection – Filter Booms

- Placed in front of a curb inlet or around a grate inlet to intercept flows
- Oil sorbent
- Sufficient capacity to retain grit and sediment from a minimum of one week's washing activity

Image Credit: New Pig Corporation

33

Filter Boom Maintenance

- Inspect booms prior to washing and at least once per week.
- Remove grit and sediment when accumulations reach 50% of the height of the roll.
- Dispose of the removed material in the trash.
- Oil sorbent booms will be replaced when saturated or according to the manufacture's recommendations.

34

Inlet Protection – Inlet Bags or Skimmers

- Placed inside an inlet catch basin to capture pollutants
- Oil sorbent
- Sufficient capacity to retain grit and sediment from a minimum of one week's washing activity

Image Credit: Dandy

Image Credit: BMP Supplies

35

Inlet Bag or Skimmer Maintenance

- Inspect catch basin BMPs prior to washing and at least once per week.
- Remove grit and sediment when accumulations reach 50% of the capacity of the inlet bag.
- Dispose of the removed material in the trash.
- Oil sorbent bags or skimmers will be replaced when saturated or according to the manufacture's recommendations.

36

"Eco-friendly" Cleaners

- **Biodegradable** soaps break down quicker
- **Phosphate-free** soaps don't contain phosphorus compounds
- Doesn't help with the solids and oils washed off the vehicle
- Still need to direct flows to grass

37

Paint and Paint Waste

38

Pollutants from Paint and Paint Waste

- Water-based paints contain solid pigments that increase turbidity
- Water-based paints may also contain surfactants and thickeners
- Oil-based paint contains petroleum distillates and organic solvents
- Some paints may contain heavy metals
- Organic solvents used to clean oil-based paint from brushes and equipment are toxic

39

Paint and Paint Waste Storage

- Store paint and paint waste **indoors**, away from storm water
- Paint and paint waste containers should remain closed when not in use
- Clearly label containers to avoid confusion

40

Equipment Cleaning

- Water-based paint brushes and equipment may be washed in a sink discharging to the sanitary sewer
- Oil-based paints and cleaning solvents must be containerized for disposal
- Never rinse brushes or paint containers into the street, gutter, or storm drain

41

Petroleum Management

42

Petroleum Pollutants

- Oil contains toxic components such as benzene
- Used oil can contain heavy metals
- One gallon of gasoline can contaminate approximately 750,000 gallons of water
- Oil poured down the drain can damage the wastewater treatment plant

43

Petroleum Storage

- Spill containment dikes must contain **110%** of the capacity of the **largest tank**
- Must be impervious construction
- Not concrete block, unless sealed or lined
- Concrete curbs are also protective for small spills
- Storm water must be inspected prior to discharge

44

Used Oil Management

- Must be sent for recycling
- Store used oil indoors
- Store used oil away from doors and aisles
- Use **closed containers**
- Clearly label used oil containers

45

Equipment Storage

- Store equipment under roof if possible
- Inspect floor or ground for staining
- Keep driving paths clear
- Move chemicals and oil away from doors or openings

46

Vehicle Maintenance

- Inspect parking areas for leaks or spills
- Identify leaking vehicles
- Repair vehicles promptly
- Clean up spills

47

Fueling Operations

- Spills can occur during fueling
- Do not "top off"
- Stay with vehicle while fueling
- Clean up any drips or spills
- Carry spill kits on municipal vehicles

48

Fueling Area Inspections

- Look for evidence of small spills
- Inspect pump and piping
- **Staining** on the pavement or gravel
- Physical **damage or deterioration**
- Leaks or drips
- Cracking or abnormal wear

49

Spill Clean Up

- **Do NOT use water to wash away spills**
- Use absorbent materials
- Dispose of materials properly when finished cleaning
- Under 25 gallons, no free liquids, can go to a lined landfill

50

Spill Reporting

- Reportable quantity for the release of oil into the environment, excluding water, is an amount of **25 gallons or more**
- **Any release of oil into water must be reported**
- During normal office hours:
  ADEM Birmingham Field Office
  205-942-6168
- After hours:
  Alabama State Warning Point
  1-800-843-0699

51

Scrap Tire Management

52

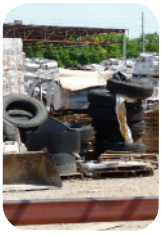
Scrap Tire Management

- Government operations that generate 10 or more scrap tires per year are **Class Two Receivers**
- Storage limit of 300 scrap tires total
- Current requirements:
  - Registration (does not expire for receivers)
  - Quarterly reporting
  - Maintain operating record

53

Scrap Tire Management

- No scrap tires may be exposed to the elements for more than **30 days**
- If exposed more than 7 days, receiver must have a **Vector Control Plan**
- Plan must be approved by ADEM



54

Scrap Tire Proposed Rule Changes

- Hearing on proposed rule to be held **March 21, 2024**
- Require existing receivers to re-register within 180 days of the effective date of the rule
- Renew registration every 3 years
- Semi-annual reporting instead of quarterly reporting

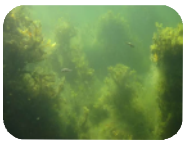
55

PHF Management

56

Fertilizers

- Fertilizers contain phosphorus or nitrogen
- Fertilizers contribute to dense vegetation growth in waterbodies (eutrophication)
- Decomposition of vegetation uses oxygen
- Lack of oxygen in waterbodies can kill fish and invertebrates



57

Pesticides

- Pesticides are used to address adult mosquitos, mosquito larvae, wasps, bees, fire ants, and rats
- Pesticides can be harmful to aquatic life and can contaminate drinking water

58

Pesticides

- Pyrethroids are synthetic insecticides
- Found in products for ant control; home lawn, garden, and landscape care; and structural pest control
- Found in mosquito control products
- Toxic to invertebrates and fish
- Highly toxic to bees

59

Herbicides

- Herbicides used to prevent regrowth in ditches
- Herbicides used in cemeteries and parks
- Aquatic herbicides used to control algae growth
- Herbicides can be toxic to fish and other aquatic life

60

ADEM PHF Permit Use Thresholds

- **Mosquitos:** 6,400 acres of treatment area
- **Weed and Algae:** 100 surface acres of water or 100 linear miles at water's edge
- **Animal Pest Control:** 100 surface acres of water or 100 linear miles at water's edge
- **Forest Canopy:** 6,400 acres of treatment area
- Permit is not required if application is below the use threshold

61

PHF Usage Best Practices

- Don't over-apply
- Check the weather - **don't spray before a rain event**
- Follow manufacture's recommendations for water setbacks
- Transfer or pour chemicals indoors, over impervious surfaces

62

PHF Storage and Disposal Best Practices

- Inspect storage areas of leaks or spills
- Containers must be labeled
- Dispose of damaged containers
- Keep containers closed when not in use
- Dispose of old, unusable, or obsolete chemicals
- Don't dump grass clippings into storm drains or waterways

63

64

What Are Illicit Discharges?

- Not authorized by NPDES permit
- Not authorized by ordinance
- Three types:
  - Continuous – constant flow
  - Intermittent – off and on
  - Transitory – one and done

65

Common Illicit Discharges

- Sewage – leaking or overflow
- Illegal dumping into storm drains
- Construction sites – paint, oil, sediment
- Unpermitted industrial discharges
- Swimming pools – chlorinated or saltwater

66

Signs of an Illicit Discharge

- Staining at inlets or in culverts
- Dry-weather flow
- Odor
- Sheen
- Foam

67

Illicit Discharge Detection

- **Outfall Reconnaissance Inventory**
- Visually inspect outfalls
- Record observations
- Perform field screening
- Collect samples

68

Illicit Discharge Reporting and Tracking

- Public reporting
- Municipal employee reporting
- Report must include location, date, time, and a brief description at a minimum
- Track reports in GIS or on map as part of outfall screening program

69

Illicit Discharge Elimination

- Trace sources using the storm system map and field inspection
- Pursue compliance
- Report unpermitted facilities to ADEM
- Fix leaks as soon as possible
- Public education
- Community collection days

70

71

Oil or Fuels

- **Color:** Rainbow sheen floating on top of water surface; water may be gray or milky
- Dark staining of surrounding surfaces may be present
- When disturbed, sheen will swirl together
- **Odor:** May have strong petroleum or gasoline smell
- **Turbidity and Floatables:** Oil sheen, red, brown, black streaks

72

Oil or Fuels

73

Oil or Fuels

74

Oil or Fuels

75

Oil or Fuels

76

Sewage

- **Color:** Gray
- **Odor:** Strong sewage smell, sulfur, fecal matter
- **Turbidity and Floatables:** Foam, bubbles, fecal solids, food wastes, toilet paper, etc.

