



# UCFRBA 2019 ANNUAL REPORT

Prepared for NC Division of Water Resources  
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# 1 | BACKGROUND

The Upper Cape Fear River Basin Association (UCFRBA) has been monitoring the waters of the Cape Fear River basin from its headwaters to the confluence of the Haw and Deep Rivers for the past twenty years. This non-profit organization was established in February 2000, as part of the NC Monitoring Coalition Program, to provide more effective and efficient means to monitor water quality throughout the watershed. The NC Monitoring Coalition Program allows individual wastewater dischargers to collectively fund and implement an instream monitoring program in exchange for a waiver of the ambient monitoring requirements in their individual National Pollutant Discharge Elimination System (NPDES) permits. The UCFRBA is currently comprised of 18 local governments and private industries that rely upon the river for wastewater discharge and/or water supply. It was the last basin association to be formed in the Cape Fear River Basin, following the Lower and Middle Basin programs which were established in 1996 and 1998 respectively.



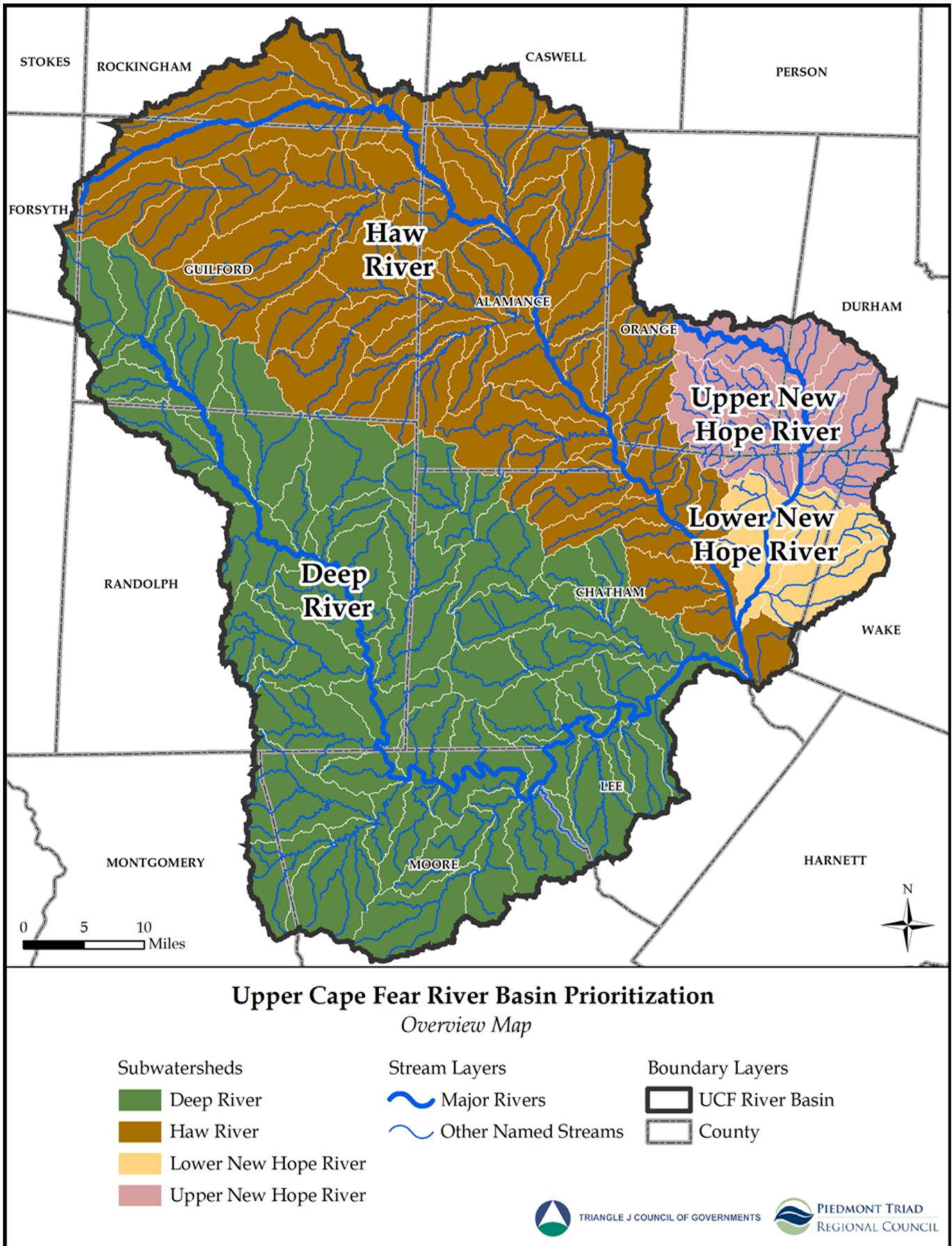
**Figure 1: Upper Cape Fear River Basin**

The UCFRBA maintains a robust monitoring network of thirty-nine (39) monitoring stations throughout the Upper Cape Fear River Basin, which are sampled on a monthly and bi-monthly basis. Monitoring locations are coordinated with the State's existing ambient and biological monitoring networks, to provide a more comprehensive picture of watershed conditions without duplicating efforts. The UCFRBA has a Memorandum of Agreement (MOA) with the North Carolina Division of Water Resources (NCDWR) binding its members to participate in the monitoring program, which began in April 2000. The Association has since renewed its MOA with NCDWR every five years and is in the process of renewing this agreement for 2020-2025.

In addition to its monitoring program, the UCFRBA provides an ongoing forum for interested parties to work together on water resource planning, management and protection issues of mutual concern in the Jordan Lake watershed (including the Haw River and New Hope Creek subwatersheds), the Deep River watershed, and the Rocky River watershed in the uppermost part of the Cape Fear River Basin. The UCFRBA has undertaken several special studies in the past to provide supplemental data and better understand the forces driving water quality in the Upper Cape Fear River. Previous studies have included working with the US Geological Society (USGS) to study sediment and nutrients within the watershed, a four-month pilot study of dissolved metals, and additional sampling to support the development of a watershed model for the Deep River and Rocky River watersheds. Members were also active in the development of the Jordan Lake TMDL and are currently participating in the Jordan Lake One Water initiative.

This report has been prepared to provide interested parties with general information regarding the UCFRBA's monitoring and research activities during calendar year 2019. The report describes the Association's organizational structure, current and future monitoring efforts, and provides a summary of monitoring data collected over the past year.

