

**Lower Neuse Basin Association
P.O. Box 1410
Clayton, North Carolina 27528-1410**

**Annual Monitoring Report
2021**

Submitted By: Barry Parks, Chairman
Barry Parks

Prepared By: Haywood M. Phthisic, III, Executive Director

Lower Neuse Basin Association Contact Information

Officers of the Lower Neuse Basin Association

Chairman -

Barry Parks
City of Wilson
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Secretary -

Chuck Smithwick
Contentnea MSD
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Grifton, N.C. 28530
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Associates:

Executive Director -

Haywood M. Phthisic, III
P.O. Box 1410
Clayton, N.C. 27528-1410
919.796.8049
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Association Counsel -

Daniel F. McLawhorn
1706 St. Mary's Street
Raleigh, N.C. 27608
919.612.4520
hgdunn@poynerspruill.com

Coalition Web Site Address - <https://www.lnba.net>

Lower Neuse Basin Association

April 18, 2022

Members and Contact Information

A complete list of LNBA delegates for 2021 follows in Section I. The Town of Snow Hill joined the LNBA in 2021.

Monitoring Stations for 2021

A complete list of the monitoring stations with station numbers, descriptions, coordinates, county, sub basin and stream classification included in Section II. The LNBA staff visited each station during 2021.

The Agreement between the LNBA and the Division of Water Resources was renewed in 2019. The effective date was August 1, 2019 through July 31, 2024. There were several sampling stations, added, deleted, or moved to a better location for safety reasons or environmental conditions.

Quality Assurance/Quality Control Issues

Environment I reported no quality assurance or quality control issues in 2021.

Environment I reported it completed and passed proficiency testing for its satellite lab (field testing equipment) in 2021.

NCDEQ- DWQ did not conduct a field review and inspection in 2021.

On April 3, 2007, the Division of Water Quality suspended the collection and analysis of total recoverable metals as required by the monitoring coalitions. The metals are no longer collected as part of the LNBA MOA agreement.

Environment I's contact information and sampling methods/protocols are listed in Section III with the sampling errors and omissions for 2021.

Special Projects

The Lower Neuse Basin Association, in cooperation with its sister organization, the Neuse River Compliance Association, has continued with its partnership with Dr. Hans Pearl of the University of North Carolina at Chapel Hill, Institute of Marine Science. The two associations support the MODMON monitoring program of the Neuse River Estuary. The associations began assisting with this research in July 2006 and have extended this support through the 2020-2021 fiscal year. Continued financial support may not be considered.

Suggested Changes

There are no suggested changes at this time.

Statistical Analysis of Data

Statistical analyses of the data for each monitoring station are included in Section IV.

Section I

LNBA Members and Contact Information

Lower Neuse Basin Members and Contact Information for 2021

Member	Contact	Address	Phone	Mobile Phone	Email
Duke Energy Progress	Mike Graham	1677 Old Smithfield Rd. Goldsboro, NC	919.580.3983		Mike.Graham2@duke-energy.com
City of Goldsboro	Robert Sherman Bobby Edwards	PO Drawer A Goldsboro, NC 27533	919.735.6075 919.735.3320		RSherman@goldsboronc.gov bedwards@goldsboronc.gov
City of Havelock	Rick Day	PO Drawer 368 Havelock, NC 28532	252.444.6409		rday@havelocknc.us
City of Kinston	Kenneth Stevens	PO Box 339 Kinston, NC 28501	252.939.3275	252.560.0252	kenneth.stevens@ci.kinston.nc.us
City of New Bern	Jordan Hughes Tony Hawkins	PO Box 1129 New Bern, NC 28563	252.639.7527 252.639.7555	252.341.5448 252.521.7687	hughesj@newbern-nc.org hawkinst@newbern-nc.org
City of Raleigh	John Kiviniemi	PO Box 590 Raleigh, NC 27602	919.996.6623	919.810.0368	John.Kiviniemi@raleighnc.gov
City of Wilson	Barry Parks Jimmy Pridgen	PO Box 10 Wilson, NC 27894	252.399.2461 252.399.2491	252.205.2516 252.399.2519	bparks@wilsonnc.org jpridgen@wilsonnc.org
Contentnea MSD	Chuck Smithwick Renee Smith	PO Box 477 Grifton, NC 28530	252.524.5584	252.413.8898	cmsd100@embarqmail.com
Johnston County	Chandra Farmer Dan Wall	PO Box 2263 Smithfield, NC 27577	919.209.8333 919.209.8333	919.795.6138 919.795.1889	chandra.farmer@johnstonnc.com dan.wall@johnstonnc.com
Dupont-Kinston, Inc.	Jeff White	4693 Highway 11 North Grifton, NC 28530	252.758.5774	252.939.0661	jeff.white@usa.dupont.com
Town of Benson	Tim Robbins Brian Leavitt	PO Box 69 Benson, NC 27504	919.894.1606 919.894.2373		trobbs@townofbenson.com bleavitt@townofbenson.com
Town of Cary	Donald Smith Jamie Revels	PO Box 8005 Cary, NC 27512-8005	919.469.4305	919.609.7306	donald.smith@townofcary.org jamie.revels@townofcary.org

Member	Contact	Address	Phone	Mobile Phone	Email
Town of Farmville	David Hodgkins	3672 N. Main St.	252.753.6700		dhodgkins@farmville-nc.com
	James Shoulders	Farmville, NC 27828-0086	252.814.6348		James.shoulders@suez.com
Town of Fuquay-Varina	Mike Wagner	401 Old Honeycutt Rd.	919.753.1013	919.625.3524	mwagner@fuquay-varina.org
	Chris Grimes	Fuquay-Varina, NC 27526			cgrimes@fuquay-varina.org
Town of Kenly	Larry Faison	PO Box 519	919.284.2116		larry.faison@townofkenly.com
	Phillip Smith	Kenly, NC 27542		252.955.2423	phillip.smith@townofkenly.com
Town of La Grange	James Sutton	PO Box 368	252.566.3186		jwsutton@lagrangenc.com
	John Craft	La Grange, NC 28551		252.560.9914	jpcraft@lagrangenc.com
Town of Apex	David Hardin	PO Box 250	919.249.3366		David.Hardin@apexnc.org
	Michael Deaton	Apex, NC 27502	919.249.3413		Michael.Deaton@apexnc.org
Town of Clayton	Bill Simpson	PO Box 879	919.553.1536	919.594.0417	wsimpson@townofclaytonnc.org
	Rich Cappola	Clayton, NC 27520	919.553.1530	919.291.7608	rcappola@townofclaytonnc.org
Town of Snow Hill	Todd Whaley	908 SE 2nd Street	252.747.3414		manager@snowhillnc.com
	Drake Robart	Snow Hill, N.C. 28580		252.939.5213	wwtp_orc@snowhillnc.com
Associated Parties					
Executive Director	Haywood Phthisic	PO Box 1410	919.796.8049	919.796.8049	exec.director@lnba.net
		Clayton, N.C. 27528-1410			
Association Counsel	Dan McLawhorn	1706 St. Mary's Street	919.612.4520	919.612.4520	dan@dfm-lawyer.com
		Raleigh, NC 27608			
Environment 1, Inc.	Mark Oliveira	PO Box 7085, 114 Oakmont C	252.756.6208	252.531.8085	moliveira@environment1inc.com
		Greenville, NC 27835-7085	252.756.6208		

NPDES Permit #	LNBA Permittees Ownership and Facility	Authorized Representative and Title	County	Region	HUC (8 Digit)
NC0003417	Duke Energy Progress Lee Steam Plant	Jeffery D. Hines General Manager	Wayne	WaRO	3020201
NC0003760	E.I. DuPont - Kinston Plant	Emily Price Plant Manager	Lenoir	WaRO	3020202
NC0020389	Town of Benson - Benson WWTP	Tim Robbins Public Utility Director	Johnston	RRO	3020201
NC0021253	City of Havelock - Havelock WWTP	Chris McGee City Manager	Craven	WaRO	3020204
NC0021644	Town of LaGrange - LaGrange WWTP	John Craft Town Manager	Lenoir	WaRO	3020202
NC0023906	City of Wilson - Wilson WWTP	Grant Goings City Manager	Wilson	RRO	3020203
NC0023949	City of Goldsboro - Goldsboro WWTP	Timothy M. Salmon City Manager	Wayne	WaRO	3020202
NC0024236	City of Kinston - Kinston Regional WWTF	Rhonda Barwick Director of Public Services	Lenoir	WaRO	3020202
NC0025348	City of New Bern - New Bern WWTP	Mark Stevens City Manager	Craven	WaRO	3020204
NC0025453	Town of Clayton - Little Creek WWTP	Rich Cappola Interim Town Manager	Johnston	RRO	3020201
NC0029033	City of Raleigh - Neuse River WWTP	John Kiviniemi Resource Recovery Director	Wake	RRO	3020201
NC0029572	Town of Farmville - Farmville WWTP	David Hodgkins Town Manager	Pitt	WaRO	3020203
NC0030716	Johnston County Central Johnston County Regional WWTP	Rick J. Hester County Manager	Johnston	RRO	3020201
NC0030759	City of Raleigh - Smith Creek WWTP	John Kiviniemi Resource Recovery Director	Wake	RRO	3020201
NC0032077	Contentnea Metropolitan Sewerage District Contentnea MSD WWTP	Charles M. Smithwick, Jr. District Manager	Pitt	WaRO	3020203
NC0048879	Town of Cary - North WWTP	Paul Ray North Cary Facility Manager	Wake	RRO	3020201
NC0064050	Town of Apex - Apex WRF	Drew Havens Town Manager	Wake	RRO	3020201
NC0064891	Town of Kenly - Kenly Regional WWTP	Larry Faison Interim Town Manager	Johnston	RRO	3020201
NC0065102	Town of Cary - South WWTP	Jarrod Buchanan South Cary Facility Manager	Wake	RRO	3020201
NC0066516	Town of Fuquay Varina Terrible Creek WWTP	Adam Mitchell Town Manager	Wake	RRO	3020201
NC0020842	Town of Snow Hill Snow Hill WWTF	Todd Whaley Town Manager	Greene	WaRO	3020203
NC0079316	City of Raleigh - Little Creek WWTP	John Kiviniemi Resource Recovery Director	Wake	RRO	3020203
NC0084735	Johnston County Johnston County WTP	Rick J. Hester County Manager	Johnston	RRO	3020201