Report observed SSOs

77

Sewage

78

Sewage

79

Sewage

80

Sewage

81

Sediment

- **Color:** Orange, yellow, red, chocolate milk
- **Odor:** None
- **Turbidity and Floatables:** Typically find deposits settled to bottom, water can be very turbid, may not be able to see bottom of stream

82

Sediment

83

Sediment

84

Sediment

85

Sediment

86

Sediment

87

Soaps and Detergents

- **Color:** Milky white, grey, cloudy
- **Odor:** Fragrance like laundry detergent or soap, or none at all
- **Turbidity and Floatables:** Bubbles, foam, highly turbid

88

Soaps and Detergents

89

Soaps and Detergents

90

Soaps and Detergents

91

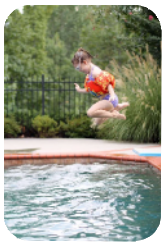
Swimming Pool Discharges

- Swimming pool discharges are authorized, provided they are:
  - pH neutral
  - Dechlorinated (less than 1 ppm of chlorine)
- Best practice is to discharge the pool water over a grassed surface to infiltrate
- Saltwater swimming pools should be discharged to the sanitary sewer **with prior approval** from the utility

92

Swimming Pool Discharges

- **Color:** None
- **Odor:** Chlorine or none at all
- **Turbidity and Floatables:** None
- Swimming pool discharges are distinguishable by location
- An observed swimming pool discharge should be reported



93

Iron Bacteria

Not an illicit discharge!

- **Color:** Red, reddish-orange, slimy, fuzzy
- **Odor:** Rotten, swampy, or none at all
- **Turbidity and Floatables:** Oily sheen that breaks apart when disturbed, "crumbs" settled on the bottom

94

Iron Bacteria

- The red or orange deposits are caused by bacteria that feed on dissolved iron
- The bacteria colonize the transition zone where deoxygenated water flows into oxygenated water
- The iron-oxide deposits settle to the bottom or remain suspended in the slime
- Iron bacteria are naturally-occurring and not harmful

95

Iron Bacteria

96

Iron Bacteria

97

Iron Bacteria

98

Iron Bacteria

99

Iron Bacteria

100

Illicit Discharge Reporting

- Observed illicit discharges should be immediately reported to your supervisor
- Supervisors should report to one of the following:

City	Report To	Phone	Email
Attalla	Jason Nicholson	256-441-9200	jnicholson@attallacity.org
Glencoe	Todd Means	256-492-1424 x 5	toddmeans@cityofglencoe.org
Hokes Bluff	Lisa Lowman	256-492-2414 x 6	lisa.lowman@cityofhokesbluff.com
Rainbow City	Joel Garmon	256-413-1230	jgarmon@rbcalabama.com
Southside	Judd Rich	256-442-9775 x 131	juddrich@cityofsouthside.com

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Illicit Discharge Reporting

- The report should contain the following information:
  - Date
  - Time
  - Location
  - Observed characteristics (e.g., odor, color, sheen, etc.)
- You are **NOT** required to investigate
- Just report what you observed

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Appendix F – Construction Site Storm Water Runoff

ADEM
Alabama Department of Environmental Management

QCI Training Program

thompson
ENGINEERING

Certificate of Completion

is hereby granted to:

John Jayroe

City of Rainbow City

for satisfactory completion of

Online Initial

Training

QCI No. T7970

Expires 8/4/2024

This certificate confers six (6.0) professional development hours (PDHs) to students who require credits for licenses or certifications.
Such PDHs are subject to the qualifying requirements of the licensing or certifying organization.

SITE PLAN CHECKLIST

DEVELOPMENT: _____

_____

APPLICANT _____

DATE _____

GRAPHIC INFORMATION

VICINTY MAP _____

NORTH ARROW, SCALE, DATE_____

LOCATION OF STRUCTURES_____

FLOOD PLAINS_____

WETLANDS & WATERCOURSES_____

STEEP SLOPES_____

REQUIRED BUFFERYARKS_____

LANDSCAPING_____

PARKING_____

CURB CUTS_____

EASTMENTS & RIGHT OF WAYS_____

SIGNS_____

PHASES_____

FINISH FLOOR ELEV._____

UTILITY LINES_____

SOILD WASTE RECEPTACIES_____

ENGINEERING REQUIREMENTS

RUNOFF CALCULATIONS_____

STORMWATER MANAGEMENT_____

PARKING PLACES (HC)_____

ON SITE FIRE PROTECTION_____

DETAILS_____

SITE TRIANGLE ENTERANCE_____

EROISION CONTROL /BMPs_____

BUILDING CHECK LIST

CODES USES IN DRAWING_____
FOOTING PLAN_____
FLOOR PLAN_____
DETAILS SHEET_____
ELEVATIONS_____
PLUMBING DRAWING_____
MECHANICAL DRAWING_____
ELECTRICAL DRAWING_____
DOES BUILDING REQUIRE SPRINKLERS_____

RAINBOW CITY MS4

NPDES-PERMITTED CONSTRUCTION SITE INVENTORY

(Sites Within the MS4 Boundary)

	PERMIT	SITE NAME	STREET	CITY	ZIP	START DATE
1	ALR10C0X3	Hollingsworth Townhomes LLC	306 Hollingsworth Ave	Rainbow City	35906	6/16/2021
2	ALR10C13A	Southtowne Mini Warehouses	199 Woodland Dr.	Rainbow City	35906	7/16/2021
3	ALR10C1HR	Christ Central Church	491 W Grand Ave	Rainbow City	35906	10/8/2021
4	ALR10C29D	Westbrook Christian School Gymnasium	100 Westminster Drive	Rainbow City	35906	4/27/2022
5	ALR10C2D6	Kensington Gardens	Kensington Lane	Rainbow City	35906	5/24/2022
6	ALR10C2TN	Montrose Speculative Plaza	3518 MONTROSE AVE	Rainbow City	35906	08/24/22
7	ALR10C3J2	Morgan Crossing Subdivision	3352 Rainbow Drive	Rainbow City	35906	03/01/23
8	ALR10C3PP	Bar 1	214 East Grand Ave	Rainbow City	35906	04/11/23
9	ALR10C41Z	Sutton Bridge Storage	1951-1923 Sutton Bridge Rd	Rainbow City	35906	07/12/23
10	ALR10C4BB	BASCO - Steele Station	Steele Station Road	Rainbow City	35906	09/18/23
11	ALR10C4BW	Wyatt Lee	800 W Grand Ave	Rainbow City	35906	09/21/23
12	ALR10C516	Westminster	Westminster Dr	Rainbow City	35906	03/11/24
13	ALR10C55L	Cobblestone Cottages	506 Lasalle Street	Rainbow City	35906	04/15/24
14	ALR10C564	Fast Pace Urgent Care - Rainbow City	Silvey Street	Rainbow City	35906	04/17/24
15	ALR10C597	Ice Station Zebra	339-401 Woodland Dr	Rainbow City	35906	05/22/24

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Cloudy 71 Degrees

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
X	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control	X	Sediment Basin
X	Stabilized Constuction Entrance	X	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment leaving the site

Have items noted on last inspection been corrected? YES X NO

If No Explain:

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

4/28/2023
Date Of Inspection

Eric Self
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment Leaving the site
Silt fence	along highway	Needs replaced sediment leaving site

Have items noted on last inspection been corrected? _____ YES x NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Joel Garmon

From: Joel Garmon
Sent: Friday, May 26, 2023 1:18 PM
To: 'GARY PLIMPTON'
Cc: Cody Adams
Subject: 2810B Rainbow Dr
Attachments: 2810B Rainbow Dr.jpg

Gary,

2810B Rainbow Dr needs to be corrected ASAP!

Joel Garmon, CPESC
Building Official
City of Rainbow City

256.413.1230
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

Joel Garmon

From: GARY PLIMPTON <garyplimpton@comcast.net>
Sent: Monday, May 29, 2023 7:37 AM
To: Joel Garmon
Subject: Re: 2810B Rainbow Dr

yes sir, ALDOT and engineer meeting tuesday, we will finally get permit approved.

On 05/26/2023 1:18 PM CDT Joel Garmon <jgarmon@rbcalabama.com> wrote:

Gary,

2810B Rainbow Dr needs to be corrected ASAP!