**Figure 2: Upper Cape Fear Overview Map**



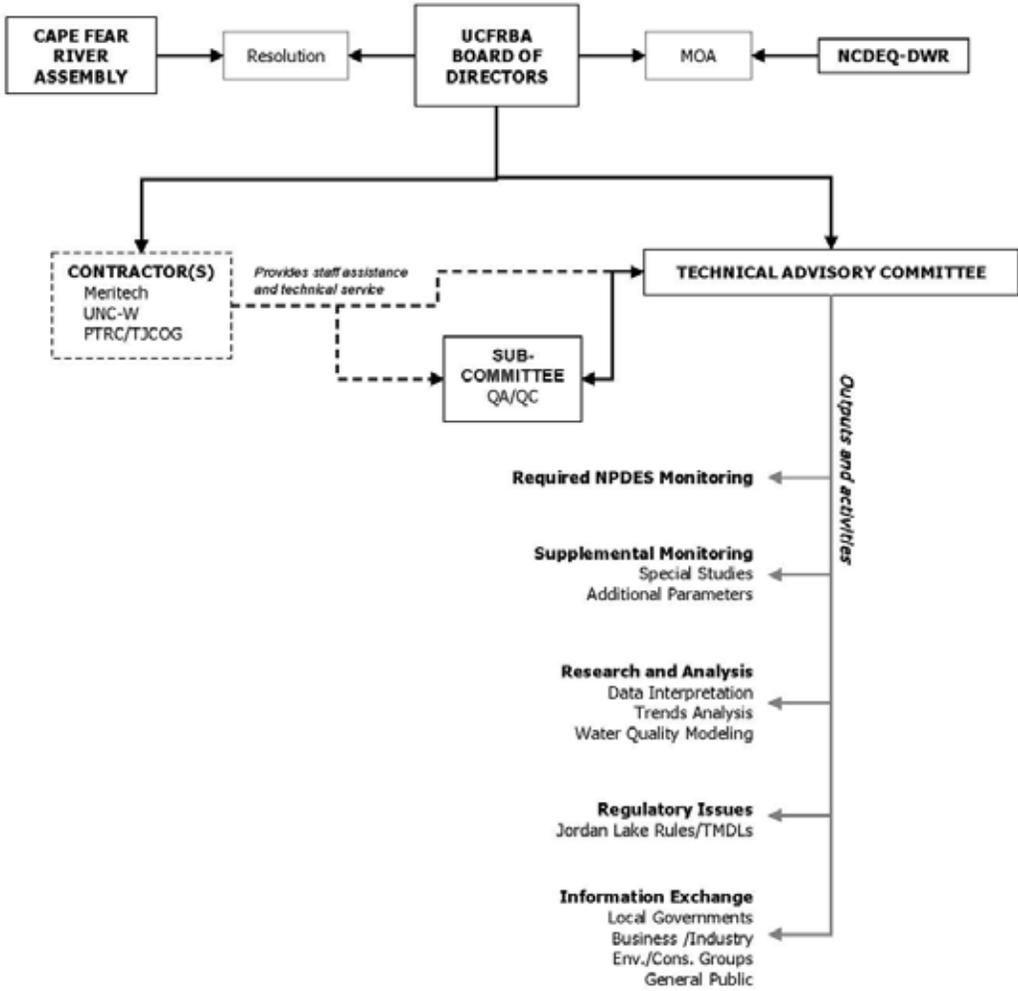
# 2 | ORGANIZATION

## Board of Directors

The UCFRBA is governed by a Board of Directors, which is made up of one representative from each corporate (dues paying) member. This includes 18 local governments and industries using the UCFRBA for water supply or treating and discharging wastewater. Each corporate member is afforded one vote and has the authority to appoint one Director and one Alternate Director to the Board of Directors. The Town of Cary is a special exception, as they have no permit responsibilities within the Basin, but do have an interest in water supply quality and are therefore accorded voting rights with lower dues. The Board of Directors has ultimate responsibility for all financial actions, membership, election of officers, and decisions affecting the Association and typically meets on a bi-annual basis.

Listed below are the organizations that make up the Board of Directors, their designated representatives, and NPDES permit numbers. The full board list with addresses and contact information can be found in APPENDIX B.

**Figure 3: Organizational Structure**



**Figure 4: 2019 Board of Directors**

<b>Corporate Members</b>	<b>Discharger</b>	<b>Public Water System</b>	<b>Representatives</b>		<b>NPDES Permit Number(s)</b>
Arclin	Yes	No	Brian Reddy	Brad Crawford	NC0000892
Asheboro	Yes	Yes	Michael Rhoney	John Ogburn II	NC0026123
Burlington	Yes	Yes	Bob Patterson	Eric Davis	NC0023868, NC0023876
Cary	No	Yes	Maria Vanderloop	Sarah Braman	None
City of Durham	Yes	Yes	Charlie Cocker	Vicki Westbrook	NC0047597
Graham	Yes	Yes	Tonya Mann	Cris Routh	NC0021211
Greensboro	Yes	Yes	Martie Groome	Elijah Williams	NC0047384
High Point	Yes	Yes	Terry Houk	Derrick Boone	NC0024210
Mebane	Yes	Yes	Dennis Hodge	David Cheek	NC0021474
OWASA	Yes	Yes	Ed Kerwin	Monica Dodson	NC0025241
Pilgrim's Pride	Yes	No	Tina Pedley	Jamal Mohammed	NC0072575, NCG590000
Pittsboro	Yes	Yes	Cindy Perry	Robert Morgan	NC0020354
Ramseur	Yes	Yes	Terry Lewallen	Vicki Caudle	NC0026565
Randleman	Yes	Yes	Michael Glass	Zack Hewett	NC0025445
Reidsville	Yes	Yes	Chuck Smith	Preston Mitchell	NC0024881
Sanford	Yes	Yes	Victor Czar	Scott Siletzky	NC0024147
Siler City	Yes	Yes	Roy Lynch	Chris McCorquodale	NC0026441
Star	Yes	Yes	Wesley Brown	Mary O'Brien	NC0058548

## Officers

The Officers of the Board of Directors consist of a Chair, a Vice Chair, and a Secretary/Treasurer. Officers are elected biannually by the Board of Directors and each officer serves a term of two (2) years. The next officer elections will occur in 2020.

### Officers of the Board of Directors

*Chairman:* Michael Rhoney, City of Asheboro

*Vice-Chairman:* Charles Cocker, City of Durham

## Technical Advisory Committee

The Technical Advisory Committee (TAC) is responsible for providing the Board of Directors with assistance and recommendations concerning the development of proposed annual work programs, specific project plans, and alternative funding sources and strategies. Technical Committee members represent a range of stakeholders with expertise in water quality research and management issues and they serve on a volunteer basis. The Technical Committee is open to participation to anyone that would like to attend. A complete list of current TAC committee members is provided in Appendix C.

*Technical Advisory Committee (TAC) Chair:* Alicia Goots, City of Greensboro

*TAC Vice-Chair:* VACANT

## QA/QC Subcommittee

The Quality Assurance/Quality Control Subcommittee reviews monthly monitoring data to ensure its accuracy and reliability. The following are members of the QA/QC Subcommittee:

Dawn Molnar, QA/QC Chair	City of High Point	Glenn McGirt	City of Burlington
Elaine Sellars	City of High Point	Amanda Hancock	Meritech, Inc.
Alicia Goots	City of Greensboro	Cameron Colvin	PTRC, Staff Support
Martie Groome	City of Greensboro		

## Administrative Staff

The UCFRBA contracts with the Triangle J Council of Governments (TJCOG) and Piedmont Triad Regional Council (PTRC) for administrative, financial, and technical services. These two organizations jointly manage the association and provide ongoing staff support.

### *Staff Contacts*

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## Official Website

The UCFRBA maintains a dedicated website at <https://www.ptrc.org/ucfrba>. This website provides up-to-date information about the UCFRBA and its monitoring program, including station locations, monitoring schedules, organizational documents, and meeting notices and materials.



# 3 | MONITORING

## Summary of Monitoring Program

The UCFRBA is on track to renew its MOA with NCDWR in May 2020 in order to comply with the federal NPDES program. The current monitoring program required by the MOA for the Upper Cape Fear includes forty (40) stations, which were established in cooperation with the NCDWR to monitor water quality near point source discharges. Stations are dispersed throughout the Upper Cape Fear River Basin, covering the main stems of the Haw and Deep Rivers, as well as most major tributaries. One site in Durham County (B3300000) was removed from the UCFRBA's monitoring responsibilities on behalf of its members. In 2019, Station B3040000 on New Hope Creek at SR 1107 was also relocated due to safety concerns. The station was assigned a new station number (B3039000) and is now located above SR 1107 at a concrete impoundment.

Water quality samples are collected and analyzed on a monthly basis for a range of parameters including temperature, dissolved oxygen, conductivity, pH, fecal coliform, turbidity, total suspended solids, ammonium, nitrite-nitrate, TKN, and total phosphorus. Field parameters (temperature, dissolved oxygen, conductivity, and pH) are sampled bi-monthly during the growing season (May – September) at thirty-one (31) of the UCFRBA's thirty-nine (39) monitoring stations. Through 2007, the UCFRBA also monitored metals quarterly and low-level mercury at seven (7) sites. However, in April 2007, NCDWR released a memo suspending the metals monitoring requirement in the MOA for all monitoring coalitions while they re-evaluate new approaches regarding metals data and the use of water quality standards and criteria for metals. As a result, there is no metals data to report for this year. A complete list of UCFRBA monitoring stations and their monitoring frequencies have been provided in Table 1 .

Over the next two years (2019-2020), the UCFRBA will be collecting additional samples at stations B4800000 and B5950000 to support the development of a watershed model for the Upper Cape Fear watershed (Deep River and Rocky River watersheds) and a water quality and hydrodynamic model for the Middle Cape Fear watershed (from confluence of the Haw River and Deep River down to Lock and Dam #1). Additional sampling will include five (5) new parameters (chlorophyll a, orthophosphates, total organic carbon, BOD5, and BOD20) and nutrients, turbidity, and suspended residue samples will be increased to twice monthly during the growing season. This additional monitoring will continue through December 2020.

This year the UCFRBA dedicated a significant amount of time and resources to reevaluate its monitoring program and renegotiate its MOA with NCDWR for 2020-2025. Each monitoring station was visited by UCFRBA staff and QA/QC subcommittee members to review parking, safety, and sampling conditions. Recent changes to the monitoring program, such as the relocation of Station B30400000 (now B3039000), were incorporated into the new MOA. Durham also requested re-adding Station B330000 along Northeast Creek at SR 1102 because of its value to their stormwater management department. Monitoring for Station B330000 will begin in March 2020.