Section II

Monitoring Station Information

List Of Monitoring Stations

Station	Location	County	Latitude	Longitude	Class	Sub-Basin
J2230000	Smith Creek @ SR 2045 (Burlington Mill Road) near Wake Forest	Wake	35.9182	-78.5348	C NSW	03020201
J2330000	Neuse River at SR 2215 (Buffalo Road) near Neuse	Wake	35.8479	-78.5302	C NSW	03020201
J3310000	Crabtree Creek @ SR 2921, North Raleigh Blvd, Raleigh	Wake	35.8041	-78.6081	C NSW	03020201
J3970000	Walnut Creek at SR 2551 (Barwell Road) near Raleigh	Wake	35.7493	-78.5345	C NSW	03020201
J4050000	Neuse River @ SR 2555 (Auburn Knightdale Road) near Raleigh	Wake	35.7266	-78.5139	C NSW	03020201
J4080000	Poplar Creek @ SR 2049 (Bethlehem Road) near Knightdale	Wake	35.7309	-78.4776	C NSW	03020201
J4110000	Marks Creek @ SR 1714 (Pitchard Road) near Archer's Lodge	Johnston	35.7062	-78.4312	C NSW	03020201
J4130000	Neuse River @ SR 1700 (Covered Bridge Road) near Archer's Lodge	Johnston	35.6749	-78.4364	WS-V NSW	03020201
J4170000	Neuse River @ at NC 42E of Clayton	Johnston	35.6473	-78.4056	WS-IV NSW	03020201
J4370000	Neuse River at US 70 Business @ Smithfield	Johnston	35.5128	-78.3498	WS-IV NSW	03020201
J4414000	Swift Creek @ SR 1152 (Holly Springs Road) near Macedonia	Wake	35.7187	-78.7527	WS-III NSW	03020201
J4500000	Swift Creek @ Indian Creek former discharge location near Garner, N.C.	Wake	35.6476	-78.6041	C NSW	03020201
J4510500	Swift Creek at SR 1525, Cornwallis Road near Clayton	Johnston	35.5999	-78.5356	C NSW	03020201
J4511000	White Oak Creek @ N.C. 42 Hwy near Clayton, N.C.	Johnston	35.6176	-78.5281	C NSW	03020201
J4520000	Swift Creek @ SR 1562 (Steel Bridge Road) near Smithfield, N.C.	Johnston	35.5515	-78.46	C NSW	03020201
J4580000	Swift Creek @ SR 1501 (Swift Creek Road) near the Johnston County Airport	Johnston	35.5442	-78.397	C NSW	03020201
J4690000	Middle Creek @ SR 1152 (Holly Springs Road) near Holly Springs	Wake	35.6609	-78.8042	C NSW	03020201
J4868000	Middle Creek @ SR 1375 (Lake Wheeler Road) near Banks	Wake	35.6356	-78.7279	C NSW	03020201
J4980000	Middle Creek @ SR 1006 (Old Stage Road) near Willow Springs	Wake	35.6091	-78.6866	C NSW	03020201

Station	Location	County	Latitude	Longitude	Class	Sub-Basin
J5002000	Middle Creek @ SR 1517 (Old Sanders Hse) near Edmonson	Johnston	35.5626	-78.5756	C NSW	03020201
J5010000	Middle Creek @ NC 210 near Smithfield	Johnston	35.5075	-78.4013	C NSW	03020201
J5170000	Black Creek @ SR 1162 (Black Creek Road) near Four Oaks	Johnston	35.46925	-78.45681	C NSW	03020201
J5250000	Neuse River @ SR 1201 (Richardson Bridge Road) near Cox Mill	Johnston	35.3741	-78.1962	WS-IV NSW	03020201
J5390000	Hannah Creek @ SR 1158 (Allens Crossroads Drive) near Benson	Johnston	35.3868	-78.511	C NSW	03020201
J5390800	Hannah Creek @ SR 1227 (Ivey Road) near Benson	Johnston	35.4025	-78.4952	C NSW	03020201
J5410000	Mill Creek @ SR 1200 (Richardson Bridge Road) near Cox Mill	Johnston	35.342	-78.2162	C NSW	03020201
J5500000	Falling Creek @ SR 1219 (Old Grantham Road) near Grantham	Wayne	35.3224	-78.1282	WS-IV NSW	03020201
J5630000	Little River @ SR 2320, Riley Road near Zebulon	Wake	35.8375	-78.3599	HQW NSW	03020201
J5685000	Little River at Weaver Road near Bagley	Johnston	35.5791	-78.1723	WS-V NSW	03020201
J5750000	Little River at SR 2339 (Bagley Road) near Lowell Mill	Johnston	35.5613	-78.1594	WS-V NSW	03020201
J5790000	Buffalo Creek @ SR 2358 (Lake Glad Road) near Webdeil, N.C.	Wake	35.7697	-78.7697	C NSW	03020201
J5930000	Little River @ US 581 near Cherry Hospital	Wayne	35.393	-78.0258	C NSW	03020201
J6010950	Walnut Creek @ SR 1730 (Saint Johns Church Road) near Walnut Creek	Wayne	35.2817	-77.8686	C NSW	03020202
J6024000	Neuse River @ SR 1731 (Piney Grove Road) near Seven Springs	Wayne	35.229	-77.846	C NSW	03020202
J6044400	Bear Creek at SR 1603, Washington Street near LaGrange	Lenoir	35.3137	-77.8153	C Sw NSW	03020202
J6044500	Bear Creek @ SR 1311 (Bear Creek Road) near Kinston	Lenoir	35.2489	-77.7843	WS-IV Sw NSW	03020202
J6055000	Mosley Creek @ SR 1327 (Willey Measley Road) near LaGrange	Lenoir	35.3119	-77.7313	C Sw NSW	03020202
J6150000	Neuse River @ NC 11 Bypass at Kinston	Lenoir	35.2587	-77.5835	C NSW	03020202
J6250000	Neuse River @ NC 55 near Graingers	Lenoir	35.2957	-77.4962	C NSW	03020202
J6410000	Little Creek @ NC 97 near Zebulon	Wake	35.8279	-78.3025	C NSW	03020203

<i>Station</i>	<i>Location</i>	<i>County</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Class</i>	<i>Sub-Basin</i>
J6450000	Little Creek @ NC 39 near Zebulon	Wake	35.8125	-78.2681	C NSW	03020203
J6500000	Moccasin Creek @ SR 1131 (Antioch Church Road) near Conner	Wilson	35.7301	-78.1895	C NSW	03020203
J6680000	Turkey Creek @ SR 1101 (Claude Lewis Rodd) near Middlesex	Nash	35.7519	-78.1597	C NSW	03020203
J6765000	Contentnea Creek at Willow Springs drive near Dixie	Wilson	35.6838	-77.941	C Sw NSW	03020203
J6890000	Contentnea Creek @ SR 1622 (Evansdale Road) near Wilson	Wilson	35.6429	-77.8902	C Sw NSW	03020203
J7210000	Contentnea Creek @ NC 58 near Stantonsburg	Wilson	35.5861	-77.8111	C Sw NSW	03020203
J7240000	Toisnot Swamp @ SR 1539 (Sand Pit Road) near Stantonsburg	Wilson	35.5976	-77.7947	C Sw NSW	03020203
J7325000	Nahunta Swamp @ NC 58 near Contentnea	Greene	35.5081	-77.7455	C Sw NSW	03020203
J7330000	Contentnea Creek @ US 13 near Snow Hill	Greene	35.4585	-77.6753	C Sw NSW	03020203
J7690000	Little Contentnea Creek @ SR 1218 (Chinquapin Road) near Farmville	Pitt	35.5881	-77.5416	C Sw NSW	03020203
J7740000	Little Contentnea Creek @ SR 1110 (HWY 903) near Scuffleton	Pitt	35.4567	-77.4854	C Sw NSW	03020203
J7850000	Neuse River @ SR 1470 (Maple Cypress Road) at the boat ramp dock upstre	Craven	35.31368	-77.30287	C Sw NSW	03020202
J8870000	Trent River @ the Alfred Cunningham Drawbridge on E. Front Street, New Be	Craven	35.10159	-77.03708	SB Sw NSW	03020204

Section III

Contract Laboratory Information,
Audits, MOA Revisions, and Sample
Errors and Omissions

Environment I, Inc.
 Mark Oliveira, President
 P.O. Box 7085
 114 Oakmont Dr.
 Greenville, N.C. 27835-7085
 252.756.6208
moliveira@environment1inc.com