Joel Garmon, CPESC

Building Official

City of Rainbow City

256.413.1230
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny 82

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle,Gravel	At the highway and drain	
Silt fence	along haighway	

Have items noted on last inspection been corrected? x **YES** _____ **NO**

If No Explain: Spoke to own onsite at the time of inspection to correct issue

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/30/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny 91

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment Leaving the site
Silt fence	along highway	Needs repair sediment leaving site

Have items noted on last inspection been corrected? x YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

6/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The S[illegible]le, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location: Gary Plimpton 2810B Rainbow Dr

Weather: Cloudy 91°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment leaving the site

Have items noted on last inspection been corrected? ____ YES ✓ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

7/28/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The ıale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

John Jayroe

From: GARY PLIMPTON <garyplimpton@comcast.net>
Sent: Monday, August 14, 2023 1:56 PM
To: John Jayroe
Subject: Re: Rainbow City Building Dept. / Property @ 2810B Rainbow Drive

Hello John, Yessir, I noticed mud on site inspection, RBC police stopped traffic in order for me to clean street.

On 08/14/2023 11:55 AM CDT John Jayroe <jjayroe@rbcalabama.com> wrote:

Good morning Mr. Plimpton,

The jobsite at 2810B Rainbow Drive has issues with the silt fence, the wattle, and sediment entering the roadway. The rain this weekend has just exacerbated the problems. Please take care of this as soon as possible.

Thank you,

John

John Jayroe

Deputy Building Official

City of Rainbow City

256.413.1240
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

RBC RAINBOW CITY ALABAMA

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location: Gary Plimpton 2810B Rainbow Dr

Weather: Sunny 87°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment leaving the site

Have items noted on last inspection been corrected? ____ YES ✓ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

8/22/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The ale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

John Jayroe

From: GARY PLIMPTON <garyplimpton@comcast.net>
Sent: Tuesday, August 22, 2023 4:13 PM
To: John Jayroe
Subject: Re: 2810B Rainbow Drive question

Hello Mr. Jayroe.

We received a permit from ALDOT for driveway replacement.

Curb installation should be complete before next rain.

At that time, we will then complete fine grading, and lay stone base,

in addition, we plan to replace the silt fence that was removed,

and also address the north border.

> On 08/22/2023 3:30 PM CDT John Jayroe <jjayroe@rbcalabama.com> wrote:
>
> Good Afternoon Mr. Plimpton,
>
> I did a site inspection this morning and had a question. What are you planning on doing on the north (road) side of the property? The silt fence has been removed and there isn't a proper construction entrance. I think rain is coming next week and it looks like it could be a mess if something isn't done before then.

John Jayroe

Deputy Building Official

City of Rainbow City

256.413.1240
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

RBC RAINBOW CITY ALABAMA

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny - 80°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

9/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny - 54°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny - 48°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

11/27/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Fair - 51°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

12/20/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Partly Cloudy 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Mostly Cloudy 55°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
☒	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	☒	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
needs silt fence repair	east side / hill	mud entering the parking and driveway
contacted via email	2/8/2024	

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix


Feb 7, 2024 11:14:09 AM
2810 Rainbow Drive
Rainbow City
Etowah County
Alabama


Feb 7, 2024 11:14:19 AM
2810 Rainbow Drive
Rainbow City
Etowah County
Alabama


Feb 7, 2024 11:14:53 AM
2810 Rainbow Drive
Rainbow City
Etowah County
Alabama

John Jayroe

From: John Jayroe
Sent: Thursday, February 8, 2024 8:26 AM
To: garyplimpton@comcast.net
Subject: 2810 B Rainbow Drive - Viva Coffee
Attachments: TimePhoto_20240207_111453.jpg; TimePhoto_20240207_111419.jpg; TimePhoto_20240207_111409.jpg

Good morning Mr. Plimpton,

I've been by 2810 B Rainbow Drive (Viva) several times this week and seen a few issues that I'm sure aware of. Could you please repair the silt fence, add some wattles or hay, and stabilize the bare ground with grass seed?

Thank you!

John Jayroe
Deputy Building Official
City of Rainbow City

256.413.1240
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

RBC RAINBOW CITY ALABAMA

John Jayroe

From: John Jayroe
Sent: Thursday, February 15, 2024 3:38 PM
To: GARY PLIMPTON
Subject: Viva Coffee / 2810B Rainbow Drive
Attachments: TimePhoto_20240215_142242.jpg

Good afternoon Gary,

I understand things are super busy right now but we really want to see that silt fence repaired and some plant growth on that open dirt ASAP. It looks like there is going to be a good break in the rain so this would be the best time to fix those issues.

Thank you!

John Jayroe
Deputy Building Official
City of Rainbow City

256.413.1240
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

RAINBOW CITY ALABAMA

John Jayroe

From: John Jayroe
Sent: Thursday, February 15, 2024 3:57 PM
To: GARY PLIMPTON
Subject: RE: Viva Coffee / 2810B Rainbow Drive

Great, thanks for the update!

From: GARY PLIMPTON <garyplimpton@comcast.net>
Sent: Thursday, February 15, 2024 3:53 PM
To: John Jayroe <jjayroe@rbcalabama.com>
Subject: Re: Viva Coffee / 2810B Rainbow Drive

started today, should finish tomorrow, or friday

On 02/15/2024 3:37 PM CST John Jayroe <jjayroe@rbcalabama.com> wrote:

Good afternoon Gary,

I understand things are super busy right now but we really want to see that silt fence repaired and some plant growth on that open dirt ASAP. It looks like there is going to be a good break in the rain so this would be the best time to fix those issues.

Thank you!

John Jayroe

Deputy Building Official

City of Rainbow City

256.413.1240
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

RBC RAINBOW CITY ALABAMA

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather 72° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Ice Station Zebra - Dav Cummans

Weather 61° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Sutton Bridge Storage - 1930 Sutton Bridge Rd.

Weather 62° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - 491 W. Grand Ave

Weather 61° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/5/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather 65° _ Sunny

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/7/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Johnsons Big Foods

Weather 62° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Hames Street (Dr. Brant Haynie/Mark Hill)

Weather 62° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather 61° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Wyatt Lee Meadows LP

Weather 73° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/4/2024	*John D. Jayroe*
Date Of Inspection	Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Fully Loaded - Deer Foot Parkway

Weather 73° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather 73° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather 72° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather 72° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather 71° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Silt fence compromised	East side of property	silt fence is down due to overflow

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain:

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather 72° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 142 Lakeshore Drive - Don Bennefield

Weather 70° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 140 Garmon Drive - Paul Johnson

Weather 71° - Mostly Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

3/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Thrasher Investment Group - LaSalle

Weather 63° - Cloudy

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

3/5/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Thrasher Investment Group - LaSalle

Weather Sunny 53°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/7/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - 491 W. Grand Ave

Weather Sunny 53°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/7/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather Sunny 47°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/7/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Fully Loaded - Deer Foot Parkway

Weather Sunny 61°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/6/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather Sunny 55°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/6/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 140 Garmon Drive - Paul Johnson

Weather Sunny 54°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/6/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Wyatt Lee Meadows LP

Weather Sunny 58°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Sutton Bridge Storage - 1930 Sutton Bridge Rd.

Weather Cloudy 52°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather Cloudy 50°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather Cloudy 50°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Mostly Cloudy 55°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
☒	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	☒	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
needs silt fence repair	east side / hill	mud entering the parking and driveway
contacted via email	2/8/2024	

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Johnsons Big Foods

Weather Cloudy 50°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Hames Street (Dr. Brant Haynie/Mark Hill)

Weather Cloudy 52°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather Cloud 55°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather Cloudy 50°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/5/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 142 Lakeshore Drive - Don Bennefield

Weather Sunny 51°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

2/2/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Fully Loaded - Deer Foot Parkway

Weather Partly Cloudy 43°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather Partly Cloudy 43°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather Partly Cloudy 43°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

1/4/2024	*John D. Jayroe*
Date Of Inspection	Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Partly Cloudy 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather Partly Cloud 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather Partly Cloudy 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather Partly Cloudy 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 142 Lakeshore Drive - Don Bennefield

Weather Partly Cloudy 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/4/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Wyatt Lee Meadows LP

Weather Partly Cloudy 37°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

1/3/2024	*John D. Jayroe*
Date Of Inspection	Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Thrasher Investment Group - LaSalle

Weather Partly Cloudy 37°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/3/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - 491 W. Grand Ave

Weather Partly Cloudy 37°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/3/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Sutton Bridge Storage - 1930 Sutton Bridge Rd.

Weather Partly Cloudy 36°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/3/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Hames Street (Dr. Brant Haynie/Mark Hill)

Weather Partly Cloudy 36°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

1/3/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather Partly Cloudy 37°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

1/3/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 140 Garmon Drive - Paul Johnson

Weather Partly Cloudy 38°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

1/3/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Johnsons Big Foods

Weather Partly Cloudy 36°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

1/3/2024
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - Deer Foot Parkway

Weather Sunny - 48°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: ____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

12/21/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - 491 W. Grand Ave

Weather Sunny - 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

12/21/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Keith McDuffie - 1930 Sutton Bridge Rd.