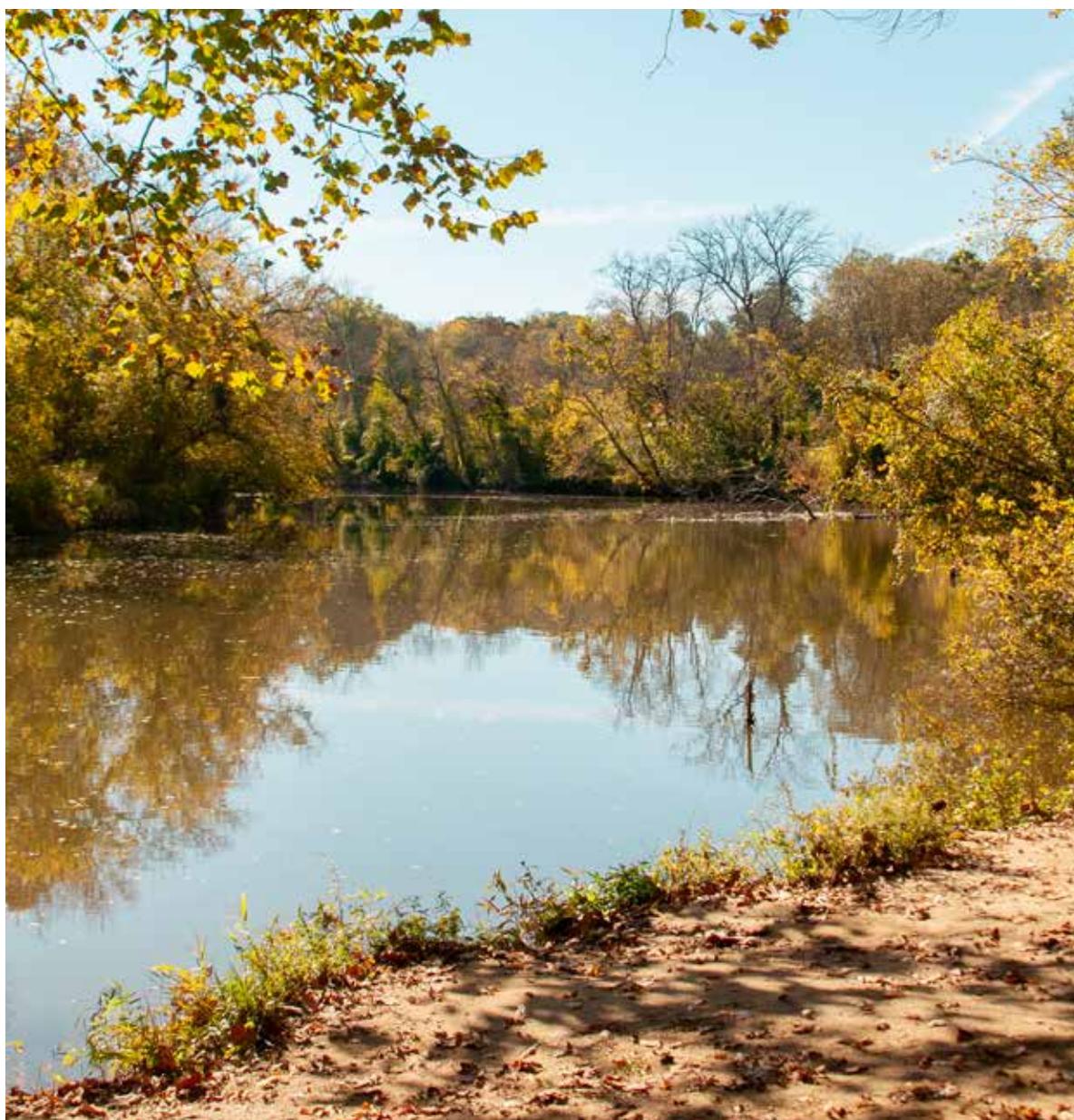
## Certified Lab

Laboratory services are currently provided by Meritech Inc., based in Reidsville, NC. Meritech is certified by

NCDWR to perform environmental analysis and report monitoring data to DEQ for NPDES compliance and has provided these services for the UCFRBA since 2005. SimaLabs, Inc., was the UCFRBA's laboratory for conducting instream monitoring and analyses until August 2004.

## **Data Access**

All monitoring data collected by the UCFRBA is reviewed by the QA/QC subcommittee and submitted to NCDWR on a quarterly basis. Data can be accessed from two online databases – the U.S. EPA's Water Quality Portal (WQP) Database and the Cape Fear River Water Quality Database, which is a joint effort between the Upper, Middle, and Lower Cape Fear programs. This database is maintained by the University of UNC-Wilmington and provides additional analysis and reporting capabilities. Data is typically compiled and uploaded to both databases on an annual basis.



**Table 1: UCFRBA WATER QUALITY MONITORING STATIONS**

DWQ Station Number	Location	Station Information	Latitude (dd,ddd)	Longitude (ddd,ddd)	County	Stream Class	Stream Index	Sub-Basin	Field Parameters	Fecal Coliform	Turbidity	TSS	Nutrients	Metals
B0050000	Haw Riv at US 29 Bus nr Bennala	ups Reidsville WWTP	36.2652	-79.6523	ROCKINGHAM	C, NSW	16-(1)	03-06-01	M + 2SM	M	M	M	M	
B0070010	Troublesome Crk at US 29 Bus nr Reidsville	major tributary, rps inputs	36.2768	-79.6499	ROCKINGHAM	C, NSW	16-6-(3)	03-06-01	M	M	M	M	M	
B0170000	Haw Riv at SR 2620 High Rock Rd nr Williamsburg	below Reidsville WWTP	36.2514	-79.5647	ROCKINGHAM	C, NSW	16-(1)	03-06-01	M + 2SM	M	M	M	M	
B0400000	Rock Rd nr Monticello	model verification	36.1778	-79.6177	GUILFORD	C, NSW	16-11-(9)	03-06-02	M	M	M	M	M	
B0480050	N Buffalo Crk at N Buffalo Crk WWTP Inflow Conduit Pier at Greensboro	ups N, Buffalo WWTP	36.1074	-79.7502	GUILFORD	C, NSW	16-11-14-1	03-06-02	M + 2SM	M	M	M	M	
B0540050 <sup>4</sup>	Mill Rd nr McLeansville	dns N, Buffalo WWTP	36.1299	-79.6626	GUILFORD	C, NSW	16-11-14-1	03-06-02	M + 2SM	M	M	M	M	
B0670000	S Buffalo Crk at SR 3000	USGS gage, ups TZ	36.0598	-79.7256	GUILFORD	C, NSW	16-11-14-2	03-06-02	M + 2SM	M	M	M	M	
B1020000	McConnell Rd nr Greensboro	ups Burlington East WWTP	36.1531	-79.4894	ALAMANCE	C, NSW	16-(1)	03-06-02	M + 2SM	M	M	M	M	
B1200000	Haw Riv at NC 54 nr Graham	btw Burlington East and Graham	36.0481	-79.3667	ALAMANCE	C, NSW	16-(1)	03-06-02	M + 2SM	M	M	M	M	
B1350000	Meadams Crk at Corrigoor Rd nr Mebane	ups Mebane WWTP	36.0885	-79.2844	ALAMANCE	C, NSW	16-18-7	03-06-02	M + 2SM	M	M	M	M	
B1380000	Meadams Crk at SR 1940 Gibson Rd nr Florence Town	dns Mebane WWTP	36.0891	-79.3074	ALAMANCE	C, NSW	16-18-7	03-06-02	M + 2SM	M	M	M	M	
B1440000	Haw Riv at SR 2158 Sweepsomville Rd nr Sweepsomville	dns Graham WWTP	36.0256	-79.3682	ALAMANCE	C, NSW	16-(1)	03-06-02	M + 2SM	M	M	M	M	
B1940000	Big Alamance Crk at NC 87 nr Sweepsomville	ups Burlington S, WWTP	36.0242	-79.3943	ALAMANCE	C, NSW	16-19-(4.5)	03-06-02	M + 2SM	M	M	M	M	
B2000000	Haw Riv at SR 1005 nr Saxpaw	Rural area, dns Cane Creek	35.8953	-79.2585	ALAMANCE	C, NSW	16-(1)	03-06-04	M	M	M	M	M	
B2100000	Haw Riv at SR 1713 nr Bynum	USGS Gage, ups Jordan L., DWR ambient stn	35.7716	-79.1449	CHATHAM	WS-IV, NSW	16-(28.5)	03-06-04	M	M	M	M	M	
B3020000	New Hope Crk at NC 54 nr Durham	ups S, Durham WRF, below waterfowl imp.	35.9167	-78.9704	DURHAM	WS-IV, NSW	16-41-1-(11.5)	03-06-05	M + 2SM	M	M	M	M	
B3025000	Third Fork Crk at NC 54 nr Durham	Urban runoff	35.9187	-78.9548	DURHAM	WS-IV, NSW	16-41-1-12-(2)	03-06-05	M	M	M	M	M	
B3040000	New Hope Crk at SR 1107	Jordan Lake TMDL, USGS gage	35.8847	-78.9656	DURHAM	WS-IV, NSW	16-41-1-(11.5)	03-06-05	M + 2SM	M	M	M	M	
B3670000	Northeast Crk at SR 1731 O Kelly Church Road nr Durham	dns Durham Co. RTP WWTP, Jordan Lake TMDL	35.8555	-78.9397	CHATHAM	WS-IV, NSW	16-41-1-17-(0.7)	03-06-05	M + 2SM	M	M	M	M	
B3899160	Morgan Crk at Mason Farm	ups OWASA	35.8987	-79.0263	ORANGE	WS-IV, NSW	16-41-2-(5.5)	03-06-06	M + 2SM	M	M	M	M	
B3900000	Morgan Crk at SR 1726 Old Farnington Rd nr Farnington	dns OWASA, DWR ambient stn	35.8612	-79.0100	CHATHAM	WS-IV, NSW, CA	16-41-2-(5.5)	03-06-06	M + 2SM	M	M	M	M	
B4080000	Haw Riv at SR 1011 Old US 1 nr Haywood	dns Honeywell, ups Nestle Res-ins	35.6164	-79.0569	CHATHAM	WS-IV	16-42	03-06-04	M + 2SM	M	M	M	M	