Environment 1, Inc. River Basin Method Codes 2021

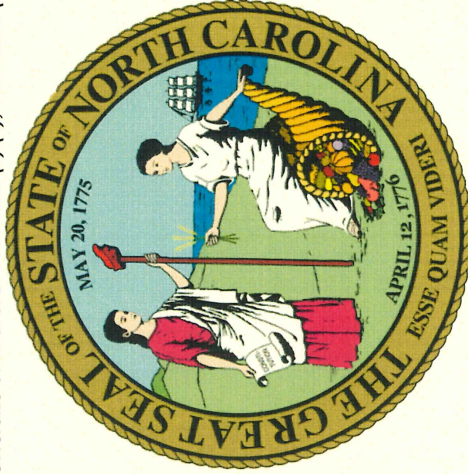
Parameter	EPA / SM code	Rev./ date used until 08/31/2021	Rev./ date used starting 09/01/2021
Temp (° C)	SM 2550B	2010	2010
DO (mg/l)	SM 4500 OG	2011	2016*
pH (su)	SM 4500 HB	2011	2011
Conductivity (umhos/cm)	SM 2510 B	2011	2011
Fecal Coliform	SM 9222 D	2006	2015*
Suspended Residue, (mg/l)	SM 2540 D	2011	2015*
Turbidity (NTU)	SM 2130 B	2011	2011
Chlorophyll a (ug/l)	EPA 445.0	Rev. 1.2 - 1997	Rev. 1.2 - 1997
NH3_N (mg/l)	EPA 350.1	Rev. 2.0 - 1993	Rev. 2.0 - 1993
TKN_N (mg/l)	EPA 351.2	Rev. 2.0 - 1993	Rev. 2.0 - 1993
NO2_NO3_N (mg/l)	EPA 353.2	Rev. 2.0 - 1993	Rev. 2.0 - 1993
TP (mg/l)	EPA 365.4	Rev. 2.0 - 1974	Rev. 2.0 - 1974

*** New Method revision date as of 09/01/2021**

STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF WATER RESOURCES LABORATORY CERTIFICATION BRANCH

In accordance with the provisions of N.C.G.S. 143-215.3 (a) (1), 143-215.3 (a)(10) and NCAC 2H.0800:



2021

Environment 1 Inc.

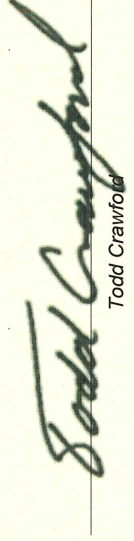
Is hereby certified to perform environmental analysis as listed on Attachment 1 and report monitoring data to DEQ for compliance with NPDES effluent, surface water, groundwater, and pretreatment regulations.

By reference 15A NCAC 2H .0800 is made a part of this certificate.

This certificate does not guarantee validity of data generated, but indicates the methodology, equipment, quality control procedures, records, and proficiency of the laboratory have been examined and found to be acceptable.

This certificate shall be valid until 12/31/2021

Certificate No. 10


Todd Crawford

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Environment 1 Inc.
 Address: 114 Oakmont Dr.
 Greenville, NC 27858

Certificate Number: 10
 Effective Date: 1/1/2021
 Expiration Date: 12/31/2021
 Date of Last Amendment: 1/1/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

INORGANIC	SM 4500 F ⁻ C-2011 (Aqueous)
ALKALINITY	HARDNESS TOTAL - WET CHEM
SM 2320 B-2011 (Aqueous)	SM 2340 C-2011 (Aqueous)
BACTERIA - COLIFORM FECAL	INORGANIC PHENOLS
SM 9221C E-2006 (MPN) (Aqueous)	EPA 420.1, Rev. 1978 (Aqueous)
SM 9221C E-2006 (MPN) (Biosolids)	NITROGEN, AMMONIA
SM 9222 D-2006 (MF) (Aqueous)	EPA 350.1, Rev. 2.0, 1993 (Aqueous)
BACTERIA - COLIFORM TOTAL	NITROGEN, NITRATE
SM 9221 B-2006 (MPN) (Aqueous)	(NO3 + NO2 EPA 353.2, Rev. 2.0, 1993) - (NO2 EPA 353.2, Rev. 2.0, 1993) (Aqueous)
SM 9222 B-2006 (MF) (Aqueous)	NITROGEN, NITRITE
BACTERIA - ENTEROCOCCI	EPA 353.2, Rev. 2.0, 1993 (Aqueous)
IDEXX Enterolert® (MPN) (Aqueous)	NITROGEN, NO3 + NO2
BOD	EPA 353.2, Rev. 2.0, 1993 (Aqueous)
SM 5210 B-2011 (LDO) (Aqueous)	NITROGEN, TOTAL KJELDAHL
SM 5210 B-2011 (LDO) (Aqueous)	EPA 351.2, Rev. 2.0, 1993 (Aqueous)
CHLORIDE	OIL & GREASE
SM 4500 Cl ⁻ B-2011 (Aqueous)	EPA 1664 Rev. B (Aqueous)
CHLOROPHYLL a	ORGANIC CARBON, DISSOLVED
EPA 445.0, Rev. 1.2 (Fluorometric) (Aqueous)	SM 5310 C-2011 (UV Oxidation) (Aqueous)
COD	ORGANIC CARBON, TOTAL
Hach 8000 (Aqueous)	SM 5310 C-2011 (UV Oxidation) (Aqueous)
COLOR, ADMI	pH
SM 2120 F-2011 (ADMI) (Aqueous)	SM 4500 H+B-2011 (Aqueous)
COLOR, PC	PHOSPHATE, ORTHO
SM 2120 B-2011 (PtCo) (Aqueous)	SM 4500 P E-2011 (Aqueous)
CONDUCTIVITY	PHOSPHORUS, TOTAL
SM 2510 B-2011 (Aqueous)	EPA 365.4, 1974 (Aqueous)
CYANIDE	RESIDUE, DISSOLVED 180 C
SM 4500 CN ⁻ E-2011 (Total) (Aqueous)	SM 2540 C-2011 (Aqueous)
SM 4500 CN ⁻ E-2011 (Total) (Non-Aqueous)	ASTM D5907-13 (Aqueous)
DISSOLVED OXYGEN	RESIDUE, SETTLEABLE
SM 4500 O G-2011 (Aqueous)	SM 2540 F-2011 (Aqueous)
FLUORIDE	RESIDUE, SUSPENDED
	SM 2540 D-2011 (Aqueous)

This certification requires maintenance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Environment 1 Inc.
 Address: 114 Oakmont Dr.
 Greenville, NC 27858

Certificate Number: 10
 Effective Date: 1/1/2021
 Expiration Date: 12/31/2021
 Date of Last Amendment: 1/1/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

RESIDUE, TOTAL	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SM 2540 B-2011 (Aqueous)	SW-846 6020 B (Aqueous)
SM 2540 G-2011 (Non-Aqueous)	CADMIUM
SALINITY	SM 3113 B-2010 (Aqueous)
SM 2520 B-2011 (Aqueous)	SM 3113 B-2010 (Non-Aqueous)
SULFATE	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SM 4500 SO4 ²⁻ E-2011 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SULFIDE	SW-846 6020 B (Aqueous)
SM 4500 S ²⁻ D-2011 (Aqueous)	CALCIUM
TEMPERATURE	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SM 2550 B-2010 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
TURBIDITY	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SM 2130 B-2011 (Aqueous)	CHROMIUM TOTAL
METAL	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
ALUMINUM	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SW-846 6020 B (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	COBALT
SW-846 6020 B (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
ANTIMONY	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SM 3113 B-2010 (Aqueous)	SW-846 6020 B (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	COPPER
SW-846 6020 B (Aqueous)	SM 3111 B-2011 (Aqueous)
ARSENIC	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SM 3113 B-2010 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SM 3113 B-2010 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6020 B (Aqueous)
SW-846 6020 B (Aqueous)	IRON
BARIIUM	SM 3111 B-2011 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
BERYLLIUM	SW-846 6020 B (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	LEAD

This certification requires maintenance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Environment 1 Inc.
 Address: 114 Oakmont Dr.
 Greenville, NC 27858

Certificate Number: 10
 Effective Date: 1/1/2021
 Expiration Date: 12/31/2021
 Date of Last Amendment: 1/1/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

SM 3113 B-2010 (Aqueous)	SM 3113 B-2010 (Aqueous)
SM 3113 B-2010 (Non-Aqueous)	SM 3113 B-2010 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6020 B (Aqueous)
SW-846 6020 B (Aqueous)	SILVER
MAGNESIUM	SM 3113 B-2010 (Aqueous)
SM 3111 B-2011 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6020 B (Aqueous)
MANGANESE	SODIUM
SM 3111 B-2011 (Aqueous)	SM 3111 B-2011 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SM 3111 B-2011 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
MERCURY	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 245.1, Rev. 3.0, 1994 (Aqueous)	THALLIUM
SW-846 7471 B (Non-Aqueous)	EPA 279.2, 1978 (Aqueous)
EPA 1631 E (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
MOLYBDENUM	SW-846 6020 B (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	TIN
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)	SW-846 6020 B (Aqueous)
NICKEL	VANADIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6020 B (Aqueous)
SW-846 6020 B (Aqueous)	ZINC
POTASSIUM	SM 3111 B-2011 (Aqueous)
SM 3111 B-2011 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6020 B (Aqueous)

North Carolina Wastewater/Groundwater Laboratory Certification
Certified Parameters Listing

Lab Name: Environment 1 Inc.
Address: 114 Oakmont Dr.
Greenville, NC 27858

Certificate Number: 10
Effective Date: 1/1/2021
Expiration Date: 12/31/2021
Date of Last Amendment: 1/1/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

SW-846 6020 B (Aqueous)
ORGANIC
BASE NEUTRAL/ACID, ORGANICS
EPA 625.1 (Aqueous)
SW-846 8270 E (Aqueous)
CHLORINATED ACID HERBICIDES
SW-846 8151 A (Aqueous)
PESTICIDES, ORGANOCHLORINE
SW-846 8081 B (Aqueous)
PURGEABLE, AROMATICS
EPA 602 (Aqueous)
SM 6200 C-2011 (Aqueous)
PURGEABLE, HALOCARBONS
SM 6200 C-2011 (Aqueous)
PURGEABLE, ORGANICS
EPA 624.1 (Aqueous)
SW-846 8260 D (Aqueous)

**Amendment to the Memorandum of Agreement
Between the North Carolina Division of Water Resources
and the Lower Neuse Basin Association**

WHEREAS, the NORTH CAROLINA DIVISION OF WATER RESOURCES, the LOWER NEUSE BASIN ASSOCIATION, and NPDES PERMITTEES have entered into a MEMORANDUM OF AGREEMENT (MOA) dated August 1, 2019; and

WHEREAS, the MOA allows modification to add certain new parties to the MOA by written consent of the DWR and the LNBA; and

NOW THEREFORE, the MOA is hereby amended as follows:

The SNOW HILL WASTE WATER TREATMENT PLANT (NC0020842) is added to the MOA; and Todd Whaley, Interim Town Manager, is added as the signature authority.