Weather Sunny - 45°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

12/21/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather Sunny 48°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

12/21/2023	*John D. Jayroe*
Date Of Inspection	Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Johnsons Big Foods

Weather Sunny - 47°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

12/21/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather Sunny - 44°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

12/20/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Fair - 51°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

12/20/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather Sunny - 39°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

12/20/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather Sunny - 36°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

12/20/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather Fair - 50°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

12/20/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather Fair - 50°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

12/20/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather Sunny 61°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

11/30/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Johnsons Big Foods

Weather Sunny - 61°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

11/30/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - 491 W. Grand Ave

Weather Sunny - 40°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

11/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather Sunny - 40°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

11/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather Sunny - 57°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

11/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Keith McDuffie - 1930 Sutton Bridge Rd.

Weather Sunny - 50°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

11/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather Sunny - 48°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: ____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

11/27/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny - 48°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

11/27/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather Sunny - 48°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

11/27/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather Sunny - 48°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

11/27/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - 491 W. Grand Ave

Weather Sunny - 66°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather Sunny - 57°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather Sunny 64°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny - 54°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Mini-Warehouse @ 3561 Julie Street

Weather Sunny - 57°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather Sunny - 66°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather Sunny - 63°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather Sunny - 66°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Keith McDuffie - 1930 Sutton Bridge Rd.

Weather Sunny - 60°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather Sunny - 56°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Keith McDuffie - 1930 Sutton Bridge Rd.

Weather Sunny - 77°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

9/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Trent Thrasher - 491 W. Grand Ave

Weather Partly Cloudy - 78°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

9/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather Sunny -76°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: ____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

9/25/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Mini-Warehouse @ 3561 Julie Street

Weather Sunny - 78°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

9/25/2023	*John D. Jayroe*
Date Of Inspection	Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather Partly Cloudy 78°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

9/27/2023	*John D. Jayroe*
Date Of Inspection	Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny - 80°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

9/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather Partly Cloudy - 78°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: ____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

9/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather Partly Cloudy - 78°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ✓ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

9/29/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather Partly Cloudy - 78°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

9/27/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather Sunny - 76°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

9/25/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location: Gary Plimpton 2810B Rainbow Dr

Weather: Sunny 87°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment leaving the site

Have items noted on last inspection been corrected? ____ YES ✓ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

8/22/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The ale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Rainbow City Industrial - Lumley Road

Weather Sunny 92°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance		General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Site is stable		

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

8/25/2023	*John D. Jayroe*
Date Of Inspection	Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Southtown Mni Warehouses - 199 Woodland Drive

Weather Sunny - 82°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: ____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

8/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Mini-Warehouse @ 3561 Julie Street

Weather Mostly Cloudy - 86°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: ____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

8/30/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts - 3352 Rainbow Drive

Weather Fair - 95°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: ____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

8/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Barone's Pizza & Arcade

Weather Sunny - 91°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control		Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

8/25/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Apartments @ Hollingsworth

Weather Sunny - 84°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
silt fence	N/NE side of yard	tree limb on silt fence
detention pond	drain grate	grate is blocked by debris

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

8/22/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave. - Anita Bedwell

Weather Partly Cloudy - 84°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

8/22/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location: Gary Plimpton 2810B Rainbow Dr

Weather: Cloudy 91°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Constuction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment leaving the site

Have items noted on last inspection been corrected? ____ YES ✓ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

7/28/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The ıale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Mini-Warehouses @ 3561 Julie Street

Weather Cloudy 92°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

7/28/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 199 Woodland Avenue (Dave Cummins)

Weather Cloudy 92°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

7/28/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin Donuts @ 3352 Rainbow Drive

Weather Cloudy 92°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ **YES** ____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

7/28/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 360 Hollingsworth Avenue Apartments (Brian Ledbetter)

Weather Cloudy 92°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ **YES** _____ **NO**

If No Explain: _____

Note: **Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.**

7/28/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location 607 West Grand Ave (Anita Bedwell)

Weather Cloudy 92°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

7/28/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dave Cummins 199 woodland Ave

Weather Sunny 91

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

6/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Anita Bedwell 607 W Grand Ave

Weather Sunny 91

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

6/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Mini-warehouses 3561 julie St

Weather Sunny 91

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? x YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

6/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Brian Ledbetter 360 Hollingsworth Ave

Weather Sunny 91

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

6/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny 91

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment Leaving the site
Silt fence	along highway	Needs repair sediment leaving site

Have items noted on last inspection been corrected? x YES ____ NO

If No Explain: ____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

6/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The S[illegible]le, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dunkin 3352 Rainbow Dr

Weather Sunny 91

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

6/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny 82

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle,Gravel	At the highway and drain	
Silt fence	along haighway	

Have items noted on last inspection been corrected? x **YES** _____ **NO**

If No Explain: Spoke to own onsite at the time of inspection to correct issue

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/30/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment Leaving the site
Silt fence	along highway	Needs replaced sediment leaving site

Have items noted on last inspection been corrected? _____ YES x NO

If No Explain: _____

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Anita Bedwell 607 W Grand Ave

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: [illegible]

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The S[illegible]ale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Dave Cummins 199 Woodland Ave

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? _____ YES _____ NO

If No Explain: Site Stable

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Farmers Credit 308 W Grand Ave

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	X	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Site Stable (Completed)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Brian Ledbetter 360 Hollingsworth Ave

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: [illegible]

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The [illegible]ale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Mini-warehouses 3561 Julie St

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	x	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Silt Fence	Julie St	Needs more silt fencing
Wattle or hay bells	Julie St	In ditches near sub station

Have items noted on last inspection been corrected? ____ YES x NO

If No Explain: Spoke to own onsite at the time of inspection to correct issue

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Julie St

Weather Cloudy 71 Degrees

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
X	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control	X	Sediment Basin
X	Stabilized Constuction Entrance	X	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Silt Fence	Julie St	Needs To Add More Fencing
Gravel Constuction Entrance	Julie St	Getting Mud On Street

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Site Stable

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

4/28/2023
Date Of Inspection

Eric Self
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Woodland Dr

Weather Cloudy 71 Degrees

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
X	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control	X	Sediment Basin
X	Stabilized Constuction Entrance	X	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Site Stable

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

4/28/2023
Date Of Inspection

Eric Self
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Gary Plimpton 2810B Rainbow Dr

Weather Cloudy 71 Degrees

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
X	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control	X	Sediment Basin
X	Stabilized Constuction Entrance	X	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance
Wattle, Gravel	At the highway and drain	Sediment leaving the site

Have items noted on last inspection been corrected? YES X NO

If No Explain:

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

4/28/2023
Date Of Inspection

Eric Self
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Farmers Credit 308 W Grand Ave

Weather Cloudy 71 Degrees

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
X	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control		Sediment Basin
X	Stabilized Constuction Entrance	X	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Site Stable

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

4/28/2023
Date Of Inspection

Eric Self
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Brian Ledbetter Hollingsworth Ave

Weather Cloudy 71 Degrees

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
X	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control	X	Sediment Basin
X	Stabilized Constuction Entrance	X	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Site Stable

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

4/28/2023
Date Of Inspection

Eric Self
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Anita Bedwell W Grand Ave

Weather Cloudy 71 Degrees

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
X	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
X	Perimeter Control		Sediment Basin
X	Stabilized Constuction Entrance	X	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Site Stable

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

4/28/2023
Date Of Inspection

Eric Self
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Appendix G – Post-Construction Storm Water Management

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Mini-Warehouse @ 3561 Julie Street

Weather Sunny - 57°

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
✓	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
✓	Perimeter Control	✓	Sediment Basin
✓	Stabilized Construction Entrance	✓	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Final

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

10/23/2023
Date Of Inspection

John D. Jayroe
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

Rainbow City Erosion & Sediment Control Inspection Report Form

Project Name And Location Farmers Credit 308 W Grand Ave

Weather Sunny 81

BMP Checklist

	Inlet Barrier (ie: Gravel Bags)		Stream Crossings
x	Sediment Barriers (ie: Ditch Checks)		Temporary or Final Stabilization
x	Perimeter Control	X	Sediment Basin
x	Stabilized Constuction Entrance	x	General Site Condition (Trash, etc)

Noncompliance

BMP	Location	Reason For Noncompliance

Have items noted on last inspection been corrected? ____ YES ____ NO

If No Explain: Site Stable (Completed)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 5 days. All other BMP's on site are considered to be in good working condition.

