



May 14, 2019

Alabama Department of Environmental Management
PO Box 301463
1400 Coliseum Boulevard
Montgomery, AL 36110

ATTEN: Ms. Cammie Ashmore

**Reference: MS4 Annual Report 2018/2019 Period
City of Tuscumbia Separate Storm Sewer System
NPDES #ALR040022
Colbert County (33)**

Dear Ms. Ashmore,

On the behalf of the *City of Tuscumbia*, please find enclosed a copy of the supporting material regarding the above reference Annual Report.

If you have any questions, please feel free to contact me by phone at 256.566.9220 or by email at rmcwhorter@enersolv.com

Sincerely,

A handwritten signature in blue ink that reads "Ricky McWhorter". The signature is fluid and cursive, with the first name being the most prominent.

Ricky McWhorter
Sr. Environmental Project Scientist
ENERSOLV CORP



City of Tusculmbia

Welcome to

Tuscumbia, *Alabama*

Charm of the Shoals



2018/2019

City of Tusculmbia
NPDES Permit # ALR040022
Annual Report

Submitted by the Stormwater Advisory Committee

Prepared by:

Prepared by: ENERSOLV CORP



2018/2019

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Signatures

Welcome to

Tuscumbia - Alabama

Charm of the Shoals

City of Tuscumbia

Annual Report General Permit for Phase II
Municipal Separate Storm Sewer Systems
(MS4) NPDES Permit No. ALR 040022

May 14, 2019

Submitted by:

City of Tuscumbia:


Katherine Logan
Chairperson Pro Tempore

Tuscumbia Stormwater Advisory Committee:

William Foster, Board Member

Robert Mitchell, Board Member

Ron Kirkland, Board Member

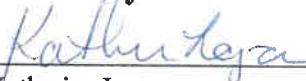
Prepared for the City of Tuscumbia by: ENERSOLV CORP


Ricky McWhorter, Sr. Environmental Project Scientist

I certify under penalty of law that I have reviewed this Annual Report and all attachments contained in the appendix thereto and that the same are true and correct. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Dated this the day May 14, 2019

City of Tuscumbia


Katherine Logan
Chairperson Pro Tempore

Tuscumbia Stormwater Advisory Committee

William Foster, Board Member

Robert Mitchell, Board Member

Ron Kirkland, Board Member






Introduction

This Annual Report was developed in accordance with the guidelines provided in Title 40 Code of Federal Regulations (CFR), Part 122.26(b)(16) which authorizes discharges of stormwater from small MS4s incorporated by reference in the Alabama Administrative Code 335-6 as administered by the Alabama Department of Environmental Management (ADEM) and NPDES ALR040022 Phase II General Permit effective October 1, 2016.

The City of Tuscumbia has completed this Annual Report in Compliance with Part V. C. Reporting of the NPDES Phase II Permit No. ALR040022. The purpose of this Annual Report is to describe the compliance efforts reflected in the City's Storm Water Management Plan (SWMP) and to better understand the need for additional compliance measure. It also gives the Stormwater Committee (SWC) an opportunity to evaluate compliance, and to propose additional controls, activities and documentation. The permit requires that the City of Tuscumbia to submit an annual report to ADEM each year by May 31st. The Annual Reports cover the year (April 1 - March 31) prior to the submittal date. This annual report covers the period from April 1, 2018 to March 31, 2019. In accordance with the requirements of the permit, the Annual Report includes the following:

- The status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs, progress towards achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Possible (MEP), and the measurable goals for each of the minimum control measures;
- Results of information collected and analyzed, if any, during the reporting period,
- including any monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP;
- A summary of the stormwater activities we plan to undertake during the next reporting cycle (including an implementation schedule).
- Proposed changes to the SMWP, including changes to any BMPs or any identified measurable goals that apply to the program elements;
- Notice that we are relying on another government entity to satisfy some permit obligations (if applicable); and
- All monitoring results collected during the previous year in accordance with Part V, if applicable. The monitoring reports shall be submitted in a format acceptable to the Department.

These elements will be addressed within the Annual Report and in each section detailing the implementation of the six minimum measures:

- I. Public Education and Public Involvement
- II. Illicit Discharge Detection and Elimination
- III. Erosion and Sedimentation Controls
- IV. Post-Construction Storm Water Runoff Control
- V. Pollution Prevention and Good Housekeeping

MS4 Description

The City of Tuscumbia is a mixed-used community consisting of urban, residential, and light industry located Colbert County, Alabama comprised of approximately 22.8 km². Tuscumbia is located northeast of the center of Colbert County at 34°43'51"N 87°42'10"W (34.730839, -87.702854). It is bordered to the north by the city of Sheffield and to the northeast by the city of Muscle Shoals. The Tennessee River is 1 mile (1.6 km) to the northwest. The main receiving stream is Spring Creek which flows through the center of the City.

Evaluation Discussion

The Tuscumbia MS4 Program continues to make significant strides in the past few years in working toward achieving improvements regarding it's NPDES Phase II MS4 Permit. Since the permit reissuance in October 2016, a more defined program is being implemented pursuant to the Storm Water Management Plan (SWMP) related to public involvement, illicit discharges, construction stormwater, good housekeeping and stream monitoring. In July 2017, the SWC began the Spring Creek stream monitoring - 303(d) listed for agricultural impairments - and city point source monitoring programs in partnership with Enersolv Corporation - acting as an environmental consulting agency to help with compliance issues. However, significant strides have been made; there are still areas that need more focus such as public involvement, stormwater inspections and enforcement.

In the next coming reporting period, the program will focus on public participation activities and outreach, construction stormwater compliance, stream monitoring, record keeping, and a SWMP update.

The City of Tuscumbia has entered an agreement with Enersolv Corp to help manage the MS4 Program. As part of this program, Enersolv is planning to augment construction stormwater enforcement by conducting inspections, and work with file management. They also plan to update the current SWMP to be more representative of current challenges.

City of Tuscumbia

Alabama NPDES Phase II Annual Report Permit # ALR040022

May 14, 2019

This report documents the activities related to each of the 6 Minimum Control Measures, including the BMP and rationale statement, as required by the City of Tuscumbia's NPDES Stormwater (MS4) permit.

The Appendix includes documentation of the action items and the Spring Creek monitoring plan and data information.

I Public Education and Outreach

BMP No. 1- Mail out flyers to homes and businesses two times per year.

Challenges: The primary source of pollution addressed by public education and outreach is trash, litter, soil disturbances, chemicals, and individual oil changes.

BMP Rationale: The problems addressed by this BMP are most common to residences and businesses in this area. Correcting these problems will go a long way toward cleaning up the waters in this area. The published information reaches a large segment of the population by placing billboards and signs at strategic locations and coordinating with "Keep the Shoals Beautiful" and the Chamber of Commerce and Civic Organizations.

Activities:

Ongoing: In previous years, ordinances have been adopted which encourage the limited use of fertilizer, pesticides, and herbicides within the City. The City continues to get involved and support activities and events that educate the public on how litter and pollution control can help the environment.

2018-2019 Activities:

Local News Media Exposure: Tuscumbia Public Works Administrative Assistant was interviewed on June 15, 2018, by WAFF News Channel 48 concerning the 2nd Annual *Chunk the Junk Clean Up Day*. She talked about the effects of stormwater runoff, steps the public can take to prevent stormwater pollution, as well as ways the public can get involved in stormwater program activities such as the Citywide Clean-up Day. (Aired on WAFF 48 June 15, 2018 at 6:00 pm)

Shoals Solid Waste Authority (SSWA): This organization is supported by the City, with funding and drop off locations. Special projects include:

- Mentioned in news articles in the local newspaper (Times Daily)
 - "City Cleanup Day" (6/14/18)

- "Council Facebook Stream" - 5365 Total Followers
- Helped Sponsor Community Events
 - "Shoals Earth Month" (April 2018)
 - "Shoals Earth Day Fest" (4/7/18) <http://quadcitiesdaily.com/?p=448253>
(See Appendix A photo)
 - "Jazz it up with Trash" https://www.timesdaily.com/gallery/news/jazz-it-up-with-trash/collection_ed92491e-f561-11e2-ab7d-0019bb30f31a.html

Webpage Update: Continuous updates are ongoing. (Total views 5722)

- Home Page Focus Element Links:
http://cityoftuscumbia.org/?page_id=89
 - Stormwater Management Plan 2011-2015
 - 2014-2015 SWMP Annual Report
 - 2015-2016 MS4 Annual Report
 - Removal of Trash, Waste, and Debris Ordinance
 - Sewer Do's and Dont's
 - Storm Water FAQs
 - Basic Report FINAL 05 15 2018
 - Basic Report FINAL 07 13 2018
 - Basic Report FINAL 09 04 2018
 - Spring Creek Analytical Report October 2018
 - 2018 Annual MS4 Report
- Buildings & Permit Page Focus Elements Links:
http://cityoftuscumbia.org/?page_id=2151
 - Ordinance for Illicit Discharge
 - Ordinance for Stormwater Operation
 - Ordinance for Erosion and Sediment Control
 - SWMPP Jan 8, 2017
 - Contacts for IDDE
 - 1709973 Basic Report FINAL 07 26 2017 1048
 - 1710072 Basic Report FINAL 08 01 2017 0949
 - 1710509 Basic Report FINAL 08 07 2017 1704
 - 1710508 Basic Report FINAL 08 08 2017 1018
 - 1712220 Basic Report FINAL 09 11 2017 1520
 - 1712221 Basic Report FINAL 09 07 2017 1523

The following events and distributed literature related to recycling:

- *Helen Keller Festival*
- *W.C. Handy Festival*

- *Shoals Earth Day*
- *Earth Day* – 4/22/2018
- Partner with Keep the Shoals Beautiful-Platinum Leaf Sponsor of the Tennessee River Litter Tournament on 9/15/18

Citywide Cleanup Day "Chunk the Junk": Organized and implemented a City Cleanup day in which 392 lbs of trash and debris was recovered around the City. 6/16/18. See City of Tusculmbia Facebook page links below. (See Appendix A photo)

<https://www.facebook.com/TuscumbiaSanitation/>

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support for public education. Special projects included:

- Provided sign advertising encouraging citizens to stop litter and keep the Shoals area clean.

"Annual Tennessee Litter Tournament": Event participation as a sponsor with KTSB.

<https://www.quadcities.com/?p=476247>

Signs: The City continues to maintain various anti-litter signs throughout the area to remind people to keep the Shoals clean. "Do Not Dump" and "Do Not Litter" signs were replaced and installed in various places. The Street Department also continues to install tags on storm drain inlets and junction boxes to warn the public that drainage enters waterways and discourage dumping. (See Appendix A)

Brochures, Flyers, Etc.: Materials are displayed at the utility department and the building department for citizens to pick up. Information related to stormwater management is shared with civic organizations such as Kiwanis Club and Civitan Club.

Utility Bills Notifications: Statements asking for citizens to help prevent stormwater pollution and describing actions to take are periodically placed on utility bills before mailing – 8/28/18 & 9/28/18 (See Appendix A for copy of utility bill).

BMP No. 2: Run-Off Reduction/ Permeable Pavement

Challenge: The main source of pollution addressed by this BMP is soil erosion during construction.

BMP Rationale: Most of the soil erosion and introduction of silt into the stormwater system is due to construction activities which disturb the landscape. By placing restrictions of this BMP on contractors and developers, soil erosion will be better managed and improve water quality. Requirements are outlined in the subdivision regulations, SWMP, and the new stormwater ordinances.

Activities:

Ongoing: Regulations and ordinances now dictate that contractors and developers will adhere to the rules which have been adopted to control erosion. The City requires engineers to provide monthly inspection reports for the City to review. The City's staff also provided inspection and enforcement of the rules. BMP for each project exceeding 1 acre is required and is reviewed by the City Review office. Permits are required before excavation or prior to any soil disturbance.

2019-2019 Activities: The frequency of action is continual. Every construction project is reviewed for compliance with the city regulations. See link for City Ordinances related to erosion control:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Erosion_and_Sediment_Control.pdf

BMP No. 4 - Storm Drain Inlet Protection and Public Awareness

Challenge: Storm drains are an easy and visible way to dump unwanted materials. However, when the public is made aware that the storm drains lead to creeks and rivers, they are less likely to dump materials in the storm drains.

BMP Rationale: To make the public aware of the harm to dumping material in the storm drain.

Activities:

Ongoing - Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city. (See Appendix A photo)

Ongoing - Increased the number of participation in specific events

Ongoing - Continuing to work with KTSB to educate the public

Extra Information:

Stormwater FAQs and Sewer Do's and Don'ts were published on the City's website for the public. See link <https://www.docdroid.net/Byvx5hK/tuscumbia-sewer-dos-and-donts.pdf>

Tuscumbia Street and Sanitation Department posted a notice to public on its Facebook page to contact the Tuscumbia Street and Sanitation Department if they had a sewer problem at their home or business before calling a plumbing contractor.

Measure specific activities planned for the next reporting period

During this next reporting period, City of Tuscumbia plans to continue to promote the MS4 Public Education and Outreach best management measures to include at a minimum:

1. Continue ongoing activities related to public education and outreach.
2. Continue to work with KTSB to help initiate public education and outreach programs.
3. Increase the number of participations in specific events.
4. Increase the efficiency of record keeping and documentation related to public education activities.
5. Continue working to label storm drain inlets to promote public education regarding impacts.

II. Public Involvement and Participation

Challenge: The challenge addressed in this BMP is associated mainly with littering by the public and the general disregard for erosion and pollution problems.

BMP Rationale: The rationale for this BMP is to create ownership and transparency for citizens. That is, the more they are involved with the decision-making process and cleanup activities, the more they will be aware of the problems related to litter and erosion. Public involvement and participation helps to increase general awareness and concern over these issues. These activities also involve environmentally concerned individuals and help get citizens involved in reporting violations to be enforced by City officials.

Activities:

Ongoing: Citizens are encouraged to clean up their areas and to stop littering and notify City officials of littering and erosion issues. The City has also participated in the Groundwater Guardian Program which is a committee of local officials, business owners, and concerned citizens that implements educational programs for children and adults about the importance of protecting the natural groundwater resources in the area. This committee continues to distribute literature and promote education programs.

2018-2019 Activities:

Public Hearing: Scheduled for every other year and was last held on 2/17/17, and we proposed to have one during the 2019 calendar year. Stormwater Committee presented to City Council and the public the goals of and objectives of the SWMPP and reduction of stormwater impacts.

Shoals Solid Waste Authority (SSWA): This organization is supported by the City with funding and to help with drop off locations. Special projects include:

- Distributed brochures and other materials to the general public on recycling at several public events in the area throughout the year. Also provided recycle bins during community events.

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special public involvement projects included:

- Organized and implemented the 2nd Annual "Chuck the Junk Citywide Cleanup" day in which 392 lbs of trash and debris was recovered around the City. 6/19/18, See City of Tuscumbia Facebook page link:
http://cityoftuscumbia.org/?page_id=89 (See Appendix A)
- Sponsored an Earth Day event on 4/7/18. (Sponsor with KTSB)
- Assisted other organizations with clean-up events: Participated in the *Annual Tennessee Litter Tournament* for the Shoals – 8/22/18
- Collected over 15,163 pounds of debris within the City of Tuscumbia by employees in which the *Shoals Solid Waste Authority* collects from the City

BMP No. 2: Stenciling at Stormwater Inlets

Challenge: The challenge addressed in this BMP is associated mainly with illicit dumping by the general public into stormwater system inlets. Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city.

BMP Rationale: The rationale for this BMP is to make citizens aware that whatever enters a stormwater inlet may eventually enter our rivers and streams. This awareness should reduce the amount of illicit discharges by the general public.

Activities:

2018-2019 Activities: The City of Tuscumbia Public Works Department continues to maintain and install curb tags at storm drains around the City.

BMP No. 3 - Art Contest at Elementary Schools

Challenge: The challenge addressed in this BMP is associated mainly with littering and the general disregard for pollution problems.

BMP Rationale: the rationale for this BMP is that good habits are best learned at a young age. If our children can be involved in litter prevention and become aware of the issues related to pollution, they will be more proactive as adults.

Activities:

2018-2019 Activities:

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special projects focusing on elementary schools include:

- *"Cleanup Campus Contest"* for all Tuscumbia elementary students. This contest provided an opportunity to win the *Steve Trash Award* in which G.W. Trenholm from Tuscumbia was the winner.

Measure specific activities planned for the next reporting period

Tuscumbia will continue to implement the Public Involvement & Participation measures as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue to work with the Groundwater Guardian Program.
2. Continue to work with the Shoals Solid Waste Authority (SSWA) in partnership regarding public awareness of water quality and litter control.
3. Continue to work with the Keep the Shoals Beautiful (KTSB) in partnership regarding public awareness of water quality and litter control.
4. Work with local schools regarding public awareness of water quality and litter control.
5. Continue to increase the efficiency of record keeping and documentation related to public awareness activities.

III. Illicit Discharge Detection & Elimination**BMP No. 1: Enforcement Personnel to Re-certify QCI**

Challenge: The problem addressed with this BMP is the lack of training regarding the effects of illicit discharges, proper BMP measures and the lack of enforcement of City ordinances.

BMP Rationale: The rationale for this BMP is that an enforcement process is necessary to work toward eliminating the problem associated with illicit discharges. City officials will be informed and trained regarding the hazards associated with illicit discharges and proper BMP measures.

Activities:

Ongoing: All ordinance requirements related to illicit discharges were completed prior to 2010. Mr. Greg Willingham with the City of Tuscumbia is responsible for BMP review and code enforcements. See webpage link:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Illicit_Discharge.pdf

2018-2019 Activities: Greg Willingham was certified as QCI on April 28, 2018 QCI#73967. (See Appendix B for certificate copy)

BMP No. 2: Site Inspections - Industrial, Commercial, Construction Sites

Challenge: The problem addressed with this BMP is the illicit discharge by industrial, commercial sites, and construction sites into the City stormwater system.

BMP Rationale: The rationale for this BMP is that an inspection process is necessary to identify illicit discharges and enable the City to enforce the ordinances related to such discharges.

Activities:

Ongoing: Greg Willingham was recertified on April 28, 2018 QCI#73967. The City continues to conduct routine inspections of the stormwater discharge points and other sites. The records of certifications and facility inspections are kept on file at City Hall.

2018-2019 Activities: The City's QCIs conducted approximately 93 onsite construction site inspections and observations. There were no referrals based on inspections. There were no construction site complaints received during the reporting year.

BMP No. 3: Stormwater Runoff Sampling & 303(d) Spring Creek Stream Sampling

Challenges: The problem addressed with this BMP is stream contamination caused by illicit discharges and stormwater runoff.

BMP Rationale: The rationale for this BMP is that sampling and testing stormwater at the known outfall of the City's stormwater system will help to identify issues so further inspection and enforcement can take place. Also, seasonal monthly stormwater sampling will be conducted on Spring Creek at specific locations identified in the SWMPP during seasonal months triggered by rainfall and dry events.

Activities:

Ongoing: GIS mapped has occurred on approximately 50% of the city's stormwater drain inlets and the stormwater collection system and a map was created. Locations along Spring Creek have been delineated as seasonal sampling points and they continue to be monitored for City impact.

2018-2019 Activities: According to the SWMPP, four locations along Spring Creek were chosen as required by the SWMPP related to 303(d) listing requirements. According to the data collected, it again appears that the City of Tuscumbia is not a significant contributor to the current 303(d) impairments. Monitoring is planned during the 2019 monitoring to continue to evaluate potential sources and impacts. (See Appendix C for data and 2018/2019 Sampling Plan)

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue the Illicit Discharge Detection and Elimination measures as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue to promote the objectives of the measure through education and outreach activities.
2. Train additional City personnel to support the IDDE control measures.
3. Increase the quantity of training to support the IDDE control measures.
4. Increase the efficiency of record keeping and documentation related to IDDE activities.

IV. Construction Site Stormwater Runoff Control

BMP No. 1: Construction Sites Permitted by City and ADEM

Challenge: The challenge addressed with this BMP is the runoff of silt and other illicit discharges into the City stormwater system from construction sites.

BMP Rationale: The rationale for this BMP is that by requiring contractors to follow the permitting process for stormwater runoff, they will be given the proper BMP measures to follow to minimize erosion and illicit discharges. These permits also include regular inspections that will hold them accountable to the permit requirements.

Activities:

Ongoing: The City addresses erosion and sediment controls at construction sites through subdivision regulations and ordinances. These are enforceable by City officials and apply to non-subdivision type construction projects. Mr. Greg Willingham with the City of Tuscumbia is responsible for reviewing all inspection reports, keeping a copy on file and enforcing all related ordinances and regulations. See City Ordinance links for Stormwater Operations and Erosion Control:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Stormwater_Operation.pdf

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Erosion_and_Sediment_Control.pdf

2018-2019 Activities: Approximately 93 onsite construction inspection/observations were recorded as being conducted during the monitoring period. There were no referrals based on inspections. There were no construction site complaints received during the reporting year. Inspection record keeping is located at the Building Department.

Storm drain inspection log was kept by city employees as storm drains were inspected and cleaned. The city recorded 47 inspections during the reporting period.

BMP No. 2: Follow Up on Inspections If Required

Challenge: The challenge addressed with this BMP is the lack of concern of the holder of the stormwater permit to address deficiencies noted in the inspection reports.

BMP Rationale: The rationale for this BMP is that an enforcement process is necessary to ensure compliance with the permitting requirements.

Activities:

Ongoing: Follow up inspections of permitted construction sites is an ongoing activity by the City Building Department and conducted as needed. Copies of inspection reports outlining any problems or deficiencies are held at City Hall.

2018-2019 Activities: Follow-up inspections were conducted based on the extent of the conditions at the site to achieve compliance.

BMP No. 3: Construction Stormwater Runoff Sampling and Testing

Challenge: The problem addressed with this BMP is stream contamination caused by erosion of silt and/or illicit discharges.

BMP Rationale: The rationale for this BMP is that sampling and testing stormwater runoff from construction sites should ensure the contractor's compliance with BMP measures and determine if additional measures need to be put in place.

Activities:

2017-2018 Activities: No samples were collected from discharges from construction sites during sampling period. However, monitoring was conducted on four Spring Creek sampling/monitoring points during the seasonal monitoring period to establish instream water quality baseline data and potential impacts.

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue implementing Construction Site Stormwater Runoff Control as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue program implementation to ensure the requirements of the BMPs are met.
2. To have third-party consultant (Enersolv Corp) perform audits of programs in accordance with the environmental management system (EMS).
3. To have third-party (Enersolv Corp) increase and develop training programs for personnel to better communicate the programs requirements and the responsibilities of everyone involved in the construction and enforcement process.
4. Increase the efficiency of record keeping and documentation related to IDDE activities.

V. Post Construction Stormwater Management in New Development and Re-Development**BMP No. 1: All Construction Sites Secured with Vegetation and Run-off Control**

Challenge: The challenge addressed with this BMP is soil erosion and sedimentation due to construction sites that are completed long term soil stabilization.

BMP Rationale: The rationale for this BMP is it will ensure the continuation of sediment and erosion control measures until permanent stabilization is achieved by requiring owners to provide a bond to cover the cost of replacing or establishing such measures.

Activities:

Ongoing: The City addresses this requirement by requiring all construction and development plans to have a BMP that shows erosion control measures and final permanent stabilization. Mr. Greg Willingham (QCI) with the City of Tuscumbia is responsible for overseeing and enforcing all related ordinances and regulations.

2018-2019 Activities: No follow-ups during the reporting period.

BMP No. 2: Post Construction Maintenance Agreements

Challenge: The problem addressed with this BMP is that once some developments are completed, the site is not maintained for sediment and erosion control.

BMP Rationale: The rationale for this BMP is it will ensure the long term operation and maintenance of sediment and erosion control measures by requiring owners to sign an agreement to be recorded with the property deed or plat that transfers to any new owner or operator the responsibility for post-construction management.

Activities:

Ongoing: This requirement is monitored with existing ordinances and regulations. The City continues to require a Post-Construction Maintenance Agreement to be recorded with the final plat.

2018-2019 Activities: No new activities reported for this BMP.

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue implementation of Post Construction Stormwater Management in new development and redevelopment as defined in the SWMP. During the next reporting period, the following activities are planned:

1. Work toward implementing system standards and plan review as defined in the SWMP.
2. Provide training on standards and requirements for new projects related to post construction maintenance.
3. Initiate implementing a maintenance schedule and/or observations of control measures.
4. Increase the efficiency of record keeping and documentation related to post-constructions maintenance activities.

VI. Pollution Prevention / Good Housekeeping for Municipal Operations.**BMP No. 1: Personnel Training**

Challenge: The problem addressed with this BMP is City personnel not adequately trained and aware of BMP requirements and the effects of pollution.

BMP Rationale: The rationale for this BMP is that many of the City personnel can prevent pollution and erosion or at least observe the activities of others. By adequately training them in proper BMP requirements, it will help to ensure good housekeeping practices and pollution prevention through personal practice or notification of observed violations.

Activities:

Ongoing: The City continues to educate employees through training and conferences.

2018-2019 Activities: Greg Willingham was certified as QCI on April 28, 2018 QCI#73967. (See Appendix B for Certificate)

The Building Department maintains copies of the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas (Volumes 1 & 2) for use and reference by City officials.

BMP No. 2: Solid Waste Collection from Streets and Drains

Challenge: The challenge addressed with this BMP is the polluted runoff that occurs when runoff from impervious areas wash litter and other floatables into the stormwater system.

BMP Rationale: The rationale for this BMP is that by collecting solid waste from streets and drains will prevent it from getting into the stormwater system and making its way into rivers and streams.

Activities:

Ongoing: The City continues to conduct regular surveys throughout the city for litter and collects it for proper disposal. Records are kept and reported each year as to the total poundage of litter retrieved and disposes of at the landfill. They also pick up leaves piled up along gutters by citizens from October through March.

2018-2019 Activities: The Public Works Department cleaned out numerous storm drains and gutters and collected litter to prevent it from reaching the storm system. This prevented debris from reaching Spring Creek. See below:

- **Municipal Inspections:** Monthly inspections were conducted at the seven facilities for City SOP issues. 53 inspections were conducted during the monitoring period.
- **Storm Drains Monitored:** 47 monitoring inspections were conducted during the reporting period.
- **Routine Litter Cleanup/ Right-of-Way Maintenance:** 97 bags totaling approximately 987 lbs., of litter was removed and prevented from entering waters of the State.
- **Municipal Facilities and SOPs:** The City has seven municipal facility locations that are monitored on a routine basis. The City has developed SOPs for operation at these seven facilities to help preclude the introduction of storm water pollutants.
- **Sewer Maintenance:** Contracted rot control in two locations helping to preclude the City's impact on water quality of receiving streams.

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue to perform and promote sound pollution prevention good housekeeping management practices. During the next reporting period, the following activities are planned:

1. Continue to train City personnel related to pollution prevention and good housekeeping of municipal facilities.
2. Continue to conduct routine inspections of facilities related to SOP implementation activities.
3. Continue to conduct routine and special litter cleanup days and right-of-way maintenance to preclude water quality impacts.
4. Increase the efficiency of record keeping and documentation related to good housekeeping and pollution prevention activities.