**Table 2: UCFRBA WATER QUALITY MONITORING STATIONS**

DWQ Station Number	Location	Station Information	Latitude (dd,ddd)	Longitude (dd,ddd)	County	Stream Class	Stream Index	Sub-Basin	Field Parameters	Fecal Coliform	Turbidity	TSS	Nutrients	Metals
B4350000	Deep Riv at SR 1113 Knett Dr nr Hayworth Spring	ups Ric Hand Crk ups High Point Eastside WW TP, fecal coliform	35.9594	-79.9061	GUILFORD	WS-IV, CA*	17-(4)	03-06-08	M + 2SM	M	M	M	M	
B4380000	Richland Crk at SR 1154 Kensey Valley Rd nr High point	TMDL	35.9410	-79.9322	GUILFORD	WS-IV, CA*	17-(7-4)	03-06-08	M + 2SM	M	M	M	M	
B4621000	Muddy Crk at SR 1917 Suits Rd nr Glensia	fecal coliform TMDL	35.8836	-79.8950	RANDOLPH	WS-IV, *	17-9-(1)	03-06-08	M	M	M	M	M	
B4770500	Deep Riv at 220 Bus Main St at Randleman	ups Randleman WW TP ups Haskettis Crk	35.8233	-79.8033	RANDOLPH	C	17-(10-5)	03-06-08	M + 2SM	M	M	M	M	
B4800000 <sup>5</sup>	Deep Riv at SR 2122/2128 Worthville Rd at Worthville	ups Randleman WW TP dns Worthville dam	35.8021	-79.7771	RANDOLPH	C	17-(10-5)	03-06-09	M + 2SM	M	M	M	M	
B4870000	Haskett Crk at Asheboro WW TP Bridge nr Asheboro	ups Asheboro WW TP	35.7649	-79.7864	RANDOLPH	C	17-12	03-06-09	M	M	M	M	M	
B4920000	Deep Riv at SR 2261 Old Liberty Rd nr Central Falls	ups Asheboro WW TP, below Haskettis Crk	35.7642	-79.7734	RANDOLPH	C	17-(10-5)	03-06-09	M + 2SM	M	M	M	M	
B5070000	Deep Riv at SR 2615 Brocklyn Ave at Ramseur	ups Ramseur WWTP	35.7302	-79.6558	RANDOLPH	C	17-(10-5)	03-06-09	M + 2SM	M	M	M	M	
B5100000	Deep Riv at SR 2628 Hinshaw Town Rd nr Parks Crossroads	dns Ramseur WWTP	35.6724	-79.6274	RANDOLPH	C	17-(10-5)	03-06-09	M + 2SM	M	M	M	M	
B5390800	Colton Crk at SR 1372 Auman Rd nr Star	dns Star WWTP	35.3782	-79.7551	MONTGOMERY	WS-III	17-26-5-3	03-06-10	M + 2SM	M	M	M	M	
B5685000	Deep Riv at Deep River Park Bridge nr Cummock	ups Golden Poultry	35.5704	-79.2411	CHATHAM	C	17-(38-7)	03-06-11	M + 2SM	M	M	M	M	
B5620000	Deep Riv at US 15 and 501 nr Sanford	dns Sanford WWTP	35.5704	-79.1942	LEE	C	17-(38-7)	03-06-11	M + 2SM	M	M	M	M	
B5950000 <sup>5</sup>	Rocky Riv at US 64 nr Siler City	dns reservoir, ups Siler City WWTP	35.7351	-79.4233	CHATHAM	C	17-(43)-9	03-06-12	M + 2SM	M	M	M	M	
B5980000	Rocky Riv at SR 2170 Rivers Chapel Rd nr Siler City	dns Siler City WWTP	35.6985	-79.3756	CHATHAM	C	17-(43)-8	03-06-12	M + 2SM	M	M	M	M	
B6040000	Deep Riv at SR 1011 Old US 1 nr Monture	ups of confluence with Haw River, DWR, ambient stn	35.6176	-79.0912	CHATHAM	WS-IV	17-(43-5)	03-06-11	M	M	M	M	M	
B5990000	Loves Creek at Waste Treatment Plant Rd at Siler City	ups Siler City WWTP	35.7298	-79.4289	CHATHAM	C	17-(43)-10	03-06-12	M + 2SM	M	M	M	M	
B5920000	Loves Creek at Progress Blvd at Siler City	ups Siler City WWTP	35.7322	-79.4246	CHATHAM	C	17-(43)-10	03-06-12	M + 2SM	M	M	M	M	

1 Field Parameters include Temperature, Dissolved Oxygen, pH, Conductivity

2 Nutrients include Ammonia as N, Nitrate/Nitrite as N, Total Kjeldahl Nitrogen as N, and Total Phosphorus as P

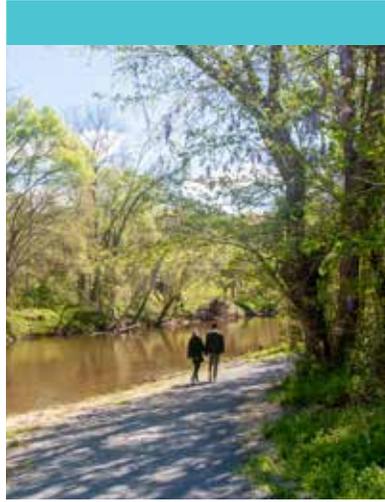
3 No requirements for metals monitoring are included in this MOA, as the DWR is currently in the process of reviewing metals water quality assessment techniques, evaluation criteria and relevant standards. However, the DWR may conclude the review within the life cycle of this MOA. At such time, or when the DWQ Director mandates, the UCFRBA is expected to resume monitoring at a level of effort similar to that in the 2005-2010 MOA. Within 60 days of the release of relevant documentation, the UCFRBA will finalize an amendment to the MOA, which includes metals monitoring.

4 The City of Greensboro recently decommissioned its North Buffalo Creek WWTP at this location.

5 The UCFRBA is conducting additional monitoring at stations B4800000 and B5950000 from January 2019 – December 2020. New parameters include chlorophyll a, orthophosphates, total organic carbon, BOD5, and BOD20. In addition, nutrients, turbidity, and suspended residue are being sample twice monthly during the summer (May-September).

M=Monthly M+2SM=Monthly with twice Monthly Summer Sampling May, June, July, August, and September. Samples are to be collected at least 10-days apart except when extenuating circumstances arise.