5/26/2023
Date Of Inspection

Joel Garmon
Inspector Signature

6 GOALS

No Sediment Leaves The Site - Lines Of Defense Everywhere & Always - Cover Quickly - Protect The Swale, Ditch, & Channel - Keep Clean Water Clean - Inspect, Clean, & Fix

STORMWATER FACILITY
MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this day of _____, _____, by and between _____, acting by and through _____, hereinafter referred to as "Landowner", and the City of Rainbow City, AL, hereinafter referred to as "City".

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property described as an approximately _____ acre tract located in the City of Rainbow City, Alabama, according to the deed recorded as document number _____, Deed Records, Etowah County, Alabama, hereinafter called the "Property".

WHEREAS, the Landowner is proceeding to build on and develop the Property according to the Site Plan/Subdivision Plan known as _____ hereinafter called the "Plan", which is expressly made a part hereof, as approved or to be approved by the City and the Landowner provides for management of storm water within the confines of the Property; and

WHEREAS, the City and the Landowner, and their successors and assigns, agree that the health, safety and welfare of the residents of the City of Rainbow City, Alabama, require that on-site Stormwater Management Facilities be constructed and maintained on a portion of the Property; and

WHEREAS, the City requires that on-site Stormwater Management Facilities ("Facility") as shown on the Plan be constructed and adequately maintained by the Landowner, its successors and assigns, the location and dimensions of which is shown and

more particularly described by metes and bounds in the attached Exhibit "A" ("Facility Property"); and

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner, its successors and assigns, shall adequately construct and maintain the on-site Stormwater Management Facility ("Facility") at no expense to the City of Rainbow City in accordance with the design specifications for the Facility, attached as Exhibit "B", and the current standards then in force and effect in the City of Rainbow City and with the Operations and Maintenance Plan attached to this Agreement as Exhibit "C". The Stormwater Facility includes all pipes, channels or other conveyances built to convey Stormwater to the facility, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the Stormwater. Adequate maintenance is herein defined as good working condition so that these facilities are performing their design functions. The Stormwater Structural Control Maintenance Checklists, attached to this Agreement as Exhibit "D", are to be used to establish what good working condition is acceptable to the City.
2. The Landowner, its successors and assigns, shall inspect the Facility and submit an inspection report to the City annually. The purpose of the inspection is to assure safe and proper functioning of the Facility. The inspection shall cover the entire Facility, berms, outlet structure, pond areas, access roads, etc. Components of the Facility, which need maintenance or replacement to perform their design function, shall be noted in the inspection report along with the corrective actions to be taken.
3. The Landowner, its successors and assigns, hereby grant permission to the City, its authorized agents and employees, to enter upon the Property and to inspect the Facility Property whenever the City deems necessary. The purpose

of inspection is to follow-up on reported deficiencies and/or to respond to citizen complaints. The City shall provide the Landowner, its successors and assigns, copies of the inspection findings and a directive to commence with the repairs if necessary.

4. In the event the Landowner, its successors and assigns, fails to maintain the Facility in good working condition as specified herein, the City, its authorized agents and employees, may enter upon the Facility Property and take whatever steps necessary to correct deficiencies identified in the inspection report and to charge the costs of such repairs to the Landowner, its successors and assigns**. It is expressly understood and agreed that the City is under no obligation to routinely maintain or repair said Facility, and in no event shall this Agreement be construed to impose any such obligation on the City, as such obligation is Landowner's.**

5. The Landowner, its successors and assigns, will perform the work necessary to keep the Facility in good working order as appropriate. In the event the City pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner, its successors and assigns, shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder. In the event that Landowner or its successors or assigns fail to pay the City for the costs incurred under this section, the City shall impress a lien for the costs of such work upon other lots owned by the Landowner. Such lien shall be perfected by filing in the office of the Probate Judge of Etowah County, Alabama, an affidavit identifying the property to be charged with such lien, stating the amount thereof, and making reference to this Agreement.

6. This Agreement imposes no liability of any kind whatsoever on the City. **THE LANDOWNER AGREES TO HOLD THE CITY HARMLESS FROM ANY LIABILITY IN THE EVENT THE FACILITY FAILS TO OPERATE PROPERLY. LANDOWNER COVENANTS AND AGREES AND DOES HEREBY AGREE TO INDEMNIFY, HOLD HARMLESS**

AND DEFEND THE CITY OF RAINBOW CITY, ITS AGENTS, SERVANTS AND EMPLOYEES FROM AND AGAINST ALL COSTS, EXPENSES, LOSSES, DAMAGES, CLAIMS OR CAUSES OF ACTION WHATSOEVER ARISING, OR WHICH MIGHT ARISE, FROM THE FAILURE OF LANDOWNER OR ANY FUTURE OWNERS OF THE ABOVE FACILITITY PROPERTY TO MAINTAIN THE FACILITY, INCLUDING, BUT NOT LIMITED TO THE BED AND BANKS OF THE DETENTION POND; ANY DAMAGES CAUSED TO PERSON OR PROPERTY DUE TO (1) FLOODING OF THE POND AND ITS BANKS, (2) SLOPE FAILURE OF THE BANKS OF THE POND, OR (3) FAILURE OF THE POND OR ITS BANKS TO OPERATE IN A MANNER CONSISTENT WITH CITY OF RAINBOW CITY CRITERIA TO PERFORM ANY OTHER DUTIES OR OBLIGATIONS HEREUNDER.

7. Landowner covenants and agrees that no habitable building shall be erected within the drainage easement outlined on Exhibit "A" but this paragraph shall not preclude construction of other improvements within the drainage easement, which do not impede drainage. Landowner covenants and agrees that no habitable building shall be erected on the above property abutting such easement which shall have a finished floor at an elevation less than two feet above the maximum depth of water in the detention pond which would occur during a 100 year frequency flood.

8. This Agreement shall be recorded among the land records of Etowah County, Alabama, shall constitute a covenant running with the land, and shall be binding on the Landowner, its administrators, executors, assigns, heirs and any other successors in interests, including any property owners' association.

[SIGNATURE PAGE FOLLOWS]

Executed this _____ day of _____ 20__.

Landowner

_____

Name:

Title: _____

City of Rainbow City, Alabama

_____

Joel Garmon
Building Official

ATTEST

_____

Heather Hill
Building Department Secretary

STATE OF ALABAMA §

COUNTY OF ETOWAH §

I, _____, a Notary Public in and for said County and State, hereby certify that _____ whose name(s) are subscribed to the foregoing instrument, and who is known to me, acknowledged before me on this day that being informed of the contents of the conveyance _____ executed the same voluntarily for the purposes and consideration expressed in the foregoing instrument.

Given under my hand and seal this _____ day of _____, 20_____.

_____
Notary Public, State of Alabama

EXHIBIT “A”

INSERT LEGAL DESCRIPTION

Exhibit "C"

CITY OF RAINBOW CITY STORMWATER FACILITY OPERATION AND MAINTENANCE PLAN

The only responsibility the City of Rainbow City has in the operation and maintenance of this Facility is inspection.

General Maintenance Procedures

The structural and functional integrity of the Facility shall be maintained at all times by removing and preventing drainage interference, obstructions, blockages, or other adverse effects into, through, or out of the system.

Periodic silt removal shall occur when standing water conditions occur or the pond's storage volume is reduced by more than 10%. Silt shall be removed and the pond/basin returned to original lines and grades shown on the approved engineering plans. In addition, corrective measures are required any time a basin does not drain completely within 72 hours of cessation of inflow. NO STANDING WATER IS ALLOWED in basins designed for dry detention purposes.

Accumulated litter, sediment, and debris shall be removed every 6 months or as necessary to maintain proper operation of the basin. Disposal shall be in accordance with federal, state and local regulations.

Detention facilities shall be mowed monthly between the months of April and October or anytime vegetation exceeds 12-inches in height.

To prevent debris from entering and clogging the downstream storm sewer system a wire mesh screen or similar screening device shall be installed over the outlet until final acceptance.