By: Todd A. Whaley
Todd Whaley, Interim Town Manager for the
SNOW HILL WASTE WATER TREATMENT PLANT

Date: 9/17/2021

IN WITNESS WHEREOF, the parties have caused the execution of this instrument by authority duly given, to be effective as of October 1st, 2021.

LOWER NEUSE BASIN
ASSOCIATION
By: Barry Parks
Barry Parks, Chair
Lower Neuse Basin Association

Date: 9/17/21

NORTH CAROLINA DIVISION OF
WATER RESOURCES
By: S. Daniel Smith
S. Daniel Smith, Director
North Carolina Division of Water
Resources

Date: 9/22/21

LNBA Sample Errors/Omissions for 2021

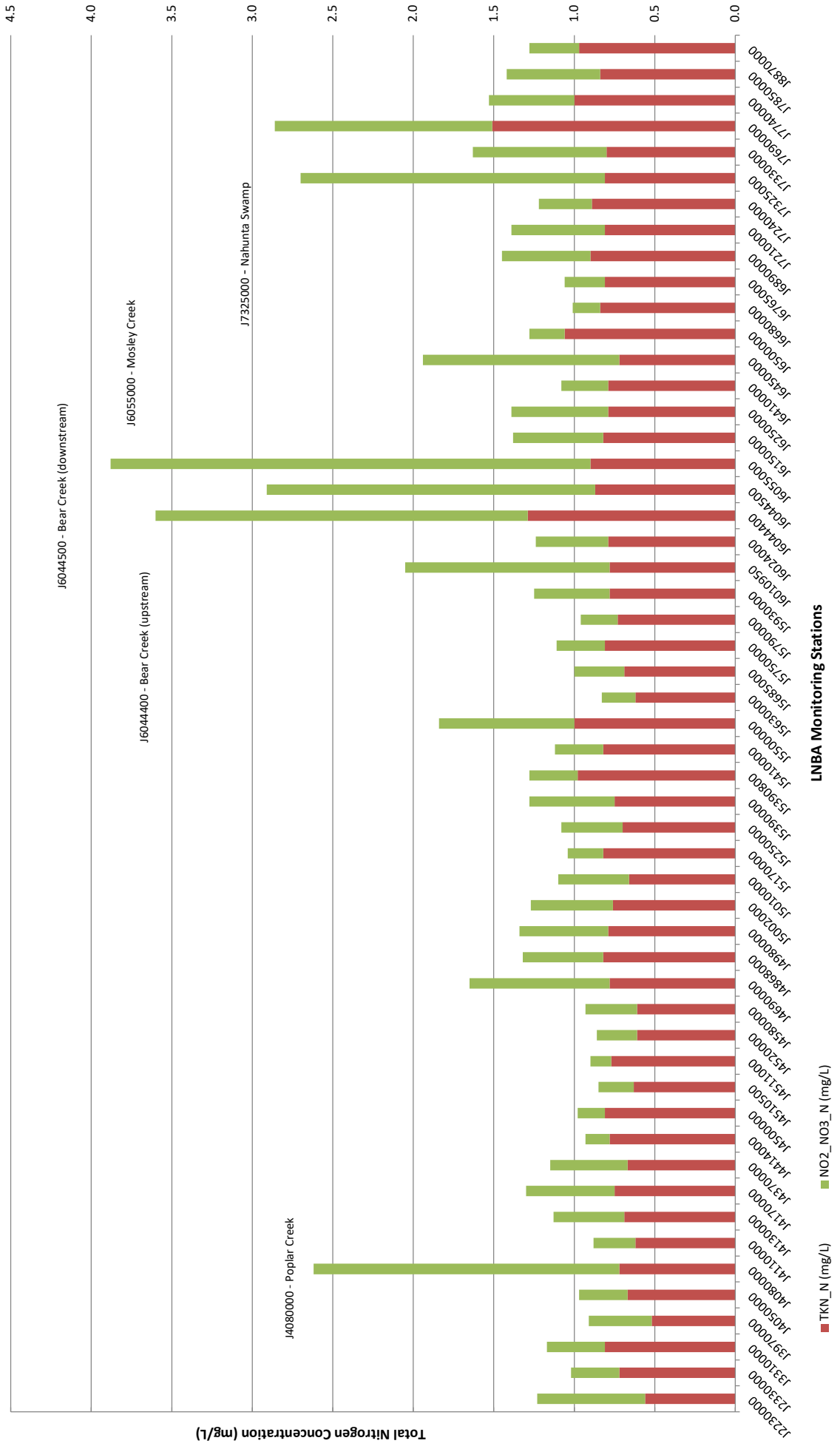
Date: 4/20/2022

February, 2021			
J5010000	2/15/2021	Dissolved oxygen equipment issue, unable to stabilize, sample collected on later date	
J5170000	2/15/2021	Dissolved oxygen equipment issue, unable to stabilize, sample collected on later date	
J5250000	2/15/2021	Dissolved oxygen equipment issue, unable to stabilize, sample collected on later date	
J5390000	2/15/2021	Dissolved oxygen equipment issue, unable to stabilize, sample collected on later date	
J5390800	2/15/2021	Dissolved oxygen equipment issue, unable to stabilize, sample collected on later date	
J5410000	2/22/2021	Unable to access, road flooded	
J5500000	2/22/2021	Unable to access, road flooded	
August, 2021			
J4520000	8/17/2021	Unable to access- bridge construction	
October, 2021			
J4580000	10/7/2021	Unable to access- stream nearly dry	
November, 2021			
J2230000	11/8/2021	Unable to access- stream nearly dry	

Section IV

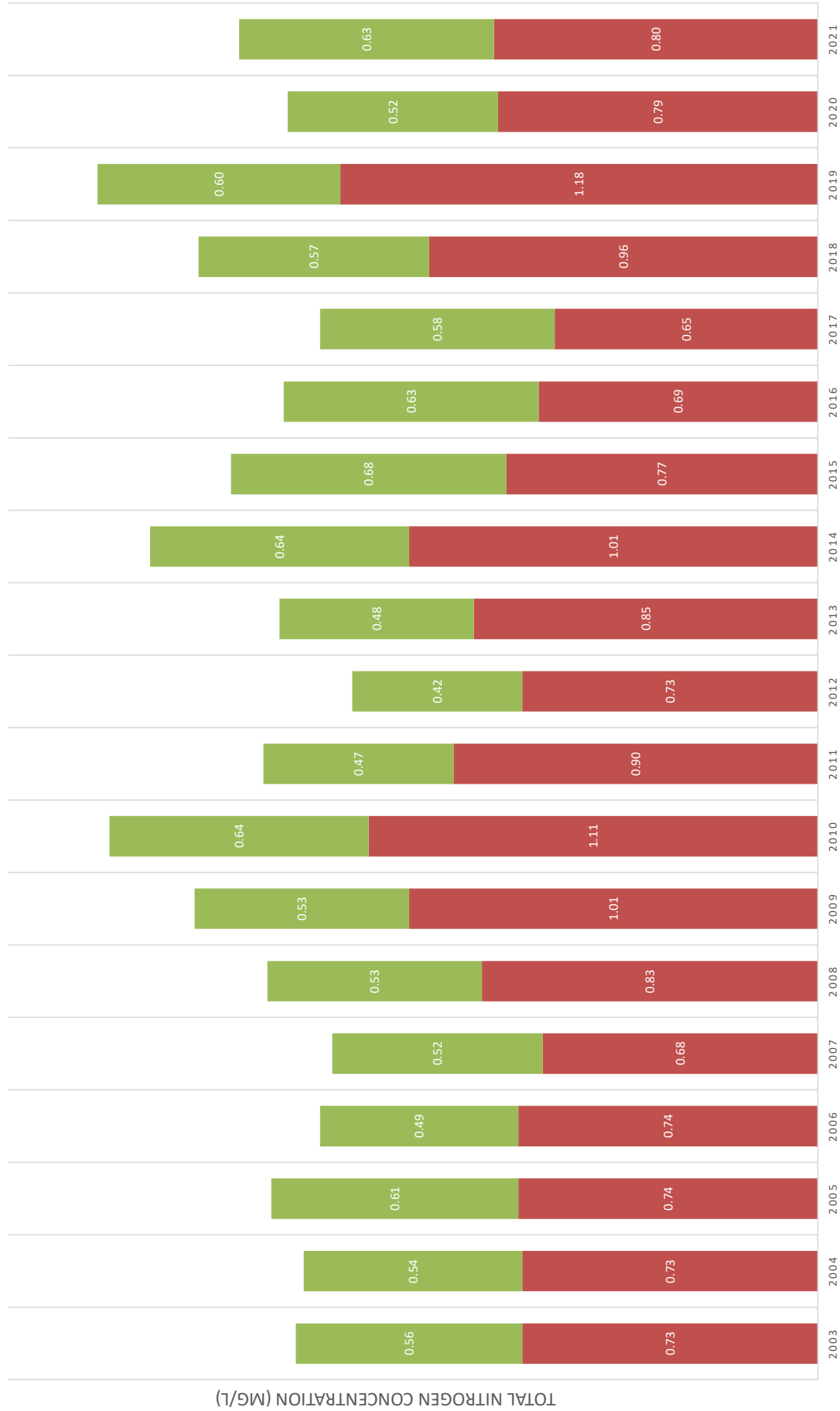
Statistical Analysis of Sampling Data

2021 LNBA Monitoring Stations Total Nitrogen Annual Average Concentrations



2003-2021 AVERAGE TOTAL NITROGEN CONCENTRATIONS FOR LNBA SAMPLING SITES

■ TKN_N (mg/L) ■ NO2_NO3_N (mg/L)