Appendix A

Shoals Earth Day Feast 2018

City of Tuscumbia "Chunk the Junk 2018"

Storm Drain Makers

Utility Bill Mail outs

Shoals Earth Day Feast 2018

11TH ANNUAL
Shoals Earth Day Fest 2018
SATURDAY, APRIL 7TH
11 AM - 6 PM
FREE!
HISTORIC, DOWNTOWN TUSCUMBIA
 S. MAIN ST. & 6TH
 (Main Location: The Roundhouse)

LIVE MUSIC ENTERTAINMENT SCHEDULE

11:00	MAYOR KERRY UNDERWOOD, WELCOME
	JACQUELYN CORDOBA, NATIVE AMERICAN BLESSING
11:15	BLIND THE SKY, CLASSIC AND ORIGINAL ROCK
12:00	STEVE TRASH, ROCKIN' ECO HERO
12:30	C.O.R.E., AFRICAN DRUMMING
1:00	UNCLE SHUFFELO AND HIS HAINT HOLLOW HOOTENAMMY, TRADITIONAL OLD TIME APPALACHIAN MUSIC
2:00	KONJURE, CLASSIC AND ORIGINAL ROCK
2:45	ALABAMA RIVERS ALLIANCE & TN RIVERKEEPER
3:00	STEVE TRASH, ROCKIN' ECO HERO
3:30	AN ABSTRACT THEORY, CLASSIC AND ORIGINAL ROCK
4:15	HELOHA HICKMAN, NATIVE AMERICAN GRASS DANCE
4:30	JOHNNY BELEW & FRIENDS, POSITIVE VIBES JAM
5:15	WILD SOUTH & SIERRA CLUB
5:30	STEVE TRASH, ROCKIN' ECO HERO
6:00	CLOSING REMARKS

Children's Activities - Earth-Friendly Displays - Vendors - Speakers - Juggling - Recycling Drop-off

Earth Day Fest 2018

Chunk the Junk Citywide Litter Clean Day

The City of Tuscumbia
Presents The 2nd Annual
"Chunk the Junk"



Time: 8:00 - 11:00
Date: 06/16/2018

On June 16, 2018, residents, civic groups, church groups and businesses of Tuscumbia will gather to clean up their city which will

- Improve our community
- Invest & show pride in our beautiful City
- Give an opportunity for social fellowship & participation

Prize will be awarded to the one who gathers the most junk!

**BEAUTIFUL NEIGHBORHOODS
HAPPEN BECAUSE OF YOU!!!!**

To sign up please contact the Public Works
Department at 256-366-6674

Supplies will be provided and
refreshments will be served



Chunk the Junk Cleanup Day

Sign in List - 2018-Employees

**Sign in Sheet for 2018 Chunk the Junk
Employees**

- 1. Kim Holley (✓ shirt)
- 2. Donna Bubka (✓ shirt)
- 3. Bryce Rocce II (✓ shirt)
- 4. JOSHUA LANDERS (✓ shirt)
- 5. EARL WILLARD (✓ shirt)
- 6. James Smith
- 7. W.J. Clemens (✓ shirt)
- 8. Bo Stanley (✓ shirt)
- 9. Jammy McCreary (✓ shirt)
- 10. Lueter Echols (✓ shirt)
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____

Sign In Sheet -2018 – VolunteersSign in Sheet for 2018 Chunk the JunkVolunteers

1. Kyle Brown ✓ *Shut 256-702-1337*
2. Patrice Brown ✓ *Shut*
3. Andrena Mitchell } *Alana Mitchell (GS) Shut ✓*
4. Emily Luey ✓ *Shut* } *Girl Scouts - a few kids*
5. Michael Luey ✓ *Shut* }
6. Roger Fuller ✓ *Shut*
7. Maybodie Christopher ✓ *Shut*
8. Lisa Rogers ✓ *Shut*
9. Kyle Rogers ✓ *Shut*
10. Lee Rogers ✓ *Shut* *BHG: Bymabns*
11. Michael & Eleanor Luey (GS)
12. Kelli & Khloe Jeffreys (GS) *Large ✓ Shut*
13. Jeff Austin ✓ *Shut*
14. Whitney Marshall } *Shut* } *Gabby Dean (GS)*
15. Mary Kimbrough ✓ *Shut* (CS)

Storm Darin Marking



North Cave Street and McIntosh Ave

Utility Bill Mail Outs


	09-28-18	28 1 22	10-22-18	
	59214	60409	1195	EL 128.76
	341	346	5	WA 28.63
	2381	2386	5	GA 12.00
				GB 16.00
				SW 13.70
				TX 7.33

PLEASE DO NOT PLACE FATS,
OILS, GREASE OR SOLID
WASTE IN THE SEWER SYST.
THESE MAY CLOG PIPES AND
CAUSE SEWER OVERFLOWS.
CALL TUSCUMBIA PUBLIC
WORKS AT 256-386-5674.

Paid from Bank Acct 10/22	013-1580-00	206.42	10.32	216.74
		0.00		0.00
		206.42		216.74

013-1580-00	206.42	STANLEY II, HUGH
0.00	10.32	STANLEY, KRISTA
10-22-18	216.74	114 HERITAGE PL
		TUSCUMBIA AL
		35674-3708

STANLEY II, HUGH
114 HERITAGE PL



Tusculum
114 Heritage Pl
Tusculum, AL 35674-3708
356-386-5674
Return Service Requested

HELP PREVENT STORMWATER
POLLUTION BY NOT DRAINING
PROHIBITED SUBSTANCES OR
PLACING LEAVES, DEBRIS OR
TRASH INTO GUTTERS. THESE
ITEMS CAN POLLUTE OUR
WATERWAY. THANK YOU

PAID FROM BANK ACCT 09/22

ACCOUNT NO	013-1580-00	AMOUNT	288.16
PAYOR'S BALANCE	0.00	STATE TAX	14.01
PAY ORG'S ACCT	09-22-18	OFFICE AMOUNT	294.17

STANLEY II, HUGH
114 HERITAGE PL

Utility bill mail outs

Appendix B

QCI – Greg Willingham

QCI Certificate

This certifies that
Greg Willingham of
City of Tuscumbia

has successfully completed the
**QUALIFIED CREDENTIALLED INSPECTOR
TRAINING**
Project has been approved through stormwater management
QCI # 70267 EXPIRATION 04/30/2019

Your responsibilities as a QCI:

- Monthly or weekly inspections
- Inspections following certain rain events
- Log and keep records for construction projects
- Keep the permittee, operator and QCI informed

Protecting our environment through stormwater management
HOME BUILT CONSTRUCTION OF ALABAMA

[Handwritten Signature]

Signature

Appendix C

Spring Creek Water Quality Data

Table 1 - Spring Creek Stream Survey Summary - 2018 MS4 NPDES Permit # ALR040022

Analytes	Location	Date	NO3-N		NO2-N		NH3-N		CBOD		Chlor a		Cond		ALK, T		TKN		P, T		TSS		Ca		Mn		HARD		DO		pH	
			mg/l	mg/l	mg/l	mg/l	mg/l	umho/cm	ug/l	umho/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	SC- 1	4/26/2018	0.92	<0.060	0.112	<4.00	<5.00	196.00	83.60	<1.50	<1.00	18.00	34.6	2.35	94.10	8.90	7.50															
	SC- 2	4/26/2018	0.92	<0.060	<0.100	<4.00	<5.00	199.00	85.80	<1.50	2.72	34.00	37.1	2.39	98.30	8.90	6.80															
	SC- 3	4/26/2018	1.84	<0.060	<0.100	<4.00	<5.00	251.00	112.00	<1.50	1.19	12.00	46.6	2.29	121.0	7.80	7.10															
	SC- 4	4/26/2018	2.24	<0.060	<0.100	<4.00	<5.00	283.00	124.00	<1.50	<1.00	8.00	54.8	2.47	138.0	7.00	6.60															
	SC- 1	6/21/2018	2.40	<0.060	<0.100	<4.00	<5.00	383.00	<4.00	<1.50	<1.00	6.00	74.7	3.43	187.0	7.50	7.20															
	SC- 2	6/21/2018	2.36	<0.060	<0.100	<4.00	<5.00	378.00	169.00	<1.50	<1.00	7.50	78.2	3.60	195.0	7.20	6.90															
	SC- 3	6/21/2018	3.92	<0.060	<0.100	<4.00	<5.00	402.00	173.00	<1.50	<1.00	3.50	78.2	2.46	185.0	7.60	6.50															
	SC- 4	6/21/2018	3.94	<0.060	<0.100	<4.00	<5.00	396.00	170.00	<1.50	<1.00	2.50	78.0	2.47	195.0	7.20	7.20															
	Equip BL	6/21/2018	<0.260	<0.060	<0.100	<4.00	<5.00	1.93	21.00	<1.50	<1.00	<2.50	<1.0	<1.0	<2.5	6.70	7.70															
	SC-1	8/24/2018	<0.260	<0.060	0.176	<4.00	<5.00	196.00	91.40	<1.50	<1.00	2.50	34.7	2.28	101.0	4.50	6.50															
	SC-2	8/24/2018	1.21	<0.060	<0.100	<4.00	<5.00	314.00	161.00	<1.50	<1.00	<2.50	60.4	2.91	168.0	6.40	6.50															
	SC-3	8/24/2018	3.87	<0.060	<0.100	<4.00	<5.00	420.00	199.00	4.30	<1.00	<2.50	83.1	2.86	217.0	6.30	6.40															
	SC-4	8/24/2018	3.87	<0.060	<0.100	<4.00	<5.00	425.00	203.00	<1.50	<1.00	16.00	83.6	2.76	207.0	5.40	6.50															
	SC-1	10/26/18	0.20	<0.060	<0.100	<3.00	<5.00	252.00	128.00	<1.50	1.06	2.50	40.3	3.58		5.66	7.10															
	SC-2	10/26/18	15.10	<0.060	<0.100	<3.00	<5.00	288.00	216.00	<1.50	1.19	<2.50	79.7	4.20		7.00	7.10															
	SC-3	10/26/18	3.51	<0.060	<0.100	<3.00	<5.00	303.00	224.00	<1.50	1.46	<2.50	78.6	3.70		6.00	6.50															
	SC-4	10/26/18	3.40	<0.060	<0.100	<3.00	<5.00	247.00	208.00	1.87	1.50	3.75	77.6	3.50		6.20	6.10															
	SC-1*	11/29/18					<5.00																									
	SC-2*	11/29/18					0.267																									
	SC-3*	11/29/18					0.534																									
	SC-4*	11/29/18					0.267																									

* Due to laboratory challenges, the samples had to be recollected.

Location	Longitude	Latitude
SC-1	34°42'25.26"N	87°41'31.46"W
SC-2	34°42'55.73"N	87°41'53.01"W
SC-3	34°43'43.21"N	87°42'38.33"W
SC-4	34°43'57.15"N	87°42'51.61"W



2220 Beltline Road SW
Decatur, AL 35601
256.350.0846
www.esclabsciences.com

May 15, 2018

Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601

We appreciate the opportunity to provide our services to you on this project. Please find attached the data for the sample(s) listed below:

<u>LabNumber</u>	<u>Sample Description</u>	<u>Date/Time Collected</u>	<u>Date Submitted</u>
1805671-01	Tuscumbia City SC- 1	4/26/18 12:40	4/26/18
1805671-02	Tuscumbia City SC-2	4/26/18 12:16	4/26/18
1805671-03	Tuscumbia City SC- 3	4/26/18 12:04	4/26/18
1805671-04	Tuscumbia City SC-4	4/26/18 11:26	4/26/18

ESC-Decatur is accredited to ISO/IEC 17025:2005 by ANSI-ASQ National Accreditation Board (ANAB) and to the TNI 2003 Standard by the Florida Department of Health. Our quality system also meets relevant quality system requirements of ISO 9001:2008. Not all tests performed by ESC-Decatur are covered by these accreditations. Tests within our scope of accreditation are indicated by an asterisk (*) in the Test Result section of this report. Tests not included in the accreditations are performed in accordance with ESC-Decatur's Standard Operating Procedures and the quality control program using, where applicable, USEPA methodology.

This cover page and the attached chain-of-custody record(s) are integral parts of your report. ESC-Decatur considers this report your official record. This information shall remain in ESC-Decatur's active database for a period of one (1) calendar year before archiving. Any replacement of this information after archiving may result in an administrative fee to cover the cost of retrieval.

If you have any questions or would like more information regarding these analyses, please call us at (256) 350-0846.

Karen Sutton

Karen Sutton
Project Manager

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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Accredited
Florida DOH
#E871078

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ESC-Decatur also maintains ISO/IEC 17025 accreditation through ANSI-ASQ Accreditation Board for the specific tests listed in ANAB Certificate #L2239 scope of accreditation.

Tests within the scope of accreditation are indicated by an asterisk (*).

This report may contain information that is confidential and/or proprietary. This information is intended for the addressee only and may not be copied or disseminated except in full without the written consent of ESC-Decatur.



ANAB Cert. #L2239 Testing
ADEM
Drinking Water
Certification
No. 40160

Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC- 1

Sample ID: 1805671-01

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	0.918	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	0.918	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	0.112	mg/l		
* Carbonaceous BOD	<4.00	mg/l		D
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	196.0	umho/cm		
Total Alkalinity	83.6	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	18.0	mg/l		

On-Site Analysis

Dissolved Oxygen	8.90	mg/l		
pH	7.5	su		

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC-2

Sample ID: 1805671-02

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	0.961	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	0.961	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	199.0	umho/cm		
Total Alkalinity	85.8	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	2.72	mg/l		
* Total Suspended Solids	34.0	mg/l		

On-Site Analysis

Dissolved Oxygen	8.90	mg/l		
pH	6.8	su		

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller Energolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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ANAB Cert. #L2239 Testing

ADEM
Drinking Water
Certification
No. 40160

Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC- 3

Sample ID: 1805671-03

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	1.84	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	1.84	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l		D
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	251.0	umho/cm		
Total Alkalinity	112	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	1.19	mg/l		
* Total Suspended Solids	12.0	mg/l		

On-Site Analysis

Dissolved Oxygen	7.80	mg/l		
pH	7.1	su		

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller Energolv Corporation 2220 Beltline Road SW Decatur, AL 35601



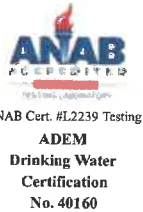
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ANAB Cert. #L2239 Testing
ADEM
Drinking Water
Certification
No. 40160

Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC-4

Sample ID: 1805671-04

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	2.24	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	2.24	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l		D
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	283.0	umho/cm		
Total Alkalinity	124	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	8.00	mg/l		

On-Site Analysis

Dissolved Oxygen	7.00	mg/l		
pH	6.6	su		

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

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Enersolv Corporation
2220 Beltline Road SW
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All calculations are performed prior to rounding per EPA and *Standard Methods* requirements.

Data Qualifiers:

- D Estimated BOD/CBOD value - sample dissolved oxygen depletion less than method required 2.0 mg/l.
- < Less than reporting limit

Analysis Information

Lab Number	Analysis	Specific Method	Analyst	Analysis Start Date/Time	Analysis End Date/Time
1805671-01	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-01	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	
1805671-01	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	05/02/2018 11:00
1805671-01	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-01	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-01	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 19:03	
1805671-01	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 19:03	
1805671-01	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 19:03	
1805671-01	Total Phosphorus	EPA 365.3	JW	05/01/2018 15:15	
1805671-01	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	04/27/2018 06:00	
1805671-01	Total Suspended Solids	USGS I-3765-85	JRL	04/29/2018 14:10	
1805671-02	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-02	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	05/02/2018 11:00
1805671-02	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	
1805671-02	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-02	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-02	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 20:51	
1805671-02	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 20:51	
1805671-02	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 20:51	
1805671-02	Total Phosphorus	EPA 365.3	JW	05/01/2018 15:15	
1805671-02	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	04/27/2018 06:00	
1805671-02	Total Suspended Solids	USGS I-3765-85	JRL	04/29/2018 14:10	
1805671-03	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-03	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	05/02/2018 11:00
1805671-03	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	
305671-03	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-03	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-03	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 21:09	

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



NELAP
Accredited
Florida DOH
#E871078

ESC-Decatur maintains National Environmental Laboratory Accreditation Program (NELAP) accreditation through Florida Department of Health (#E871078). Some tests included in this report may not be covered by this accreditation.

ESC-Decatur also maintains ISO/IEC 17025 accreditation through ANSI-ASQ Accreditation Board for the specific tests listed in ANAB Certificate #L2239 scope of accreditation.



ANAB Cert. #L2239 Testing
ADEM
Drinking Water
Certification
No. 40160

Tests within the scope of accreditation are indicated by an asterisk (*).

This report may contain information that is confidential and/or proprietary. This information is intended for the addressee only and may not be copied or disseminated except in full without the written consent of ESC-Decatur.

1805671-03	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 21:09	
1805671-03	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 21:09	
1805671-03	Total Phosphorus	EPA 365.3	JW	05/01/2018 15:15	
1805671-03	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	04/27/2018 06:00	
1805671-03	Total Suspended Solids	USGS I-3765-85	JRL	04/29/2018 14:10	
1805671-04	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-04	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	05/02/2018 11:00
1805671-04	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	
1805671-04	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-04	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-04	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 21:28	
1805671-04	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 21:28	
805671-04	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 21:28	
1805671-04	Total Phosphorus	EPA 365.3	JW	05/01/2018 15:15	
1805671-04	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	04/27/2018 06:00	
1805671-04	Total Suspended Solids	USGS I-3765-85	JRL	04/29/2018 14:10	

The results contained in this report are only representative of the sample(s) received.



ANALYTICAL REPORT

May 07, 2018



ESC - Decatur Lab

Sample Delivery Group: L989681
Samples Received: 04/28/2018
Project Number: 1805671
Description:

Report To: Mr. Bill Hollerman
2220 Beltline Road SW
Decatur, AL 35601

Entire Report Reviewed By:

Olivia Studebaker
Technical Service Representative

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 ESC is performed per guidance provided in laboratory standard operating procedures 060302, 060303, and 060304.

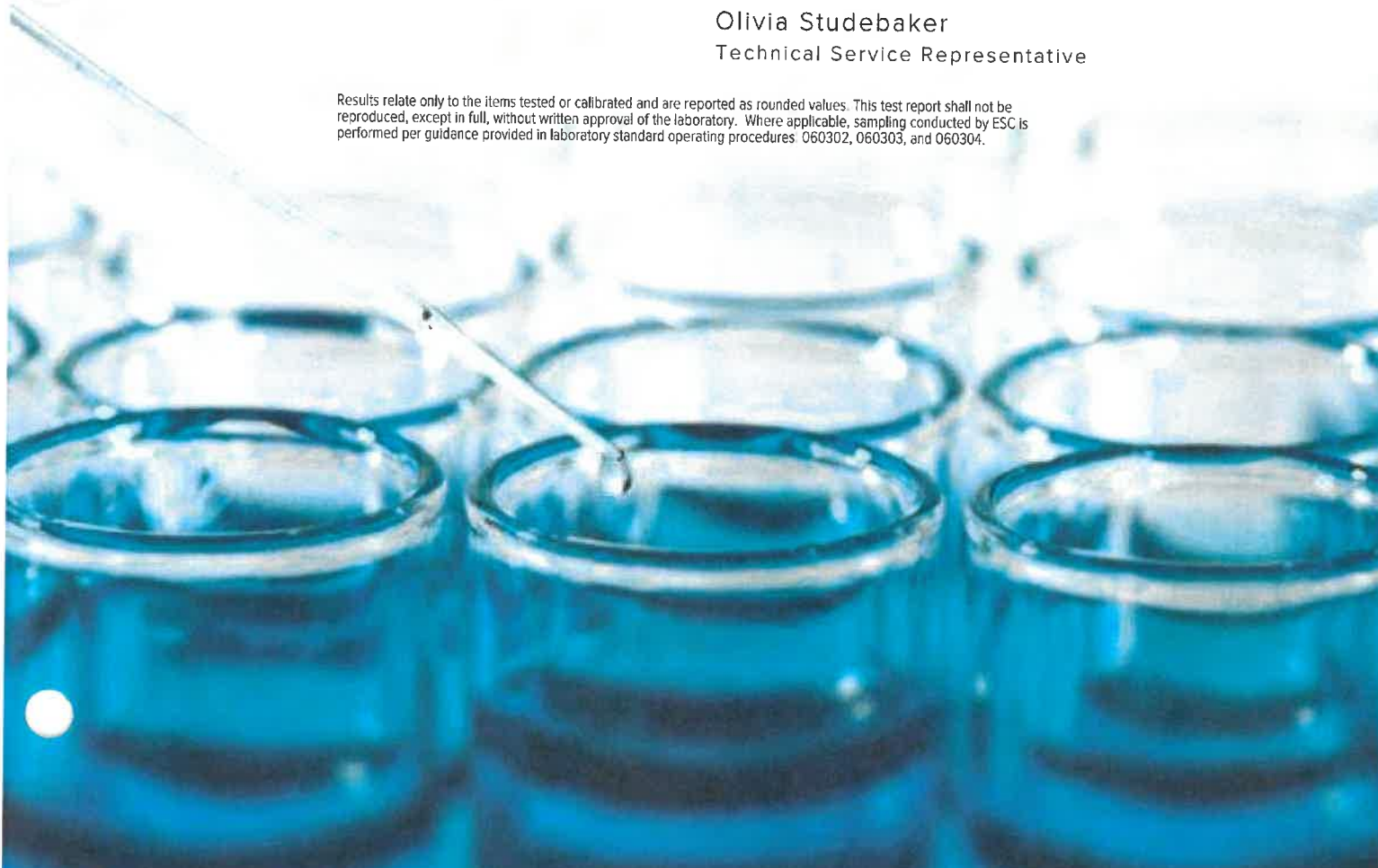


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Cp: Cover Page

Tc: Table of Contents

Ss: Sample Summary

Cn: Case Narrative

Sr: Sample Results

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1805671-03 L989681-03

1805671-04 L989681-04

Qc: Quality Control Summary

Wet Chemistry by Method 130.1

Metals (ICP) by Method 200.7

Gl: Glossary of Terms

Al: Accreditations & Locations

Sc: Sample Chain of Custody



May 14, 2019

Alabama Department of Environmental Management
PO Box 301463
1400 Coliseum Boulevard
Montgomery, AL 36110

ATTEN: Ms. Cammie Ashmore

**Reference: MS4 Annual Report 2018/2019 Period
City of Tuscumbia Separate Storm Sewer System
NPDES #ALR040022
Colbert County (33)**

Dear Ms. Ashmore,

On the behalf of the *City of Tuscumbia*, please find enclosed a copy of the supporting material regarding the above reference Annual Report.

If you have any questions, please feel free to contact me by phone at 256.566.9220 or by email at rmcwhorter@enersolv.com

Sincerely,

A handwritten signature in blue ink that reads "Ricky McWhorter". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Ricky McWhorter
Sr. Environmental Project Scientist
ENERSOLV CORP



Welcome to

Tuscumbia, *Alabama*

Charm of the Shoals



2018/2019

City of Tuscumbia
NPDES Permit # ALR040022
Annual Report

Submitted by the Stormwater Advisory Committee

Prepared by:

Prepared by: ENERSOLV CORP



2018/2019

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Welcome to

Tuscumbia *Alabama*

Charm of the Shoals

City of Tuscumbia

Annual Report General Permit for Phase II
Municipal Separate Storm Sewer Systems
(MS4) NPDES Permit No. ALR 040022

May 14, 2019

Submitted by:

City of Tuscumbia:



Katherine Logan
Chairperson Pro Tempore

Tuscumbia Stormwater Advisory Committee:

William Foster, Board Member

Robert Mitchell, Board Member

Ron Kirkland, Board Member

Prepared for the City of Tuscumbia by: ENERSOLV CORP




Ricky McWhorter, Sr. Environmental Project Scientist

I certify under penalty of law that I have reviewed this Annual Report and all attachments contained in the appendix thereto and that the same are true and correct. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Dated this the day May 14, 2019

City of Tuscumbia





Katherine Logan
Chairperson Pro Tempore


Tuscumbia Stormwater Advisory Committee

William Foster, Board Member

Robert Mitchell, Board Member

Ron Kirkland, Board Member



Introduction

This Annual Report was developed in accordance with the guidelines provided in Title 40 Code of Federal Regulations (CFR), Part 122.26(b)(16) which authorizes discharges of stormwater from small MS4s incorporated by reference in the Alabama Administrative Code 335-6 as administered by the Alabama Department of Environmental Management (ADEM) and NPDES ALR040022 Phase II General Permit effective October 1, 2016.

The City of Tuscumbia has completed this Annual Report in Compliance with Part V. C. Reporting of the NPDES Phase II Permit No. ALR040022. The purpose of this Annual Report is to describe the compliance efforts reflected in the City's Storm Water Management Plan (SWMP) and to better understand the need for additional compliance measure. It also gives the Stormwater Committee (SWC) an opportunity to evaluate compliance, and to propose additional controls, activities and documentation. The permit requires that the City of Tuscumbia to submit an annual report to ADEM each year by May 31st. The Annual Reports cover the year (April 1 - March 31) prior to the submittal date. This annual report covers the period from April 1, 2018 to March 31, 2019. In accordance with the requirements of the permit, the Annual Report includes the following:

- The status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs, progress towards achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Possible (MEP), and the measurable goals for each of the minimum control measures;
- Results of information collected and analyzed, if any, during the reporting period,
- including any monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP;
- A summary of the stormwater activities we plan to undertake during the next reporting cycle (including an implementation schedule).
- Proposed changes to the SMWP, including changes to any BMPs or any identified measurable goals that apply to the program elements;
- Notice that we are relying on another government entity to satisfy some permit obligations (if applicable); and
- All monitoring results collected during the previous year in accordance with Part V, if applicable. The monitoring reports shall be submitted in a format acceptable to the Department.

These elements will be addressed within the Annual Report and in each section detailing the implementation of the six minimum measures:

- I. Public Education and Public Involvement
- II. Illicit Discharge Detection and Elimination
- III. Erosion and Sedimentation Controls
- IV. Post-Construction Storm Water Runoff Control
- V. Pollution Prevention and Good Housekeeping

MS4 Description

The City of Tuscumbia is a mixed-used community consisting of urban, residential, and light industry located Colbert County, Alabama comprised of approximately 22.8 km². Tuscumbia is located northeast of the center of Colbert County at 34°43'51"N 87°42'10"W (34.730839, -87.702854). It is bordered to the north by the city of Sheffield and to the northeast by the city of Muscle Shoals. The Tennessee River is 1 mile (1.6 km) to the northwest. The main receiving stream is Spring Creek which flows through the center of the City.

Evaluation Discussion

The Tuscumbia MS4 Program continues to make significant strides in the past few years in working toward achieving improvements regarding its NPDES Phase II MS4 Permit. Since the permit reissuance in October 2016, a more defined program is being implemented pursuant to the Storm Water Management Plan (SWMP) related to public involvement, illicit discharges, construction stormwater, good housekeeping and stream monitoring. In July 2017, the SWC began the Spring Creek stream monitoring - 303(d) listed for agricultural impairments - and city point source monitoring programs in partnership with Enersolv Corporation - acting as an environmental consulting agency to help with compliance issues. However, significant strides have been made; there are still areas that need more focus such as public involvement, stormwater inspections and enforcement.

In the next coming reporting period, the program will focus on public participation activities and outreach, construction stormwater compliance, stream monitoring, record keeping, and a SWMP update.

The City of Tuscumbia has entered an agreement with Enersolv Corp to help manage the MS4 Program. As part of this program, Enersolv is planning to augment construction stormwater enforcement by conducting inspections, and work with file management. They also plan to update the current SWMP to be more representative of current challenges.

City of Tuscumbia

Alabama NPDES Phase II Annual Report Permit # ALR040022

May 14, 2019

This report documents the activities related to each of the 6 Minimum Control Measures, including the BMP and rationale statement, as required by the City of Tuscumbia's NPDES Stormwater (MS4) permit.

The Appendix includes documentation of the action items and the Spring Creek monitoring plan and data information.

I Public Education and Outreach

BMP No. 1- Mail out flyers to homes and businesses two times per year.

Challenges: The primary source of pollution addressed by public education and outreach is trash, litter, soil disturbances, chemicals, and individual oil changes.

BMP Rationale: The problems addressed by this BMP are most common to residences and businesses in this area. Correcting these problems will go a long way toward cleaning up the waters in this area. The published information reaches a large segment of the population by placing billboards and signs at strategic locations and coordinating with "Keep the Shoals Beautiful" and the Chamber of Commerce and Civic Organizations.

Activities:

Ongoing: In previous years, ordinances have been adopted which encourage the limited use of fertilizer, pesticides, and herbicides within the City. The City continues to get involved and support activities and events that educate the public on how litter and pollution control can help the environment.