4. PREVENTIVE MAINTENANCE/INSPECTION

- Visual inspections of all components will be conducted every 6 months.
- A log shall be kept of maintenance actions, and inspections. The log should document the condition of the detention system's primary components, mowing, and silt, litter and debris removal dates. Document aeration of the basin bottoms and replanting to prevent the sealing of the basin bottom.
- **Written maintenance and repair records shall be maintained by the party or parties signing the attached Agreement and shall be provided to the City upon request.**

Exhibit “D”

Stormwater Structural Maintenance CHECKLIST

FREQUENT INSPECTION	DATE	REPAIRS REQUIRED	REPAIRS MADE	NOTES
Mowing				
Remove Trash and debris				
Inspect irrigation system operation				
Remove grass clippings				
Violations Noted				
MINOR INSPECTION				
Condition of Pond				
Amount of silt in pond				
Amount of silt in flume				
Amount of ponded water				
Amount of wetland vegetation				
Location of Erosion				
Percent of vegetation				
Condition of trash guard				
Location of Erosion				
MAJOR INSPECTIONS				
Condition of Stormwater Quality Structure				
Type of Stormwater Quality Structure				
Structure type and Condition				
Condition of Rip-Rap				

Condition of filtration system				
Berm or Embankment Settlement				
Location of erosion				
Evidence of Animals				
Evidence of Aquatic life				
Condition of Aeration Foundation				

RAINBOW CITY MS4
STRUCTURAL CONTROLS INVENTORY

	TYPE	FACILTIY	ADDRESS	CITY-OWNED?	DATE INSTALLED	MAINTENANCE AGREEMENT?
1	Detention Pond	Choice Fabricators Inc.	3155 Steele Station Road		Aug 1999	
2	Detention Pond	Rainbow Presbyterian Church	3220 Rainbow Drive		Dec 2002	
3	Detention Pond	Advance Auto Parts	3333 Rainbow Drive		May 2006	
4	Detention Pond	Deerfoot Industrial Park	Industrial Parkway		Sep 2006	
5	Detention Pond	Gold's Gym	200 Market Way		Apr 2007	
6	Detention Pond	Longs Furniture	3404 Greenview Ave		May 2007	
7	Underground Detention	Purple Onion	3318 Rainbow Drive		Sep 2013	
8	Detention Pond	City Church	4017 Rainbow Drive	Y	Jul 2014	
9	Detention Pond	Publix	128 W Grand Ave		Sep 2015	
10	Detention Pond	State Farm / Charles Gough	226 Sutton Bridge Road		Dec 2015	
11	Underground Detention	Krystal Kwik	3327 Rainbow Drive		Jan 2016	
12	Detention Pond	TOYOTA DEALERSHIP	927 W Grand Ave		Mar 2016	
13	Detention Pond	WIGGINS MINI WAREHOUSES	1 Wiggins St		Nov 2016	
14	Detention Pond	NEO - Northeast Orthopedics	524 West Grand Ave		Feb 2017	
15	Detention Pond	Shops at Little Bridge Marina	65 Shops at Little Bridge		Sep 2017	Y
16	Detention Pond	Rainbow City Animal Shelter	4450 Steele Station Road	Y	Oct 2017	Y
17	Detention Pond	Paul Barker	4980 Rainbow Drive		Jan 2018	Y
18	Detention Pond	DOLLAR GENERAL	4010 RAINBOW DRIVE		Aug 2019	
19	Detention Pond	WASH BOX	180 W Grand Ave		Oct 2019	
20	Detention Pond	MMC Health Care	110 MMC Parkway		Dec 2019	
21	Detention Pond	DOLLAR GENERAL	2719 RAINBOW DRIVE		Jan 2021	
22	Detention Pond	Plimpton Corner	730 West Grand Ave		Jan 2021	
23	Detention Pond	Dennis Harker	511 East Grand Ave		Dec 2022	
24	Detention Pond	Dollar General	5046 Rainbow Drive		Dec 2022	
25	Detention Pond	Alabama Farm Credit	308 West Grand Ave		Oct 2023	Y
26	Detention Pond	Anita Bedwell	607 W Grand Ave		Feb 2024	Y
27	Detention Pond	Dunkin'	3352 Rainbow Drive			

Annual Inspection Report for
Stormwater Management Ponds

Location TOYOTA DEALERSHIP - 927 West Grand Ave.

Date 1/22/2024 **Inspector** John D. Jayroe

Inspection Items:	Pass	Fail	N/A	Comments
Terrain/bank Components				
Bank Stabilization	X			
Spillway	X			
Outfall	X			
Other:			X	
Water Quality				
Turbidity			X	
Floating Debris			X	
Submerged/semi-			X	
submerged debris			X	
oil sheen/Surface Scum			X	
Other:			X	
General Site Conditions				
Proper Maintenance	X			
Access				
Other:			X	
Structures				
Pumps			X	
Aerators			X	
Valves			X	
Water Treatment			X	
Structures			X	
Other:			X	

Actions Required: No issues encountered on date of inspection

Annual Inspection Report for
Stormwater Management Ponds

Location: DOLLAR GENERAL - 4010 RAINBOW DRIVE

Date: 1/22/2024 Inspector: John D. Jayroe

Inspection Items:	Pass	Fail	N/A	Comments
Terrain/bank Components				
Bank Stabilization	X			
Spillway	X			
Outfall	X			
Other:			X	
Water Quality				
Turbidity			X	
Floating Debris			X	
Submerged/semi-			X	
submerged debris			X	
oil sheen/Surface Scum			X	
Other:			X	
General Site Conditions				
Proper Maintenance	X			
Access				
Other:		X		Trash around the pond.
Structures				
Pumps			X	
Aerators			X	
Valves			X	
Water Treatment			X	
Structures			X	
Other:			X	

Actions Required: A letter w/ a picture was delivered to the store on 1/24.
I went back later and cleaned up in and around the retention pond.


DOLLAR GENERAL®
Jan 22, 2024 9:50:33 AM
3925 Rainbow Drive
Rainbow City
Etowah County
Alabama


Jan 22, 2024 9:50:55 AM
4010 Rainbow Drive
Rainbow City
Etowah County
Alabama


Jan 22, 2024 9:50:57 AM
4010 Rainbow Drive
Rainbow City
Etowah County
Alabama


Jan 22, 2024 9:51:01 AM
4010 Rainbow Drive
Rainbow City
Etowah County
Alabama

Annual Inspection Report for
Stormwater Management Ponds

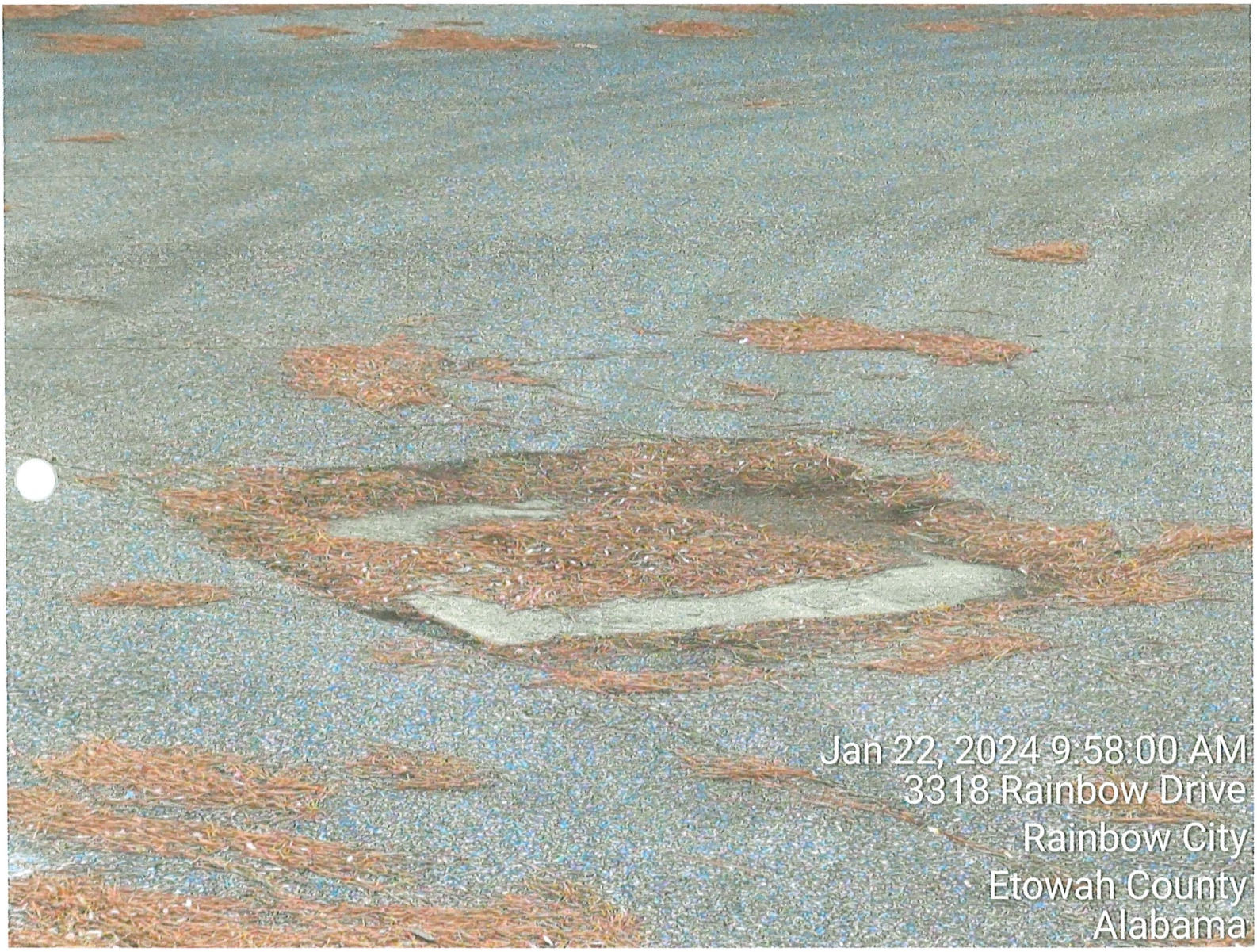
Location: PURPLE ONION - 3318 RAINBOW DRIVE