Avg. TKN_N = 0.80 mg/L Avg. NO2_NO3_N = 0.56 mg/L

YEAR

TOTAL NITROGEN CONCENTRATION (MG/L)

2021 LNBA Monitoring Report

Station J2230000

Smith Creek @ SR 2045 (Burlington Mill Road) near Wake Forest **Stream Class:** C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.9182

Longitude: -78.5348

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	15	N/A	N/A	N/A	7.6	25.4	20.0
<i>DO (mg/l)</i>	15	N/A	4	0	7.0	11.2	8.3
<i>*** pH (SU)</i>	15	N/A	6 to 9	0	6.5	7.5	N/A
<i>Conductivity (umhos/cm)</i>	15	1	N/A	N/A	50	132	105
<i>** Fecal Coliform (/100 mls)</i>	10	N/A	400	2	50	6,000	305
<i>Suspended Residue (mg/l)</i>	10	1	N/A	N/A	3.4	1,210.0	128.6
<i>Turbidity (NTU)</i>	10	N/A	50	1	10.0	1,100.0	125.4
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	10	1	N/A	N/A	0.02	0.22	0.08
<i>TKN_N (mg/l)</i>	10	0	N/A	N/A	0.26	0.96	0.48
<i>NO2_NO3_N (mg/l)</i>	10	0	N/A	N/A	0.22	0.92	0.67
<i>TP (mg/l)</i>	10	0	N/A	N/A	0.05	0.96	0.24
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J2330000

Neuse River at SR 2215 (Buffalo Road) near Neuse

Stream Class: C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.8479

Longitude: -78.5302

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.4	29.1	20.4
<i>DO (mg/l)</i>	17	N/A	4	0	6.2	12.7	8.4
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.4	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	62	114	90
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	20	6,000	118
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	3.1	124.0	19.6
<i>Turbidity (NTU)</i>	12	N/A	50	1	4.2	95.0	19.4
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.21	0.11
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.38	0.85	0.61
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.08	0.70	0.30
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.29	0.09
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J3310000

Crabtree Creek @ SR 2921, North Raleigh Blvd, Raleigh

Stream Class: C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.8041

Longitude: -78.6081

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	8.1	28.4	20.1
<i>DO (mg/l)</i>	17	N/A	4	0	6.3	12.2	8.5
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.1	7.4	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	78	211	154
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	6	110	6,100	495
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	2.8	350.0	37.1
<i>Turbidity (NTU)</i>	12	N/A	50	1	6.3	240.0	34.6
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.15	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.38	1.21	0.72
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.15	0.51	0.36
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.42	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J3970000

Walnut Creek at SR 2551 (Barwell Road) near Raleigh

Stream Class: C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.7493

Longitude: -78.5345

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.8	26.6	19.1
<i>DO (mg/l)</i>	17	N/A	4	0	6.7	11.6	8.5
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.9	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	102	181	128
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	112	6,000	320
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	18.0	7.9
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.8	28.0	16.0
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.02	0.11	0.07
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.32	0.65	0.45
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.22	0.67	0.39
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.18	0.07
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J4050000

Neuse River @ SR 2555 (Auburn Knightdale Road) near Raleigh **Stream Class:** C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.7266

Longitude: -78.5139

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.4	27.7	19.8
<i>DO (mg/l)</i>	17	N/A	4	0	6.0	12.4	8.3
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.1	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	62	130	101
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	33	6,000	148
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	3.1	24.0	13.1
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.1	24.0	16.2
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.20	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.39	0.86	0.57
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.16	0.40	0.30
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.17	0.07
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4080000

Poplar Creek @ SR 2049 (Bethlehem Road) near Knightdale

Stream Class: C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.7309

Longitude: -78.4776

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.8	23.6	17.6
<i>DO (mg/l)</i>	17	N/A	4	0	7.2	11.5	8.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.4	7.1	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	76	178	132
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	5	112	1,300	325
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.8	16.0	10.5
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.9	21.0	11.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.20	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.40	0.88	0.63
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	1.22	3.21	1.90
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.11	0.60	0.34
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J4110000

Marks Creek @ SR 1714 (Pitchard Road) near Archer's Lodge

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.7062

Longitude: -78.4312

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.5	25.8	18.2
<i>DO (mg/l)</i>	17	N/A	4	0	6.9	11.7	8.5
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.9	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	58	88	77
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	5	78	7,100	352
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	3.8	25.0	11.0
<i>Turbidity (NTU)</i>	12	N/A	50	0	7.0	30.0	14.9
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.15	0.08
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.28	0.81	0.54
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.13	0.47	0.26
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.19	0.08
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4130000

Neuse River @ SR 1700 (Covered Bridge Road) near Archer's Lodge

Stream Class: WS-V NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.6749

Longitude: -78.4364

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.6	27.6	20.2
<i>DO (mg/l)</i>	17	N/A	4	0	6.3	12.0	8.0
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.2	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	75	264	175
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	31	818	152
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.6	30.0	15.7
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.8	27.0	16.0
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.15	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.39	0.80	0.60
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.22	0.83	0.44
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.03	0.93	0.24
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4170000

Neuse River @ at NC 42E of Clayton

Stream Class: WS-IV NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.6473

Longitude: -78.4056

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.6	27.5	19.8
<i>DO (mg/l)</i>	17	N/A	4	0	5.1	11.9	7.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.6	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	79	270	178
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	30	2,300	194
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	3.1	29.0	12.7
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.1	29.0	16.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.21	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.40	0.94	0.65
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.27	0.92	0.55
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.09	0.84	0.25
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4370000

Neuse River at US 70 Business @ Smithfield

Stream Class: WS-IV NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5128

Longitude: -78.3498

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.5	29.2	20.2
<i>DO (mg/l)</i>	17	N/A	4	0	5.6	11.8	7.8
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.5	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	76	262	165
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	5	28	6,000	250
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.1	136.0	30.6
<i>Turbidity (NTU)</i>	12	N/A	50	2	4.5	100.0	29.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	1	N/A	N/A	0.02	0.10	0.06
<i>TKN_N (mg/l)</i>	12	1	N/A	N/A	0.20	0.82	0.61
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.25	0.77	0.48
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.07	0.27	0.17
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4414000

Swift Creek @ SR 1152 (Holly Springs Road) near Macedonia

Stream Class: WS-III NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.7187

Longitude: -78.7527

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.2	27.8	19.2
<i>DO (mg/l)</i>	17	N/A	4	0	4.0	12.4	7.3
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.5	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	67	138	98
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	41	3,800	229
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	109.0	19.3
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.9	30.0	13.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.12	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.38	1.28	0.69
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.03	0.27	0.15
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.03	0.35	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4500000

Swift Creek @ Indian Creek former discharge location near
Gamer, N.C.

Stream Class: C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.6476

Longitude: -78.6041

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.7	27.7	19.9
<i>DO (mg/l)</i>	17	N/A	4	0	4.2	12.1	7.0
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.0	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	60	96	83
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	38	855	142
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	2.9	33.0	11.6
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.2	50.0	20.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.37	0.15
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.46	0.92	0.66
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.02	0.33	0.17
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.13	0.08
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4510500

Swift Creek at SR 1525, Cornwallis Road near Clayton

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5999

Longitude: -78.5356

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	5.9	26.9	19.0
<i>DO (mg/l)</i>	17	N/A	4	0	5.1	12.2	7.8
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.0	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	59	100	85
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	42	420	110
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	2.8	25.0	10.2
<i>Turbidity (NTU)</i>	12	N/A	50	0	7.5	40.0	19.2
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.05	0.40	0.12
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.36	0.70	0.51
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.38	0.22
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.12	0.07
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J4511000

White Oak Creek @ N.C. 42 Hwy near Clayton, N.C.