2018-2019 Activities:

Local News Media Exposure: Tuscumbia Public Works Administrative Assistant was interviewed on June 15, 2018, by WAFF News Channel 48 concerning the 2nd Annual *Chunk the Junk Clean Up Day*. She talked about the effects of stormwater runoff, steps the public can take to prevent stormwater pollution, as well as ways the public can get involved in stormwater program activities such as the Citywide Clean-up Day. (Aired on WAFF 48 June 15, 2018 at 6:00 pm)

Shoals Solid Waste Authority (SSWA): This organization is supported by the City, with funding and drop off locations. Special projects include:

- Mentioned in news articles in the local newspaper (Times Daily)
 - "City Cleanup Day" (6/14/18)

- "Council Facebook Stream" - 5365 Total Followers
- Helped Sponsor Community Events
 - "Shoals Earth Month" (April 2018)
 - "Shoals Earth Day Fest" (4/7/18) <http://quadcitiesdaily.com/?p=448253>
(See Appendix A photo)
 - "Jazz it up with Trash" https://www.timesdaily.com/gallery/news/jazz-it-up-with-trash/collection_ed92491e-f561-11e2-ab7d-0019bb30f31a.html

Webpage Update: Continuous updates are ongoing. (Total views 5722)

- Home Page Focus Element Links:
http://cityoftuscumbia.org/?page_id=89
 - Stormwater Management Plan 2011-2015
 - 2014-2015 SWMP Annual Report
 - 2015-2016 MS4 Annual Report
 - Removal of Trash, Waste, and Debris Ordinance
 - Sewer Do's and Dont's
 - Storm Water FAQs
 - Basic Report FINAL 05 15 2018
 - Basic Report FINAL 07 13 2018
 - Basic Report FINAL 09 04 2018
 - Spring Creek Analytical Report October 2018
 - 2018 Annual MS4 Report
- Buildings & Permit Page Focus Elements Links:
http://cityoftuscumbia.org/?page_id=2151
 - Ordinance for Illicit Discharge
 - Ordinance for Stormwater Operation
 - Ordinance for Erosion and Sediment Control
 - SWMPP Jan 8, 2017
 - Contacts for IDDE
 - 1709973 Basic Report FINAL 07 26 2017 1048
 - 1710072 Basic Report FINAL 08 01 2017 0949
 - 1710509 Basic Report FINAL 08 07 2017 1704
 - 1710508 Basic Report FINAL 08 08 2017 1018
 - 1712220 Basic Report FINAL 09 11 2017 1520
 - 1712221 Basic Report FINAL 09 07 2017 1523

The following events and distributed literature related to recycling:

- *Helen Keller Festival*
- *W.C. Handy Festival*

- *Shoals Earth Day*
- *Earth Day* – 4/22/2018
- Partner with Keep the Shoals Beautiful-Platinum Leaf Sponsor of the Tennessee River Litter Tournament on 9/15/18

Citywide Cleanup Day “Chunk the Junk”: Organized and implemented a City Cleanup day in which 392 lbs of trash and debris was recovered around the City. 6/16/18. See City of Tusculmbia Facebook page links below. (See Appendix A photo)

<https://www.facebook.com/TuscumbiaSanitation/>

“Keep the Shoals Beautiful” (KTSB): This organization is supported by the City with annual financial support for public education. Special projects included:

- Provided sign advertising encouraging citizens to stop litter and keep the Shoals area clean.

“Annual Tennessee Litter Tournament”: Event participation as a sponsor with KTSB.

<https://www.quadcities.com/?p=476247>

Signs: The City continues to maintain various anti-litter signs throughout the area to remind people to keep the Shoals clean. "Do Not Dump" and "Do Not Litter" signs were replaced and installed in various places. The Street Department also continues to install tags on storm drain inlets and junction boxes to warn the public that drainage enters waterways and discourage dumping. (See Appendix A)

Brochures, Flyers, Etc.: Materials are displayed at the utility department and the building department for citizens to pick up. Information related to stormwater management is shared with civic organizations such as Kiwanis Club and Civitan Club.

Utility Bills Notifications: Statements asking for citizens to help prevent stormwater pollution and describing actions to take are periodically placed on utility bills before mailing – 8/28/18 & 9/28/18 (See Appendix A for copy of utility bill).

BMP No. 2: Run-Off Reduction/ Permeable Pavement

Challenge: The main source of pollution addressed by this BMP is soil erosion during construction.

BMP Rationale: Most of the soil erosion and introduction of silt into the stormwater system is due to construction activities which disturb the landscape. By placing restrictions of this BMP on contractors and developers, soil erosion will be better managed and improve water quality. Requirements are outlined in the subdivision regulations, SWMP, and the new stormwater ordinances.

Activities:

Ongoing: Regulations and ordinances now dictate that contractors and developers will adhere to the rules which have been adopted to control erosion. The City requires engineers to provide monthly inspection reports for the City to review. The City's staff also provided inspection and enforcement of the rules. BMP for each project exceeding 1 acre is required and is reviewed by the City Review office. Permits are required before excavation or prior to any soil disturbance.

2019-2019 Activities: The frequency of action is continual. Every construction project is reviewed for compliance with the city regulations. See link for City Ordinances related to erosion control:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Erosion_and_Sediment_Control.pdf

BMP No. 4 - Storm Drain Inlet Protection and Public Awareness

Challenge: Storm drains are an easy and visible way to dump unwanted materials. However, when the public is made aware that the storm drains lead to creeks and rivers, they are less likely to dump materials in the storm drains.

BMP Rationale: To make the public aware of the harm to dumping material in the storm drain.

Activities:

Ongoing - Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city. (See Appendix A photo)

Ongoing - Increased the number of participation in specific events

Ongoing - Continuing to work with KTSB to educate the public

Extra Information:

Stormwater FAQs and Sewer Do's and Don'ts were published on the City's website for the public. See link <https://www.docdroid.net/Byvx5hK/tuscumbia-sewer-dos-and-donts.pdf>

Tuscumbia Street and Sanitation Department posted a notice to public on its Facebook page to contact the Tuscumbia Street and Sanitation Department if they had a sewer problem at their home or business before calling a plumbing contractor.

Measure specific activities planned for the next reporting period

During this next reporting period, City of Tuscumbia plans to continue to promote the MS4 Public Education and Outreach best management measures to include at a minimum:

1. Continue ongoing activities related to public education and outreach.
2. Continue to work with KTSB to help initiate public education and outreach programs.
3. Increase the number of participations in specific events.
4. Increase the efficiency of record keeping and documentation related to public education activities.
5. Continue working to label storm drain inlets to promote public education regarding impacts.

II. Public Involvement and Participation

Challenge: The challenge addressed in this BMP is associated mainly with littering by the public and the general disregard for erosion and pollution problems.

BMP Rationale: The rationale for this BMP is to create ownership and transparency for citizens. That is, the more they are involved with the decision-making process and cleanup activities, the more they will be aware of the problems related to litter and erosion. Public involvement and participation helps to increase general awareness and concern over these issues. These activities also involve environmentally concerned individuals and help get citizens involved in reporting violations to be enforced by City officials.

Activities:

Ongoing: Citizens are encouraged to clean up their areas and to stop littering and notify City officials of littering and erosion issues. The City has also participated in the Groundwater Guardian Program which is a committee of local officials, business owners, and concerned citizens that implements educational programs for children and adults about the importance of protecting the natural groundwater resources in the area. This committee continues to distribute literature and promote education programs.

2018-2019 Activities:

Public Hearing: Scheduled for every other year and was last held on 2/17/17, and we proposed to have one during the 2019 calendar year. Stormwater Committee presented to City Council and the public the goals of and objectives of the SWMPP and reduction of stormwater impacts.

Shoals Solid Waste Authority (SSWA): This organization is supported by the City with funding and to help with drop off locations. Special projects include:

- Distributed brochures and other materials to the general public on recycling at several public events in the area throughout the year. Also provided recycle bins during community events.

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special public involvement projects included:

- Organized and implemented the 2nd Annual "Chuck the Junk Citywide Cleanup" day in which 392 lbs of trash and debris was recovered around the City. 6/19/18, See City of Tuscumbia Facebook page link:
http://cityoftuscumbia.org/?page_id=89 (See Appendix A)
- Sponsored an Earth Day event on 4/7/18. (Sponsor with KTSB)
- Assisted other organizations with clean-up events: Participated in the *Annual Tennessee Litter Tournament* for the Shoals – 8/22/18
- Collected over 15,163 pounds of debris within the City of Tuscumbia by employees in which the *Shoals Solid Waste Authority* collects from the City

BMP No. 2: Stenciling at Stormwater Inlets

Challenge: The challenge addressed in this BMP is associated mainly with illicit dumping by the general public into stormwater system inlets. Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city.

BMP Rationale: The rationale for this BMP is to make citizens aware that whatever enters a stormwater inlet may eventually enter our rivers and streams. This awareness should reduce the amount of illicit discharges by the general public.

Activities:

2018-2019 Activities: The City of Tuscumbia Public Works Department continues to maintain and install curb tags at storm drains around the City.

BMP No. 3 - Art Contest at Elementary Schools

Challenge: The challenge addressed in this BMP is associated mainly with littering and the general disregard for pollution problems.

BMP Rationale: the rationale for this BMP is that good habits are best learned at a young age. If our children can be involved in litter prevention and become aware of the issues related to pollution, they will be more proactive as adults.

Activities:

2018-2019 Activities:

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special projects focusing on elementary schools include:

- *"Cleanup Campus Contest"* for all Tuscumbia elementary students. This contest provided an opportunity to win the *Steve Trash Award* in which G.W. Trenholm from Tuscumbia was the winner.

Measure specific activities planned for the next reporting period

Tuscumbia will continue to implement the Public Involvement & Participation measures as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue to work with the Groundwater Guardian Program.
2. Continue to work with the Shoals Solid Waste Authority (SSWA) in partnership regarding public awareness of water quality and litter control.
3. Continue to work with the Keep the Shoals Beautiful (KTSB) in partnership regarding public awareness of water quality and litter control.
4. Work with local schools regarding public awareness of water quality and litter control.
5. Continue to increase the efficiency of record keeping and documentation related to public awareness activities.

III. Illicit Discharge Detection & Elimination**BMP No. 1: Enforcement Personnel to Re-certify QCI**

Challenge: The problem addressed with this BMP is the lack of training regarding the effects of illicit discharges, proper BMP measures and the lack of enforcement of City ordinances.

BMP Rationale: The rationale for this BMP is that an enforcement process is necessary to work toward eliminating the problem associated with illicit discharges. City officials will be informed and trained regarding the hazards associated with illicit discharges and proper BMP measures.



May 14, 2019

Alabama Department of Environmental Management
PO Box 301463
1400 Coliseum Boulevard
Montgomery, AL 36110

ATTEN: Ms. Cammie Ashmore

**Reference: MS4 Annual Report 2018/2019 Period
City of Tuscumbia Separate Storm Sewer System
NPDES #ALR040022
Colbert County (33)**

Dear Ms. Ashmore,

On the behalf of the *City of Tuscumbia*, please find enclosed a copy of the supporting material regarding the above reference Annual Report.

If you have any questions, please feel free to contact me by phone at 256.566.9220 or by email at rmcwhorter@enersolv.com

Sincerely,

A handwritten signature in blue ink that reads 'Ricky McWhorter'.

Ricky McWhorter
Sr. Environmental Project Scientist
ENERSOLV CORP

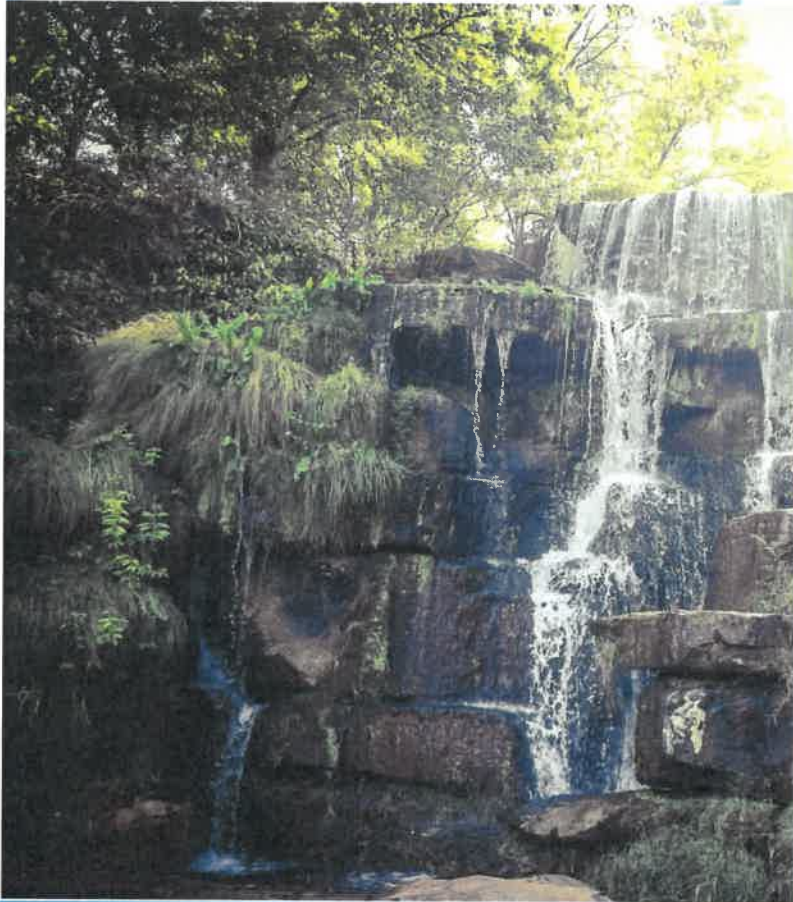


City of Tuscumbia

Welcome to

Tuscumbia, *Alabama*

Charm of the Shoals



2018/2019

City of Tuscumbia
NPDES Permit # ALR040022
Annual Report

Submitted by the Stormwater Advisory Committee

Prepared by:

Prepared by: ENERSOLV CORP



2018/2019

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Tuscumbia *Naturae*

Charm of the Shoals

City of Tuscumbia

Annual Report General Permit for Phase II
Municipal Separate Storm Sewer Systems
(MS4) NPDES Permit No. ALR 040022

May 14, 2019

Submitted by:

City of Tuscumbia:



Katherine Logan
Chairperson Pro Tempore

Tuscumbia Stormwater Advisory Committee:

William Foster, Board Member

Robert Mitchell, Board Member

Ron Kirkland, Board Member



Prepared for the City of Tuscumbia by: ENERSOLV CORP

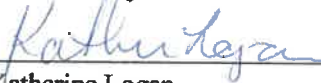


Ricky McWhorter, Sr. Environmental Project Scientist

I certify under penalty of law that I have reviewed this Annual Report and all attachments contained in the appendix thereto and that the same are true and correct. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Dated this the day May 14, 2019

City of Tuscumbia



Katherine Logan
Chairperson Pro Tempore

Tuscumbia Stormwater Advisory Committee

William Foster, Board Member

Robert Mitchell, Board Member

Ron Kirkland, Board Member





Introduction

This Annual Report was developed in accordance with the guidelines provided in Title 40 Code of Federal Regulations (CFR), Part 122.26(b)(16) which authorizes discharges of stormwater from small MS4s incorporated by reference in the Alabama Administrative Code 335-6 as administered by the Alabama Department of Environmental Management (ADEM) and NPDES ALR040022 Phase II General Permit effective October 1, 2016.

The City of Tuscumbia has completed this Annual Report in Compliance with Part V. C. Reporting of the NPDES Phase II Permit No. ALR040022. The purpose of this Annual Report is to describe the compliance efforts reflected in the City's Storm Water Management Plan (SWMP) and to better understand the need for additional compliance measure. It also gives the Stormwater Committee (SWC) an opportunity to evaluate compliance, and to propose additional controls, activities and documentation. The permit requires that the City of Tuscumbia to submit an annual report to ADEM each year by May 31st. The Annual Reports cover the year (April 1 - March 31) prior to the submittal date. This annual report covers the period from April 1, 2018 to March 31, 2019. In accordance with the requirements of the permit, the Annual Report includes the following:

- The status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs, progress towards achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Possible (MEP), and the measurable goals for each of the minimum control measures;
- Results of information collected and analyzed, if any, during the reporting period,
- including any monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP;
- A summary of the stormwater activities we plan to undertake during the next reporting cycle (including an implementation schedule).
- Proposed changes to the SMWP, including changes to any BMPs or any identified measurable goals that apply to the program elements;
- Notice that we are relying on another government entity to satisfy some permit obligations (if applicable); and
- All monitoring results collected during the previous year in accordance with Part V, if applicable. The monitoring reports shall be submitted in a format acceptable to the Department.

These elements will be addressed within the Annual Report and in each section detailing the implementation of the six minimum measures:

- I. Public Education and Public Involvement
- II. Illicit Discharge Detection and Elimination
- III. Erosion and Sedimentation Controls
- IV. Post-Construction Storm Water Runoff Control
- V. Pollution Prevention and Good Housekeeping

MS4 Description

The City of Tuscumbia is a mixed-used community consisting of urban, residential, and light industry located Colbert County, Alabama comprised of approximately 22.8 km². Tuscumbia is located northeast of the center of Colbert County at 34°43'51"N 87°42'10"W (34.730839, -87.702854). It is bordered to the north by the city of Sheffield and to the northeast by the city of Muscle Shoals. The Tennessee River is 1 mile (1.6 km) to the northwest. The main receiving stream is Spring Creek which flows through the center of the City.

Evaluation Discussion

The Tuscumbia MS4 Program continues to make significant strides in the past few years in working toward achieving improvements regarding its NPDES Phase II MS4 Permit. Since the permit reissuance in October 2016, a more defined program is being implemented pursuant to the Storm Water Management Plan (SWMP) related to public involvement, illicit discharges, construction stormwater, good housekeeping and stream monitoring. In July 2017, the SWC began the Spring Creek stream monitoring - 303(d) listed for agricultural impairments - and city point source monitoring programs in partnership with Enersolv Corporation - acting as an environmental consulting agency to help with compliance issues. However, significant strides have been made; there are still areas that need more focus such as public involvement, stormwater inspections and enforcement.

In the next coming reporting period, the program will focus on public participation activities and outreach, construction stormwater compliance, stream monitoring, record keeping, and a SWMP update.

The City of Tuscumbia has entered an agreement with Enersolv Corp to help manage the MS4 Program. As part of this program, Enersolv is planning to augment construction stormwater enforcement by conducting inspections, and work with file management. They also plan to update the current SWMP to be more representative of current challenges.

City of Tuscumbia

Alabama NPDES Phase II Annual Report Permit # ALR040022

May 14, 2019

This report documents the activities related to each of the 6 Minimum Control Measures, including the BMP and rationale statement, as required by the City of Tuscumbia's NPDES Stormwater (MS4) permit.

The Appendix includes documentation of the action items and the Spring Creek monitoring plan and data information.

I Public Education and Outreach

BMP No. 1- Mail out flyers to homes and businesses two times per year.

Challenges: The primary source of pollution addressed by public education and outreach is trash, litter, soil disturbances, chemicals, and individual oil changes.

BMP Rationale: The problems addressed by this BMP are most common to residences and businesses in this area. Correcting these problems will go a long way toward cleaning up the waters in this area. The published information reaches a large segment of the population by placing billboards and signs at strategic locations and coordinating with "Keep the Shoals Beautiful" and the Chamber of Commerce and Civic Organizations.

Activities:

Ongoing: In previous years, ordinances have been adopted which encourage the limited use of fertilizer, pesticides, and herbicides within the City. The City continues to get involved and support activities and events that educate the public on how litter and pollution control can help the environment.

2018-2019 Activities:

Local News Media Exposure: Tuscumbia Public Works Administrative Assistant was interviewed on June 15, 2018, by WAFF News Channel 48 concerning the 2nd Annual *Chunk the Junk Clean Up Day*. She talked about the effects of stormwater runoff, steps the public can take to prevent stormwater pollution, as well as ways the public can get involved in stormwater program activities such as the Citywide Clean-up Day. (Aired on WAFF 48 June 15, 2018 at 6:00 pm)

Shoals Solid Waste Authority (SSWA): This organization is supported by the City, with funding and drop off locations. Special projects include:

- Mentioned in news articles in the local newspaper (Times Daily)
 - "City Cleanup Day" (6/14/18)

- "Council Facebook Stream" - 5365 Total Followers
- Helped Sponsor Community Events
 - "Shoals Earth Month" (April 2018)
 - "Shoals Earth Day Fest" (4/7/18) <http://quadcitiesdaily.com/?p=448253>
(See Appendix A photo)
 - "Jazz it up with Trash" https://www.timesdaily.com/gallery/news/jazz-it-up-with-trash/collection_ed92491e-f561-11e2-ab7d-0019bb30f31a.html

Webpage Update: Continuous updates are ongoing. (Total views 5722)

- Home Page Focus Element Links:
 - http://cityoftuscumbia.org/?page_id=89
 - Stormwater Management Plan 2011-2015
 - 2014-2015 SWMP Annual Report
 - 2015-2016 MS4 Annual Report
 - Removal of Trash, Waste, and Debris Ordinance
 - Sewer Do's and Dont's
 - Storm Water FAQs
 - Basic Report FINAL 05 15 2018
 - Basic Report FINAL 07 13 2018
 - Basic Report FINAL 09 04 2018
 - Spring Creek Analytical Report October 2018
 - 2018 Annual MS4 Report
- Buildings & Permit Page Focus Elements Links:
 - http://cityoftuscumbia.org/?page_id=2151
 - Ordinance for Illicit Discharge
 - Ordinance for Stormwater Operation
 - Ordinance for Erosion and Sediment Control
 - SWMPP Jan 8, 2017
 - Contacts for IDDE
 - 1709973 Basic Report FINAL 07 26 2017 1048
 - 1710072 Basic Report FINAL 08 01 2017 0949
 - 1710509 Basic Report FINAL 08 07 2017 1704
 - 1710508 Basic Report FINAL 08 08 2017 1018
 - 1712220 Basic Report FINAL 09 11 2017 1520
 - 1712221 Basic Report FINAL 09 07 2017 1523

The following events and distributed literature related to recycling:

- *Helen Keller Festival*
- *W.C. Handy Festival*

- *Shoals Earth Day*
- *Earth Day* – 4/22/2018
- Partner with Keep the Shoals Beautiful-Platinum Leaf Sponsor of the Tennessee River Litter Tournament on 9/15/18

Citywide Cleanup Day “Chunk the Junk”: Organized and implemented a City Cleanup day in which 392 lbs of trash and debris was recovered around the City. 6/16/18. See City of Tuscumbia Facebook page links below. (See Appendix A photo)

<https://www.facebook.com/TuscumbiaSanitation/>

“Keep the Shoals Beautiful” (KTSB): This organization is supported by the City with annual financial support for public education. Special projects included:

- Provided sign advertising encouraging citizens to stop litter and keep the Shoals area clean.

“Annual Tennessee Litter Tournament”: Event participation as a sponsor with KTSB.

<https://www.quadcities.com/?p=476247>

Signs: The City continues to maintain various anti-litter signs throughout the area to remind people to keep the Shoals clean. "Do Not Dump" and "Do Not Litter" signs were replaced and installed in various places. The Street Department also continues to install tags on storm drain inlets and junction boxes to warn the public that drainage enters waterways and discourage dumping. (See Appendix A)

Brochures, Flyers, Etc.: Materials are displayed at the utility department and the building department for citizens to pick up. Information related to stormwater management is shared with civic organizations such as Kiwanis Club and Civitan Club.

Utility Bills Notifications: Statements asking for citizens to help prevent stormwater pollution and describing actions to take are periodically placed on utility bills before mailing – 8/28/18 & 9/28/18 (See Appendix A for copy of utility bill).

BMP No. 2: Run-Off Reduction/ Permeable Pavement

Challenge: The main source of pollution addressed by this BMP is soil erosion during construction.

BMP Rationale: Most of the soil erosion and introduction of silt into the stormwater system is due to construction activities which disturb the landscape. By placing restrictions of this BMP on contractors and developers, soil erosion will be better managed and improve water quality. Requirements are outlined in the subdivision regulations, SWMP, and the new stormwater ordinances.

Activities:

Ongoing: Regulations and ordinances now dictate that contractors and developers will adhere to the rules which have been adopted to control erosion. The City requires engineers to provide monthly inspection reports for the City to review. The City's staff also provided inspection and enforcement of the rules. BMP for each project exceeding 1 acre is required and is reviewed by the City Review office. Permits are required before excavation or prior to any soil disturbance.

2019-2019 Activities: The frequency of action is continual. Every construction project is reviewed for compliance with the city regulations. See link for City Ordinances related to erosion control:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Erosion_and_Sediment_Control.pdf

BMP No. 4 - Storm Drain Inlet Protection and Public Awareness

Challenge: Storm drains are an easy and visible way to dump unwanted materials. However, when the public is made aware that the storm drains lead to creeks and rivers, they are less likely to dump materials in the storm drains.

BMP Rationale: To make the public aware of the harm to dumping material in the storm drain.

Activities:

Ongoing - Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city. (See Appendix A photo)

Ongoing - Increased the number of participation in specific events

Ongoing - Continuing to work with KTSB to educate the public

Extra Information:

Stormwater FAQs and Sewer Do's and Don'ts were published on the City's website for the public. See link <https://www.docdroid.net/Byvx5hK/tuscumbia-sewer-dos-and-donts.pdf>

Tuscumbia Street and Sanitation Department posted a notice to public on its Facebook page to contact the Tuscumbia Street and Sanitation Department if they had a sewer problem at their home or business before calling a plumbing contractor.

Measure specific activities planned for the next reporting period

During this next reporting period, City of Tuscumbia plans to continue to promote the MS4 Public Education and Outreach best management measures to include at a minimum:

1. Continue ongoing activities related to public education and outreach.
2. Continue to work with KTSB to help initiate public education and outreach programs.
3. Increase the number of participations in specific events.
4. Increase the efficiency of record keeping and documentation related to public education activities.
5. Continue working to label storm drain inlets to promote public education regarding impacts.

II. Public Involvement and Participation

Challenge: The challenge addressed in this BMP is associated mainly with littering by the public and the general disregard for erosion and pollution problems.

BMP Rationale: The rationale for this BMP is to create ownership and transparency for citizens. That is, the more they are involved with the decision-making process and cleanup activities, the more they will be aware of the problems related to litter and erosion. Public involvement and participation helps to increase general awareness and concern over these issues. These activities also involve environmentally concerned individuals and help get citizens involved in reporting violations to be enforced by City officials.

Activities:

Ongoing: Citizens are encouraged to clean up their areas and to stop littering and notify City officials of littering and erosion issues. The City has also participated in the Groundwater Guardian Program which is a committee of local officials, business owners, and concerned citizens that implements educational programs for children and adults about the importance of protecting the natural groundwater resources in the area. This committee continues to distribute literature and promote education programs.

2018-2019 Activities:

Public Hearing: Scheduled for every other year and was last held on 2/17/17, and we proposed to have one during the 2019 calendar year. Stormwater Committee presented to City Council and the public the goals of and objectives of the SWMPP and reduction of stormwater impacts.

Shoals Solid Waste Authority (SSWA): This organization is supported by the City with funding and to help with drop off locations. Special projects include:

- Distributed brochures and other materials to the general public on recycling at several public events in the area throughout the year. Also provided recycle bins during community events.

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special public involvement projects included:

- Organized and implemented the 2nd Annual "Chuck the Junk Citywide Cleanup" day in which 392 lbs of trash and debris was recovered around the City. 6/19/18, See City of Tuscumbia Facebook page link:
http://cityoftuscumbia.org/?page_id=89 (See Appendix A)
- Sponsored an Earth Day event on 4/7/18. (Sponsor with KTSB)
- Assisted other organizations with clean-up events: Participated in the *Annual Tennessee Litter Tournament* for the Shoals – 8/22/18
- Collected over 15,163 pounds of debris within the City of Tuscumbia by employees in which the *Shoals Solid Waste Authority* collects from the City

BMP No. 2: Stenciling at Stormwater Inlets

Challenge: The challenge addressed in this BMP is associated mainly with illicit dumping by the general public into stormwater system inlets. Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city.

BMP Rationale: The rationale for this BMP is to make citizens aware that whatever enters a stormwater inlet may eventually enter our rivers and streams. This awareness should reduce the amount of illicit discharges by the general public.

Activities:

2018-2019 Activities: The City of Tuscumbia Public Works Department continues to maintain and install curb tags at storm drains around the City.

BMP No. 3 - Art Contest at Elementary Schools

Challenge: The challenge addressed in this BMP is associated mainly with littering and the general disregard for pollution problems.

BMP Rationale: the rationale for this BMP is that good habits are best learned at a young age. If our children can be involved in litter prevention and become aware of the issues related to pollution, they will be more proactive as adults.