Q=Quarterly March, June, September, and December ups=upstream dns=downstream



## Sampling Methods

The following are the sampling methods used by Meritech for UCFRBA analysis:

pH -----SM 4500 HB  
Temperature-----SM 2550 B  
Conductivity-----EPA 120.1  
DO-----SM 4500 O G  
Fecal Coliform-----SM 9222D  
TSS-----SM 2540 D  
Turbidity-----EPA 180.1  
Ammonia-----EPA 350.1  
TKN-----SM 4500 NH3B  
NO2/NO3-----EPA 353.2  
Ptot-----EPA 200.7  
Metals (except Hg)-----EPA 200.7 (discontinued 08/2007)  
Mercury-----EPA 1631 (discontinued 08/2007)

## Certified Laboratories & Quality Assurance/Quality Control Issues

Meritech Labs is the contractor for all data collection for this project. All known QA/QC issues are denoted in the remarks section of the monthly spreadsheets that were submitted to NCDWQ. The UCFRBA's QA/QC subcommittee also met quarterly to review and approve monthly samples.

Due to issues with their mass spectrometer, Meritech had to analyze total phosphorus samples in December 2019 using analytical method EPA 200.7, instead of EPA 200.8, which has the same detection limits. There was also one scheduling error in December 2019 that resulted in a missed sample at station B0670000 (UCFRBA #7). All other samples in 2019 were collected and analyzed as required by the MOA.

# 4 | 2019 ISSUES

The following are topics that occupied significant UCFRBA staff and members' time in 2019.

## Additional Monitoring to Support Modeling & Assessment Branch

In January 2019, the UCFRBA began collecting additional samples at stations B4800000 and B5950000 to support the NCDWR Modeling and Assessment Branch in developing a watershed model for the Upper Cape Fear watershed (Deep River and Rocky River watersheds) and a water quality and hydrodynamic model for the Middle Cape Fear watershed (from confluence of the Haw River and Deep River down to Lock and Dam #1). Five new parameters are being monitored at these two sites, including chlorophyll a, orthophosphates, total organic carbon, and short and long-term biochemical oxygen demand. Turbidity, suspended residue, and nutrients are also now being sampled bi-monthly during the growing season (May-September). This voluntary additional sampling will continue through December 2020, excluding BOD5 samples which were agreed could be discontinued if there were zero detects, and help improve confidence in model predictions.

## Metals Sampling Request to Support 303(d)

On July 11, 2019, the UCFRBA received a letter from NCDWR asking the coalition to voluntarily collect total and dissolved metals data at eight (8) targeted coalition stations. This data would provide rationale for the 2022 303(d) report and potential delisting of certain stream segments, or assessment units (AUs), in the Upper Cape Fear River Basin. During the second half of 2019, the UCFRBA worked with NCDWR and Meritech Labs to develop a monitoring and QA/QC plan, as well as a cost estimate for additional sampling, and held several meetings to discuss the request. However, after much discussion amongst the coalition's Board of Directors, the UCFRBA respectfully elected to not participate in any additional monitoring, opting to reserve funds in case it was necessary to monitor emerging contaminants or total metals in the near future.

## 2020-2025 MOA Renewal

This year the UCFRBA dedicated a significant amount of time and resources to reevaluate its monitoring program and renegotiate the MOA between the NCDWR, UCFRBA, and UCFRBA members for 2020-2025. UCFRBA staff and QA/QC subcommittee members visited each monitoring coalition station to review parking, safety, and sampling conditions and collect up-to-date photographs for each site. The UCFRBA also worked with NCDWR to streamline components of the MOA and make it more clear and concise. During the MOA renewal process, the City of Durham requested that the UCFRBA re-add station B3300000 along Northeast Creek at SR 1102 to its monitoring network because of its value to their stormwater management department. Monitoring at this station will begin in March 2020.

## Station B3040000 Moved

In September, NCDWR monitoring staff determined that Station B3040000 (UCFRBA #20) along New Hope Creek at SR 1107 was unsafe due to the bridge's high railings, traffic, and a lack of bank access. It was agreed that the station would be relocated approximately 360 feet upstream, where samples can be taken from a stormwater control structure. The station has been assigned a new station number (B3039000) to reflect this change. Complete station coordinate information has been provided below.

B3039000	New Hope Crk above SR1107 at concrete impoundment	DWR ambient stn, USGS gage, Jordan Lake TMDL	35.8858	-78.9653
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## Cape Fear Database Updates

The UCFRBA continued its partnership with the MCFRBA and LCFRP to maintain a centralized water quality database for the Cape Fear River Basin. The database was updated to a new platform this year to improve functionality and is now accessible at the following web address: [www.capefearwq.com](http://www.capefearwq.com).

# APPENDIX

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## **Appendix A: UCFRBA STATION SUMMARIES**

This section was intentionally left blank. The UCFRBA relies upon the Cape Fear Database for quick and efficient reporting. 2019 UCFRBA Station Summary tables will be inserted into the annual report as soon as 2019 data is made available on the Cape Fear Database website.

## Appendix B: UCFRBA BOARD OF DIRECTORS

# UPPER CAPE FEAR RIVER BASIN ASSOCIATION

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## Appendix D: UCFRBA SAMPLING PROCEDURES

### 1669 Sampling Procedures

#### A. Supplies

1. Cooler (Hg Only) – Contains the following
  - a. Gloves (2x): Large bag with one pair, inside of which is a small bag with two pairs. Lone pair is a backup set.
  - b. Sample Bottles (2x): Large bag with bottle lot #, sampling site and date, inside of which is a small bag, also contains same information. The sampling bottle is in the small bag.
  - c. Sampling Tubing (1x): Double bagged with the lot # written on the bag. Single use tubing.
  - d. Backup Cooler: Items a. through d. will be kept in a separate cooler which will be used as a spare in the event that a problem is encountered with the original kit. Should this kit not be used; it may be used for a subsequent sampling event at the same site.
2. Sampling Supplies – Contains the following
  - a. DI Carboy – Wrapped in plastic bag sealed with rubber band.
  - b. Peristaltic pump (portable) – Battery operated pump for sampling.
  - c. Waste Carboy – Collects waste during the sampling process
  - d. Polypropylene Support and Clamp – Used to position the sample tubing for hands free operation.
  - e. Sampling Wand – PVC pipe 1" diameter x 10' with T glued to end for better handling. Pipe is notched to accept sample tubing.
  - f. Plastic Sheetting – Single use to cover the sampling table. Clamped to the bottom of table.
  - g. Garbage Bag – Standard white kitchen garbage bag to collect refuse from sampling event
  - h. Sampling Table – 2' x 4' used to setup sampling supplies.
  - i. COC (Chain of Custody) – Records sampling information i.e. Client, Date/Time, Lot #'s, Sampling Team, Sampling Conditions, etc.
  - j. Two Person Sampling Team (CH/DH) – Clean Hands and Dirty Hands Sampling Team; predetermined to help expedite sampling process.

#### B. Initial Arrival Set-up.

1. Do not park in close proximity to the sampling site, and whenever possible approach site from downwind.
2. Note sampling site conditions with regards to wind and wind direction; also noting potential sources of contamination from the surrounding area.
3. Setup table close to the sampling site according to the orientation required for sampling the effluent
  - a. Clamp down a fresh sheet of plastic on the sampling table.
  - b. Put on set of gloves – non-bagged.
  - c. Place the DI Water Carboy, Peristaltic Pump, and Tubing Support Stand on the table.
  - d. Open the access area to the pump head so that the tubing may be quickly connected to the pump when the samplers are ready.
  - e. Place sampling wand on table
  - f. Place waste carboy on ground in proximity to the sampling tables.
  - g. Tie the garbage bag to the sampling table
  - h. Fill out paper work including the sampling conditions and lot #'s of sampling equipment and preservatives.
4. Make final check that the sampling area is accessible and logistically feasible from the table set-up area.
5. Remove any impedance from the sampling area.

### **C. Sampling – Clean Hands(CH)/Dirty Hands(DH).**

1. Assign clean hands and dirty hands technicians.
2. Both CH and DH will now wait ten minutes for the sampling site to equilibrate from any destabilization resulting from the initial set-up.