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.6176

Longitude: -78.5281

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.3	29.9	21.3
<i>DO (mg/l)</i>	17	N/A	4	2	2.4	12.1	7.2
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.2	7.1	N/A
<i>Conductivity (umhos/cm)</i>	17	2	N/A	N/A	50	80	67
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	7	380	38
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.4	20.0	9.4
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.5	45.0	20.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.35	0.11
<i>TKN_N (mg/l)</i>	12	1	N/A	N/A	0.20	1.00	0.67
<i>NO2_NO3_N (mg/l)</i>	12	1	N/A	N/A	0.02	0.42	0.13
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.13	0.08
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J4520000

Swift Creek @ SR 1562 (Steel Bridge Road) near Smithfield, N.C. **Stream Class:** C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5515

Longitude: -78.46

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	16	N/A	N/A	N/A	6.1	26.2	18.4
<i>DO (mg/l)</i>	16	N/A	4	0	6.2	12.2	8.2
<i>*** pH (SU)</i>	16	N/A	6 to 9	3	4.2	7.1	N/A
<i>Conductivity (umhos/cm)</i>	16	1	N/A	N/A	50	106	86
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	56	6,000	189
<i>Suspended Residue (mg/l)</i>	12	4	N/A	N/A	2.5	28.0	9.4
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.7	45.0	16.2
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.30	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.33	0.75	0.51
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.44	0.25
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.21	0.08
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4580000

Swift Creek @ SR 1501 (Swift Creek Road) near the Johnston County Airport

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5442

Longitude: -78.397

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	18	N/A	N/A	N/A	6.0	26.0	18.6
<i>DO (mg/l)</i>	18	N/A	4	0	5.5	13.2	8.2
<i>*** pH (SU)</i>	18	N/A	6 to 9	0	6.0	7.2	N/A
<i>Conductivity (umhos/cm)</i>	18	0	N/A	N/A	60	103	85
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	62	646	168
<i>Suspended Residue (mg/l)</i>	12	3	N/A	N/A	2.5	25.0	7.7
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.8	37.0	14.0
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.10	0.06
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.38	0.68	0.55
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.13	0.53	0.32
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.02	0.11	0.06
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4690000

Middle Creek @ SR 1152 (Holly Springs Road) near Holly Springs

Stream Class: C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.6609

Longitude: -78.8042

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.3	25.8	18.6
<i>DO (mg/l)</i>	17	N/A	4	0	5.4	12.3	8.1
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.0	7.4	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	84	424	255
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	40	3,900	182
<i>Suspended Residue (mg/l)</i>	12	4	N/A	N/A	2.5	28.0	6.2
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.3	45.0	14.9
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.34	0.11
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.38	0.88	0.67
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.45	1.19	0.87
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.11	0.64	0.32
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J4868000

Middle Creek @ SR 1375 (Lake Wheeler Road) near Banks

Stream Class: C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.6356

Longitude: -78.7279

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.0	26.9	19.8
<i>DO (mg/l)</i>	17	N/A	4	0	5.7	11.6	7.6
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.5	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	86	399	227
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	44	3,000	191
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.2	71.0	13.7
<i>Turbidity (NTU)</i>	12	N/A	50	1	4.8	60.0	18.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.80	0.14
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.42	1.07	0.68
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.22	0.78	0.50
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.42	0.15
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J4980000

Middle Creek @ SR 1006 (Old Stage Road) near Willow Springs **Stream Class:** C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.6091

Longitude: -78.6866

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.1	27.3	19.6
<i>DO (mg/l)</i>	17	N/A	4	0	5.7	11.7	8.1
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.6	7.1	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	87	372	210
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	66	2,600	268
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.0	98.0	17.6
<i>Turbidity (NTU)</i>	12	N/A	50	1	6.8	85.0	21.8
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.18	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.37	1.48	0.70
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.24	1.08	0.55
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.30	0.16
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J5002000

Middle Creek @ SR 1517 (Old Sanders Hse) near Edmonson

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5626

Longitude: -78.5756

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.4	26.4	18.9
<i>DO (mg/l)</i>	17	N/A	4	0	5.7	12.1	8.0
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.9	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	74	309	167
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	62	5,100	270
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.1	234.0	27.6
<i>Turbidity (NTU)</i>	12	N/A	50	1	6.9	210.0	31.9
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.05	0.22	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.37	1.25	0.67
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.33	0.72	0.51
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.05	0.37	0.13
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J5010000

Middle Creek @ NC 210 near Smithfield

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5075

Longitude: -78.4013

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	18	N/A	N/A	N/A	5.5	25.9	18.3
<i>DO (mg/l)</i>	17	N/A	4	0	6.2	11.6	8.0
<i>*** pH (SU)</i>	17	N/A	6 to 9	2	5.8	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	59	249	152
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	21	836	150
<i>Suspended Residue (mg/l)</i>	12	2	N/A	N/A	2.6	26.0	9.2
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.3	35.0	16.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	1	N/A	N/A	0.02	0.13	0.07
<i>TKN_N (mg/l)</i>	12	1	N/A	N/A	0.20	1.00	0.59
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.28	0.70	0.44
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.18	0.10
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5170000

Black Creek @ SR 1162 (Black Creek Road) near Four Oaks

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.46925

Longitude: -78.45681

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	18	N/A	N/A	N/A	5.4	25.8	18.3
<i>DO (mg/l)</i>	17	N/A	4	5	2.0	11.7	6.0
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.1	6.7	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	52	90	71
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	13	791	112
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	8.7	4.9
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.6	22.0	11.2
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	3	N/A	N/A	0.02	0.26	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.36	1.17	0.73
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.53	0.22
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.11	0.07
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5250000

Neuse River @ SR 1201 (Richardson Bridge Road) near Cox Mill **Stream Class:** WS-IV NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.3741

Longitude: -78.1962

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	18	N/A	N/A	N/A	5.9	28.5	20.1
<i>DO (mg/l)</i>	17	N/A	4	0	5.4	11.2	7.6
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	6.4	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	74	265	165
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	52	827	130
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	5.5	44.0	24.6
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.4	40.0	25.0
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.10	0.05
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.20	0.91	0.65
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.19	0.45	0.38
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.07	0.30	0.19
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J5390000

Hannah Creek @ SR 1158 (Allens Crossroads Drive) near Benson

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.3868

Longitude: -78.511

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	18	N/A	N/A	N/A	7.1	26.8	18.9
<i>DO (mg/l)</i>	17	N/A	4	2	1.5	10.7	6.8
<i>*** pH (SU)</i>	17	N/A	6 to 9	9	5.4	6.6	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	64	125	93
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	4	36	927	181
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.6	10.0	6.1
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.9	14.0	9.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.16	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.24	0.88	0.65
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.14	1.19	0.53
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.43	0.08
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J5390800

Hannah Creek @ SR 1227 (Ivey Road) near Benson

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.4025

Longitude: -78.4952

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	18	N/A	N/A	N/A	6.8	27.1	18.9
<i>DO (mg/l)</i>	17	N/A	4	8	1.3	10.5	4.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.3	6.7	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	56	317	154
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	30	900	137
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.6	113.0	16.3
<i>Turbidity (NTU)</i>	12	N/A	50	1	7.5	160.0	23.2
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.38	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.44	1.89	0.88
<i>NO2_NO3_N (mg/l)</i>	12	1	N/A	N/A	0.02	1.04	0.30
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.05	0.62	0.23
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5410000

Mill Creek @ SR 1200 (Richardson Bridge Road) near Cox Mill

Stream Class: C NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.342

Longitude: -78.2162

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	16	N/A	N/A	N/A	7.3	27.0	20.3
<i>DO (mg/l)</i>	16	N/A	4	0	4.4	11.2	6.5
<i>*** pH (SU)</i>	16	N/A	6 to 9	1	5.8	6.6	N/A
<i>Conductivity (umhos/cm)</i>	16	0	N/A	N/A	63	122	87
<i>** Fecal Coliform (/100 mls)</i>	11	N/A	400	2	38	936	170
<i>Suspended Residue (mg/l)</i>	11	5	N/A	N/A	2.5	11.0	4.9
<i>Turbidity (NTU)</i>	11	N/A	50	0	3.7	21.0	9.9
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	11	0	N/A	N/A	0.03	0.16	0.09
<i>TKN_N (mg/l)</i>	11	1	N/A	N/A	0.20	1.01	0.73
<i>NO2_NO3_N (mg/l)</i>	11	0	N/A	N/A	0.13	0.57	0.30
<i>TP (mg/l)</i>	11	1	N/A	N/A	0.02	0.18	0.07
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5500000

Falling Creek @ SR 1219 (Old Grantham Road) near Grantham

Stream Class: WS-IV NSW

County: Wayne

Sub-Basin: 03020201

Latitude: 35.3224

Longitude: -78.1282

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	16	N/A	N/A	N/A	7.4	25.9	19.5
<i>DO (mg/l)</i>	16	N/A	4	1	3.8	11.5	6.0
<i>*** pH (SU)</i>	16	N/A	6 to 9	4	5.3	7.0	N/A
<i>Conductivity (umhos/cm)</i>	16	0	N/A	N/A	69	160	111
<i>** Fecal Coliform (/100 mls)</i>	11	N/A	400	3	28	2,000	247
<i>Suspended Residue (mg/l)</i>	11	1	N/A	N/A	2.5	11.0	4.5
<i>Turbidity (NTU)</i>	11	N/A	50	0	3.1	19.0	8.7
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	11	1	N/A	N/A	0.02	0.12	0.07
<i>TKN_N (mg/l)</i>	11	0	N/A	N/A	0.23	1.69	0.93
<i>NO2_NO3_N (mg/l)</i>	11	0	10	0	0.14	2.47	0.84
<i>TP (mg/l)</i>	11	0	N/A	N/A	0.05	0.17	0.10
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5630000

Little River @ SR 2320, Riley Road near Zebulon

Stream Class: HQW NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.8375

Longitude: -78.3599

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	4.9	27.0	18.3
<i>DO (mg/l)</i>	17	N/A	4	0	4.2	10.5	6.9
<i>*** pH (SU)</i>	17	N/A	6 to 9	2	5.0	6.7	N/A
<i>Conductivity (umhos/cm)</i>	17	1	N/A	N/A	50	139	76
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	15	310	85
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	5.9	3.6
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.9	12.0	8.4
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	3	N/A	N/A	0.02	0.17	0.07
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.39	0.72	0.55
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.05	0.37	0.21
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.03	0.08	0.06
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5685000

Little River at Weaver Road near Bagley

Stream Class: WS-V NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5791

Longitude: -78.1723

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.7	26.0	18.7
<i>DO (mg/l)</i>	17	N/A	4	0	4.3	11.1	7.6
<i>*** pH (SU)</i>	17	N/A	6 to 9	4	5.6	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	3	N/A	N/A	50	92	71
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	28	380	81
<i>Suspended Residue (mg/l)</i>	12	2	N/A	N/A	2.5	9.7	6.0
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.6	23.0	12.9
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.14	0.08
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.47	0.82	0.61
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.16	0.87	0.31
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.11	0.06
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5750000