Activities:

2018-2019 Activities:

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special projects focusing on elementary schools include:

- "*Cleanup Campus Contest*" for all Tuscumbia elementary students. This contest provided an opportunity to win the *Steve Trash Award* in which G.W. Trenholm from Tuscumbia was the winner.

Measure specific activities planned for the next reporting period

Tuscumbia will continue to implement the Public Involvement & Participation measures as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue to work with the Groundwater Guardian Program.
2. Continue to work with the Shoals Solid Waste Authority (SSWA) in partnership regarding public awareness of water quality and litter control.
3. Continue to work with the Keep the Shoals Beautiful (KTSB) in partnership regarding public awareness of water quality and litter control.
4. Work with local schools regarding public awareness of water quality and litter control.
5. Continue to increase the efficiency of record keeping and documentation related to public awareness activities.

III. Illicit Discharge Detection & Elimination**BMP No. 1: Enforcement Personnel to Re-certify QCI**

Challenge: The problem addressed with this BMP is the lack of training regarding the effects of illicit discharges, proper BMP measures and the lack of enforcement of City ordinances.

BMP Rationale: The rationale for this BMP is that an enforcement process is necessary to work toward eliminating the problem associated with illicit discharges. City officials will be informed and trained regarding the hazards associated with illicit discharges and proper BMP measures.

Activities:

Ongoing: All ordinance requirements related to illicit discharges were completed prior to 2010. Mr. Greg Willingham with the City of Tuscumbia is responsible for BMP review and code enforcements. See webpage link:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Illicit_Discharge.pdf

2018-2019 Activities: Greg Willingham was certified as QCI on April 28, 2018 QCI#73967. (See Appendix B for certificate copy)

BMP No. 2: Site Inspections - Industrial, Commercial, Construction Sites

Challenge: The problem addressed with this BMP is the illicit discharge by industrial, commercial sites, and construction sites into the City stormwater system.

BMP Rationale: The rationale for this BMP is that an inspection process is necessary to identify illicit discharges and enable the City to enforce the ordinances related to such discharges.

Activities:

Ongoing: Greg Willingham was recertified on April 28, 2018 QCI#73967. The City continues to conduct routine inspections of the stormwater discharge points and other sites. The records of certifications and facility inspections are kept on file at City Hall.

2018-2019 Activities: The City's QCIs conducted approximately 93 onsite construction site inspections and observations. There were no referrals based on inspections. There were no construction site complaints received during the reporting year.

BMP No. 3: Stormwater Runoff Sampling & 303(d) Spring Creek Stream Sampling

Challenges: The problem addressed with this BMP is stream contamination caused by illicit discharges and stormwater runoff.

BMP Rationale: The rationale for this BMP is that sampling and testing stormwater at the known outfall of the City's stormwater system will help to identify issues so further inspection and enforcement can take place. Also, seasonal monthly stormwater sampling will be conducted on Spring Creek at specific locations identified in the SWMPP during seasonal months triggered by rainfall and dry events.

Activities:

Ongoing: GIS mapped has occurred on approximately 50% of the city's stormwater drain inlets and the stormwater collection system and a map was created. Locations along Spring Creek have been delineated as seasonal sampling points and they continue to be monitored for City impact.

2018-2019 Activities: According to the SWMPP, four locations along Spring Creek were chosen as required by the SWMPP related to 303(d) listing requirements. According to the data collected, it again appears that the City of Tuscumbia is not a significant contributor to the current 303(d) impairments. Monitoring is planned during the 2019 monitoring to continue to evaluate potential sources and impacts. (See Appendix C for data and 2018/2019 Sampling Plan)

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue the Illicit Discharge Detection and Elimination measures as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue to promote the objectives of the measure through education and outreach activities.
2. Train additional City personnel to support the IDDE control measures.
3. Increase the quantity of training to support the IDDE control measures.
4. Increase the efficiency of record keeping and documentation related to IDDE activities.

IV. Construction Site Stormwater Runoff Control

BMP No. 1: Construction Sites Permitted by City and ADEM

Challenge: The challenge addressed with this BMP is the runoff of silt and other illicit discharges into the City stormwater system from construction sites.

BMP Rationale: The rationale for this BMP is that by requiring contractors to follow the permitting process for stormwater runoff, they will be given the proper BMP measures to follow to minimize erosion and illicit discharges. These permits also include regular inspections that will hold them accountable to the permit requirements.

Activities:

Ongoing: The City addresses erosion and sediment controls at construction sites through subdivision regulations and ordinances. These are enforceable by City officials and apply to non-subdivision type construction projects. Mr. Greg Willingham with the City of Tuscumbia is responsible for reviewing all inspection reports, keeping a copy on file and enforcing all related ordinances and regulations. See City Ordinance links for Stormwater Operations and Erosion Control:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Stormwater_Operation.pdf

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Erosion_and_Sediment_Control.pdf

2018-2019 Activities: Approximately 93 onsite construction inspection/observations were recorded as being conducted during the monitoring period. There were no referrals based on inspections. There were no construction site complaints received during the reporting year. Inspection record keeping is located at the Building Department.

Storm drain inspection log was kept by city employees as storm drains were inspected and cleaned. The city recorded 47 inspections during the reporting period.

BMP No. 2: Follow Up on Inspections If Required

Challenge: The challenge addressed with this BMP is the lack of concern of the holder of the stormwater permit to address deficiencies noted in the inspection reports.

BMP Rationale: The rationale for this BMP is that an enforcement process is necessary to ensure compliance with the permitting requirements.



May 14, 2019

Alabama Department of Environmental Management
PO Box 301463
1400 Coliseum Boulevard
Montgomery, AL 36110

ATTEN: Ms. Cammie Ashmore

**Reference: MS4 Annual Report 2018/2019 Period
City of Tuscumbia Separate Storm Sewer System
NPDES #ALR040022
Colbert County (33)**

Dear Ms. Ashmore,

On the behalf of the *City of Tuscumbia*, please find enclosed a copy of the supporting material regarding the above reference Annual Report.

If you have any questions, please feel free to contact me by phone at 256.566.9220 or by email at rmcwhorter@enersolv.com

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ricky McWhorter', is written over a faint circular stamp.

Ricky McWhorter
Sr. Environmental Project Scientist
ENERSOLV CORP



2220 Beltline Road SW • Decatur, Alabama 35601
P.O. Box 1646 • Decatur, Alabama 35602 • (256) 350-0846 • Fax: (256) 350-0686

City of Tuscumbia

Welcome to

Tuscumbia. *Alabama*

Charm of the Shoals



2018/2019

City of Tuscumbia
NPDES Permit # ALR040022
Annual Report

Submitted by the Stormwater Advisory Committee

Prepared by:

Prepared by: ENERSOLV CORP



2018/2019

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Tuscumbia, Alabama

Charm of the Shoals

City of Tuscumbia

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Municipal Separate Storm Sewer Systems
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May 14, 2019

Submitted by:

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Katherine Logan
Chairperson Pro Tempore

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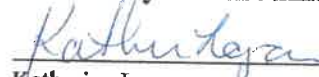
Prepared for the City of Tuscumbia by: ENERSOLV CORP


Ricky McWhorter, Sr. Environmental Project Scientist

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Dated this the day May 14, 2019

City of Tuscumbia

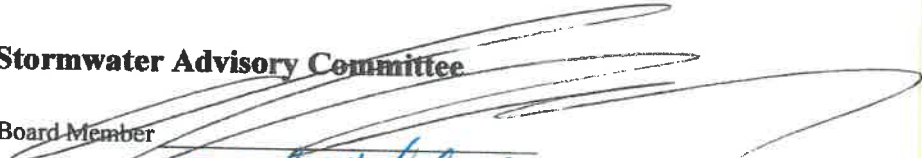



Katherine Logan
Chairperson Pro Tempore

Tuscumbia Stormwater Advisory Committee

William Foster, Board Member

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Ron Kirkland, Board Member

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- including any monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP;
- A summary of the stormwater activities we plan to undertake during the next reporting cycle (including an implementation schedule).
- Proposed changes to the SMWP, including changes to any BMPs or any identified measurable goals that apply to the program elements;
- Notice that we are relying on another government entity to satisfy some permit obligations (if applicable); and
- All monitoring results collected during the previous year in accordance with Part V, if applicable. The monitoring reports shall be submitted in a format acceptable to the Department.

These elements will be addressed within the Annual Report and in each section detailing the implementation of the six minimum measures:

- I. Public Education and Public Involvement
- II. Illicit Discharge Detection and Elimination
- III. Erosion and Sedimentation Controls
- IV. Post-Construction Storm Water Runoff Control
- V. Pollution Prevention and Good Housekeeping

MS4 Description

The City of Tuscumbia is a mixed-used community consisting of urban, residential, and light industry located Colbert County, Alabama comprised of approximately 22.8 km². Tuscumbia is located northeast of the center of Colbert County at 34°43'51"N 87°42'10"W (34.730839, -87.702854). It is bordered to the north by the city of Sheffield and to the northeast by the city of Muscle Shoals. The Tennessee River is 1 mile (1.6 km) to the northwest. The main receiving stream is Spring Creek which flows through the center of the City.

Evaluation Discussion

The Tuscumbia MS4 Program continues to make significant strides in the past few years in working toward achieving improvements regarding it's NPDES Phase II MS4 Permit. Since the permit reissuance in October 2016, a more defined program is being implemented pursuant to the Storm Water Management Plan (SWMP) related to public involvement, illicit discharges, construction stormwater, good housekeeping and stream monitoring. In July 2017, the SWC began the Spring Creek stream monitoring - 303(d) listed for agricultural impairments - and city point source monitoring programs in partnership with Enersolv Corporation - acting as an environmental consulting agency to help with compliance issues. However, significant strides have been made; there are still areas that need more focus such as public involvement, stormwater inspections and enforcement.

In the next coming reporting period, the program will focus on public participation activities and outreach, construction stormwater compliance, stream monitoring, record keeping, and a SWMP update.

The City of Tuscumbia has entered an agreement with Enersolv Corp to help manage the MS4 Program. As part of this program, Enersolv is planning to augment construction stormwater enforcement by conducting inspections, and work with file management. They also plan to update the current SWMP to be more representative of current challenges.

City of Tuscumbia

Alabama NPDES Phase II Annual Report Permit # ALR040022

May 14, 2019

This report documents the activities related to each of the 6 Minimum Control Measures, including the BMP and rationale statement, as required by the City of Tuscumbia's NPDES Stormwater (MS4) permit.

The Appendix includes documentation of the action items and the Spring Creek monitoring plan and data information.

I Public Education and Outreach

BMP No. 1- Mail out flyers to homes and businesses two times per year.

Challenges: The primary source of pollution addressed by public education and outreach is trash, litter, soil disturbances, chemicals, and individual oil changes.

BMP Rationale: The problems addressed by this BMP are most common to residences and businesses in this area. Correcting these problems will go a long way toward cleaning up the waters in this area. The published information reaches a large segment of the population by placing billboards and signs at strategic locations and coordinating with "Keep the Shoals Beautiful" and the Chamber of Commerce and Civic Organizations.

Activities:

Ongoing: In previous years, ordinances have been adopted which encourage the limited use of fertilizer, pesticides, and herbicides within the City. The City continues to get involved and support activities and events that educate the public on how litter and pollution control can help the environment.

2018-2019 Activities:

Local News Media Exposure: Tuscumbia Public Works Administrative Assistant was interviewed on June 15, 2018, by WAFF News Channel 48 concerning the 2nd Annual *Chunk the Junk Clean Up Day*. She talked about the effects of stormwater runoff, steps the public can take to prevent stormwater pollution, as well as ways the public can get involved in stormwater program activities such as the Citywide Clean-up Day. (Aired on WAFF 48 June 15, 2018 at 6:00 pm)

Shoals Solid Waste Authority (SSWA): This organization is supported by the City, with funding and drop off locations. Special projects include:

- Mentioned in news articles in the local newspaper (Times Daily)
 - "City Cleanup Day" (6/14/18)

- "Council Facebook Stream" - 5365 Total Followers
- Helped Sponsor Community Events
 - "Shoals Earth Month" (April 2018)
 - "Shoals Earth Day Fest" (4/7/18) <http://quadcitiesdaily.com/?p=448253>
(See Appendix A photo)
 - "Jazz it up with Trash" https://www.timesdaily.com/gallery/news/jazz-it-up-with-trash/collection_ed92491e-f561-11e2-ab7d-0019bb30f31a.html

Webpage Update: Continuous updates are ongoing. (Total views 5722)

- Home Page Focus Element Links:
 - http://cityoftuscumbia.org/?page_id=89
 - Stormwater Management Plan 2011-2015
 - 2014-2015 SWMP Annual Report
 - 2015-2016 MS4 Annual Report
 - Removal of Trash, Waste, and Debris Ordinance
 - Sewer Do's and Dont's
 - Storm Water FAQs
 - Basic Report FINAL 05 15 2018
 - Basic Report FINAL 07 13 2018
 - Basic Report FINAL 09 04 2018
 - Spring Creek Analytical Report October 2018
 - 2018 Annual MS4 Report
- Buildings & Permit Page Focus Elements Links:
 - http://cityoftuscumbia.org/?page_id=2151
 - Ordinance for Illicit Discharge
 - Ordinance for Stormwater Operation
 - Ordinance for Erosion and Sediment Control
 - SWMPP Jan 8, 2017
 - Contacts for IDDE
 - 1709973 Basic Report FINAL 07 26 2017 1048
 - 1710072 Basic Report FINAL 08 01 2017 0949
 - 1710509 Basic Report FINAL 08 07 2017 1704
 - 1710508 Basic Report FINAL 08 08 2017 1018
 - 1712220 Basic Report FINAL 09 11 2017 1520
 - 1712221 Basic Report FINAL 09 07 2017 1523

The following events and distributed literature related to recycling:

- *Helen Keller Festival*
- *W.C. Handy Festival*

- *Shoals Earth Day*
- *Earth Day – 4/22/2018*
- Partner with Keep the Shoals Beautiful-Platinum Leaf Sponsor of the Tennessee River Litter Tournament on 9/15/18

Citywide Cleanup Day "Chunk the Junk": Organized and implemented a City Cleanup day in which 392 lbs of trash and debris was recovered around the City. 6/16/18. See City of Tuscumbia Facebook page links below. (See Appendix A photo)

<https://www.facebook.com/TuscumbiaSanitation/>

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support for public education. Special projects included:

- Provided sign advertising encouraging citizens to stop litter and keep the Shoals area clean.

"Annual Tennessee Litter Tournament": Event participation as a sponsor with KTSB.

<https://www.quadcities.com/?p=476247>

Signs: The City continues to maintain various anti-litter signs throughout the area to remind people to keep the Shoals clean. "Do Not Dump" and "Do Not Litter" signs were replaced and installed in various places. The Street Department also continues to install tags on storm drain inlets and junction boxes to warn the public that drainage enters waterways and discourage dumping. (See Appendix A)

Brochures, Flyers, Etc.: Materials are displayed at the utility department and the building department for citizens to pick up. Information related to stormwater management is shared with civic organizations such as Kiwanis Club and Civitan Club.

Utility Bills Notifications: Statements asking for citizens to help prevent stormwater pollution and describing actions to take are periodically placed on utility bills before mailing – 8/28/18 & 9/28/18 (See Appendix A for copy of utility bill).

BMP No. 2: Run-Off Reduction/ Permeable Pavement

Challenge: The main source of pollution addressed by this BMP is soil erosion during construction.

BMP Rationale: Most of the soil erosion and introduction of silt into the stormwater system is due to construction activities which disturb the landscape. By placing restrictions of this BMP on contractors and developers, soil erosion will be better managed and improve water quality. Requirements are outlined in the subdivision regulations, SWMP, and the new stormwater ordinances.

Activities:

Ongoing: Regulations and ordinances now dictate that contractors and developers will adhere to the rules which have been adopted to control erosion. The City requires engineers to provide monthly inspection reports for the City to review. The City's staff also provided inspection and enforcement of the rules. BMP for each project exceeding 1 acre is required and is reviewed by the City Review office. Permits are required before excavation or prior to any soil disturbance.

2019-2019 Activities: The frequency of action is continual. Every construction project is reviewed for compliance with the city regulations. See link for City Ordinances related to erosion control:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Erosion_and_Sediment_Control.pdf

BMP No. 4 - Storm Drain Inlet Protection and Public Awareness

Challenge: Storm drains are an easy and visible way to dump unwanted materials. However, when the public is made aware that the storm drains lead to creeks and rivers, they are less likely to dump materials in the storm drains.

BMP Rationale: To make the public aware of the harm to dumping material in the storm drain.

Activities:

Ongoing - Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city. (See Appendix A photo)

Ongoing - Increased the number of participation in specific events

Ongoing - Continuing to work with KTSB to educate the public

Extra Information:

Stormwater FAQs and Sewer Do's and Don'ts were published on the City's website for the public. See link <https://www.docdroid.net/Byvx5hK/tuscumbia-sewer-dos-and-donts.pdf>

Tuscumbia Street and Sanitation Department posted a notice to public on its Facebook page to contact the Tuscumbia Street and Sanitation Department if they had a sewer problem at their home or business before calling a plumbing contractor.

Measure specific activities planned for the next reporting period

During this next reporting period, City of Tuscumbia plans to continue to promote the MS4 Public Education and Outreach best management measures to include at a minimum:

1. Continue ongoing activities related to public education and outreach.
2. Continue to work with KTSB to help initiate public education and outreach programs.
3. Increase the number of participations in specific events.
4. Increase the efficiency of record keeping and documentation related to public education activities.
5. Continue working to label storm drain inlets to promote public education regarding impacts.

II. Public Involvement and Participation

Challenge: The challenge addressed in this BMP is associated mainly with littering by the public and the general disregard for erosion and pollution problems.

BMP Rationale: The rationale for this BMP is to create ownership and transparency for citizens. That is, the more they are involved with the decision-making process and cleanup activities, the more they will be aware of the problems related to litter and erosion. Public involvement and participation helps to increase general awareness and concern over these issues. These activities also involve environmentally concerned individuals and help get citizens involved in reporting violations to be enforced by City officials.

Activities:

Ongoing: Citizens are encouraged to clean up their areas and to stop littering and notify City officials of littering and erosion issues. The City has also participated in the Groundwater Guardian Program which is a committee of local officials, business owners, and concerned citizens that implements educational programs for children and adults about the importance of protecting the natural groundwater resources in the area. This committee continues to distribute literature and promote education programs.

2018-2019 Activities:

Public Hearing: Scheduled for every other year and was last held on 2/17/17, and we proposed to have one during the 2019 calendar year. Stormwater Committee presented to City Council and the public the goals of and objectives of the SWMPP and reduction of stormwater impacts.

Shoals Solid Waste Authority (SSWA): This organization is supported by the City with funding and to help with drop off locations. Special projects include:

- Distributed brochures and other materials to the general public on recycling at several public events in the area throughout the year. Also provided recycle bins during community events.

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special public involvement projects included:

- Organized and implemented the 2nd Annual "Chuck the Junk Citywide Cleanup" day in which 392 lbs of trash and debris was recovered around the City. 6/19/18, See City of Tuscumbia Facebook page link:
http://cityofuscumbia.org/?page_id=89 (See Appendix A)
- Sponsored an Earth Day event on 4/7/18. (Sponsor with KTSB)
- Assisted other organizations with clean-up events: Participated in the *Annual Tennessee Litter Tournament* for the Shoals – 8/22/18
- Collected over 15,163 pounds of debris within the City of Tuscumbia by employees in which the *Shoals Solid Waste Authority* collects from the City

BMP No. 2: Stenciling at Stormwater Inlets

Challenge: The challenge addressed in this BMP is associated mainly with illicit dumping by the general public into stormwater system inlets. Approximately 175 Storm Drain labels have been applied at inlets to date throughout the city.

BMP Rationale: The rationale for this BMP is to make citizens aware that whatever enters a stormwater inlet may eventually enter our rivers and streams. This awareness should reduce the amount of illicit discharges by the general public.

Activities:

2018-2019 Activities: The City of Tuscumbia Public Works Department continues to maintain and install curb tags at storm drains around the City.

BMP No. 3 - Art Contest at Elementary Schools

Challenge: The challenge addressed in this BMP is associated mainly with littering and the general disregard for pollution problems.

BMP Rationale: the rationale for this BMP is that good habits are best learned at a young age. If our children can be involved in litter prevention and become aware of the issues related to pollution, they will be more proactive as adults.

Activities:

2018-2019 Activities:

"Keep the Shoals Beautiful" (KTSB): This organization is supported by the City with annual financial support. Special projects focusing on elementary schools include:

- *"Cleanup Campus Contest"* for all Tuscumbia elementary students. This contest provided an opportunity to win the *Steve Trash Award* in which G.W. Trenholm from Tuscumbia was the winner.

Measure specific activities planned for the next reporting period

Tuscumbia will continue to implement the Public Involvement & Participation measures as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue to work with the Groundwater Guardian Program.
2. Continue to work with the Shoals Solid Waste Authority (SSWA) in partnership regarding public awareness of water quality and litter control.
3. Continue to work with the Keep the Shoals Beautiful (KTSB) in partnership regarding public awareness of water quality and litter control.
4. Work with local schools regarding public awareness of water quality and litter control.
5. Continue to increase the efficiency of record keeping and documentation related to public awareness activities.

III. Illicit Discharge Detection & Elimination**BMP No. 1: Enforcement Personnel to Re-certify QCI**

Challenge: The problem addressed with this BMP is the lack of training regarding the effects of illicit discharges, proper BMP measures and the lack of enforcement of City ordinances.

BMP Rationale: The rationale for this BMP is that an enforcement process is necessary to work toward eliminating the problem associated with illicit discharges. City officials will be informed and trained regarding the hazards associated with illicit discharges and proper BMP measures.

Activities:

Ongoing: All ordinance requirements related to illicit discharges were completed prior to 2010. Mr. Greg Willingham with the City of Tuscumbia is responsible for BMP review and code enforcements. See webpage link:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Illicit_Discharge.pdf

2018-2019 Activities: Greg Willingham was certified as QCI on April 28, 2018 QCI#73967. (See Appendix B for certificate copy)

BMP No. 2: Site Inspections - Industrial, Commercial, Construction Sites

Challenge: The problem addressed with this BMP is the illicit discharge by industrial, commercial sites, and construction sites into the City stormwater system.

BMP Rationale: The rationale for this BMP is that an inspection process is necessary to identify illicit discharges and enable the City to enforce the ordinances related to such discharges.

Activities:

Ongoing: Greg Willingham was recertified on April 28, 2018 QCI#73967. The City continues to conduct routine inspections of the stormwater discharge points and other sites. The records of certifications and facility inspections are kept on file at City Hall.

2018-2019 Activities: The City's QCIs conducted approximately 93 onsite construction site inspections and observations. There were no referrals based on inspections. There were no construction site complaints received during the reporting year.

BMP No. 3: Stormwater Runoff Sampling & 303(d) Spring Creek Stream Sampling

Challenges: The problem addressed with this BMP is stream contamination caused by illicit discharges and stormwater runoff.

BMP Rationale: The rationale for this BMP is that sampling and testing stormwater at the known outfall of the City's stormwater system will help to identify issues so further inspection and enforcement can take place. Also, seasonal monthly stormwater sampling will be conducted on Spring Creek at specific locations identified in the SWMPP during seasonal months triggered by rainfall and dry events.

Activities:

Ongoing: GIS mapped has occurred on approximately 50% of the city's stormwater drain inlets and the stormwater collection system and a map was created. Locations along Spring Creek have been delineated as seasonal sampling points and they continue to be monitored for City impact.

2018-2019 Activities: According to the SWMPP, four locations along Spring Creek were chosen as required by the SWMPP related to 303(d) listing requirements. According to the data collected, it again appears that the City of Tuscumbia is not a significant contributor to the current 303(d) impairments. Monitoring is planned during the 2019 monitoring to continue to evaluate potential sources and impacts. (See Appendix C for data and 2018/2019 Sampling Plan)

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue the Illicit Discharge Detection and Elimination measures as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue to promote the objectives of the measure through education and outreach activities.
2. Train additional City personnel to support the IDDE control measures.
3. Increase the quantity of training to support the IDDE control measures.
4. Increase the efficiency of record keeping and documentation related to IDDE activities.

IV. Construction Site Stormwater Runoff Control

BMP No. 1: Construction Sites Permitted by City and ADEM

Challenge: The challenge addressed with this BMP is the runoff of silt and other illicit discharges into the City stormwater system from construction sites.

BMP Rationale: The rationale for this BMP is that by requiring contractors to follow the permitting process for stormwater runoff, they will be given the proper BMP measures to follow to minimize erosion and illicit discharges. These permits also include regular inspections that will hold them accountable to the permit requirements.

Activities:

Ongoing: The City addresses erosion and sediment controls at construction sites through subdivision regulations and ordinances. These are enforceable by City officials and apply to non-subdivision type construction projects. Mr. Greg Willingham with the City of Tuscumbia is responsible for reviewing all inspection reports, keeping a copy on file and enforcing all related ordinances and regulations. See City Ordinance links for Stormwater Operations and Erosion Control:

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Stormwater_Operation.pdf

http://cityoftuscumbia.org/wp-content/uploads/2018/05/Ordinance_for_Erosion_and_Sediment_Control.pdf

2018-2019 Activities: Approximately 93 onsite construction inspection/observations were recorded as being conducted during the monitoring period. There were no referrals based on inspections. There were no construction site complaints received during the reporting year. Inspection record keeping is located at the Building Department.

Storm drain inspection log was kept by city employees as storm drains were inspected and cleaned. The city recorded 47 inspections during the reporting period.

BMP No. 2: Follow Up on Inspections If Required

Challenge: The challenge addressed with this BMP is the lack of concern of the holder of the stormwater permit to address deficiencies noted in the inspection reports.

BMP Rationale: The rationale for this BMP is that an enforcement process is necessary to ensure compliance with the permitting requirements.

Activities:

Ongoing: Follow up inspections of permitted construction sites is an ongoing activity by the City Building Department and conducted as needed. Copies of inspection reports outlining any problems or deficiencies are held at City Hall.

2018-2019 Activities: Follow-up inspections were conducted based on the extent of the conditions at the site to achieve compliance.

BMP No. 3: Construction Stormwater Runoff Sampling and Testing

Challenge: The problem addressed with this BMP is stream contamination caused by erosion of silt and/or illicit discharges.

BMP Rationale: The rationale for this BMP is that sampling and testing stormwater runoff from construction sites should ensure the contractor's compliance with BMP measures and determine if additional measures need to be put in place.

Activities:

2017-2018 Activities: No samples were collected from discharges from construction sites during sampling period. However, monitoring was conducted on four Spring Creek sampling/monitoring points during the seasonal monitoring period to establish instream water quality baseline data and potential impacts.

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue implementing Construction Site Stormwater Runoff Control as defined in the City's SWMP. During the next reporting period, the following activities are planned:

1. Continue program implementation to ensure the requirements of the BMPs are met.
2. To have third-party consultant (Enersolv Corp) perform audits of programs in accordance with the environmental management system (EMS).
3. To have third-party (Enersolv Corp) increase and develop training programs for personnel to better communicate the programs requirements and the responsibilities of everyone involved in the construction and enforcement process.
4. Increase the efficiency of record keeping and documentation related to IDDE activities.

V. Post Construction Stormwater Management in New Development and Re-Development**BMP No. 1: All Construction Sites Secured with Vegetation and Run-off Control**

Challenge: The challenge addressed with this BMP is soil erosion and sedimentation due to construction sites that are completed long term soil stabilization.

BMP Rationale: The rationale for this BMP is it will ensure the continuation of sediment and erosion control measures until permanent stabilization is achieved by requiring owners to provide a bond to cover the cost of replacing or establishing such measures.

Activities:

Ongoing: The City addresses this requirement by requiring all construction and development plans to have a BMP that shows erosion control measures and final permanent stabilization. Mr. Greg Willingham (QCI) with the City of Tuscumbia is responsible for overseeing and enforcing all related ordinances and regulations.

2018-2019 Activities: No follow-ups during the reporting period.

BMP No. 2: Post Construction Maintenance Agreements

Challenge: The problem addressed with this BMP is that once some developments are completed, the site is not maintained for sediment and erosion control.