Date: 1/26/2023 Inspector: John D. Jayroe

Inspection Items:	Pass	Fail	N/A	Comments
Terrain/bank Components				
Bank Stabilization	X			
Spillway	X			
Outfall	X			
Other:			X	
Water Quality				
Turbidity			X	
Floating Debris			X	
Submerged/semi-			X	
submerged debris			X	
oil sheen/Surface Scum			X	
Other:			X	
General Site Conditions				
Proper Maintenance	X			
Access				
Other:		X		Pine straw over a drainage grate
Structures				
Pumps			X	
Aerators			X	
Valves			X	
Water Treatment			X	
Structures			X	
Other:			X	

Actions Required: A letter w/ a picture was delivered to the store on 1/24
I checked back later and the grates had been cleaned off.


the purple onion
Winn-Dixie
Jan 22, 2024 9:57:36 AM
3318 Rainbow Drive
Rainbow City
Etowah County
Alabama


Jan 22, 2024 9:58:00 AM
3318 Rainbow Drive
Rainbow City
Etowah County
Alabama


Jan 26, 2024 12:07:04 PM
3318 Rainbow Drive
Rainbow City
Etowah County
Alabama

John Jayroe

Attention Store Manager of Purple Onion

Good afternoon,

I am responsible for yearly inspection of detention ponds for commercial properties in Rainbow City. I inspected your location at 3318 Rainbow Drive and noticed pine straw covering one of your drainage grates. If you could please have an employee or lawn company clear away the debris that would be great.

Thank you and I will be checking back soon to follow up. My work cell number is (256) 504-1595.

John Jayroe
Deputy Building Official
City of Rainbow City

256.413.1240
rbcalabama.com
3700 Rainbow Dr, Rainbow City, AL 35906

RAINBOW CITY ALABAMA

Appendix H – Pollution Prevention for Municipal Operations

List – Property Owned by the City of Rainbow City

Rainbow City Park (PPIN 047845)
3525 Park Lane
Walking Track, WT Vinyard Building, Pavilions, playground, picnic tables, tennis courts, pickleball courts

Rainbow City Community Center/Library (PPIN 048408)
3702 Rainbow Drive
4.00 acres

Rainbow City Municipal Building (PPIN 048409)
3700 Rainbow Drive
City Hall, Fire Dept., Police Dept.

7.3 acres behind the Rainbow City Recreation Center (PPIN 057152)
4412 Rainbow Drive
Ballfields

Rainbow City Recreation Center (PPIN 057155)
4412 Rainbow Drive
5.00 acres
Recreation Center, tennis courts, ballfields

Rainbow City Annex Building (Etowah County Historical Society
4412A Rainbow Drive

4414 Rainbow Drive (PPIN 057159)
.54 acres adjacent to the tennis courts at the Recreation Center
1.45 acres behind the .54 acres (PPIN 057160)

Vivian Lee Maddox Sports Complex
4573 Rainbow Drive
19.00 acres – soccer fields, ballfields, batting cage (PPIN 057186)
19.00 acres – baseball complex, concession stand, playground (PPIN 057187)
61.27 acres – disc golf, walking track, nature trail (PPIN 055455)
62.00 acres – (PPIN 055456) with lake
41.00 acres – (PPIN 095224) to the left of concession stand
43.00 acres - (PPIN 055430)

.74 acres Creekside Estates in Ball Play (PPIN 022565) (acquired through mitigation)
1.59 acres Creekside Estates in Ball Play (PPIN 074586)

4.19 acres Creekside Estates in Ball Play (PPIN 074589)
15.10 acres Creekside Estates in Ball Play (PPIN 074588)

Helipad (PPIN 064909)
1822 Pineview Circle
21.00 acres
Double wide trailer, helicopter pad operated by Survival Flight

2010 Broadway Street – Residential lot only (PPIN 039477)
Gadsden
Acquired through a drug conviction

Rainbow City Animal Shelter (PPIN 094053)
4450 Steele Station Road
Quasi hut
7.9 acres

40.00 acres (PPIN 048339) behind City Shop
41.00 acres (PPIN 055431) behind City Shop

Lindsey Property – Purchased 2/27/18
412 West Grand Ave. (PPIN 047740)
30.00 acres (PPIN 074751)
6.00 acres (PPIN 047836)
13.00 acres (PPIN 047837)
4.71 acres (PPIN 047838)
510 West Grand Ave. (PPIN 047748)
27.00 acres (PPIN 10448)

Etowah County Mega Sports Complex
5000 Lindsey Street
40.00 acres (PPIN 055374)
19.80 acres (PPIN 048052)
41.00 acres (PPIN 048054)
37.30 acres (PPIN 055432)
1.00 acre (PPIN 74513)

City Shop
318 Kinzie Lane (PPIN 106248)
15.00 acres (PPIN 055447)
(PPIN 055449) 9/12/22
Shop, recycling center, fencing, gravel parking

Lots 14 & 15 of Briarcliff Village (near Horseshoe Bend)
Lister Ferry Road
(PPIN 058172)
Donated to RBC by Allegheny Land Development

Fire Station II (PPIN 058522)
1400 Riddles Bend Road
2.01 acres
Fire Station, parking

.70 acres Lumley Road (PPIN 055406)
Near Universal Tool

8 acres – 238 Lumley Road (PPIN 48342 & 104009) DeVine Property
Purchased 10/13/21

Rainbow Landing (PPIN 049073)
100 Lakeshore Drive
Boat ramp, parking, restrooms, picnic pavilions, fishing pier

Lindsey Street (PPIN 073016)
10.00 acres
Purchased 3/31/21

74 acres – Martin Road
Purchased 4/15/22
PPIN 055240 055246 055239

56 Horizon Place (PPIN 041037)
(Quiet Action Title)
November 2022

Chert Pit – St. Clair County (PPIN 064079)
40 acres
Purchased 5/9/08

8.15 acres – St. Clair County (PPIN 3772)-next to Chert Pit
1.24 acres – St. Clair County (PPIN 3773)-next to Chert Pit

Industrial Parks:
Deerfoot Industrial Park
Steele Station Road
55.56 acres

Rainbow Industrial Park
Highway 77
48 acres

Lumley Road Industrial Park
165.00 acres (PPIN 055375)
47.12 acres (PPIN 055410)

Airport Road
50.00 acres (PPIN 055258)
Purchased 3/1/23

Rainbow Drive
5.03 acres (PPIN 57193)
Purchased 3/22/24

4017 Rainbow Drive (formally City Church)
(PPIN 48304)
Purchased 3/24/24

Possible Annexations:
NEAR Mega Site
Little Canoe Creek
1765 Canoe Creek Road North
1,100 acres
Zoned: Industrial

April 22, 2024

Vehicle Inspection Report

Operator Name: Cody

Vehicle Number: PW 6

(Week Beginning) 02-12-2024

Date (Week Ending) 02-16-2024 Date

	Mon	Tues	Wed	Thurs	Fri
Date:	02-12	02-13	02-14	02-15	02-16
Daily Mileage	134639	134728	134765	134,840	134,960
Items Checked					
1) Headlights					
2) Tail Lights					
3) Turn Signals					
4) Flashers					
5) Brakes					
6) Wipers					
7)Tires					
8) Safety Belts					
9) Mirrors					
10) Horn					
11) Fire Extinguisher					
12) Interior is free of Trash					
13) Vehicle Leaks	X	X	✓	✓	✓

14) Engine Check: Oil Level, Coolant Level, Hoses, Battery, Belts, Instruments, Steering, Parking Breaks, Exhaust, Heater/Defroster, Clutch/Transmission, Air Conditioner, Body/Doors.