Little River at SR 2339 (Bagley Road) near Lowell Mill

Stream Class: WS-V NSW

County: Johnston

Sub-Basin: 03020201

Latitude: 35.5613

Longitude: -78.1594

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.9	25.9	18.5
<i>DO (mg/l)</i>	17	N/A	4	1	3.6	10.8	7.4
<i>*** pH (SU)</i>	17	N/A	6 to 9	4	5.0	7.0	N/A
<i>Conductivity (umhos/cm)</i>	17	3	N/A	N/A	50	159	80
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	33	6,000	171
<i>Suspended Residue (mg/l)</i>	12	4	N/A	N/A	2.5	15.0	7.1
<i>Turbidity (NTU)</i>	12	N/A	50	0	7.2	23.0	13.8
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.21	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.46	1.45	0.71
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	0.21	0.49	0.30
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.03	0.31	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J5790000

Buffalo Creek @ SR 2358 (Lake Glad Road) near Webdell, N.C. **Stream Class:** C NSW

County: Wake

Sub-Basin: 03020201

Latitude: 35.7697

Longitude: -78.7697

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	5.5	25.8	17.9
<i>DO (mg/l)</i>	17	N/A	4	0	4.6	12.0	7.2
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.7	6.8	N/A
<i>Conductivity (umhos/cm)</i>	17	2	N/A	N/A	50	99	73
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	5	38	836	232
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	7.1	4.3
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.7	15.0	9.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	2	N/A	N/A	0.02	0.33	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.48	0.97	0.64
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.06	0.45	0.23
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.03	0.11	0.07
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J5930000

Little River @ US 581 near Cherry Hospital

Stream Class: C NSW

County: Wayne

Sub-Basin: 03020201

Latitude: 35.393

Longitude: -78.0258

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	18	N/A	N/A	N/A	5.5	27.4	19.4
<i>DO (mg/l)</i>	17	N/A	4	0	5.4	11.3	7.6
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.5	6.9	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	54	150	100
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	4	31	7,000	197
<i>Suspended Residue (mg/l)</i>	12	3	N/A	N/A	2.5	29.0	8.6
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.8	35.0	12.7
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.16	0.08
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.26	1.01	0.70
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.23	0.78	0.47
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.06	0.46	0.14
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6010950

Walnut Creek @ SR 1730 (Saint Johns Church Road) near
Walnut Creek

Stream Class: C NSW

County: Wayne

Sub-Basin: 03020202

Latitude: 35.2817

Longitude: -77.8686

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	8.5	27.6	20.2
<i>DO (mg/l)</i>	17	N/A	4	0	4.6	11.4	7.1
<i>*** pH (SU)</i>	17	N/A	6 to 9	5	5.6	6.5	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	74	93	85
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	2	718	27
<i>Suspended Residue (mg/l)</i>	12	3	N/A	N/A	2.5	15.0	5.4
<i>Turbidity (NTU)</i>	12	N/A	50	0	3.1	16.0	7.1
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.02	0.21	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.46	0.95	0.69
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.17	2.77	1.27
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.10	0.06
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6024000

Neuse River @ SR 1731 (Piney Grove Road) near Seven Springs **Stream Class:** C NSW

County: Wayne

Sub-Basin: 03020202

Latitude: 35.229

Longitude: -77.846

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.0	28.3	20.3
<i>DO (mg/l)</i>	17	N/A	4	0	5.2	11.3	7.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.5	6.9	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	55	196	113
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	16	480	79
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.0	47.0	17.0
<i>Turbidity (NTU)</i>	12	N/A	50	0	8.8	50.0	21.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.02	0.18	0.07
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.46	1.03	0.72
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.21	0.66	0.45
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.20	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6044400

Bear Creek at SR 1603, Washington Street near LaGrange

Stream Class: C Sw NSW

County: Lenoir

Sub-Basin: 03020202

Latitude: 35.3137

Longitude: -77.8153

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	9.2	25.2	19.1
<i>DO (mg/l)</i>	17	N/A	4	0	6.3	10.8	7.8
<i>*** pH (SU)</i>	17	N/A	6 to 9	13	5.6	6.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	81	182	117
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	21	682	136
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	2.7	34.0	12.8
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.7	29.0	13.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.07	1.65	0.24
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.57	2.70	1.05
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	1.26	3.43	2.31
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.05	0.68	0.19
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6044500

Bear Creek @ SR 1311 (Bear Creek Road) near Kinston

Stream Class: WS-IV Sw N

County: Lenoir

Sub-Basin: 03020202

Latitude: 35.2489

Longitude: -77.7843

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.8	25.1	18.8
<i>DO (mg/l)</i>	17	N/A	4	0	6.0	10.9	7.9
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.2	6.7	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	75	119	105
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	33	900	123
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	15.0	7.7
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.7	21.0	10.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.07	0.21	0.11
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.40	1.37	0.76
<i>NO2_NO3_N (mg/l)</i>	12	0	10	0	1.35	3.21	2.04
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.07	0.29	0.14
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	25	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6055000

Mosley Creek @ SR 1327 (Willey Measley Road) near LaGrange **Stream Class:** C Sw NSW

County: Lenoir

Sub-Basin: 03020202

Latitude: 35.3119

Longitude: -77.7313

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	8.2	24.6	18.7
<i>DO (mg/l)</i>	17	N/A	4	0	6.4	11.0	8.0
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.2	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	64	118	103
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	33	590	203
<i>Suspended Residue (mg/l)</i>	12	2	N/A	N/A	2.5	45.0	9.3
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.3	16.0	8.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.17	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.52	1.26	0.80
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	1.39	4.37	2.98
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.05	0.25	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J6150000

Neuse River @ NC 11 Bypass at Kinston

Stream Class: C NSW

County: Lenoir

Sub-Basin: 03020202

Latitude: 35.2587

Longitude: -77.5835

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.5	28.6	20.2
<i>DO (mg/l)</i>	17	N/A	4	0	5.3	11.3	7.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.0	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	59	205	117
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	13	380	73
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	3.7	48.0	15.2
<i>Turbidity (NTU)</i>	12	N/A	50	1	13.0	55.0	21.1
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	2	N/A	N/A	0.02	0.21	0.07
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.39	1.15	0.75
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.27	0.73	0.56
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.06	0.27	0.12
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6250000

Neuse River @ NC 55 near Graingers

Stream Class: C NSW

County: Lenoir

Sub-Basin: 03020202

Latitude: 35.2957

Longitude: -77.4962

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.5	28.4	20.1
<i>DO (mg/l)</i>	17	N/A	4	0	5.2	11.4	7.8
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.6	7.3	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	65	212	127
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	18	250	66
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	4.4	23.0	11.8
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.6	30.0	16.1
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.11	0.07
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.54	0.97	0.72
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.28	0.77	0.60
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.21	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6410000

Little Creek @ NC 97 near Zebulon

Stream Class: C NSW

County: Wake

Sub-Basin: 03020203

Latitude: 35.8279

Longitude: -78.3025

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.2	23.8	16.7
<i>DO (mg/l)</i>	17	N/A	4	5	2.2	10.9	5.9
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.7	6.7	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	58	114	98
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	5	48	1,500	331
<i>Suspended Residue (mg/l)</i>	12	2	N/A	N/A	2.7	18.0	6.7
<i>Turbidity (NTU)</i>	12	N/A	50	0	8.3	20.0	13.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	1	N/A	N/A	0.02	0.47	0.14
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.31	1.33	0.65
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.10	0.51	0.29
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.24	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6450000

Little Creek @ NC 39 near Zebulon

Stream Class: C NSW

County: Wake

Sub-Basin: 03020203

Latitude: 35.8125

Longitude: -78.2681

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	8.1	25.6	18.2
<i>DO (mg/l)</i>	17	N/A	4	0	5.8	11.1	7.8
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.7	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	120	491	307
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	2	62	773	166
<i>Suspended Residue (mg/l)</i>	12	2	N/A	N/A	2.5	8.7	4.8
<i>Turbidity (NTU)</i>	12	N/A	50	0	3.9	38.0	13.2
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	1	N/A	N/A	0.02	0.28	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.41	0.87	0.65
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.51	4.45	1.22
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.37	0.18
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J6500000

Moccasin Creek @ SR 1131 (Antioch Church Road) near Conner **Stream Class:** C NSW

County: Wilson

Sub-Basin: 03020203

Latitude: 35.7301

Longitude: -78.1895

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.3	25.6	17.3
<i>DO (mg/l)</i>	17	N/A	4	1	3.8	11.9	7.0
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.1	7.0	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	50	176	104
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	46	2,900	161
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	9.8	5.1
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.8	29.0	13.5
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	2.07	0.24
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.34	3.26	0.82
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.10	0.33	0.22
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.06	0.20	0.09
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6680000

Turkey Creek @ SR 1101 (Claude Lewis Rodd) near Middlesex **Stream Class:** C NSW

County: Nash

Sub-Basin: 03020203

Latitude: 35.7519

Longitude: -78.1597

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.7	27.0	18.3
<i>DO (mg/l)</i>	17	N/A	4	6	2.5	11.3	5.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.7	6.8	N/A
<i>Conductivity (umhos/cm)</i>	17	1	N/A	N/A	50	81	66
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	28	300	61
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	3.4	11.0	5.5
<i>Turbidity (NTU)</i>	12	N/A	50	0	9.6	22.0	13.0
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	1	N/A	N/A	0.02	0.23	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.43	1.21	0.74
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.06	0.35	0.17
<i>TP (mg/l)</i>	12	1	N/A	N/A	0.02	0.13	0.07
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6765000