BMP Rationale: The rationale for this BMP is it will ensure the long term operation and maintenance of sediment and erosion control measures by requiring owners to sign an agreement to be recorded with the property deed or plat that transfers to any new owner or operator the responsibility for post-construction management.

Activities:

Ongoing: This requirement is monitored with existing ordinances and regulations. The City continues to require a Post-Construction Maintenance Agreement to be recorded with the final plat.

2018-2019 Activities: No new activities reported for this BMP.

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue implementation of Post Construction Stormwater Management in new development and redevelopment as defined in the SWMP. During the next reporting period, the following activities are planned:

1. Work toward implementing system standards and plan review as defined in the SWMP.
2. Provide training on standards and requirements for new projects related to post construction maintenance.
3. Initiate implementing a maintenance schedule and/or observations of control measures.
4. Increase the efficiency of record keeping and documentation related to post-constructions maintenance activities.

VI. Pollution Prevention / Good Housekeeping for Municipal Operations.**BMP No. 1: Personnel Training**

Challenge: The problem addressed with this BMP is City personnel not adequately trained and aware of BMP requirements and the effects of pollution.

BMP Rationale: The rationale for this BMP is that many of the City personnel can prevent pollution and erosion or at least observe the activities of others. By adequately training them in proper BMP requirements, it will help to ensure good housekeeping practices and pollution prevention through personal practice or notification of observed violations.

Activities:

Ongoing: The City continues to educate employees through training and conferences.

2018-2019 Activities: Greg Willingham was certified as QCI on April 28, 2018 QCI#73967. (See Appendix B for Certificate)

The Building Department maintains copies of the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas (Volumes 1 & 2) for use and reference by City officials.

BMP No. 2: Solid Waste Collection from Streets and Drains

Challenge: The challenge addressed with this BMP is the polluted runoff that occurs when runoff from impervious areas wash litter and other floatables into the stormwater system.

BMP Rationale: The rationale for this BMP is that by collecting solid waste from streets and drains will prevent it from getting into the stormwater system and making its way into rivers and streams.

Activities:

Ongoing: The City continues to conduct regular surveys throughout the city for litter and collects it for proper disposal. Records are kept and reported each year as to the total poundage of litter retrieved and disposes of at the landfill. They also pick up leaves piled up along gutters by citizens from October through March.

2018-2019 Activities: The Public Works Department cleaned out numerous storm drains and gutters and collected litter to prevent it from reaching the storm system. This prevented debris from reaching Spring Creek. See below:

- **Municipal Inspections:** Monthly inspections were conducted at the seven facilities for City SOP issues. 53 inspections were conducted during the monitoring period.
- **Storm Drains Monitored:** 47 monitoring inspections were conducted during the reporting period.
- **Routine Litter Cleanup/ Right-of-Way Maintenance:** 97 bags totaling approximately 987 lbs., of litter was removed and prevented from entering waters of the State.
- **Municipal Facilities and SOPs:** The City has seven municipal facility locations that are monitored on a routine basis. The City has developed SOPs for operation at these seven facilities to help preclude the introduction of storm water pollutants.
- **Sewer Maintenance:** Contracted rot control in two locations helping to preclude the City's impact on water quality of receiving streams.

Measure specific activities planned for the next reporting period

The City of Tuscumbia will continue to perform and promote sound pollution prevention good housekeeping management practices. During the next reporting period, the following activities are planned:

1. Continue to train City personnel related to pollution prevention and good housekeeping of municipal facilities.
2. Continue to conduct routine inspections of facilities related to SOP implementation activities.
3. Continue to conduct routine and special litter cleanup days and right-of-way maintenance to preclude water quality impacts.
4. Increase the efficiency of record keeping and documentation related to good housekeeping and pollution prevention activities.

Appendix A

Shoals Earth Day Feast 2018

City of Tuscumbia "Chunk the Junk 2018"

Storm Drain Makers

Utility Bill Mail outs

Shoals Earth Day Feast 2018

11TH ANNUAL
Shoals Earth Day Fest 2018
SATURDAY, APRIL 7TH
11 AM - 6 PM
FREE!
STREET PARTY!
HISTORIC, DOWNTOWN TUSCUMBIA
 S. MAIN ST. & 4TH
 (Main Location: The Boardwalk)

LIVE MUSIC

ENTERTAINMENT SCHEDULE

11:00	MAYOR KERRY UNDERWOOD, WELCOME
	JACQUELYN CORDOBA, NATIVE AMERICAN BLESSING
11:15	BLIND THE SKY, CLASSIC AND ORIGINAL ROCK
12:00	STEVE TRASH, ROCKIN' ECO HERO
12:30	C.O.R.E., AFRICAN DRUMMING
1:00	UNCLE SHUFFELO AND HIS HAINY HOLLOW HOOTENANNY, TRADITIONAL OLD TIME APPALACHIAN MUSIC
2:00	KONJURE, CLASSIC AND ORIGINAL ROCK
2:45	ALABAMA RIVERS ALLIANCE & TM RIVERKEEPER
3:00	STEVE TRASH, ROCKIN' ECO HERO
3:30	AN ABSTRACT THEORY, CLASSIC AND ORIGINAL ROCK
4:15	HELOHA HICKMAN, NATIVE AMERICAN GRASS DANCE
4:30	JOHNNY BELEW & FRIENDS, POSITIVE VIBES JAM
5:15	WILD SOUTH & SIERRA CLUB
5:30	STEVE TRASH, ROCKIN' ECO HERO
6:00	CLOSING REMARKS

Children's Activities - Earth-Friendly Vendors - Speakers - Juggling - Recycling Area - etc!

Earth Day Fest 2018

Chunk the Junk Citywide Litter Clean Day

**The City of Tusculmbia
Presents The 2nd Annual
"Chunk the Junk"**



**Time: 8:00 - 11:00
Date: 06/16/2018**

On June 16, 2018, residents, civic groups, church groups and businesses of Tusculmbia will gather to clean up their city which will

- Improve our community
- Invest & show pride in our beautiful City
- Give an opportunity for social fellowship & participation

**BEAUTIFUL NEIGHBORHOODS
HAPPEN BECAUSE OF YOU!!!!**

To sign up please contact the Public Works Department at 256-395-6674

Supplies will be provided and refreshments will be served

Prize will be awarded to the one who gathers the most junk!



Chunk the Junk Cleanup Day

Sign in List - 2018-Employees

Sign in Sheet for 2018 Chunk the Junk
Employees

1. Kim Holley (✓ shirt)
2. Doree Burkett (✓ shirt)
3. Bryce Russell (✓ shirt)
4. JOSHUA LANDERS (✓ shirt)
5. EARL WILKINSON (✓ shirt)
6. James Smith
7. W.J. Clemens (✓ shirt)
8. Bo Stanley (✓ shirt)
9. Jemmy McCreary (✓ shirt)
10. Dieter Echols (✓ shirt)
11. _____
12. _____
13. _____
14. _____
15. _____

Sign In Sheet -2018 - Volunteers

Sign in Sheet for 2018 Chunk the JunkVolunteers

1. Kyle Brown ✓ shirt 256-702-1337
2. Patrice Brown ✓ shirt
3. Andrea Mitchell } Alana Mitchell (GS) ✓ shirt ✓
4. Emily Cline ✓ shirt } Girl Scouts - a few kids
5. Michael Cline ✓ shirt }
6. Roger Fuller ✓ shirt
7. Mary Woodie Christopher ✓ shirt
8. Kim Rogers ✓ shirt
9. Kyle Rogers ✓ shirt
10. Lee Rogers ✓ shirt BHC: Bymains
11. Michael Eleanor Ivey (GS)
12. Kelli & Khloe Jeffreys (GS) Large ✓ shirt
13. Jeff Austin ✓ shirt
14. Whitney Marshall } Gabby Dean (GS)
15. Mary Kimbrough ✓ shirt (GS)

Storm Darin Marking



North Cave Street and McIntosh Ave

Utility Bill Mail Outs


	09-28-18	28 1 22	10-22-18	
	59214	60409	1195 EL	128.76
	341	346	5 WA	28.63
	2381	2386	5 GB	12.00
			5 GB	16.00
			5 SW	13.70
			TX	7.33

PLEASE DO NOT PLACE FATS,
OILS, GREASE OR SOLID
WASTE IN THE SEWER SYST.
THESE MAY CLOG PIPES AND
CAUSE SEWER OVERFLOWS.
CALL TUSCUMBIA PUBLIC
WORKS AT 256-386-5674.

Paid from Bank Acct 10/22	013-1580-00	206.42	10.32	216.74
		0.00		0.00
		206.42		216.74

013-1580-00	206.42	STANLEY II, HUGH
0.00	10.32	STANLEY, KRISTA
10-22-18	216.74	114 HERITAGE PL
		TUSCUMBIA AL
		35674-3708

STANLEY II, HUGH
114 HERITAGE PL



TUSCUMBIA
PUBLIC WORKS
114 HERITAGE PL
TUSCUMBIA, AL 35674-3708

HELP PREVENT STORMWATER
POLLUTION BY NOT DRAINING
PROHIBITED SUBSTANCES OR
PLACING LEAVES, DEBRIS OR
TRASH INTO GUTTERS. THESE
ITEMS CAN POLLUTE OUR
WATERWAY. THANK YOU

Paid from Bank Acct 09/22	013-1580-00	280.16		280.16
		0.00	14.01	
				294.17

STANLEY II, HUGH
114 HERITAGE PL

Utility bill mail outs

Appendix B

QCI – Greg Willingham

QCI Certificate

This certifies that
Greg Willingham of
City of Tuscumbia

has successfully completed the
**QUALIFIED CREDENTIALLED INSPECTOR
TRAINING**

QCI #7396 EXPIRATION 04/28/2019

Your responsibilities as a QCI:

- Monthly or weekly inspections
- Inspections following certain rain events
- Log and keep records for construction projects
- Keep the permittee, operator and QCP informed

[Handwritten signature]
Signature

Appendix C

Spring Creek Water Quality Data

Table 1 - Spring Creek Stream Survey Summary - 2018 MS4 NPDES Permit # ALR040022

Analytes		NO3-N	NO2-N	NH3-N	CBOD	Chlor a	Cond	ALK, T	TKN	P, T	TSS	Ca	Mn	HARD	DO	pH
Location	Date	mg/l	mg/l	mg/l	mg/l	ug/l	umho/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	su
SC-1	4/26/2018	0.92	<0.060	0.112	<4.00	<5.00	196.00	83.60	<1.50	<1.00	18.00	34.6	2.35	94.10	8.90	7.50
SC-2	4/26/2018	0.92	<0.060	<0.100	<4.00	<5.00	199.00	85.80	<1.50	2.72	34.00	37.1	2.39	98.30	8.90	6.80
SC-3	4/26/2018	1.84	<0.060	<0.100	<4.00	<5.00	251.00	112.00	<1.50	1.19	12.00	46.6	2.29	121.0	7.80	7.10
SC-4	4/26/2018	2.24	<0.060	<0.100	<4.00	<5.00	283.00	124.00	<1.50	<1.00	8.00	54.8	2.47	138.0	7.00	6.60
SC-1	6/21/2018	2.40	<0.060	<0.100	<4.00	<5.00	383.00	<4.00	<1.50	<1.00	6.00	74.7	3.43	187.0	7.50	7.20
SC-2	6/21/2018	2.36	<0.060	<0.100	<4.00	<5.00	378.00	169.00	<1.50	<1.00	7.50	78.2	3.60	195.0	7.20	6.90
SC-3	6/21/2018	3.92	<0.060	<0.100	<4.00	<5.00	402.00	173.00	<1.50	<1.00	3.50	78.2	2.46	185.0	7.60	6.50
SC-4	6/21/2018	3.94	<0.060	<0.100	<4.00	<5.00	396.00	170.00	<1.50	<1.00	2.50	78.0	2.47	195.0	7.20	7.20
Equip BL	6/21/2018	<0.260	<0.060	<0.100	<4.00	<5.00	1.93	21.00	<1.50	<1.00	<2.50	<1.0	<1.0	<2.5	6.70	7.70
SC-1	8/24/2018	<0.260	<0.060	0.176	<4.00	<5.00	196.00	91.40	<1.50	<1.00	2.50	34.7	2.28	101.0	4.50	6.50
SC-2	8/24/2018	1.21	<0.060	<0.100	<4.00	<5.00	314.00	161.00	<1.50	<1.00	<2.50	60.4	2.91	168.0	6.40	6.50
SC-3	8/24/2018	3.87	<0.060	<0.100	<4.00	<5.00	420.00	199.00	4.30	<1.00	<2.50	83.1	2.86	217.0	6.30	6.40
SC-4	8/24/2018	3.87	<0.060	<0.100	<4.00	<5.00	425.00	203.00	<1.50	<1.00	16.00	83.6	2.76	207.0	5.40	6.50
SC-1	10/26/18	0.20	<0.060	<0.100	<3.00	<5.00	252.00	128.00	<1.50	1.06	2.50	40.3	3.58		5.66	7.10
SC-2	10/26/18	15.10	<0.060	<0.100	<3.00	<5.00	288.00	216.00	<1.50	1.19	<2.50	79.7	4.20		7.00	7.10
SC-3	10/26/18	3.51	<0.060	<0.100	<3.00	<5.00	303.00	224.00	<1.50	1.46	<2.50	78.6	3.70		6.00	6.50
SC-4	10/26/18	3.40	<0.060	<0.100	<3.00	<5.00	247.00	208.00	1.87	1.50	3.75	77.6	3.50		6.20	6.10
SC-1*	11/29/18					<5.00										
SC-2*	11/29/18					0.267										
SC-3*	11/29/18					0.534										
SC-4*	11/29/18					0.267										

* Due to laboratory challenges, the samples had to be recollected.

Location	Longitude	Latitude
SC-1	34°42'25.26"N	87°41'31.46"W
SC-2	34°42'55.73"N	87°41'53.01"W
SC-3	34°43'43.21"N	87°42'38.33"W
SC-4	34°43'57.15"N	87°42'51.61"W



2220 Beltline Road SW
Decatur, AL 35601
256.350.0846
www.esclabsciences.com

May 15, 2018

Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601

We appreciate the opportunity to provide our services to you on this project. Please find attached the data for the sample(s) listed below:

<u>LabNumber</u>	<u>Sample Description</u>	<u>Date/Time Collected</u>	<u>Date Submitted</u>
1805671-01	Tuscumbia City SC- 1	4/26/18 12:40	4/26/18
1805671-02	Tuscumbia City SC-2	4/26/18 12:16	4/26/18
1805671-03	Tuscumbia City SC- 3	4/26/18 12:04	4/26/18
1805671-04	Tuscumbia City SC-4	4/26/18 11:26	4/26/18

ESC-Decatur is accredited to ISO/IEC 17025:2005 by ANSI-ASQ National Accreditation Board (ANAB) and to the TNI 2003 Standard by the Florida Department of Health. Our quality system also meets relevant quality system requirements of ISO 9001:2008. Not all tests performed by ESC-Decatur are covered by these accreditations. Tests within our scope of accreditation are indicated by an asterisk (*) in the Test Result section of this report. Tests not included in the accreditations are performed in accordance with ESC-Decatur's Standard Operating Procedures and the quality control program using, where applicable, USEPA methodology.

This cover page and the attached chain-of-custody record(s) are integral parts of your report. ESC-Decatur considers this report your official record. This information shall remain in ESC-Decatur's active database for a period of one (1) calendar year before archiving. Any replacement of this information after archiving may result in an administrative fee to cover the cost of retrieval.

If you have any questions or would like more information regarding these analyses, please call us at (256) 350-0846.

Karen Sutton

Karen Sutton
Project Manager

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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Florida DOH
#E871078

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ESC-Decatur also maintains ISO/IEC 17025 accreditation through ANSI-ASQ Accreditation Board for the specific tests listed in ANAB Certificate #L2239 scope of accreditation.



ANAB Cert. #L2239 Testing
ADEM
Drinking Water
Certification
No. 40160

Tests within the scope of accreditation are indicated by an asterisk (*).

This report may contain information that is confidential and/or proprietary. This information is intended for the addressee only and may not be copied or disseminated except in full without the written consent of ESC-Decatur.

Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscombria City SC- 1

Sample ID: 1805671-01

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen

0.918 mg/l

* Nitrate-Nitrogen

0.918 mg/l

CAS: 14797-55-8

* Nitrite-Nitrogen

<0.0600 mg/l

CAS: 14797-65-0

Inorganics

* Ammonia-Nitrogen

0.112 mg/l

CAS: 8013-59-0

* Carbonaceous BOD

<4.00 mg/l

Chlorophyll a (corrected)

<5.00 ug/l

D

Conductance

196.0 umho/cm

Total Alkalinity

83.6 mg/l CaCO₃

* Total Kjeldahl Nitrogen

<1.50 mg/l

* Total Phosphorus

<1.00 mg/l

* Total Suspended Solids

18.0 mg/l

On-Site Analysis

Dissolved Oxygen

8.90 mg/l

pH

7.5 su

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

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Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscombua City SC-2

Sample ID: 1805671-02

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	0.961	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	0.961	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	199.0	umho/cm		
Total Alkalinity	85.8	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	2.72	mg/l		
* Total Suspended Solids	34.0	mg/l		

On-Site Analysis

Dissolved Oxygen	8.90	mg/l		
pH	6.8	su		

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC- 3

Sample ID: 1805671-03

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

- Nitrate plus Nitrite-Nitrogen
- * Nitrate-Nitrogen
CAS: 14797-55-8
- * Nitrite-Nitrogen
CAS: 14797-65-0

1.84	mg/l
1.84	mg/l
<0.0600	mg/l

Inorganics

- * Ammonia-Nitrogen
CAS: 8013-59-0
- * Carbonaceous BOD
- Chlorophyll a (corrected)
- Conductance
- Total Alkalinity
- * Total Kjeldahl Nitrogen
- * Total Phosphorus
- * Total Suspended Solids

<0.100	mg/l	
<4.00	mg/l	D
<5.00	ug/l	
251.0	umho/cm	
112	mg/l CaCO3	
<1.50	mg/l	
1.19	mg/l	
12.0	mg/l	

On-Site Analysis

- Dissolved Oxygen
- pH

7.80	mg/l
7.1	su

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

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Enersolv Corporation
2220 Beltline Road SW
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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscombua City SC-4

Sample ID: 1805671-04

Collected: 04/26/2018

Submitted: 04/26/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen

* Nitrate-Nitrogen
CAS: 14797-55-8

* Nitrite-Nitrogen
CAS: 14797-65-0

Inorganics

* Ammonia-Nitrogen
CAS: 8013-59-0

* Carbonaceous BOD
Chlorophyll a (corrected)

Conductance

Total Alkalinity

* Total Kjeldahl Nitrogen

* Total Phosphorus

* Total Suspended Solids

On-Site Analysis

Dissolved Oxygen

pH

2.24	mg/l		
2.24	mg/l		
<0.0600	mg/l		
<0.100	mg/l		
<4.00	mg/l		D
<5.00	ug/l		
283.0	umho/cm		
124	mg/l CaCO ₃		
<1.50	mg/l		
<1.00	mg/l		
8.00	mg/l		
7.00	mg/l		
6.6	su		

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

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Enersolv Corporation
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All calculations are performed prior to rounding per EPA and Standard Methods requirements.

Data Qualifiers:

- D Estimated BOD/CBOD value - sample dissolved oxygen depletion less than method required 2.0 mg/l.
- < Less than reporting limit

Analysis Information

Lab Number	Analysis	Specific Method	Analyst	Analysis Start Date/Time	Analysis End Date/Time
1805671-01	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-01	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	
1805671-01	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	05/02/2018 11:00
1805671-01	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-01	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-01	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 19:03	
1805671-01	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 19:03	
1805671-01	Nitrate plus Nitrite-Nitrogen	EPA 365.3	LLW	04/26/2018 19:03	
1805671-01	Total Phosphorus	SM 4500-Norg C-2011	JW	05/01/2018 15:15	
1805671-01	Total Kjeldahl Nitrogen	USGS I-3765-85	RAC	04/27/2018 06:00	
1805671-01	Total Suspended Solids	SM 2320B-2011	JRL	04/29/2018 14:10	
1805671-02	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-02	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	
1805671-02	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	05/02/2018 11:00
1805671-02	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-02	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-02	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 20:51	
1805671-02	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 20:51	
1805671-02	Nitrate plus Nitrite-Nitrogen	EPA 365.3	LLW	04/26/2018 20:51	
1805671-02	Total Phosphorus	SM 4500-Norg C-2011	JW	05/01/2018 15:15	
1805671-02	Total Kjeldahl Nitrogen	USGS I-3765-85	RAC	04/27/2018 06:00	
1805671-02	Total Suspended Solids	SM 2320B-2011	JRL	04/29/2018 14:10	
1805671-03	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-03	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	
1805671-03	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	05/02/2018 11:00
305671-03	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-03	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-03	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 21:09	

SAMPLE RESULTS REPORT

Report Date/Time: 05/15/2018 13:21

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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1805671-03	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 21:09	
1805671-03	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 21:09	
1805671-03	Total Phosphorus	EPA 365.3	JW	05/01/2018 15:15	
1805671-03	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	04/27/2018 06:00	
1805671-03	Total Suspended Solids	USGS I-3765-85	JRL	04/29/2018 14:10	
1805671-04	Total Alkalinity	SM 2320B-2011	RAC	04/27/2018 14:00	
1805671-04	Carbonaceous BOD	SM 5210B-2011	CSS	04/27/2018 15:35	
1805671-04	Chlorophyll a (corrected)	SM 10200 H	JW	04/27/2018 09:15	
1805671-04	Conductance	SM 2510B	LLW	05/01/2018 13:45	
1805671-04	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	04/27/2018 09:30	
1805671-04	Nitrite-Nitrogen	EPA 300.0	LLW	04/26/2018 21:28	
1805671-04	Nitrate-Nitrogen	EPA 300.0	LLW	04/26/2018 21:28	
1805671-04	Nitrate plus Nitrite-Nitrogen	EPA 365.3	JW	05/01/2018 15:15	
1805671-04	Total Phosphorus	SM 4500-Norg C-2011	RAC	04/27/2018 06:00	
1805671-04	Total Kjeldahl Nitrogen	EPA 300.0	JRL	04/29/2018 14:10	
1805671-04	Total Suspended Solids	USGS I-3765-85			

05/02/2018 11:00

The results contained in this report are only representative of the sample(s) received.



ANALYTICAL REPORT

May 07, 2018



ESC - Decatur Lab

Sample Delivery Group: L989681
Samples Received: 04/28/2018
Project Number: 1805671
Description:

Report To: Mr. Bill Hollerman
2220 Beltline Road SW
Decatur, AL 35601

Entire Report Reviewed By:

Olivia Studebaker
Technical Service Representative

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 ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

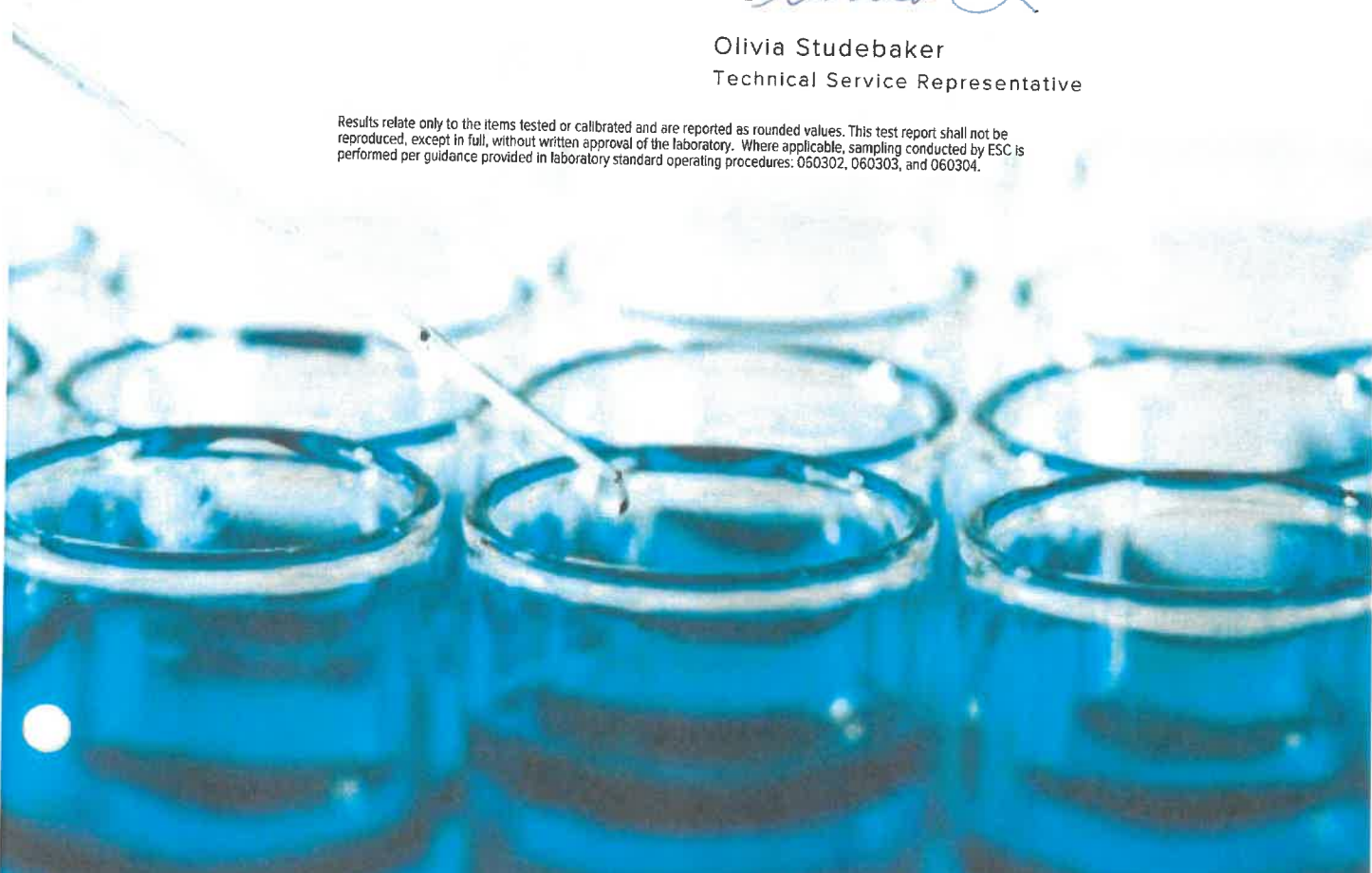


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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

1805671-01 L989681-01 WW Collected by R. McWhorter
Collected date/time 04/26/18 12:40
Received date/time 04/28/18 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1106552	1	05/03/18 16:16	05/03/18 16:16	KK
Metals (ICP) by Method 200.7	WG1104655	1	05/02/18 07:48	05/03/18 14:29	ST

1805671-02 L989681-02 WW Collected by R. McWhorter
Collected date/time 04/26/18 12:16
Received date/time 04/28/18 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1106552	1	05/03/18 16:20	05/03/18 16:20	KK
Metals (ICP) by Method 200.7	WG1104655	1	05/02/18 07:48	05/03/18 14:32	ST

1805671-03 L989681-03 WW Collected by R. McWhorter
Collected date/time 04/26/18 12:04
Received date/time 04/28/18 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1106552	1	05/03/18 16:20	05/03/18 16:20	KK
Metals (ICP) by Method 200.7	WG1104655	1	05/02/18 07:48	05/03/18 14:36	ST

1805671-04 L989681-04 WW Collected by R. McWhorter
Collected date/time 04/26/18 11:26
Received date/time 04/28/18 10:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1106552	1	05/03/18 16:21	05/03/18 16:21	KK
Metals (ICP) by Method 200.7	WG1104655	1	05/02/18 07:48	05/03/18 14:39	ST



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 radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.