### **D. Sampling Wand Collection**

1. Field Blank
  - a. DH will open the cooler containing the sampling accessories (gloves, tubing, and bottles).
  - b. DH opens glove bag for CH to put on two sets of gloves.
  - c. DH opens 2<sup>nd</sup> glove bag and puts on two sets of gloves.
  - d. DH opens the bag for the DI carboy.
  - e. DH removes the bag containing the sampling tubing, and opens the bag.
  - f. CH removes the inner bag containing the tubing, and removes the tubing, but does not allow the ends to come in contact with anything. The ends of the tubing are facing down to avoid contamination.
  - g. DH installs the tubing while CH maintains the tubing ends facing down.
  - h. DH removes the cap from the carboy.
  - i. CH places one end of the tubing into the carboy so that it remains in the carboy, and the other end is placed into the clamp on the support stand.
  - j. DH positions the waste carboy under the exit tubing and starts the pump. Rinse tubing with 1L of DI water. DH stops the pump.
  - k. DH removes the waste carboy
  - l. DH removes the double bagged sample bottle (Field Blank) from the cooler and opens the outer bag. CH removes the bagged bottle, and removes the cap. All baggies should remain in the sampling cooler until the sample bottle is returned.
  - m. CH position the bottle under the exit tubing.
  - n. DH starts the pump; CH signals to turn off the pump once the bottle is full.
  - o. CH replaces the cap, and puts the bottle back to the small bag.
  - p. DH opens large bag and CH places bagged bottle into large bag.
  - q. DH seals the baggie and puts the sample back into the cooler.
2. Sample – Sampling Wand
  - a. DH removes the double bagged sample bottle (Sample) from the cooler and CH removes the single bagged bottle from the large bag placing it on the sampling table.
  - b. DH positions the waste carboy with the sampling tubing in the support stand.
  - c. DH secures the sampling wand across the sampling table, while CH removes the sampling tubing from the DI carboy.
  - d. CH positions the sampling tubing in the sampling wand while DH holds the wand firm.
  - e. DH starts the pump while holding the wand against the table.
  - f. DH places the sampling wand in the sampling area positioning the end of the wand downstream from the tip of the sampling tubing.
  - g. Once approximately 1L of sample is passed through the tubing (2 – 5 minutes) and collected in the waste carboy, CH removes the sample bottle from the small bag, removes the cap, and fills the bottle by placing the bottle above the waste carboy.
  - h. Once full, CH replaces the cap, and places the bottle back into the baggie.
  - i. DH removes the wand from the sampling area and turns off the pump.
  - j. DH puts down the sampling wand on the table, and opens the large baggie for CH to place the sample bottle into.
  - k. DH seals the large baggie and places the sample into the sample cooler.
  - l. DH and CH may now freely cleanup the sampling area disposing of the sampling tubing and gloves into a garbage bag attached to the sampling table.
  - m. CH will finish paper work noting times that the samples were taken and any potential problems with the sampling.

## **E. Sample – Direct Collection**

1. Field Blank
  - a. DH will open the cooler containing the sampling accessories (gloves, and bottles).
  - b. DH opens glove bag for CH to put on two sets of gloves.
  - c. DH opens 2<sup>nd</sup> glove bag and puts on two sets of gloves.
  - d. DH gets double bagged field blank bottle from cooler, opens outer bag and CH removes inner bag setting it on the sampling table.
  - e. DH gets double bagged sample bottle, which is full of DI water from the lab, and opens the outer bag.
  - f. CH removes the inner bag and removes the bottle and takes off the cap.
  - g. CH then removes the field blank bottle from the inner baggie and transfers the DI water from the sample bottle to the field blank bottle.
  - h. CH caps the field blank bottle places it back into the baggie, which is placed back into the outer baggie being held open by DH.
  - i. DH then seals the baggie and places the bottle into the cooler.
2. Sample
  - a. CH takes the emptied sample bottle and fills it it with the waste stream from the sampling site.
  - b. CH replaces the cap and places the bottle back in the inner baggie.
  - c. DH opens the outer baggie and CH places the bagged sample into the outer baggie.
  - d. DH seals the outer baggie and places the bottle into the cooler.
  - e. CH and DH can now clean the sampling site and complete all necessary paperwork prior to leaving the site.

## Appendix E: NC DWR 2012 METALS MONITORING SUSPENSION LETTER



North Carolina Department of Environment and Natural Resources

Division of Water Quality

Beverly Eaves Perdue  
Governor

Charles Wakild, P. E.  
Director

Dee Freeman  
Secretary

April 24, 2012

### MEMORANDUM

To: Regional Surface Water Protection Supervisors  
Jay Sauber  
Kent Wiggins

From: Chuck Wakild 

Subject: Routine Ambient Data Collection for Total Metals

On April 3, 2007, DWQ suspended routine collection and analysis of total recoverable metals in all ambient monitoring programs because metals monitoring practices and water quality standards were under review. Since that time, the suspension has been continued by the Division at the Director's discretion.

DWQ has made significant progress in the past few years evaluating assessment techniques, evaluation criteria and relevant water quality standards. The Division has received copious amounts of information and input on potential costs and benefits of proposed metals criteria from a variety of interested parties and is currently using that input to develop a Fiscal Note for certification by the Environmental Management Commission (EMC) and approval by the Office of State Budget Management (OSBM). It is the Division's goal to have the Fiscal Note completed for review by the EMC in the fall of 2012.

Pending EMC approval, the proposed rules, fiscal note and announcement of Public Hearing dates/public comment period will be noticed in the North Carolina Register. At that time, interested parties will again have a chance to provide input for final consideration of the rules. Upon final approval by the EMC and OSBM, the rules will be submitted to the Rules Review Commission. Pending completion of all state requirements, DWQ will submit the water quality standards revisions to the US EPA and request federal approval of the revised water quality standards.

The suspension of routine ambient data collection for total metals will continue for the Discharge Monitoring Coalitions. It is recommended that the Monitoring Coalitions take this time to evaluate how the proposed water quality standards will impact their sampling programs and continue to retain their financial resources in anticipation of future monitoring efforts. DWQ ambient metals sampling will continue as it has been performed for the past two years.

Questions regarding sampling or special studies should be directed to Jay Sauber ([jay.sauber@ncdenr.gov](mailto:jay.sauber@ncdenr.gov); 919-743-8416). Questions on water quality standards for metals should be directed to Connie Brower ([connie.brower@ncdenr.gov](mailto:connie.brower@ncdenr.gov); 919-807-6416).

1617 Mail Service Center, Raleigh, North Carolina 27699-1617  
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604  
Phone: 919-807-6300 | FAX: 919-807-6492  
Internet: [www.ncwaterquality.org](http://www.ncwaterquality.org)

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## **Appendix F: UCFRBA MONITORING SERVICES CONTRACT**

### **UPPER CAPE FEAR RIVER BASIN ASSOCIATION MONITORING SERVICES**

BETWEEN UPPER CAPE FEAR RIVER BASIN ASSOCIATION, INC.  
AND MERITECH, INC

This CONTRACT effective September 1, 2017 between the UPPER CAPE FEAR RIVER BASIN ASSOCIATION, INC., hereinafter called the ASSOCIATION, and MERITECH, INC., hereinafter called the CONTRACTOR.

#### **WITNESSETH:**

WHEREAS, on June 26, 2017 the Board of Directors of the Upper Cape Fear River Basin Association, Inc. authorized a new two-year monitoring services contract between the UPPER CAPE RIVER BASIN ASSOCIATION, INC and MERITECH, INC., such contract pending review and acceptance by the Board; and

WHEREAS, this CONTRACT is consistent with the Memorandum of Agreement (MOA) (EXHIBIT 1) between the Division of Water Resources, North Carolina Department of Environment and Natural Resources (NCDENR) and the ASSOCIATION for collection, analysis and reporting of water quality data for the period of May 1, 2015 to April 30, 2020; and

WHEREAS, CONTRACTOR attests that it is a fully certified laboratory approved by the Division of Water Resources, North Carolina Department of Environment and Natural Resources and that it shall maintain continuous laboratory certification with DWQ in accordance with 15 NCAC 2H.0800 for all contaminants and parameters required for data collection by the MOA; and

WHEREAS, the ASSOCIATION requires supplemental information related to sampling and analytical services to improve quality assurance and quality control in the testing and analysis process, such supplemental information detailed in EXHIBIT 2 of this CONTRACT;

NOW, THEREFORE, in consideration of the premises and the mutual covenants contained herein, the parties do hereby contract and agree as follows:

#### **SECTION I. SCOPE OF WORK**

The CONTRACTOR does hereby covenant and agree with the ASSOCIATION that the CONTRACTOR will well and faithfully perform and execute such work and furnish such labor, materials, equipment, apparatus and supplies, in accordance with each and every one of the conditions, covenants, stipulations, terms and provisions contained in this CONTRACT and as generally described below, and will well and faithfully comply with and perform each and every obligation imposed upon the CONTRACTOR under this CONTRACT.