Contentnea Creek at Willow Springs drive near Dixie

Stream Class: C Sw NSW

County: Wilson

Sub-Basin: 03020203

Latitude: 35.6838

Longitude: -77.941

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	8.2	29.3	20.5
<i>DO (mg/l)</i>	17	N/A	4	0	4.4	12.1	7.3
<i>*** pH (SU)</i>	17	N/A	6 to 9	5	5.0	7.2	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	62	200	88
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	8	540	60
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.7	22.0	6.0
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.5	28.0	13.6
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.02	0.16	0.10
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.58	0.92	0.71
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.06	0.61	0.25
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.02	0.11	0.06
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J6890000

Contentnea Creek @ SR 1622 (Evansdale Road) near Wilson

Stream Class: C Sw NSW

County: Wilson

Sub-Basin: 03020203

Latitude: 35.6429

Longitude: -77.8902

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.9	28.6	20.2
<i>DO (mg/l)</i>	17	N/A	4	0	5.4	12.2	7.8
<i>*** pH (SU)</i>	17	N/A	6 to 9	0	6.0	7.0	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	58	292	137
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	13	727	61
<i>Suspended Residue (mg/l)</i>	12	1	N/A	N/A	2.5	9.6	5.1
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.6	30.0	11.6
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.06	0.39	0.15
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.52	0.99	0.75
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.28	1.14	0.55
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.04	0.24	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J7210000

Contentnea Creek @ NC 58 near Stantonburg

Stream Class: C Sw NSW

County: Wilson

Sub-Basin: 03020203

Latitude: 35.5861

Longitude: -77.8111

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.4	28.2	19.6
<i>DO (mg/l)</i>	17	N/A	4	0	4.7	11.7	7.3
<i>*** pH (SU)</i>	17	N/A	6 to 9	1	5.8	7.0	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	59	216	118
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	15	290	73
<i>Suspended Residue (mg/l)</i>	12	2	N/A	N/A	2.5	6.7	4.3
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.4	23.0	11.6
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.19	0.09
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.54	0.98	0.72
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.32	0.92	0.58
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.06	0.14	0.10
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J7240000

Toisnot Swamp @ SR 1539 (Sand Pit Road) near Stantonsburg

Stream Class: C Sw NSW

County: Wilson

Sub-Basin: 03020203

Latitude: 35.5976

Longitude: -77.7947

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.7	26.6	18.3
<i>DO (mg/l)</i>	17	N/A	4	0	4.6	11.5	6.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.7	6.9	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	61	114	86
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	23	682	67
<i>Suspended Residue (mg/l)</i>	12	5	N/A	N/A	2.5	10.0	4.0
<i>Turbidity (NTU)</i>	12	N/A	50	0	6.6	19.0	11.3
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.02	0.22	0.08
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.61	1.08	0.81
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.05	0.89	0.33
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.08	0.16	0.11
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J7325000

Nahunta Swamp @ NC 58 near Contentnea

Stream Class: C Sw NSW

County: Greene

Sub-Basin: 03020203

Latitude: 35.5081

Longitude: -77.7455

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	7.0	25.0	18.0
<i>DO (mg/l)</i>	17	N/A	4	0	4.9	11.7	7.7
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.8	6.9	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	74	115	103
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	4	16	1,300	156
<i>Suspended Residue (mg/l)</i>	12	3	N/A	N/A	2.5	22.0	5.9
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.3	23.0	11.4
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.04	0.20	0.12
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.50	0.96	0.69
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.77	5.07	1.89
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.05	0.15	0.10
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J7330000

Contentnea Creek @ US 13 near Snow Hill

Stream Class: C Sw NSW

County: Greene

Sub-Basin: 03020203

Latitude: 35.4585

Longitude: -77.6753

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.8	27.7	19.4
<i>DO (mg/l)</i>	17	N/A	4	0	4.8	11.6	7.4
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.8	7.0	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	56	137	101
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	16	791	49
<i>Suspended Residue (mg/l)</i>	12	3	N/A	N/A	2.5	7.5	4.2
<i>Turbidity (NTU)</i>	12	N/A	50	0	5.8	18.0	10.4
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.26	0.11
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.51	0.88	0.69
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.43	1.39	0.83
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.08	0.14	0.10
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J7690000

Little Contentnea Creek @ SR 1218 (Chinquapin Road) near Farmville

Stream Class: C Sw NSW

County: Pitt

Sub-Basin: 03020203

Latitude: 35.5881

Longitude: -77.5416

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.0	26.9	19.0
<i>DO (mg/l)</i>	17	N/A	4	4	0.7	11.5	5.3
<i>*** pH (SU)</i>	17	N/A	6 to 9	3	5.4	7.1	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	57	332	141
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	3	36	2,200	136
<i>Suspended Residue (mg/l)</i>	12	2	N/A	N/A	2.5	11.0	4.3
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.3	17.0	9.8
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.08	0.88	0.28
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.74	2.10	1.23
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.23	5.22	1.35
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.08	0.89	0.28
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J7740000

Little Contentnea Creek @ SR 1110 (HWY 903) near Scuffleton

Stream Class: C Sw NSW

County: Pitt

Sub-Basin: 03020203

Latitude: 35.4567

Longitude: -77.4854

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.1	27.5	19.1
<i>DO (mg/l)</i>	17	N/A	4	0	4.0	11.3	6.6
<i>*** pH (SU)</i>	17	N/A	6 to 9	4	5.7	7.1	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	68	219	133
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	1	54	736	107
<i>Suspended Residue (mg/l)</i>	12	7	N/A	N/A	2.5	14.0	4.1
<i>Turbidity (NTU)</i>	12	N/A	50	0	4.0	16.0	8.4
<i>Chlorophyll-a (ug/l)</i>	0	0	40	0			
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.03	0.41	0.16
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.40	1.26	0.84
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.12	1.14	0.53
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.10	0.30	0.20
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>**** Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

*Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.*

*** The Fecal Coliform average is a geometric mean.*

**** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions*

***** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.*

2021 LNBA Monitoring Report

Station J7850000

Neuse River @ SR 1470 (Maple Cypress Road) at the boat ramp dock upstream of the bridge. **Stream Class:** C Sw NSW

County: Craven

Sub-Basin: 03020202

Latitude: 35.31368

Longitude: -77.30287

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.4	28.2	20.0
<i>DO (mg/l)</i>	17	N/A	4	0	4.6	11.4	7.5
<i>*** pH (SU)</i>	17	N/A	6 to 9	2	5.4	7.9	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	68	209	118
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	3	380	50
<i>Suspended Residue (mg/l)</i>	12	0	N/A	N/A	3.3	52.0	10.7
<i>Turbidity (NTU)</i>	12	N/A	50	1	5.7	60.0	17.3
<i>Chlorophyll-a (ug/l)</i>	12	3	40	0	1.00	6.66	2.97
<i>NH3_N (mg/l)</i>	12	0	N/A	N/A	0.02	0.11	0.06
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.50	1.33	0.78
<i>NO2_NO3_N (mg/l)</i>	12	0	N/A	N/A	0.34	0.82	0.58
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.05	0.25	0.13
<i>Cadmium (ug/l)</i>	0	0	2	0			
<i>Chromium (ug/l)</i>	0	0	50	0			
<i>Copper (ug/l)</i>	0	0	7	0			
<i>Nickel (ug/l)</i>	0	0	88	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	50	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	N/A	N/A			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.012	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.

2021 LNBA Monitoring Report

Station J8870000

Trent River @ the Alfred Cunningham Drawbridge on E. Front Street, New Bern

Stream Class: SB Sw NSW

County: Craven

Sub-Basin: 03020204

Latitude: 35.10159

Longitude: -77.03708

	N	N<RL	Ref	N >Ref or N< Ref	Minimum	Maximum	* Average
<i>Temperature (C)</i>	17	N/A	N/A	N/A	6.5	29.4	21.3
<i>DO (mg/l)</i>	17	N/A	5	6	3.6	11.5	6.7
<i>*** pH (SU)</i>	17	N/A	6.8 to 8.5	4	3.9	7.8	N/A
<i>Conductivity (umhos/cm)</i>	17	0	N/A	N/A	99	16,900	4,818
<i>** Fecal Coliform (/100 mls)</i>	12	N/A	400	0	5	270	27
<i>Suspended Residue (mg/l)</i>	12	4	N/A	N/A	2.5	14.0	5.5
<i>Turbidity (NTU)</i>	12	N/A	25	0	4.3	21.0	9.5
<i>Chlorophyll-a (ug/l)</i>	12	1	40	0	1.00	25.10	8.07
<i>NH3_N (mg/l)</i>	12	1	N/A	N/A	0.02	0.29	0.11
<i>TKN_N (mg/l)</i>	12	0	N/A	N/A	0.51	1.17	0.86
<i>NO2_NO3_N (mg/l)</i>	12	1	10	0	0.02	0.83	0.31
<i>TP (mg/l)</i>	12	0	N/A	N/A	0.07	0.27	0.12
<i>Cadmium (ug/l)</i>	0	0	5	0			
<i>Chromium (ug/l)</i>	0	0	20	0			
<i>Copper (ug/l)</i>	0	0	3	0			
<i>Nickel (ug/l)</i>	0	0	8	0			
<i>Lead (ug/l)</i>	0	0	25	0			
<i>Zinc (ug/l)</i>	0	0	86	0			
<i>****Aluminum (ug/l)</i>	0	0	87	0			
<i>Iron (ug/l)</i>	0	0	1,000	0			
<i>Manganese (ug/l)</i>	0	0	200	0			
<i>Arsenic (ug/l)</i>	0	0	10	0			
<i>Mercury (ug/l)</i>	0	0	0.025	N/A			

Notes: * Results below the laboratory reporting limit (<RL) are included in the calculation as if they were at the reporting level.

** The Fecal Coliform average is a geometric mean.

*** Tidal salt waters classified as swamp waters may have a pH as low as 4.3 if it is the result of natural conditions

**** The aluminum reference level (Ref) is from the EPA's national recommended water quality criteria.