Olivia Studebaker
Technical Service Representative

- 1 C
- 2 T
- 3 S
- 4 C
- 5 S
- 6 G
- 7 G
- 8 A
- 9 S

1805671-01

Collected date/time: 04/26/18 12:40

SAMPLE RESULTS - 01

L989681

ONE LAB. NATIONWIDE

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	94.1		30.0	1	05/03/2018 16:16	WG1106552

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	34.6		1.00	1	05/03/2018 14:29	WG1104655
Magnesium	2.35		1.00	1	05/03/2018 14:29	WG1104655



1805671-02

Collected date/time: 04/26/18 12:16

SAMPLE RESULTS - 02

L989681

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	98.3		30.0	1	05/03/2018 16:20	WG1106552

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	37.1		1.00	1	05/03/2018 14:32	WG1104655
Magnesium	2.39		1.00	1	05/03/2018 14:32	WG1104655



1805671-03

Collected date/time: 04/26/18 12:04

SAMPLE RESULTS - 03

L989681

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	121		30.0	1	05/03/2018 16:20	WG1106552

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	46.6		1.00	1	05/03/2018 14:36	WG1104655
Magnesium	2.29		1.00	1	05/03/2018 14:36	WG1104655



1805671-04

Collected date/time: 04/26/18 11:26

SAMPLE RESULTS - 04

L989681

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	138		30.0	1	05/03/2018 16:21	WG1106552

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	54.8		1.00	1	05/03/2018 14:39	WG1104655
Magnesium	2.47		1.00	1	05/03/2018 14:39	WG1104655



ACCOUNT:
ESC - Decatur Lab

PROJECT:
1805671

SDG:
L989681

DATE/TIME:
05/07/18 14:54

PAGE:
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WG1106 2

Wet Chemistry by Method 130.1

QUALITY CONTROL SUMMARY

L989681-01,02,03,04

ONE LAB. IN JMWIDE.



Method Blank (MB)

(MB) R3306893-1 05/03/18 16:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hardness (colorimetric) as CaCO3	3.87	✓	1.43	30.0

L989681-01 Original Sample (OS) • Duplicate (DUP)

(OS) L989681-01 05/03/18 16:16 • (DUP) R3306893-4 05/03/18 16:19

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness (colorimetric) as CaCO3	94.1	87.3	1	7.50		20

L989880-01 Original Sample (OS) • Duplicate (DUP)

(OS) L989880-01 05/03/18 16:30 • (DUP) R3306893-5 05/03/18 16:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness (colorimetric) as CaCO3	131	126	1	3.89		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3306893-2 05/03/18 16:09 • (LCSD) R3306893-3 05/03/18 16:10

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 %
Hardness (colorimetric) as CaCO3	150	149	148	99.3	98.7	85.0-115			0.673	20

L989831-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L989831-01 05/03/18 16:24 • (MS) R3306893-6 05/03/18 16:39 • (MSD) R3306893-7 05/03/18 16:40

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hardness (colorimetric) as CaCO3	150	59.4	183	182	1	80.0-120			0.548	20

ACCOUNT:

PROJECT:

SDG:

DATE/TIME:

PAGE:

WG1104 5

Metals (ICP) by Method 200.7

Method Blank (MB)

(MB) R3306940-1 05/03/18 13:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Calcium	U	0.100	0.100	1.00
Magnesium	U	0.0168	0.0168	1.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCS-D)

(LCS) R3306940-2 05/03/18 13:10 • (LCS-D) R3306940-3 05/03/18 13:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	LCS-D Result mg/l	LCS-D Rec. %	Rec. Limits %	LCS Qualifier	LCS-D Qualifier	RPD %	RPD Limits %
Calcium	10.0	10.3	103	10.1	101	85.0-115	2.14	2.14	20	20
Magnesium	10.0	10.2	102	10.0	100	85.0-115	1.93	1.93	20	20

L989117-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L989117-01 05/03/18 13:17 • (MS) R3306940-5 05/03/18 13:23 • (MSD) R3306940-6 05/03/18 13:26

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 %
Calcium	10.0	45.8	55.7	55.2	99.9	94.6	1	70.0-130	0.947	0.947	20	20
Magnesium	10.0	19.3	29.1	28.8	97.8	94.8	1	70.0-130	1.01	1.01	20	20

L989717-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L989717-01 05/03/18 13:29 • (MS) R3306940-7 05/03/18 13:33 • (MSD) R3306940-8 05/03/18 13:36

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 %
Calcium	10.0	93.1	104	100	110	71.1	1	70.0-130	3.76	3.76	20	20
Magnesium	10.0	2.59	12.4	12.2	97.7	95.8	1	70.0-130	1.55	1.55	20	20

ACCOUNT:

PROJECT:

DATE:

QUALITY CONTROL SUMMARY

L989681-01.02.03.04

ONE LAB. N.

WIDE.

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

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.
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.
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ACCREDITATIONS & LOCATIONS

ONE LAB NATIONWIDE

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
 * 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 ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-05-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	n/a
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}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA1800 ¹⁰	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA



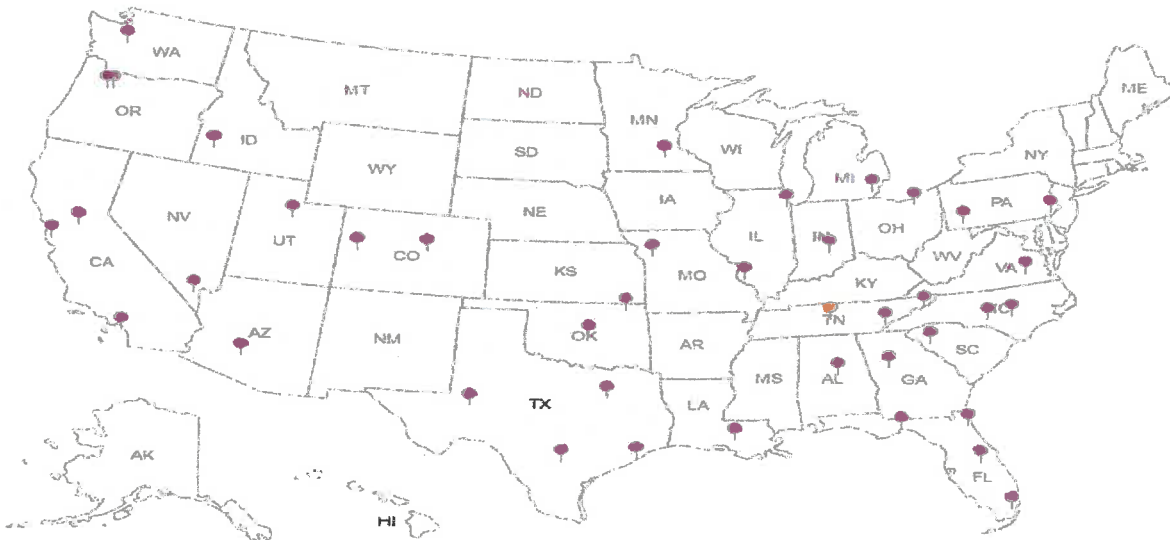
Third Party Federal Accreditations

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

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



ACCOUNT:
ESC - Decatur Lab

PROJECT:
1805671

SDG:
L989681

DATE/TIME:
05/07/18 14:54

PAGE:
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SUBCONTRACT ORDER

Sending Laboratory:

ESC - Decatur
 2220 Bellline Road SW
 Decatur, AL 35601
 Phone: 256-350-0846
 Fax: 256-350-0686

Subcontracted Laboratory:

ESC
 12065 Lebanon Road
 Mount Juliet, TN 37122
 Phone: (615) 758-5858
 Fax: 615-758-5858

Work Order: 1805671

Analysis Code	Analysis Description	Due	Comments
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Sample ID: 1805671-01 Tusculumbia City SC- 1 Matrix: Aqueous Sampled: -01

04/26/2018
 MG ICP
 HARDNESS
 CA ICP
 Containers Supplied:

Total Magnesium
 Total Hardness
 Total Calcium

05/03/2018
 05/03/2018
 05/03/2018

calculated from Ca and Mg

Sample ID: 1805671-02 Tusculumbia City SC-2 Matrix: Aqueous Sampled: -02

04/26/2018
 MG ICP
 HARDNESS
 CA ICP
 Containers Supplied:

Total Magnesium
 Total Hardness
 Total Calcium

05/03/2018
 05/03/2018
 05/03/2018

calculated from Ca and Mg

Sample ID: 1805671-03 Tusculumbia City SC- 3 Matrix: Aqueous Sampled: -03

04/26/2018
 MG ICP
 HARDNESS
 CA ICP
 Containers Supplied:

Total Magnesium
 Total Hardness
 Total Calcium

05/03/2018
 05/03/2018
 05/03/2018

calculated from Ca and Mg

Sample ID: 1805671-04 Tusculumbia City SC-4 Matrix: Aqueous Sampled: -04

04/26/2018
 MG ICP
 HARDNESS
 CA ICP
 Containers Supplied:

Total Magnesium
 Total Hardness
 Total Calcium

05/03/2018
 05/03/2018
 05/03/2018

calculated from Ca and Mg

The appropriate credentials and accreditation of the subcontract laboratory have been verified for the analyses to be performed on the samples included in this document as of the date samples were shipped to the subcontract laboratory.

Yes No

Released By

Date

Received By

Date

4-28-18

Mr. [Signature] 4/28/18 1045

2015
 OK



ANALYSIS REQUEST A CHAIN OF CUSTODY RECORD
 2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
 (256) 350-0846

www.enersolv.com

COMPANY/CLIENT NAME ENERSOLV	CLIENT P.O. NUMBER ENE 13886 RMCWHORTER
CLIENT POINT OF CONTACT R. McWhorter	CITY/STATE/ZIP Decatur, AL 35601
CLIENT EMAIL mcwhorter@enersolv.com	OTHER INFORMATION Tusculumbia Spring Creek
SAMPLE COLLECTED BY R. McWhorter	DATE DUE (REQUIRED) 4/26/18
PHONE NUMBER 256-566-9220	EXPEDITED REPORT DELIVERY (SURCHARGE)

REQUESTED ANALYSES		098968	
ALK	X	TKN	X
CBOD	X	pH	X
CHLOROPHYLL	X	TOTAL	X
COND	X	NITROGEN	X
DO	X	NUTR	X
HARD	X	HARD	X
TS	X	TS	X
GRAB GOMP	X		

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER DATE	SAMPLE TRANSFER TIME	GRAB	GOMP
B05671-03	Tusculumbia Spring Creek SC-3	4/26/18	1204	X	

Comments:
FLOW
 Collector to complete shaded areas, as applicable.

SAMPLER INFORMATION		FIELD INFORMATION				Parameters	
Start Date	Stop Date	pH	TRC mg/l	DO mg/l	Temp deg C	City	Type
						1	Poly 1/2 Cool 6c
						2	Amb Glass 1000ml Cool 6c
						1	Poly Pint HNO3 Cool 6c
						1	Poly Pint H2SO4 Cool 6c

RELINQUISHED BY (SIGNATURE)	DATE	RELINQUISHED BY (SIGNATURE)	DATE
<i>[Signature]</i>	4/26/18	<i>[Signature]</i>	4/26/18
RECEIVED BY (SIGNATURE)	DATE	RECEIVED BY (SIGNATURE)	DATE
<i>[Signature]</i>	4/26/18	<i>[Signature]</i>	4/26/18
RECEIVED FOR LABORATORY USE (SIGNATURE)	DATE	SAMPLE STATUS	
<i>[Signature]</i>	4/26/18	<input checked="" type="checkbox"/> Accepted	
		<input type="checkbox"/> Rejected	
		<input type="checkbox"/> Accepted with Exception	

SAMPLE TEMPERATURE RECEIVED @ 37

Parameters: Aik, CBOD, NO3NO2, Cond, Chlorophyll, Hard, NH3, P, TKN

2018



ANALYSIS REQUEST) CHAIN OF CUSTODY RECORD
 2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
 (256) 350-0846

PAGE 1 of 1
 MS4 Area - Spring Creek

www.enersolv.com

COMPANY/CLIENT NAME ENERSOLV	CLIENT P.O. NUMBER ENE 13886 RMCWHORTER	EMERSON PROJECT NUMBER ENE 13886 RMCWHORTER	REQUESTED ANALYSES TKN
CLIENT POINT OF CONTACT R. McWhorter	CLIENT PHYSICAL ADDRESS 2220 Beltline Rd	CITY/STATE/ZIP Decatur, AL 35601	
CLIENT EMAIL rmcwhorten@enersolv.com	PHONE NUMBER 256-566-9220	OTHER INFORMATION Tuscumbia Spring Creek	
SAMPLE COLLECTED BY R. McWhorter	EXPEDITED REPORT DELIVERY (SURCHARGE) DATE DUE (REQUIRED)		

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER/GRAB DATE	SAMPLE TRANSFER/GRAB TIME	GRAB	COMPL	TKN	CBOD	CHLOROPHYLL	COND	DO	TS	HARD	NH3	NO3NO2IC	PH	TKN
1805671-04	Tuscumbia Spring Creek SC-4	4/26/18	11:26	X		X	X	X	X	X	X	X	X	X	X	X


Comments: FLOW Collector to complete shaded areas, as applicable.

SAMPLER INFORMATION		FIELD INFORMATION				Parameters	
Start Date	Stop Date	TRC mg/l	DO mg/l	Temp deg C	City	Type	Parameters
4/26/18	4/26/18	6.6	7.0	17.0	1	Poly 12 Cool 6c	Alk, CBOD, NO3NO2, Cond
4/26/18	4/26/18	11:26	11:26	11:26	2	Amb Glass 1000ml Cool 6c	Chlorophyll
4/26/18	4/26/18	11:26	11:26	11:26	1	Poly Pint HNO3 Cool 6c	Hard

RELINQUISHED BY (SIGNATURE) <i>R. McWhorter</i>	DATE 4/26/18	TIME 14:31	RELINQUISHED BY (SIGNATURE)	DATE	TIME
RECEIVED BY (SIGNATURE) <i>R. McWhorter</i>	DATE 4/26/18	TIME 10:45	RECEIVED BY (SIGNATURE)	DATE	TIME
RECEIVED FOR LABORATORY USE (SIGNATURE) <i>R. McWhorter</i>	DATE 4/26/18	TIME 14:31	RECEIVED BY (SIGNATURE)	DATE	TIME

SAMPLE STATUS: Accepted Rejected Accepted with Exception

ESC LAB SCIENCES
Cooler Receipt Form

Client: ENERSOLY	SDG#	6991681
Cooler Received/Opened On: 4/28/18	Temperature:	2.0
Received By: Kevin Turner		
Signature: 		
Receipt Check List		
COC Seal Present / Intact?	NP	Yes No
COC Signed / Accurate?		x
Bottles arrive intact?		x
Correct bottles used?		x
Sufficient volume sent?		x
If Applicable		
VOA Zero headspace?		
Preservation Correct / Checked?		

Enersolv Field Calibration Record – pH Measurement

For all field instruments: Calibration/Confirmation Interval - Prior to each use, but not more than daily
Calibration Environmental Conditions: Room temperature

Calibrated By: R. McWhorter Date: 4/26/18 Time: 0727

pH Meter Calibration – Equipment number: PH023

	7.00 pH buffer Acc. Range 7.0 +/- 0.1	10.00pH buffer Acc. Range 10.0+/- 0.1	Acceptance Criteria met? Slope 92 – 102	
			Yes	No
Reagent ID – Pre-calibration	<u>EG 72104</u>	<u>EC 82609</u>		
Value before calibration, s.u.	<u>7.2</u>	<u>10.2</u>		
Observed pH Buffer Temp. before calibration, °C	<u>20.9</u>	<u>20.9</u>		
Correction Factor (see chart)	<u>-0.5</u>	<u>-0.5</u>		
Final pH Buffer Temp. before calibration, °C	<u>20.9</u>	<u>20.9</u>		
Final Calibration				
Reagent ID – Post-calibration	<u>EG 72104</u>	<u>EC 82609</u>		
Value Final calibration, s.u.	<u>7.1</u>	<u>10.1</u>		

pH Meter Post Cal. Date: 4/26/18 Time: 1426

	7.00 pH buffer Acc. Range 7.00+/- 0.2	10.0 pH buffer Acc. Range 10.00+/-0.2
Reagent ID	<u>EG 72104</u>	<u>EC 82609</u>
Post Calibration pH value	<u>7.1</u>	<u>10.1</u>
Observed Buffer Temp., °C	<u>20.0</u>	<u>20.0</u>
Correction Factor	<u>-0.5</u>	<u>-0.5</u>
Final Buffer Temp., °C	<u>20.3</u>	<u>20.3</u>

If any client sample pH measurement was less than 5.0 s.u., perform check on 4.0 pH buffer

4.0 Buffer Cal., if required Date/time: _____ NA

4.00 pH buffer, Acc. Range 4.00+/-0.1		
pH 4.00 buffer Reagent ID:		
pH 4.00 buffer value:		
Observed pH Buffer Temp., °C	Correction Factor	Final pH Buffer Temp., °C

Note: If equipment calibration fails to meet acceptance limits, the equipment must be taken out of service and tagged for repair.

Enersolv Field Calibration Record

Calibrated By: F. M. [Signature] Date: 4/20/18 Time: 0730

For all field instruments
 Calibration/Confirmation Interval: Prior to each use, but not more than daily
 Calibration Environmental Conditions: Room temperature

Dissolved Oxygen Meter - Equipment Number: 0307 NA

	Oxygen meter reading	Calibration successful?
Value before calibration, mg/L	8.65	Yes
% Air Saturation / Slope	97.7	Yes
Value after calibration, mg/L	8.69	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Turbidity Meter – Equipment number: 150 NA

	1 NTU	10 NTU
Meter Reading Before Calibration, NTU		
Meter Reading After Calibration, NTU		
Turbidity Standard Reagent Number		

Conductivity Meter - Equipment Number: _____ NA

Value of Conductivity Standard, uS	
Meter reading before calibration, uS	
Cell Constant Value	
Conductivity Standard Reagent Number	

Note: If equipment calibration fails to meet acceptance limits, the equipment must be taken out of service and tagged for repair.



2220 Beltline Road SW
Decatur, AL 35601
256.350.0846
www.pacenational.com

July 13, 2018

Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601

We appreciate the opportunity to provide our services to you on this project. Please find attached the data for the sample(s) listed below:

<u>LabNumber</u>	<u>Sample Description</u>	<u>Date/Time Collected</u>	<u>Date Submitted</u>
1808267-01	Tuscumbia City SC-1	6/21/18 08:51	6/21/18
1808267-02	Tuscumbia City SC-2	6/21/18 09:15	6/21/18
1808267-03	Tuscumbia City SC-3	6/21/18 09:38	6/21/18
1808267-04	Tuscumbia City SC-4	6/21/18 10:30	6/21/18
1808267-05	Tuscumbia City SC-Equipment Blank	6/21/18 12:44	6/21/18

Pace National-Decatur is accredited to ISO/IEC 17025:2005 by ANSI-ASQ National Accreditation Board (ANAB) and to the TNI 2003 Standard by the Florida Department of Health. Our quality system also meets relevant quality system requirements of ISO 9001:2008. Not all tests performed by ESC-Decatur are covered by these accreditations. Tests within our scope of accreditation are indicated by an asterisk (*) in the Test Result section of this report. Tests not included in the accreditations are performed in accordance with ESC-Decatur's Standard Operating Procedures and the quality control program using, where applicable, USEPA methodology.

This cover page and the attached chain-of-custody record(s) are integral parts of your report. Pace National-Decatur considers this report your official record. This information shall remain in Pace National-Decatur's active database for a period of one (1) calendar year before archiving. Any replacement of this information after archiving may result in an administrative fee to cover the cost of retrieval.

If you have any questions or would like more information regarding these analyses, please call us at (256) 350-0846.

Lisa W. Terry
QA Specialist

SAMPLE RESULTS REPORT

Report Date/Time: 07/13/2018 14:44

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



NELAP
Accredited
Florida DOH
#E871078

Pace National-Decatur maintains National Environmental Laboratory Accreditation Program (NELAP) accreditation through Florida Department of Health (#E871078). Some tests included in this report may not be covered by this accreditation.

ESC-Decatur also maintains ISO/IEC 17025 accreditation through ANSI-ASQ Accreditation Board for the specific tests listed in ANAB Certificate #L2239 scope of accreditation.



Tests within the scope of accreditation are indicated by an asterisk (*).

This report may contain information that is confidential and/or proprietary. This information is intended for the addressee only and may not be copied or disseminated except in full without the written consent of Pace National-Decatur.

Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC-1

Sample ID: 1808267-01

Collected: 06/21/2018

Submitted: 06/21/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	2.40	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	2.40	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	383.0	umho/cm		
Total Alkalinity	168	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	6.00	mg/l		

On-Site Analysis

Dissolved Oxygen	7.50	mg/l		
pH	7.2	su		

SAMPLE RESULTS REPORT

Report Date/Time: 07/13/2018 14:44

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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Florida DOH
#E871078

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ANAB Cert. #L2239 Testing
ADEM
Drinking Water
Certification
No. 40160

Tests within the scope of accreditation are indicated by an asterisk (*).

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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC-2

Sample ID: 1808267-02

Collected: 06/21/2018

Submitted: 06/21/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	2.36	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	2.36	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	378.0	umho/cm		
Total Alkalinity	169	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	7.50	mg/l		

On-Site Analysis

Dissolved Oxygen	7.20	mg/l		
pH	6.9	su		

SAMPLE RESULTS REPORT

Report Date/Time: 07/13/2018 14:44

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC-3

Sample ID: 1808267-03

Collected: 06/21/2018

Submitted: 06/21/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	3.92	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	3.92	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	402.0	umho/cm		
Total Alkalinity	173	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	3.50	mg/l		

On-Site Analysis

Dissolved Oxygen	7.60	mg/l		
pH	6.5	su		

SAMPLE RESULTS REPORT

Report Date/Time: 07/13/2018 14:44

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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Florida DOH
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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC-4

Sample ID: 1808267-04

Collected: 06/21/2018

Submitted: 06/21/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	3.94	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	3.94	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<4.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	396.0	umho/cm		
Total Alkalinity	170	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	2.50	mg/l		

On-Site Analysis

Dissolved Oxygen	7.20	mg/l		
pH	7.2	su		

SAMPLE RESULTS REPORT

Report Date/Time: 07/13/2018 14:44

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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Florida DOH
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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC-Equipment Blank

Sample ID: 1808267-05 Collected: 06/21/2018 Submitted: 06/21/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen

* Nitrate-Nitrogen
CAS: 14797-55-8

* Nitrite-Nitrogen
CAS: 14797-65-0

Inorganics

* Ammonia-Nitrogen
CAS: 8013-59-0

* Carbonaceous BOD
Chlorophyll a (corrected)

Conductance

Total Alkalinity

* Total Kjeldahl Nitrogen

* Total Phosphorus

* Total Suspended Solids

On-Site Analysis

Dissolved Oxygen

pH

<0.260	mg/l	
<0.200	mg/l	
<0.0600	mg/l	
<0.100	mg/l	
<4.00	mg/l	D
<5.00	ug/l	
1.930	umho/cm	
21.0	mg/l CaCO3	
<1.50	mg/l	
<1.00	mg/l	
<2.50	mg/l	
6.76	mg/l	
7.7	su	

SAMPLE RESULTS REPORT

Report Date/Time: 07/13/2018 14:44

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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Florida DOH
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All calculations are performed prior to rounding per EPA and Standard Methods requirements.

Data Qualifiers:

- D Estimated BOD/CBOD value - sample dissolved oxygen depletion less than method required 2.0 mg/l.
- < Less than reporting limit

Analysis Information

.ab Number	Analysis	SpecificMethod	Analyst	Analysis Start Date/Time	Analysis End Date/Time
1808267-01	Total Alkalinity	SM 2320B-2011	RAC	06/22/2018 14:30	
1808267-01	Carbonaceous BOD	SM 5210B-2011	AH	06/21/2018 16:00	
1808267-01	Chlorophyll a (corrected)	SM 10200 H	SH	06/21/2018 16:55	
1808267-01	Conductance	SM 2510B	LLW	06/22/2018 14:30	
1808267-01	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	06/22/2018 09:30	
1808267-01	Nitrite-Nitrogen	EPA 300.0	LLW	06/21/2018 23:07	
1808267-01	Nitrate-Nitrogen	EPA 300.0	LLW	06/21/2018 23:07	
1808267-01	Nitrate plus Nitrite-Nitrogen	EPA 365.3	LLW	06/21/2018 23:07	
1808267-01	Total Phosphorus	SM 4500-Norg C-2011	AH	06/25/2018 13:40	
1808267-01	Total Kjeldahl Nitrogen	USGS I-3765-85	RAC	06/22/2018 06:00	
1808267-01	Total Suspended Solids	SM 2320B-2011	JRL	06/24/2018 14:35	
1808267-02	Total Alkalinity	SM 2320B-2011	RAC	06/22/2018 14:30	
1808267-02	Carbonaceous BOD	SM 5210B-2011	AH	06/21/2018 16:00	
1808267-02	Chlorophyll a (corrected)	SM 10200 H	SH	06/21/2018 16:55	
1808267-02	Conductance	SM 2510B	LLW	06/22/2018 14:30	
1808267-02	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	06/22/2018 09:30	
1808267-02	Nitrite-Nitrogen	EPA 300.0	LLW	06/21/2018 23:25	
1808267-02	Nitrate-Nitrogen	EPA 300.0	LLW	06/21/2018 23:25	
1808267-02	Nitrate plus Nitrite-Nitrogen	EPA 365.3	LLW	06/21/2018 23:25	
1808267-02	Total Phosphorus	SM 4500-Norg C-2011	AH	06/25/2018 13:40	
1808267-02	Total Kjeldahl Nitrogen	USGS I-3765-85	RAC	06/22/2018 06:00	
1808267-02	Total Suspended Solids	SM 2320B-2011	JRL	06/24/2018 14:35	
1808267-03	Total Alkalinity	SM 2320B-2011	RAC	06/22/2018 14:30	
1808267-03	Carbonaceous BOD	SM 5210B-2011	AH	06/21/2018 16:00	
1808267-03	Chlorophyll a (corrected)	SM 10200 H	SH	06/21/2018 16:55	
1808267-03	Conductance	SM 2510B	LLW	06/22/2018 14:30	
1808267-03	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	06/22/2018 09:30	
1808267-03	Nitrite-Nitrogen	EPA 300.0	LLW	06/21/2018 23:44	

SAMPLE RESULTS REPORT

Report Date/Time: 07/13/2018 14:44

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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ANAB Cert. #L2239 Testing
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1808267-03	Nitrate-Nitrogen	EPA 300.0	LLW	06/21/2018 23:44	
1808267-03	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	06/21/2018 23:44	
1808267-03	Total Phosphorus	EPA 365.3	AH	06/26/2018 14:00	
1808267-03	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	06/22/2018 06:00	
1808267-03	Total Suspended Solids	USGS I-3765-85	JRL	06/24/2018 14:35	
1808267-04	Total Alkalinity	SM 2320B-2011	RAC	06/22/2018 14:30	
1808267-04	Carbonaceous BOD	SM 5210B-2011	AH	06/21/2018 16:00	
1808267-04	Chlorophyll a (corrected)	SM 10200 H	SH	06/21/2018 16:55	06/26/2018 10:05
1808267-04	Conductance	SM 2510B	LLW	06/22/2018 14:30	
1808267-04	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	06/22/2018 09:30	
1808267-04	Nitrite-Nitrogen	EPA 300.0	LLW	06/22/2018 00:02	
1808267-04	Nitrate-Nitrogen	EPA 300.0	LLW	06/22/2018 00:02	
1808267-04	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	06/22/2018 00:02	
1808267-04	Total Phosphorus	EPA 365.3	AH	06/26/2018 14:00	
1808267-04	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	06/22/2018 06:00	
1808267-04	Total Suspended Solids	USGS I-3765-85	JRL	06/24/2018 14:35	
1808267-05	Total Alkalinity	SM 2320B-2011	RAC	06/22/2018 14:30	
1808267-05	Carbonaceous BOD	SM 5210B-2011	AH	06/21/2018 16:00	
1808267-05	Chlorophyll a (corrected)	SM 10200 H	SH	06/21/2018 16:55	06/26/2018 10:05
1808267-05	Conductance	SM 2510B	LLW	06/22/2018 14:30	
1808267-05	Ammonia-Nitrogen	SM 4500 NH3-C-2011	RAC	06/22/2018 09:30	
1808267-05	Nitrite-Nitrogen	EPA 300.0	LLW	06/22/2018 00:57	
1808267-05	Nitrate-Nitrogen	EPA 300.0	LLW	06/22/2018 00:57	
1808267-05	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	06/22/2018 00:57	
1808267-05	Total Phosphorus	EPA 365.3	AH	06/26/2018 14:00	
1808267-05	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	RAC	06/22/2018 06:00	
1808267-05	Total Suspended Solids	USGS I-3765-85	JRL	06/24/2018 14:35	

The results contained in this report are only representative of the sample(s) received.