The CONTRACTOR shall promptly make payments to all persons supplying materials in the prosecution of the work, and to all laborers and others employed thereon.

### **A. Type of Work**

The work to be done and fully performed by the CONTRACTOR pursuant to this CONTRACT shall consist of the following:

1. **Base Monitoring Services:** Base Monitoring Services shall be those specified in the requirements of the MOA between the ASSOCIATION and the NCDWR, dated May 1 2015, in EXHIBIT 1. Additional quality assurance/quality control (hereafter QA/QC) requirements are specified in EXHIBIT 2. The Base Monitoring Services are summarized in general as the following items, defined as explained in the narrative following each item:
  - a. **Water sampling:** The sampling sites listed in the MOA (Exhibit 1, Appendix A spreadsheet A-1 on page 8 shall be visited on the frequency specified in Appendix spreadsheet A-1 on page 8 of the MOA by a qualified monitoring technician employed by CONTRACTOR. Water samples shall be field tested, collected, preserved, stored and transported by CONTRACTOR from each sampling site for analysis for the parameters required in Appendix A-1 of the MOA for each sampling site, in accordance with the requirements specified in Appendix B and C of the MOA and the supplemental QA/QC measures specified in EXHIBIT 2. Also, CONTRACTOR will take field notes at each site using the field site sheet, example is found in EXHIBIT 4.
  - b. **Water sample analysis:** CONTRACTOR shall collect and analyze water samples by methods approved by NCDWR to the detection limits required by NCDWR listed in MOA Appendix B and C and Supplemental Exhibit 2 for each parameter found in Appendix A. The analysis must be performed using the protocols included in NCDENR' s "Standard Operating Procedures Manual, Physical and Chemical Monitoring", 40 CFR Part 136 and 15 NCAC 2B.0505(e)(4), Standard Methods, unless otherwise specified in this contract.
  - c. **Water sample analysis reporting to the ASSOCIATION:** The results of all of the water sample analyses from all of the sampling sites shall be reported to the ASSOCIATION'S members by means of emailing spreadsheets electronically on the form approved by the ASSOCIATION in EXHIBIT 3. These reports shall be distributed by email as soon as the analysis results are available (unless otherwise specified by the ASSOCIATION, not less frequently than monthly. CONTRACTOR will provide paper copies of field note sheets for every sampling site, monthly. The water quality monitoring results and data for each month shall be reported by the CONTRACTOR to the ASSOCIATION by the end of the following month.
  - d. **Water sample analysis reporting to NCDWR:** The ASSOCIATION shall be responsible for immediately contacting NCDWR to finalize arrangements for reporting the required data. Normally, a committee of the ASSOCIATION shall review the analysis for the QA/QC measures specified in EXHIBIT 2 before the data is reported to NCDWR.
  - e. **Data collection or analysis errors:** CONTRACTOR agrees to promptly notify the specified representatives of the ASSOCIATION in the event any samples are not

collected or analyzed as required in the MOA and this contract, and to give a general reason and description of follow-up action, not later than 21 days after the scheduled sample collection date.

- f. Instream monitoring: Samples shall be collected at as close to mid-stream as possible.
- g. Same day monitoring: Sample stations in each sub-basin (as identified in Appendix A-1 shall be monitored on the same day.
- h. Frequency: Monitoring must be done at the frequency specified in Appendix A-1 of the MOA.
- i. Annual certification report: CONTRACTOR shall prepare and submit to the ASSOCIATION'S members and NCDWQ an annual (calendar year) certification report that confirms the amount of the prescribed work completed by CONTRACTOR. The narrative report must be submitted by February 28th of the following year. The report must identify the number of water samples that were not collected, analyzed and/or reported as required pursuant to the MOA and all data that was qualified.

## 2. Additional Monitoring Services

Upon mutual agreement of the ASSOCIATION and CONTRACTOR, this CONTRACT may be amended to include additional monitoring services that are determined desirable by the ASSOCIATION. MERITECH shall have sixty (60) days to respond to any changes in monitoring services before the CONTRACT is amended.

## SECTION II. TERM OF AGREEMENT

The term of this CONTRACT is for three years from September 1, 2017 through August 31, 2020.

## SECTION III. COMPENSATION

- 1. Amount due: The ASSOCIATION hereby covenants and agrees that the ASSOCIATION shall pay the CONTRACTOR, when due and payable under the following terms for the performance of the services described in Section I(A) as follows:

## Contract Cost Breakdown

Vehicle /Miles	12390 miles X .57/ mile=	\$7,062.00
Labor/ Technicians	472 hrs	
Management	200 hrs	
Reporting	<u>300 hrs</u>	
Field & admin Costs	972 hrs @ \$36.00/ hr ave.	\$34,992.00
		<u>\$42,054.00</u>
Analysis		\$45,228.00
Equipment		<u>\$3,000.00</u>
<b>Total 2017-2018</b>		<b>\$90,282.00</b>

- *Field sampling events will include pH, Temperature, DO and Conductivity at the surface of sampling site.*

## Analytical Costs

Test	Reporting Limit (mg/L)	Method	Quantity/ Year	Cost Per Test	Cost Per Year
Total Suspended Solids	1	SM 2540D	468	\$9.00	\$4,212.00
Ammonia, Nitrogen	0.1	EPA 350.1	468	\$12.00	\$5,616.00
TKN	0.20	EPA 351.1	468	\$21.00	\$9,828.00
Nitrate/Nitrite, Nitrogen	0.10	EPA 353.2	468	\$15.00	\$7,020.00
Phosphorus, total	0.020	EPA 200.7	468	\$12.00	\$5,616.00
Fecal Coliform	1 col/100 ml	SM 9222D	468	\$17.00	\$7,956.00
Turbidity	1.0 NTU	EPA 180.1	468	\$10.00	\$4,680.00
Hardness, total	0.662	SM 2340B	12	\$25.00	\$300.00
<b>TOTAL</b>	-	-			<b>\$45,228.00</b>

Year	% Increase	Annual Cost
September 2017 - August 2018	-	\$90,282.00
September 2018 - August 2019	2 %	\$92,087.64
September 2019 - August 2020	2 %	\$93,929.39

2. Payment requests: CONTRACTOR shall be eligible to submit monthly payment requests for a portion of the lump sum CONTRACT amount, provided for in the CONTRACT award notice. Payment requests shall not be submitted more frequently than monthly.

3. Payment by ASSOCIATION: ASSOCIATION shall pay CONTRACTOR'S invoice within thirty (30) days of QA/QC verification (via on-site meeting or reviewing spreadsheets via email) by the ASSOCIATION.
4. Reimbursement by CONTRACTOR: The ASSOCIATION shall not be required to pay CONTRACTOR for any unreportable or invalid data that does not meet the requirements of this CONTRACT. In the event of a disputed or contested billing, only that portion so contested will be withheld from payment, and the undisputed portion will be paid. In the event the ASSOCIATION has paid for monitoring services and data that are later determined to be unreportable or invalid, the CONTRACTOR shall promptly reimburse the ASSOCIATION for the cost of said monitoring. In such an event, the party discovering such invalid data shall promptly notify the other party of such unreportable or invalid data, and the CONTRACTOR shall reimburse the ASSOCIATION within 30 days of such notification.

#### **SECTION IV. LIABILITY AND INDEMNIFICATION**

1. Indemnification by CONTRACTOR: CONTRACTOR agrees to indemnify ASSOCIATION from any claims, damages, losses, and costs, including, but not limited to, reasonable attorney's fees and litigation costs, arising out of claims by third parties for property damage and bodily injury, including death, caused by the negligence or willful misconduct of the CONTRACTOR, CONTRACTOR'S employees, affiliated corporations, officers, agents and subcontractors in connection with the CONTRACT.
2. Indemnification by ASSOCIATION: ASSOCIATION agrees to indemnify CONTRACTOR from any claims, damages, losses, and costs, including, but not limited to, reasonable attorney's fees and litigation costs, arising out of claims by third parties for property damage and bodily injury, including death to the proportionate extent, caused by the negligence or willful misconduct of the ASSOCIATION, the ASSOCIATION'S employees, or agents in connection with the CONTRACT.
3. Proportionate Indemnification: If the negligence or willful misconduct of both ASSOCIATION and CONTRACTOR (or a person identified above for whom each is liable) is a cause of such damage or injury, the loss, cost, or expense shall be shared between the ASSOCIATION and CONTRACTOR in proportion to their relative degrees of negligence or willful misconduct and the right of indemnity shall apply for such proportion.