Mon	Tues	Wed	Thurs	Fri
✓	✓	✓	✓	✓

Operator's Comments:

Vehicle Inspection Report

Operator Name: Cody

Vehicle Number: PW6

(Week Beginning): 02-19-2024

Date (Week Ending): 02-23-2024 Date

	Mon	Tues	Wed	Thurs	Fri
Date:	02-19	02-20	02-21	02-22	02-23
Daily Mileage	134,988	135103	135210	135304	135391
Items Checked					
1) Headlights					
2) Tail Lights					
3) Turn Signals					
4) Flashers					
5) Brakes					
6) Wipers					
7)Tires					
8) Safety Belts					
9) Mirrors					
10) Horn					
11) Fire Extinguisher					
12) Interior is free of Trash					
13) Vehicle Leaks					

14) Engine Check: Oil Level, Coolant Level, Hoses, Battery, Belts, Instruments, Steering, Parking Breaks, Exhaust, Heater/Defroster, Clutch/Transmission, Air Conditioner, Body/Doors.

✓	✓	✓	✓	✓

Operator's Comments:

Vehicle Inspection Report

Operator Name: Cody

Vehicle Number: Puro

(Week Beginning): 02-26-2024

Date (Week Ending): 03-01-2024 ---Date

	Mon	Tues	Wed	Thurs	Fri
Date:	02-26	02-27	02-28	02-29	03-01
Daily Mileage	135443	135541	135642	135742	135837
Items Checked					
1) Headlights					
2) Tail Lights					
3) Turn Signals					
4) Flashers					
5) Brakes					
6) Wipers					
7)Tires					
8) Safety Belts					
9) Mirrors					
10) Horn					
11) Fire Extinguisher					
12) Interior is free of Trash					
13) Vehicle Leaks	X	X	X	X	X
14) Engine Check: Oil Level, Coolant Level, Hoses, Battery, Belts, Instruments, Steering, Parking Breaks, Exhaust, Heater/Defroster/Clutch/Transmission, Air Conditioner/Body/Doors.	✓	✓	✓	✓	✓

Operator's Comments:----------

JEREMY ADAM MCDANIEL

is certified as a

Commercial Applicator

Categories: OTPS

Expiration: 11/28/2024

Permit #: 2001953

ANIMAL SHELTER

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Animal Shelter
Facility Location:	4450 Steele Station Rd
Date of Inspection:	4/3/23
Reason for Inspection:	Quarterly Inspection
Weather:	Cloudy 63*

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Kristy Causey	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	Eric Self
Company:	Building Department
Signature:	*Eric Self*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Animal Shelter
Facility Location:	4450 Steele Station Rd
Date of Inspection:	7/25/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny – 86°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Kristy Causey	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	Building Department
Signature:	*John D. Jayroe*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Animal Shelter
Facility Location:	4450 Steele Station Rd
Date of Inspection:	10/24/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 71°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Kristy Causey	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Animal Shelter
Facility Location:	4450 Steele Station Rd
Date of Inspection:	1/2/2024
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 43°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Kristy Causey	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

FIRE
STATION 1

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 1
Facility Location:	3700 Rainbow Drive
Date of Inspection:	4/3/23
Reason for Inspection:	Quarterly Inspection
Weather:	Cloudy 63*

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	Eric Self
Company:	Building Department
Signature:	*Eric Self*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

Wash Area At Fire Station No. 1

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 1
Facility Location:	3700 Rainbow Drive
Date of Inspection:	7/25/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny – 82°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	Building Department
Signature:	*John D. Jayroe*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 1
Facility Location:	3700 Rainbow Drive
Date of Inspection:	10/23/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 69°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 1
Facility Location:	3700 Rainbow Drive
Date of Inspection:	1/2/2024
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 46°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

FIRE
STATION 2

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 2
Facility Location:	1400 Riddles Bend Rd
Date of Inspection:	4/3/23
Reason for Inspection:	Quarterly Inspection
Weather:	Cloudy 63*

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	Eric Self
Company:	Building Department
Signature:	*Eric Self*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

Wash Area At Fire Station No. 2

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 2
Facility Location:	1400 Riddles Bend Rd
Date of Inspection:	7/25/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny – 91°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	Building Department
Signature:	*John D. Jayroe*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 2
Facility Location:	1400 Riddles Bend Rd
Date of Inspection:	10/24/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 71°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Fire Station No. 1
Facility Location:	3700 Rainbow Drive
Date of Inspection:	1/2/2024
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 46°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Tim McKee	
	Position: Fire Chief	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

REC
CENTER

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Recreation Center
Facility Location:	4412 Rainbow Dr
Date of Inspection:	10/24/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 69°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Phillip Hollingsworth	
	Position: Director	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Recreation Center
Facility Location:	4412 Rainbow Dr
Date of Inspection:	4/3/23
Reason for Inspection:	Quarterly Inspection
Weather:	Cloudy 63*

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Phillip Hollingsworth	
	Position: Director	
Final Stabilization Completed		

Inspector Name:	Eric Self
Company:	Building Department
Signature:	*Eric Self*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Recreation Center
Facility Location:	4412 Rainbow Dr
Date of Inspection:	7/25/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Partly Cloudy – 90°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Phillip Hollingsworth	
	Position: Director	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	Building Department
Signature:	*John D. Jayroe*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Recreation Center
Facility Location:	4412 Rainbow Dr
Date of Inspection:	1/2/2024
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 44°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Phillip Hollingsworth	
	Position: Director	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

MAINTENANCE SHOP

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Maintenance/Shop Street Department
Facility Location:	318 Kinzie Lane
Date of Inspection:	4/3/23
Reason for Inspection:	Quarterly Inspection
Weather:	Cloudy 63*

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Michael Stevens	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	Eric Self
Company:	Building Department
Signature:	*Eric Self*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

Wash Area At RBC Shop / Steet Department

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Maintenance/Shop Street Department
Facility Location:	318 Kinzie Lane
Date of Inspection:	7/25/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny – 87°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	**YES**	**NO**	**N/A**
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	**YES**	**NO**	**N/A**
Has facility implemented the SWP3?	**YES**	**NO**	**N/A**
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: no			

Were stormwater issues discussed with on-site representative?	**YES**	**NO**
If YES, what is name and position of representative?	Name: Michael Stevens	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	Building Department
Signature:	*John D. Jayroe*

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	NA			
Stormwater Pollution Prevention Plan	NA			
Areas around machinery and/or equipment		PASS		
Areas prone to leaks and spills		PASS		
Outdoor storage and handling areas		PASS		
Waste generation, storage, treatment and disposal areas		PASS		
Vehicle wash-down areas		PASS		
Fueling areas	NA			
Loading and unloading areas	NA			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Maintenance/Shop Street Department
Facility Location:	318 Kinzie Lane
Date of Inspection:	10/24/2023
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 71°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Michael Stevens	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:				

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded

City of Rainbow City, Alabama
Storm Water Inspection Checklist

Facility:	Rainbow City Maintenance/Shop Street Department
Facility Location:	318 Kinzie Lane
Date of Inspection:	1/2/2024
Reason for Inspection:	Quarterly Inspection
Weather:	Sunny 44°

Has the facility applied for coverage under the NPDES Industrial Stormwater Permit?	YES	**NO**	N/A
Does facility have Stormwater Pollution Prevention Plan (SWP3)?	YES	**NO**	N/A
Has facility implemented the SWP3?	YES	**NO**	N/A
Is there evidence of stormwater pollutants leaving site? (If YES, explain below) Describe pollutants: NO			

Were stormwater issues discussed with on-site representative?	YES	**NO**
If YES, what is name and position of representative?	Name: Michael Stevens	
	Position: Supervisor	
Final Stabilization Completed		

Inspector Name:	John D. Jayroe
Company:	RBC Building Department
Signature:	John D. Jayroe

Inspection Results:

Inspection Completed For:	YES/ NO/NA	PASS/ FAIL	Deficiencies Found	PHOTO #
Current Industrial NOI	**NA**			
Stormwater Pollution Prevention Plan	**NA**			
Areas around machinery and/or equipment		**PASS**		
Areas prone to leaks and spills		**PASS**		
Outdoor storage and handling areas		**PASS**		
Waste generation, storage, treatment and disposal areas		**PASS**		
Vehicle wash-down areas		**PASS**		
Fueling areas	**NA**			
Loading and unloading areas	**NA**			
Other:		**FAIL**	Retention pond has been filled in. This was an oversight and will be corrected.	

Inspect for the following:	
Stains, spots or puddles of oils, grease, or chemicals on concrete or around drains.	Torn bags of dry chemicals or bags exposed to rain
Leaking or corroded equipment, pipes, containers, or lines.	Broken or cracked dikes, walls, or other physical barriers
Improperly labeled or leaking drums	Improper outdoor storage of potential stormwater pollutants
Inadequate or inaccessible spill response equipment	Oily rags improperly discarded