ANALYTICAL REPORT

June 28, 2018



ESC - Decatur Lab

Sample Delivery Group: L1003909
Samples Received: 06/22/2018
Project Number: 1808267
Description:

Report To: ESC Decatur
2220 Beltline Road SW
Decatur, AL 35601

Entire Report Reviewed By:

Olivia Studebaker
Technical Service Representative

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 ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

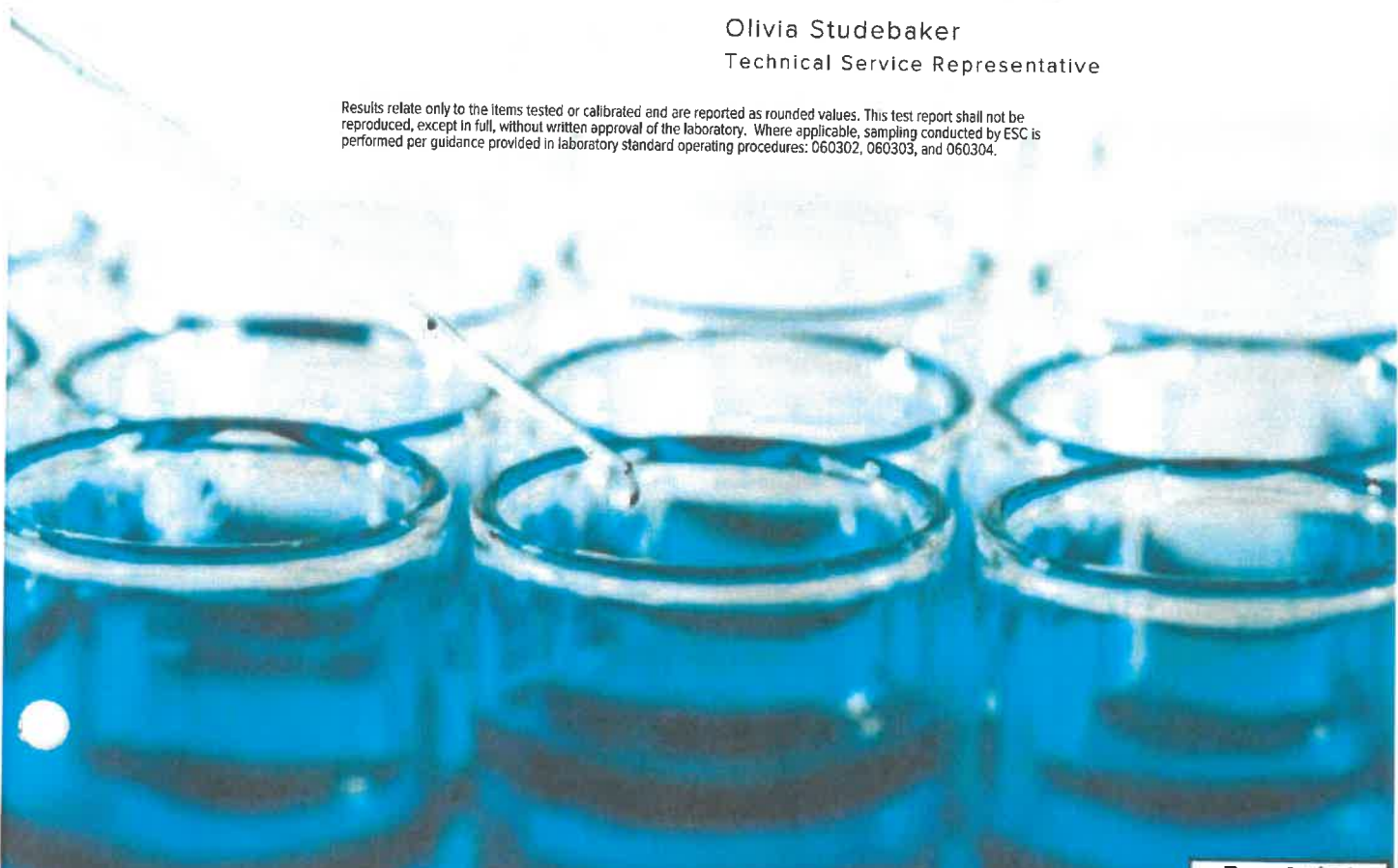


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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

1808267-01 TUCUMBIA CITY SC-1 L1003909-01 WW Collected by R. McWhorter Collected date/time 06/21/18 08:51 Received date/time 06/22/18 10:08

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1129573	1	06/26/18 00:27	06/26/18 13:03	TRB
Wet Chemistry by Method 130.1	WG1129709	1	06/26/18 10:47	06/26/18 10:47	KK
Metals (ICP) by Method 200.7	WG1129573	1	06/26/18 00:27	06/26/18 13:03	TRB

1808267-02 TUCUMBIA CITY SC-2 L1003909-02 WW Collected by R. McWhorter Collected date/time 06/21/18 09:51 Received date/time 06/22/18 10:08

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1129573	1	06/26/18 00:27	06/26/18 14:10	TRB
Wet Chemistry by Method 130.1	WG1129709	1	06/26/18 10:48	06/26/18 10:48	KK
Metals (ICP) by Method 200.7	WG1129573	1	06/26/18 00:27	06/26/18 14:10	TRB

1808267-03 TUCUMBIA CITY SC-3 L1003909-03 WW Collected by R. McWhorter Collected date/time 06/21/18 09:38 Received date/time 06/22/18 10:08

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1129573	1	06/26/18 00:27	06/26/18 14:13	TRB
Wet Chemistry by Method 130.1	WG1129709	1	06/26/18 10:49	06/26/18 10:49	KK
Metals (ICP) by Method 200.7	WG1129573	1	06/26/18 00:27	06/26/18 14:13	TRB

1808267-04 TUCUMBIA CITY SC-4 L1003909-04 WW Collected by R. McWhorter Collected date/time 06/21/18 10:30 Received date/time 06/22/18 10:08

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1129573	1	06/26/18 00:27	06/26/18 14:15	TRB
Wet Chemistry by Method 130.1	WG1129709	1	06/26/18 10:52	06/26/18 10:52	KK
Metals (ICP) by Method 200.7	WG1129573	1	06/26/18 00:27	06/26/18 14:15	TRB

1808267-05 TUCUMBIA CITY SC-5 L1003909-05 WW Collected by R. McWhorter Collected date/time 06/21/18 12:44 Received date/time 06/22/18 10:08

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1129573	1	06/26/18 00:27	06/26/18 14:18	TRB
Wet Chemistry by Method 130.1	WG1129709	1	06/26/18 10:53	06/26/18 10:53	KK
Metals (ICP) by Method 200.7	WG1129573	1	06/26/18 00:27	06/26/18 14:18	TRB



ACCOUNT:
ESC - Decatur Lab

PROJECT:
1808267

SDG:
L1003909

DATE/TIME:
06/28/18 16:35

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 radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.



Olivia Studebaker
Technical Service Representative



Collected date/time: 06/21/18 08:51

L1003909

Calculated Results

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hardness,calcium	187		2.50	1	06/26/2018 13:03	WG1129573

Wet Chemistry by Method 130.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	186		30.0	1	06/26/2018 10:47	WG1129709

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	74.7	V	1.00	1	06/26/2018 13:03	WG1129573
Magnesium	3.43		1.00	1	06/26/2018 13:03	WG1129573



Collected date/time: 06/21/18 09:51

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness,calcium	195		2.50	1	06/26/2018 14:10	WG1129573

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	186		30.0	1	06/26/2018 10:48	WG1129709

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	78.2		1.00	1	06/26/2018 14:10	WG1129573
Magnesium	3.60		1.00	1	06/26/2018 14:10	WG1129573

1 C
2 T
3 S
4 C
5 S
6 G
7 A
8 S

Collected date/time: 06/21/18 09:38

L1003909

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness,calcium	196		2.50	1	06/26/2018 14:13	WG1129573

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	185		30.0	1	06/26/2018 10:49	WG1129709

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	78.7		1.00	1	06/26/2018 14:13	WG1129573
Magnesium	2.46		1.00	1	06/26/2018 14:13	WG1129573



Collected date/time: 06/21/18 10:30

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness,calcium	195		2.50	1	06/26/2018 14:15	WG1129573

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	188		30.0	1	06/26/2018 10:52	WG1129709

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	78.0		1.00	1	06/26/2018 14:15	WG1129573
Magnesium	2.47		1.00	1	06/26/2018 14:15	WG1129573



Collected date/time: 06/21/18 12:44

L1003909

Calculated Results

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hardness,calcium	ND		2.50	1	06/26/2018 14:18	WG1129573

Wet Chemistry by Method 130.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	ND		30.0	1	06/26/2018 10:53	WG1129709

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	ND		1.00	1	06/26/2018 14:18	WG1129573
Magnesium	ND		1.00	1	06/26/2018 14:18	WG1129573



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.

Abbreviations and Definitions

ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
SDG	Sample Delivery Group.
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.
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.
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.
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

V	The sample concentration is too high to evaluate accurate spike recoveries.
---	---

1 C
2 T
3 S
4 C
5 Si
6 G
7 A
8 St

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* 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 ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey—NELAP	TN002
California	2932	New Mexico ¹	n/a
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	LAC00356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

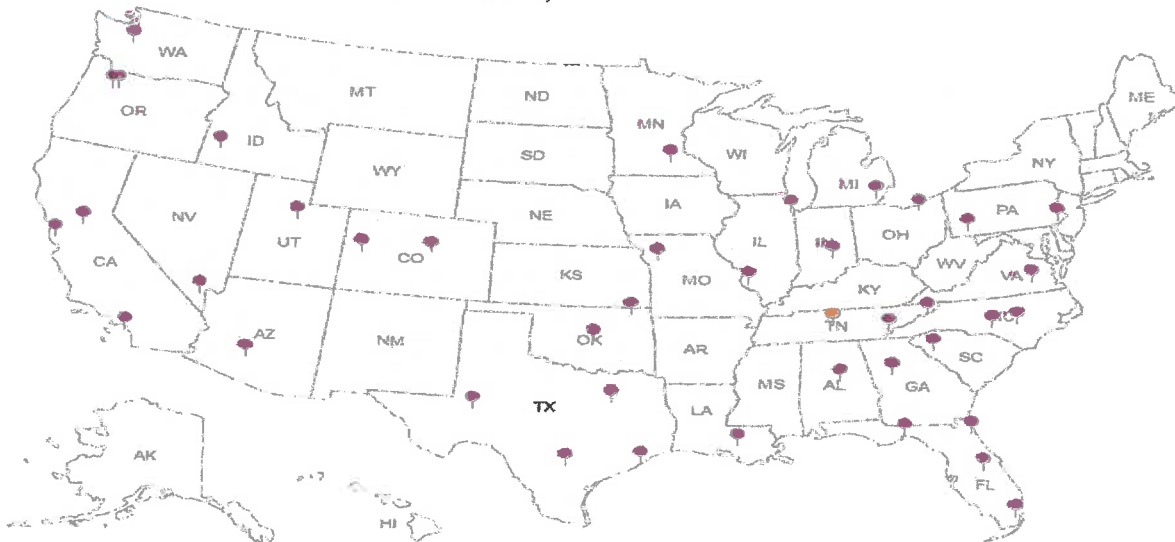
Third Party Federal Accreditations

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

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



ACCOUNT:
ESC - Decatur Lab

PROJECT:
1808267

SDG:
L1003909

DATE/TIME:
06/28/18 16:35

Page 19 of 34

11 of 19



SUBCONTRACT ORDER

E145

Sending Laboratory:

ESC - Decatur
2220 Beltline Road SW
Decatur, AL 35601
Phone: 256-350-0846
Fax: 256-350-0686

Subcontracted Laboratory:

ESC
12065 Lebanon Road
Mount Juliet, TN 37122
Phone: (615) 758-5858
Fax:

Work Order: 1808267

262 CH

Analysis Code	Analysis Description	Due	Comments
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Sample ID: 1808267-01	Tusculmia City SC-1	06/28/2018	Matrix: Aqueous Sampled: 106390901
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Sample ID: 1808267-02	Tusculmia City SC-2	06/28/2018	Matrix: Aqueous Sampled: 02
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Sample ID: 1808267-03	Tusculmia City SC-3	06/28/2018	Matrix: Aqueous Sampled: 03
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Sample ID: 1808267-04	Tusculmia City SC-4	06/28/2018	Matrix: Aqueous Sampled: 04
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Sample ID: 1808267-05	Tusculmia City SC-Equipment Blank	06/28/2018	Matrix: Aqueous Sampled: 05
-----------------------	-----------------------------------	------------	-----------------------------

The appropriate credentials and accreditations of the subcontract laboratory have been verified for the analyses to be performed on the samples included in this document as of the date samples were shipped to the subcontract laboratory.

Yes No

Received By: [Signature] Date: 6-21-18

Received By: SCA Clarix Date: 6/28/18

Received By

Date

Received By

Page 2 of 2

Date:

Sci Clz/ir (uog)

6-21-10

No

Yes

The appropriate credentials and accreditations of the subcontract laboratory have been verified for the analyses to be performed on the samples included in this document as of the date samples were shipped to the subcontract laboratory.

Containers Supplied:

Analysis Code	Analysis Description	Due	Comments
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Work Order: 1808267 (Continued)

L1003469

SUBCONTRACT ORDER (Continued)





ANALYSIS REQUEST CHAIN OF CUSTODY RECORD
 2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
 (256) 350-0846

www.enersolv.com

PAGE 1 of 1
 MS4 Area - Spring Creek

COMPANY/CLIENT NAME ENERSOLV	CLIENT P.O. NUMBER ENE 13886 RMCWHORTER	ENERSOLV PROJECT NUMBER ENE 13886 RMCWHORTER
CLIENT POINT OF CONTACT R. McWhorter	CLIENT PHYSICAL ADDRESS 2220 Beltline Rd	CITY/STATE/ZIP Decatur, AL 35601
CLIENT EMAIL rmcwhorter@enersolv.com	PHONE NUMBER 256-566-9220	OTHER INFORMATION Tuscumbia Spring Creek
SAMPLE COLLECTED BY R. McWhorter	DATE DUE (REQUIRED)	EXPEDITED REPORT DELIVERY (SURCHARGE)

REQUESTED ANALYSES

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER/GRAB DATE	SAMPLE TRANSFER/GRAB TIME	GRAB COMP	ALK	CBOD	CHLOROPHYLL	COND	DO	TSS	HARD	NH3	NO3/NO2IG	P TOTAL	PH	TKN
1808267-01	Tuscumbia Spring Creek SC-2	6/21/18	0915	X	X	X	X	X	X	X	X	X	X	X	X	X

Comments:

FLOW
 Collector to complete shaded areas, as applicable

SAMPLE TEMPERATURE RECEIVED @

SAMPLER INFORMATION	FIELD INFORMATION										SAMPLE STATUS		
	Start Date	Start Time	Stop Date	Stop Time	pH	su	TRC mg/l	DO mg/l	Temp deg C	Qty		Type	Parameters
RELINQUISHED BY: (SIGNATURE) <i>Rick McWhorter</i>	DATE 6/21/18	TIME 1245	DATE 6/21/18	TIME 1245	SM 4500-Cl D	SM 4500-Cl D	SM 4500-O G	SM 2570B	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY: (SIGNATURE) <i>R. McWhorter</i>	DATE 6/21/18	TIME 1001	DATE 6/21/18	TIME 1001	SM 4500-HB	SM 4500-HB	SM 4500-O G	SM 2570B	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RECEIVED FOR LABORATORY USE BY: (SIGNATURE) <i>R. McWhorter</i>	DATE 6/21/18	TIME 1001	DATE 6/21/18	TIME 1001	SM 4500-HB	SM 4500-HB	SM 4500-O G	SM 2570B	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

Accepted with Exception



ANALYSIS REQUEST D CHAIN OF CUSTODY RECORD
 2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
 (256) 350-0846

PAGE 1 of 1
 MS4 Area - Spring Creek

COMPANY/CLIENT NAME: **ENERSOLV**
 CLIENT P.O. NUMBER: **www.enersolv.com**
 ENERSOLV PROJECT NUMBER: **ENE 13886 RMCWHORTER**
 CLIENT PHYSICAL ADDRESS: **2220 Beltline Rd**
 PHONE NUMBER: **256-568-9220**
 CITY/STATE/ZIP: **Decatur, AL 35601**
 CLIENT CONTACT: **R. McWhorter**
 CLIENT EMAIL: **rmcwhorte@enersolv.com**
 OTHER INFORMATION: **Tuscumbia Spring Creek**
 SAMPLE COLLECTED BY: **R. McWhorter**
 DATE DUE (REQUIRED):

REQUESTED ANALYSES:

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER/GRAB DATE	SAMPLE TRANSFER/GRAB TIME	GRAB COMP	ALK	CBOD	CHLOROPHYLL	COND	DO	TSS	HARD	NH3	NITROGEN	P TOTAL	TKN
100267-03	Tuscumbia Spring Creek SC-3	6/21/18	09:50	X	X	X	X	X	X	X	X	X	X	X	X

Comments:
FLOW
 Collector to complete shaded areas, as applicable

SAMPLE TEMPERATURE RECEIVED @

SAMPLER INFORMATION	FIELD INFORMATION				Qty	Type	Parameters
	pH	DO	TRC	Temp			
Start Date	6-5	7.6	6/21/18	7.6	1	Poly 1/2 Cool 6c	Alk, CBOD, NO3NO2, Cond
Stop Date	6/21/18	6/21/18	09:50	09:38	2	Amb Glass 1000ml Cool 6c	Chlorophyll
Time	09:50	09:38	09:50	09:38	1	Poly Pint HNO3 Cool 6c	Hard
Analyst	Rm	Rm	Rm	Rm	1	Poly Pint H2SO4 Cool 6c	NH3, P, TKN
RELINQUISHED BY: (SIGNATURE)	DATE	SM 4500-H-B	DATE	SM 4500-G-G	DATE	SM 2550B	DATE
RECEIVED BY: (SIGNATURE)	DATE	DATE	DATE	DATE	DATE	DATE	DATE
RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	DATE	DATE	DATE	DATE	DATE	DATE

RELINQUISHED BY: (SIGNATURE) *[Signature]* DATE *6/21/18* TIME *12:55*
 RECEIVED BY: (SIGNATURE) *[Signature]* DATE *6/21/18* TIME *12:55*
 RECEIVED FOR LABORATORY USE BY: (SIGNATURE) *[Signature]* DATE *6/21/18* TIME *12:55*

Accepted Rejected Accepted with Exception



ANALYSIS REQUEST CHAIN OF CUSTODY RECORD
 2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
 (256) 350-0846

PAGE 1 of 1
 MS4 Area - Spring Creek
 1100701

www.enersolv.com

COMPANY/CLIENT NAME: City of Tusculumbia
 CLIENT POINT OF CONTACT: Bo Stanley
 CLIENT EMAIL: bostan29@comcast.net
 CLIENT P.O. NUMBER: ENE 13886
 CLIENT PHYSICAL ADDRESS: 202 East 6th Street
 PHONE NUMBER: (256) 386-5674
 CITY/STATE/ZIP: Tusculumbia, AL 35674

REQUESTED ANALYSES

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER/GRAB DATE	SAMPLE TRANSFER/GRAB TIME	GRAB COMP	ALK	CBOD	CHLOROPHYLL	COND	HARD	NH3	NO3NO2IC	P TOTAL	TKN
1100701-05	SC Equipment Blank	6/21/18	1244	X	X	X	X	X	X	X	X	X	X

Comments:


Collector to complete shaded areas, as applicable

SAMPLE TEMPERATURE RECEIVED @

SAMPLER INFORMATION	FIELD INFORMATION	Qty	Type	Parameters:
Start Date: 7/7/18 Stop Date: 6/21/18 Start Time: 1244 Stop Time: 1244 Analyst: R	TRC: 7.71 mg/l DO: 6.76 mg/l Date: 6/21/18 Time: 12:44 Analyst: R	1	Poly 1/2 Cool 6c	Alk, CBOD, NO3NO2, Cond
Relinquished By: (Signature) Received By: (Signature)	Relinquished By: (Signature) Received By: (Signature)	2	Amb Glass 1000ml Cool 6c	Chlorophyll
Relinquished By: (Signature) Received By: (Signature)	Relinquished By: (Signature) Received By: (Signature)	1	Poly Pint HNO3 Cool 6c	Hard
Relinquished By: (Signature) Received By: (Signature)	Relinquished By: (Signature) Received By: (Signature)	1	Poly Pint H2SO4 Cool 6c	NH3, P, TKN

Accepted with Exception Rejected Accepted

ESC LAB SCIENCES Cooler Receipt Form

Client: ENERSOILY	SDG#	L1603909
Cooler Received/Opened On: 6/22/18	Temperature:	26
Received By: Kevin Turner		
Signature: 		
Receipt Check List		
	NIP	Yes No
COC Signed / Accurate?		<input checked="" type="checkbox"/> <input type="checkbox"/>
Bottles arrive intact?		<input checked="" type="checkbox"/> <input type="checkbox"/>
Correct bottles used?		<input checked="" type="checkbox"/> <input type="checkbox"/>
Sufficient volume sent?		<input checked="" type="checkbox"/> <input type="checkbox"/>
If Applicable		<input checked="" type="checkbox"/> <input type="checkbox"/>
VOA Zero heads pace?		
Preservation Correct / Checked?		<input checked="" type="checkbox"/>



ANALYSIS REQUEST / CHAIN OF CUSTODY RECORD
2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
(256) 350-0846

www.enersolv.com

COMPANY/CLIENT NAME ENERSOLV	CLIENT P.O. NUMBER ENE 13886 RMCWHORTER	ENERSOLV PROJECT NUMBER ENE 13886 RMCWHORTER
CLIENT POINT OF CONTACT R. McWhorter	CLIENT PHYSICAL ADDRESS 2220 Beltline Rd	CITY/STATE/ZIP Decatur, AL 35601
CLIENT EMAIL rmcwhorter@enersolv.com	PHONE NUMBER 256-566-9220	OTHER INFORMATION Tuscumbia Spring Creek
SAMPLE COLLECTED BY R. McWhorter	EXPEDITED REPORT DELIVERY (SURCHARGE) DATE DUE (REQUIRED)	

REQUESTED ANALYSES

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER/GRAB DATE	SAMPLE TRANSFER/GRAB TIME	GRAB COMP	ALK	CBOD	CHLOROPHYLL	COND	DO	TSS	HARD	MEH	NO3NO2IC	P TOTAL	PH	TKN
1808267-03	Tuscumbia Spring Creek SC-3	6/21/18	09:38	X	X	X	X	X	X	X	X	X	X	X	X	X

Comments:
FLOW
 Collector to complete shaded areas, as applicable

SAMPLER INFORMATION	FIELD INFORMATION										SAMPLE TEMPERATURE RECEIVED @	
	Start Date	Stop Date	Start Time	Stop Time	Analyst	pH su	TRC mg/l	DO mg/l	Temp deg C	Qty		Type
RELINQUISHED BY: (SIGNATURE) <i>R. McWhorter</i>	DATE 6/21/18	DATE 6/21/18	TIME 09:38	TIME 09:38	ANALYST RM	6.5	6.5	7.6	7.6	1	Poly 1/2 Cool 6c	Alk, CBOD, NO3NO2, Cond
RECEIVED BY: (SIGNATURE) <i>R. McWhorter</i>	DATE 6/21/18	DATE 6/21/18	TIME 12:45	TIME 12:45	ANALYST RM	6.5	6.5	7.6	7.6	2	Amb Glass 1000ml Cool 6c	Chlorophyll
RECEIVED FOR LABORATORY USE BY: (SIGNATURE) <i>R. McWhorter</i>	DATE 6/21/18	DATE 6/21/18	TIME 12:45	TIME 12:45	ANALYST RM	6.5	6.5	7.6	7.6	1	Poly Pint HNO3 Cool 6c	Hard
RELINQUISHED BY: (SIGNATURE) <i>R. McWhorter</i>	DATE 6/21/18	DATE 6/21/18	TIME 12:45	TIME 12:45	ANALYST RM	6.5	6.5	7.6	7.6	1	Poly Pint H2SO4 Cool 6c	NH3, P, TKN



ANALYSIS REQUEST / CHAIN OF CUSTODY RECORD
2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
(256) 350-0846

www.enersolv.com

COMPANY/CLIENT NAME City of Tuscumbia		CLIENT P O NUMBER ENE 13886 RMCWHORTER		ENERSOLV PROJECT NUMBER ENE 13886 RMCWHORTER	
CLIENT POINT OF CONTACT Bo Stanley		CLIENT PHYSICAL ADDRESS 202 East 6th Street		CITY/STATE/ZIP Tuscumbia, AL 35674	
CLIENT EMAIL bostan29@comcast.net		PHONE NUMBER (256)386-5674		OTHER INFORMATION	
SAMPLE COLLECTED BY		EXPEDITED REPORT DELIVERY (SURCHARGE)		DATE DUE (REQUIRED)	
ENERSOLV LAB NUMBER 1000267-05	SAMPLE DESCRIPTION SC Equipment Blank	SAMPLE TRANSFER/GRAB DATE 6/21/18	SAMPLE TRANSFER/GRAB TIME 1244	GRAB COMP X	REQUESTED ANALYSES
					ALK X
					CBOD X
					CHLOROPHYLL X
					COND X
					HARD X
					NH3 X
					NO3NO2IC X
					P TOTAL X
					TKN X

Comments:

Collector to complete shaded areas, as applicable

SAMPLE TEMPERATURE RECEIVED @ 3.4

SAMPLER INFORMATION		FIELD INFORMATION						Qty	Type	Parameters
Start Date	pH su	TRC mg/l	DO mg/l	Temp deg C	Date	Date	1	Poly 1/2 Cool 6c	Alk, CBOD, NO3NO2, Cond	
Start Time	Date	Date	Date	Date	Date	Date	2	Amb Glass 1000ml Cool 6c	Chlorophyll	
Stop Date	Time	Time	Time	Time	Time	Time	1	Poly Pint HNO3 Cool 6c	Hard	
Stop Time	Analyst	Analyst	Analyst	Analyst	Analyst	Analyst	1	Poly Pint H2SO4 Cool 6c	NH3, P, TKN	
RELINQUISHED BY: (SIGNATURE)	DATE	SM 4500-H+B	DATE	SM 4500-CI D	DATE	SM 2550B	1	RELINQUISHED BY: (SIGNATURE)	DATE	
RECEIVED BY: (SIGNATURE)	DATE	6/21/18	1245	RECEIVED BY: (SIGNATURE)	DATE	RECEIVED BY: (SIGNATURE)	DATE	RECEIVED BY: (SIGNATURE)	DATE	
RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	6/21/18	1245	DATE	TIME	DATE	TIME	DATE	TIME	

Rejected Accepted Accepted with Exception

Energolv Field Calibration Record – pH Measurement

For all field instruments: Calibration/Confirmation Interval - Prior to each use, but not more than daily
Calibration Environmental Conditions: Room temperature

Calibrated By: R. McWhorter Date: 6/21/18 Time: 0805

pH Meter Calibration – Equipment number: PH031

	7.00 pH buffer Acc. Range 7.0 +/- 0.1	10.00pH buffer Acc. Range 10.0+/- 0.1	Acceptance Criteria met? Slope 92 – 102	
			Yes	No
Reagent ID – Pre-calibration	<u>EC82604</u>	<u>EC82609</u>		
Value before calibration, s.u.	<u>7.1</u>	<u>10.1</u>		
Observed pH Buffer Temp. before calibration, °C	<u>32.4</u>	<u>30.6</u>		
Correction Factor (see chart)	<u>0</u>	<u>0</u>		
Final pH Buffer Temp. before calibration, °C	<u>31.0</u>	<u>31.0</u>		
Final Calibration				
Reagent ID – Post-calibration	<u>EC82604</u>	<u>EC82609</u>		
Value Final calibration, s.u.	<u>7.0</u>	<u>10.0</u>		

pH Meter Post Cal. Date: 6/21/18 Time: 12:19

	7.00 pH buffer Acc. Range 7.00+/- 0.2	10.0 pH buffer Acc. Range 10.00+/-0.2
Reagent ID	<u>EC82604</u>	<u>EC82609</u>
Post Calibration pH value	<u>7.0</u>	<u>10.0</u>
Observed Buffer Temp., °C	<u>31.6</u>	<u>31.6</u>
Correction Factor	<u>0</u>	<u>0</u>
Final Buffer Temp., °C	<u>31.6</u>	<u>31.6</u>

If any client sample pH measurement was less than 5.0 s.u., perform check on 4.0 pH buffer

4.0 Buffer Cal., if required Date/time: _____ NA

4.00 pH buffer, Acc. Range 4.00+/-0.1		
pH 4.00 buffer Reagent ID:		
pH 4.00 buffer value:		
Observed pH Buffer Temp., °C	Correction Factor	Final pH Buffer Temp., °C

Note: If equipment calibration fails to meet acceptance limits, the equipment must be taken out of service and tagged for repair.