#### **SECTION V. COMPLIANCE WITH LAWS**

CONTRACTOR agrees that in performing the required services, CONTRACTOR will comply with applicable regulatory requirements including federal, state and local laws, rules, regulations, orders, codes, criteria and standards.

#### **SECTION VI. CONTRACTOR'S INSURANCE**

During the performance of this CONTRACT, the CONTRACTOR shall maintain the following insurance:

- a. Comprehensive General Liability Insurance with bodily injury limits of not less than \$1,000,000 for each occurrence and not less than \$1,000,000 in the aggregate, and with property damage limits of not less than \$100,000 for each occurrence and not less than \$1,000,000 in the aggregate.
- b. Automobile Liability Insurance with a combined single limit of not less than \$1,000,000 for each accident.
- c. Worker's Compensation Insurance in accordance with statutory requirements and Employers' Liability Insurance with limits of not less than \$100,000 for each accident.
- d. Professional Liability Insurance with limits of not less than \$1,000,000 annual aggregate.
- e. The CONTRACTOR shall name the ASSOCIATION as an additional insured on the policy.

#### **SECTION VII. ASSOCIATION'S RESPONSIBILITIES**

The ASSOCIATION shall be responsible for the following:

- a. Approve all procedures established to govern the relationship among the ASSOCIATION, CONTRACTOR, and third parties.
- b. Provide designated personnel to represent the ASSOCIATION in matters involving the CONTRACTOR.
- c. Payment of invoices for services in accordance with Section III.

#### **SECTION VIII. TERMINATION OF CONTRACT FOR CAUSE**

In the event of failure by the CONTRACTOR to perform in accordance with the terms of this CONTRACT, ASSOCIATION shall have the right to terminate the CONTRACT upon 14 days written notice to the CONTRACTOR, in which event CONTRACTOR shall have neither the obligation nor the right to perform further services under this CONTRACT.

#### **SECTION IX. UNCONTROLLABLE FORCES**

Neither CONTRACTOR nor the ASSOCIATION shall be considered to be in default of the provisions of this CONTRACT if delays in or failure of performance shall be due to uncontrollable forces. The term "uncontrollable forces" shall mean any event that results in the prevention or delay of performance by a party, and that is beyond the control of the non-performing party. The term "uncontrollable forces" includes, but is not limited to, fire, acts of God, flood, earthquakes, major storms, lightning, epidemic, war, riot, and civil disturbance.

**SECTION X. GOVERNING LAW**

The laws of the State of North Carolina shall govern this CONTRACT.

**SECTION XI. ASSIGNMENT**

The CONTRACTOR shall not assign, sublet or transfer any rights under or interest in this CONTRACT, including monies that are or may become due. Provided, however, for a period of 90 days from the initial date of this CONTRACT and upon written notice to the ASSOCIATION, CONTRACTOR may assign and transfer any rights under or interest in this Contract, including monies that are or may become due, to a purchaser of substantially all of the assets of CONTRACTOR without the prior consent, written or oral, of the OWNER. Nothing contained in this paragraph shall prevent the CONTRACTOR from employing such independent consultants, associates or subcontractors, as it may deem appropriate to assist the CONTRACTOR in the performance of the services rendered.

**Upper Cape Fear River Basin Association**

ATTEST

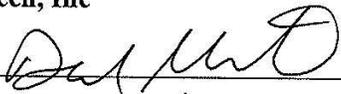
By:   
Dennis Hodge, UCFRBA Chairman

\_\_\_\_\_  
Secretary

Date: 6/28/2017

**Meritech, Inc**

ATTEST

By:   
Date: 6/29/17

\_\_\_\_\_  
David Merritt, Vice President Meritech, Inc.

+



# **MERITECH, INC.**

**ENVIRONMENTAL LABORATORIES**

## **UPPER CAPE FEAR RIVER BASIN ASSOCIATION MONITORING SERVICES**

BETWEEN UPPER CAPE FEAR RIVER BASIN ASSOCIATION, INC.  
AND MERITECH, INC

### **Addendum to Contract January 1, 2019**

#### **BACKGROUND**

- A. The UPPER CAPE FEAR RIVER BASIN ASSOCIATION (the "ASSOCIATION") and MERITECH, INC (the "CONTRACTOR") entered into a contract (the "CONTRACT") on September 1, 2017, for three-years worth of monitoring services.
- B. The ASSOCIATION and CONTRACTOR desire to amend the CONTRACT to accommodate a two-year special monitoring study lead by the NC Division of Water Resources (NCDWR).
- C. This CONTRACT ADDENDUM (the "AGREEMENT") is the third amendment to the CONTRACT.

#### **SCOPE OF WORK**

In addition to the Base Monitoring Services specified in the requirements of the MOA between the ASSOCIATION and the NCDWR, dated May 1, 2015, the CONTRACTOR will perform and complete additional water sampling and analyses for stations B4800000 (UCFRBA Station #34) and B5950000 (UCFRBA Station #43) as specified in the NCDWR's "Monitoring Plan for Upper and Middle Cape Fear River Watersheds".

Water sample analysis reporting to the ASSOCIATION: The results of all of the water sample analyses from all of the specified sampling sites shall be reported to the ASSOCIATION'S members by means of emailing spreadsheets electronically on the form approved by the ASSOCIATION and NCDWR's COALITION COORDINATOR.

Frequency: Monitoring must be done at the frequency specified in NCDWR's "Monitoring Plan for Upper and Middle Cape Fear River Watersheds".

Upon mutual agreement of the ASSOCIATION and CONTRACTOR, this AGREEMENT may be amended to reflect any additions or removal of analyses as deemed appropriate by the ASSOCIATION or NCDWR.

#### **TERM OF AGREEMENT**

The term of this AGREEMENT is from January 1, 2019 through August 31, 2020.

**ANALYTICAL COSTS FOR ADDITIONAL SAMPLING**

UCFRB Parameters	Reporting Limit (mg/L)	Method	Quantity/ 2 years	Cost Per Test	Cost Per 2 Years
BOD, 5 day	2.0	SM 5210B	48	\$25.00	\$1,200.00
BOD20 or 30	2.0	SM 5210B	4	\$75.00	\$300.00
Total Suspended Solids	2.5	SM2540D	20	\$9.00	\$180.00
Ammonia, Nitrogen	0.1	EPA 350.1	20	\$12.00	\$240.00
TKN	0.2	EPA 351.2	20	\$21.00	\$420.00
Nitrate/Nitrite, Nitrogen	0.10	EPA 353.2	20	\$15.00	\$300.00
Phosphorus, total	0.05	EPA 200.7	20	\$12.00	\$240.00
Ortho-Phosphate	0.05	SM 4500P E	68	\$45.00	\$3,060.00
Chlorophyll A	0.001	EPA 445	68	\$80.00	\$5,440.00
TOC	1	SM 5310C	68	\$45.00	\$3,060.00
Turbidity	1.0 NTU	EPA 180.1	20	\$10.00	\$200.00
<b>TOTAL/ 2 years</b>	-	-			<b>\$14,640.00</b>

**COST BREAKDOWN**

Monthly Costs

Year	Current Monthly Costs	Additional Monthly Costs	New Monthly Total
September 2018 – August 2019	\$7,648.47	\$610.00	\$8,258.47
September 2019 – August 2020	\$7,801.44	\$610.00	\$8,411.44

Annual Costs

Year	Current Annual Costs	Additional Annual Costs	NEW Annual Total
September 2017 – August 2018	\$89,982.00	-	\$89,982.00
September 2018 – August 2019	\$91,781.64	\$4,880.00	\$96,661.64
September 2019 – August 2020	\$93,617.27	\$7,320.00	\$100,937.27

Except as otherwise expressly provided in this AGREEMENT, all of the terms and conditions of the CONTRACT remain unchanged and in full effect.

Upper Cape Fear River Basin Association

Meritech, Inc

By: Michael Rhoney  
Michael Rhoney, UCFRBA Chairman

By: David Merritt  
David Merritt, Vice President Meritech, Inc

Date: 12/21/18

Date: 12/4/18

## UCFRBA 2019 ANNUAL REPORT

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**PIEDMONT TRIAD**  
**REGIONAL COUNCIL**



**TRIANGLE J**  
**COUNCIL OF GOVERNMENTS**