Energolv form FLD-030-SOP A-1 rev. 7 2/14/18

Enersolv Field Calibration Record

Calibrated By: P. McWhorter Date: 10/21/18 Time: 0809

For all field instruments
 Calibration/Confirmation Interval: Prior to each use, but not more than daily
 Calibration Environmental Conditions: Room temperature

Dissolved Oxygen Meter - Equipment Number: 0307 NA

	Oxygen meter reading	Calibration successful?
Value before calibration, mg/L	9.67	
% Air Saturation / Slope	96.2	
Value after calibration, mg/L	9.0	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Turbidity Meter - Equipment number: 150 NA

	1 NTU	10 NTU
Meter Reading Before Calibration, NTU		
Meter Reading After Calibration, NTU		
Turbidity Standard Reagent Number		

Conductivity Meter - Equipment Number: _____ NA

Value of Conductivity Standard, uS	
Meter reading before calibration, uS	
Cell Constant Value	
Conductivity Standard Reagent Number	

Note: If equipment calibration fails to meet acceptance limits, the equipment must be taken out of service and tagged for repair.

Enersolv form FLD-030-SOP A-3 rev. 7



2220 Beltline Road SW
Decatur, AL 35601
256.350.0846
www.pacenational.com

September 04, 2018

Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601

We appreciate the opportunity to provide our services to you on this project. Please find attached the data for the sample(s) listed below:

<u>LabNumber</u>	<u>Sample Description</u>	<u>Date/Time Collected</u>	<u>Date Submitted</u>
1811342-01	Tuscumbia City SC- 1	8/24/18 07:50	8/24/18
1811342-02	Tuscumbia City SC- 2	8/24/18 08:15	8/24/18
1811342-03	Tuscumbia City SC- 3	8/24/18 08:45	8/24/18
1811342-04	Tuscumbia City SC- 4	8/24/18 09:18	8/24/18

Pace National-Decatur is accredited to ISO/IEC 17025:2005 by ANSI-ASQ National Accreditation Board (ANAB) and to the TNI 2003 Standard by the Florida Department of Health. Our quality system also meets relevant quality system requirements of ISO 9001:2008. Not all tests performed by ESC-Decatur are covered by these accreditations. Tests within our scope of accreditation are indicated by an asterisk (*) in the Test Result section of this report. Tests not included in the accreditations are performed in accordance with ESC-Decatur's Standard Operating Procedures and the quality control program using, where applicable, USEPA methodology.

This cover page and the attached chain-of-custody record(s) are integral parts of your report. Pace National-Decatur considers this report your official record. This information shall remain in Pace National-Decatur's active database for a period of one (1) calendar year before archiving. Any replacement of this information after archiving may result in an administrative fee to cover the cost of retrieval.

If you have any questions or would like more information regarding these analyses, please call us at (256) 350-0846.



Jimmy Wilson

SAMPLE RESULTS REPORT

Report Date/Time: 09/04/2018 13:40

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



NELAP
Accredited
Florida DOH
#E871078

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ESC-Decatur also maintains ISO/IEC 17025 accreditation through ANSI-ASQ Accreditation Board for the specific tests listed in ANAB Certificate #L2239 scope of accreditation.

Tests within the scope of accreditation are indicated by an asterisk (*).

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ANAB Cert. #L2239 Testing
ADEM
Drinking Water
Certification
No. 40160

Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC- 1

Sample ID: 1811342-01

Collected: 08/24/2018

Submitted: 08/24/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	<0.260	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	<0.200	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	0.176	mg/l		
* Carbonaceous BOD	<3.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	196.0	umho/cm		
Total Alkalinity	91.4	mg/l CaCO ₃		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	2.50	mg/l		

On-Site Analysis

Dissolved Oxygen	4.50	mg/l		
pH	6.5	su		

SAMPLE RESULTS REPORT

Report Date/Time: 09/04/2018 13:40

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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC- 2

Sample ID: 1811342-02

Collected: 08/24/2018

Submitted: 08/24/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	1.21	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	1.21	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD				
Chlorophyll a (corrected)	<3.00	mg/l		D
Conductance	<5.00	ug/l		
Total Alkalinity	314.0	umho/cm		
* Total Kjeldahl Nitrogen	161	mg/l CaCO3		
* Total Phosphorus	<1.50	mg/l		
* Total Suspended Solids	<1.00	mg/l		
	<2.50	mg/l		

On-Site Analysis

Dissolved Oxygen	6.40	mg/l		
pH	6.5	su		

SAMPLE RESULTS REPORT

Report Date/Time: 09/04/2018 13:40

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC- 3

Sample ID: 1811342-03

Collected: 08/24/2018

Submitted: 08/24/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	3.87	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	3.87	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<3.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	420.0	umho/cm		
Total Alkalinity	199	mg/l CaCO3		
* Total Kjeldahl Nitrogen	4.30	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	<2.50	mg/l		

On-Site Analysis

Dissolved Oxygen	6.35	mg/l		
pH	6.4	su		

SAMPLE RESULTS REPORT

Report Date/Time: 09/04/2018 13:40

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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Analyte Name	Result	Units	Qual	Regulatory Limit
--------------	--------	-------	------	------------------

Sample Point: Tuscumbia City SC- 4

Sample ID: 1811342-04 Collected: 08/24/2018 Submitted: 08/24/2018

Anions by IC

Nitrate plus Nitrite-Nitrogen	3.87	mg/l		
* Nitrate-Nitrogen CAS: 14797-55-8	3.87	mg/l		
* Nitrite-Nitrogen CAS: 14797-65-0	<0.0600	mg/l		

Inorganics

* Ammonia-Nitrogen CAS: 8013-59-0	<0.100	mg/l		
* Carbonaceous BOD	<3.00	mg/l	D	
Chlorophyll a (corrected)	<5.00	ug/l		
Conductance	425.0	umho/cm		
Total Alkalinity	203	mg/l CaCO3		
* Total Kjeldahl Nitrogen	<1.50	mg/l		
* Total Phosphorus	<1.00	mg/l		
* Total Suspended Solids	16.0	mg/l		

On-Site Analysis

Dissolved Oxygen	5.40	mg/l		
pH	6.5	su		

SAMPLE RESULTS REPORT

Report Date/Time: 09/04/2018 13:40

REPORT TO
Darrin Miller
Enersolv Corporation
2220 Beltline Road SW
Decatur, AL 35601



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All calculations are performed prior to rounding per EPA and *Standard Methods* requirements.

Data Qualifiers:

- D Estimated BOD/CBOD value - sample dissolved oxygen depletion less than method required 2.0 mg/l.
- < Less than reporting limit

Analysis Information

Lab Number	Analysis	SpecificMethod	Analyst	Analysis Start Date/Time	Analysis End Date/Time
1811342-01	Total Alkalinity	SM 2320B-2011	RAC	08/28/2018 15:00	
1811342-01	Carbonaceous BOD	SM 5210B-2011	JB	08/24/2018 15:00	08/29/2018 09:30
1811342-01	Chlorophyll a (corrected)	SM 10200 H	JW	08/24/2018 15:30	
1811342-01	Conductance	SM 2510B	LLW	08/28/2018 09:20	
1811342-01	Ammonia-Nitrogen	SM 4500 NH3-C-2011	AH	08/27/2018 08:00	
1811342-01	Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 13:34	
1811342-01	Nitrate-Nitrogen	EPA 300.0	LLW	08/24/2018 13:34	
1811342-01	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 13:34	
1811342-01	Total Phosphorus	EPA 365.3	JW	08/30/2018 06:45	
1811342-01	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	AH	08/27/2018 09:00	
1811342-01	Total Suspended Solids	USGS I-3765-85	JRL	08/26/2018 14:40	
1811342-02	Total Alkalinity	SM 2320B-2011	RAC	08/28/2018 15:00	
1811342-02	Carbonaceous BOD	SM 5210B-2011	JB	08/24/2018 15:00	08/29/2018 09:30
1811342-02	Chlorophyll a (corrected)	SM 10200 H	JW	08/24/2018 15:30	
1811342-02	Conductance	SM 2510B	LLW	08/28/2018 09:20	
1811342-02	Ammonia-Nitrogen	SM 4500 NH3-C-2011	AH	08/27/2018 08:00	
1811342-02	Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 13:52	
1811342-02	Nitrate-Nitrogen	EPA 300.0	LLW	08/24/2018 13:52	
1811342-02	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 13:52	
1811342-02	Total Phosphorus	EPA 365.3	JW	08/30/2018 06:45	
1811342-02	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	AH	08/27/2018 09:00	
1811342-02	Total Suspended Solids	USGS I-3765-85	JRL	08/26/2018 14:40	
1811342-03	Total Alkalinity	SM 2320B-2011	RAC	08/28/2018 15:00	
1811342-03	Carbonaceous BOD	SM 5210B-2011	JB	08/24/2018 15:00	08/29/2018 09:30
1811342-03	Chlorophyll a (corrected)	SM 10200 H	JW	08/24/2018 15:30	
1811342-03	Conductance	SM 2510B	LLW	08/28/2018 09:20	
1811342-03	Ammonia-Nitrogen	SM 4500 NH3-C-2011	AH	08/27/2018 08:00	
1811342-03	Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 14:10	

SAMPLE RESULTS REPORT

Report Date/Time: 09/04/2018 13:40

REPORT TO
Darrin Miller Enersolv Corporation 2220 Beltline Road SW Decatur, AL 35601



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ANAB Cert. #L2239 Testing
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No. 40160

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1811342-03	Nitrate-Nitrogen	EPA 300.0	LLW	08/24/2018 14:10	
1811342-03	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 14:10	
1811342-03	Total Phosphorus	EPA 365.3	JW	08/30/2018 06:45	
1811342-03	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	AH	08/27/2018 09:00	
1811342-03	Total Suspended Solids	USGS I-3765-85	JRL	08/26/2018 14:40	
1811342-04	Total Alkalinity	SM 2320B-2011	RAC	08/28/2018 15:00	
1811342-04	Carbonaceous BOD	SM 5210B-2011	JB	08/24/2018 15:00	08/29/2018 09:30
1811342-04	Chlorophyll a (corrected)	SM 10200 H	JW	08/24/2018 15:30	
1811342-04	Conductance	SM 2510B	LLW	08/28/2018 09:20	
1811342-04	Ammonia-Nitrogen	SM 4500 NH3-C-2011	AH	08/27/2018 08:00	
1811342-04	Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 14:29	
1811342-04	Nitrate-Nitrogen	EPA 300.0	LLW	08/24/2018 14:29	
811342-04	Nitrate plus Nitrite-Nitrogen	EPA 300.0	LLW	08/24/2018 14:29	
1811342-04	Total Phosphorus	EPA 365.3	JW	08/30/2018 06:45	
1811342-04	Total Kjeldahl Nitrogen	SM 4500-Norg C-2011	AH	08/27/2018 09:00	
1811342-04	Total Suspended Solids	USGS I-3765-85	JRL	08/26/2018 14:40	

The results contained in this report are only representative of the sample(s) received.



ANALYTICAL REPORT

August 31, 2018

ESC - Decatur Lab

Sample Delivery Group: L1020837
Samples Received: 08/25/2018
Project Number: 1811342
Description:

Report To: ESC Decatur
2220 Beltline Road SW
Decatur, AL 35601

Entire Report Reviewed By:

Kelly Mercer
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 National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

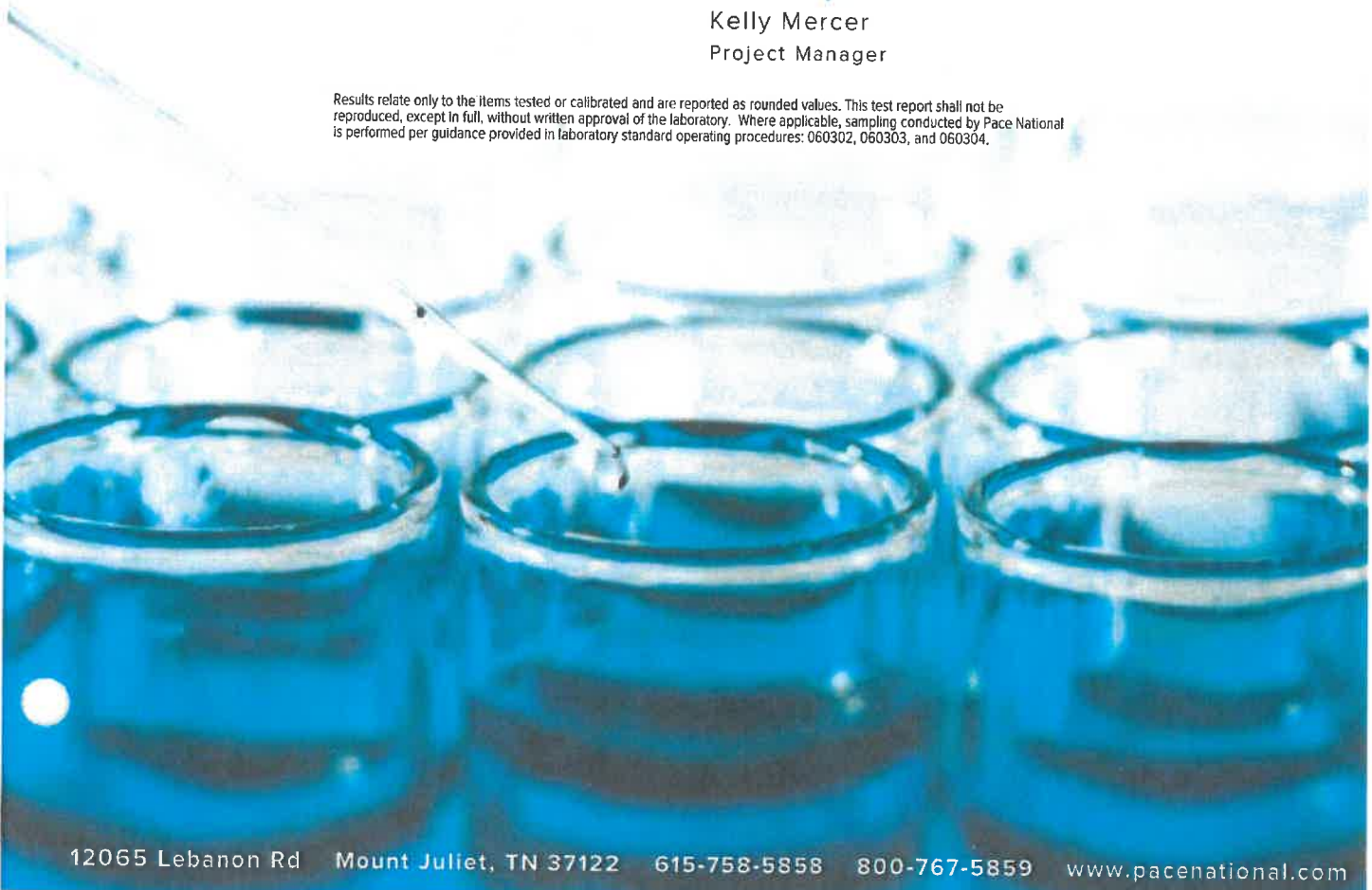










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1811342-02 TUSCUMBIA CITY SC-2 L1020837-02	6	
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ACCOUNT:
ESC - Decatur Lab

PROJECT:
1811342

SDG:
L1020837

DATE/TIME:
08/31/18 13:12

PAGE:
2 of 16

SAMPLE SUMMARY

ONE LAB. NATIONWIDE

1811342-01 TUSCUMBIA CITY SC-1 L1020837-01 WW Collected by R. McWhorter
Collected date/time 08/24/18 07:50
Received date/time 08/25/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1158603	1	08/29/18 15:48	08/29/18 15:48	JER
Metals (ICP) by Method 200.7	WG1158056	1	08/27/18 18:45	08/29/18 12:27	CCE

1811342-02 TUSCUMBIA CITY SC-2 L1020837-02 WW Collected by R. McWhorter
Collected date/time 08/24/18 08:15
Received date/time 08/25/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1158603	1	08/29/18 15:48	08/29/18 15:48	JER
Metals (ICP) by Method 200.7	WG1158056	1	08/27/18 18:45	08/29/18 12:30	CCE

1811342-03 TUSCUMBIA CITY SC-3 L1020837-03 WW Collected by R. McWhorter
Collected date/time 08/24/18 08:45
Received date/time 08/25/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1158603	5	08/29/18 15:59	08/29/18 15:59	JER
Metals (ICP) by Method 200.7	WG1158056	1	08/27/18 18:45	08/29/18 11:29	CCE

1811342-04 TUSCUMBIA CITY SC-4 L1020837-04 WW Collected by R. McWhorter
Collected date/time 08/24/18 09:18
Received date/time 08/25/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 130.1	WG1158603	5	08/29/18 16:01	08/29/18 16:01	JER
Metals (ICP) by Method 200.7	WG1158056	1	08/27/18 18:45	08/29/18 12:33	CCE



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.



Kelly Mercer
Project Manager

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Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hardness (colorimetric) as CaCO3	101		30.0	1	08/29/2018 15:48	WG1158603

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium	34.7		1.00	1	08/29/2018 12:27	WG1158056
Magnesium	2.28		1.00	1	08/29/2018 12:27	WG1158056



Collected date/time: 08/24/18 08:15

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	168		30.0	1	08/29/2018 15:48	WG1158603

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	60.4		1.00	1	08/29/2018 12:30	WG1158056
Magnesium	2.91		1.00	1	08/29/2018 12:30	WG1158056



Collected date/time: 08/24/18 08:45

L1020837

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	217	B	150	5	08/29/2018 15:59	WG1158603

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	83.1		1.00	1	08/29/2018 11:29	WG1158056
Magnesium	2.86		1.00	1	08/29/2018 11:29	WG1158056



Wet Chemistry by Method 130.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	207	B	150	5	08/29/2018 16:01	WG1158603

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Calcium	83.6		1.00	1	08/29/2018 12:33	WG1158056
Magnesium	2.76		1.00	1	08/29/2018 12:33	WG1158056



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.

Abbreviations and Definitions

RDL	Reported Detection Limit.
SDG	Sample Delivery Group.
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.
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.
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.
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.
---	--

1 C
 2 T
 3 S
 4 C
 5 S
 6 Sc
 7 A
 8 Sc

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	EB7487	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}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	A130792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

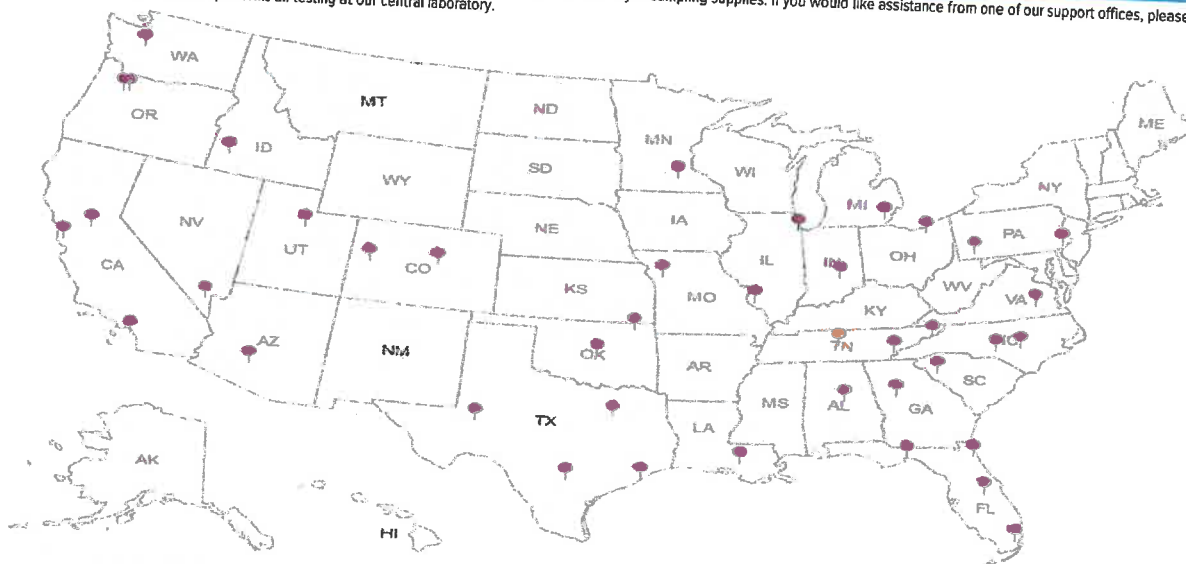
Third Party Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	700789
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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ACCOUNT:
ESC - Decatur Lab

PROJECT:
1811342

SDG:
L1020837

DATE/TIME:
08/31/18 13:12

PAGE:
10 of 16



1084

SUBCONTRACT ORDER

Subcontracted Laboratory:

ESC
1205 Lebanon Road
Mount Juliet, TN 37122
Phone: (615) 758-5858
Fax:

Sending Laboratory:

ESC - Decatur
2220 Bellme Road SW
Decatur, AL 35601
Phone: 256-350-0846
Fax: 256-350-0666

Work Order 1811342

Analysis Code	Analysis Description	Date	Comments
Sample ID: 1811342-01	Tusculum City SC-1	08/31/2018	

MG ICP	Total Magnesium	08/31/2018	Matrix: Aqueous Sampled: -01
CA ICP	Total Calcium	08/31/2018	Please Calculate Hardness
Containers Supplied:			

Sample ID: 1811342-02	Tusculum City SC-2	08/31/2018	
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MG ICP	Total Magnesium	08/31/2018	Matrix: Aqueous Sampled: -02
CA ICP	Total Calcium	08/31/2018	Please Calculate Hardness
Containers Supplied:			

Sample ID: 1811342-03	Tusculum City SC-3	08/31/2018	
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MG ICP	Total Magnesium	08/31/2018	Matrix: Aqueous Sampled: -03
CA ICP	Total Calcium	08/31/2018	Please Calculate Hardness
Containers Supplied:			

Sample ID: 1811342-04	Tusculum City SC-4	08/31/2018	
-----------------------	--------------------	------------	--

MG ICP	Total Magnesium	08/31/2018	Matrix: Aqueous Sampled: -04
CA ICP	Total Calcium	08/31/2018	Please Calculate Hardness
Containers Supplied:			

Appropriate credentials and accreditations of the subcontract laboratory have been verified for the analyses to be performed on the samples included in this document as of the date samples were shipped to the subcontract laboratory.

Yes No

Used By: *[Signature]* Date: 8/24/18
Received By: *[Signature]* Date: 8/25/18
Page 1 of 1

RAD SCREEN: <0.5 mR/hr
10% GCSE
Count = 4
OK



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD
 2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
 (256) 350-0848

PAGE 1 of 1
 MS4 Area - Spring Creek

www.enersolv.com

ENERSOLV PROJECT NUMBER: ENE 13888 RMCWHORTER
 CLIENT P.O. NUMBER: 2220 Beltline Rd
 CLIENT PHYSICAL ADDRESS: 2220 Beltline Rd
 CITY/STATE/ZIP: Decatur, AL 35601
 CLIENT CONTACT: R. McWhorter
 PHONE NUMBER: 256-566-9220
 CLIENT EMAIL: rmcwhorter@enersolv.com
 OTHER INFORMATION: Tuscumbia Spring Creek
 EXPEDITED REPORT DELIVERY (SURCHARGE):
 DATE DUE (REQUIRED):

REQUESTED ANALYSES: 40100057

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER DATE	SAMPLE TRANSFER TIME	GRAV	COMP	ALK	CBOD	CHLOROPHYLL	COND	DO	TSS	FAED	NH3	NITROGENIC	P TOTAL	TKN
1811342-0	Tuscumbia Spring Creek SC-1	8/24/18	07:50	X		X	X	X	X	X	X	X	X	X	X	X

Comments: FLOW 108 g/sec @ 2.5 ft D
 Collector to complete shaded areas, as applicable

SAMPLER INFORMATION	FIELD INFORMATION										SAMPLE TEMPERATURE RECEIVED @ 23		
	pH	TRC	DO	Temp	DO	DO	DO	DO	DO	DO		DO	
Start Date: 6-53	Start Date: 8/24/18	Stop Date: 8/24/18	Time: 07:55	Analyst: R	SM 4500-HB	SM 4500-CID	SM 4500-G	SM 2550B	Poly 1/2 Gallon	Poly 100ml Cool 6c	Poly 1 Pint HNO3 Cool 6c	Poly 1 Pint H2SO4 Cool 6c	NH3, P, TKN

RECEIVED FOR LABORATORY USE BY (SIGNATURE): [Signature]
 DATE: 8/24/18 TIME: 12:15
 RECEIVED BY (SIGNATURE): [Signature]
 DATE: 8/24/18 TIME: 12:15
 SAMPLE STATUS: Accepted Rejected Accepted with Exception



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD
 2220 BELTLINE ROAD SW DECATUR, ALABAMA 35601
 (256) 350-0846

COMPANY/CLIENT NAME: ENERSOLV
 CLIENT P.O. NUMBER: [blank]
 CLIENT PHYSICAL ADDRESS: 2220 Beltline Rd
 PHONE NUMBER: 256-586-9220
 CITY/STATE/ZIP: Decatur, AL 35601
 CLIENT CONTACT: R. McWhorter
 CLIENT EMAIL: rmcwhorter@enersolv.com
 SAMPLE COLLECTED BY: R. McWhorter
 OTHER INFORMATION: Tusculumbia Spring Creek
 EXPEDITED REPORT DELIVERY (SURCHARGE): [blank]
 DATE DUE (REQUIRED): [blank]

REQUESTED ANALYSES **L010837**

ENERSOLV LAB NUMBER	SAMPLE DESCRIPTION	SAMPLE TRANSFER/GRAB DATE	SAMPLE TRANSFER/GRAB TIME	GRAB	COMB	ZK	CBOD	CHLOROPHYLL	COND	DO	TSS	FARD	NH3	NH4NO3	TOTAL	PH	TKN
1811343-02	Tusculumbia Spring Creek SC-2	8/24/18	8:15	X		X	X	X	X	X	X	X	X	X	X	X	X

Comments:

FLOW

Collector to complete shaded areas, as applicable.

SAMPLE TEMPERATURE RECEIVED @ 7.3

SAMPLER INFORMATION	FIELD INFORMATION	Qty	Type	Parameters
Start Date: 8/24/18 Start Time: 8:20 Stop Date: 8/24/18 Stop Time: 8:20 Analyst: R	DO: 6.4 mg/l Date: 8/24/18 Temp: 20 deg C Date: 8/24/18 Time: 8:20 Analyst: R	1	Poly 1/2 Cool 8c	Alk, CBOD, NO3NO2, Cond
RELINQUISHED BY: (SIGNATURE) R. McWhorter DATE: 8/24/18 TIME: 2:15	RELINQUISHED BY: (SIGNATURE) [Signature] DATE: 8/24/18 TIME: 2:15	2	Amb Glass 1000ml Cool 8c	Chlorophyll
RECEIVED BY: (SIGNATURE) [Signature] DATE: 8/24/18 TIME: 19:15	RECEIVED BY: (SIGNATURE) [Signature] DATE: 8/24/18 TIME: 19:15	1	Poly Pint HNO3 Cool 8c	Hard

RECEIVED FOR LABORATORY USE BY: (SIGNATURE) [Signature]
 DATE: 8/24/18
 TIME: 19:15

Accepted with Exception

