Memorandum of Agreement
Between
The State of North Carolina's Division of Water Quality
And
The Lower Neuse Basin Association Permittees

Effective:
August 1, 2009 through July 31, 2014

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MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) is made by and between the NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES'S DIVISION OF WATER QUALITY (DWQ), the NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGERS in the Lower Neuse River basin who have voluntarily executed this MOA (the LNBA PERMITTEES), and the LOWER NEUSE BASIN ASSOCIATION (the LNBA), a non-profit corporation whose members include the LNBA PERMITTEES. The MOA includes all the attached tables and appendices. This MOA does not affect any influent or effluent monitoring requirement or any other of the NPDES permit requirements of individual permit holders with the one exception of performing upstream and downstream water quality monitoring. The LNBA PERMITTEES are exempted from instream monitoring as specified in their individual NPDES permits beginning on the effective date of this MOA and continuing for the duration of each permittee's participation in this MOA. Subsequent to the execution of this MOA, the DWQ will issue a letter to each PERMITTEE notifying the permittee that the instream monitoring requirements of its permit are not effective for as long as this MOA is in place and the permittee remains a party to this MOA.

The purpose of this MOA is to establish a formal agreement between the DWQ, the LNBA PERMITTEES, and the LNBA. This MOA authorizes the LNBA to act on behalf of the PERMITTEES as described herein. This MOA identifies the responsibilities of the LNBA Permittees and the LNBA for surface water monitoring and reporting within the Lower Neuse River Basin. The water quality monitoring will occur at strategically located surface water sites to obtain information on water quality in the basin. Monitoring sites and parameters were established by the DWQ and are listed in Table A-1, such that the instream monitoring is efficient, effective, and basin-oriented.

The LNBA will perform the monitoring activities described herein on behalf of LNBA PERMITTEES who are members in good standing of the LNBA. Each LNBA PERMITTEE agrees to remain a member in good standing of the LNBA. The LNBA will contract for the performance of the monitoring activities described herein with a laboratory appropriately certified by the DWQ for the required laboratory and field analyses. Sample collection and field measurements will be made by the LNBA PERMITTEES, the LNBA, or a sub-contractor who will act as agent(s) of the LNBA PERMITTEES for the sole purpose of performing monitoring services required by this MOA. It will be the responsibility of the LNBA to coordinate the collection and analyses of the water quality monitoring data for the locations, parameters, and frequencies specified in Table A-1 of this MOA. Sample collection, field measurement, and target reporting limits are specified in Appendix B of this MOA. Monthly and annual reporting requirements, including data format and data summaries are described in Appendix C of this MOA.

The LNBA shall submit the water quality data to the DWQ using the format documented in Appendix C of this MOA preferably in Microsoft® Excel 2000, a subsequent version, or the equivalent. The LNBA shall submit the water quality data to the DWQ within 90 days of the end of the month in which the sampling was performed. All data shall be archived by the LNBA for a period of 5 years. Each LNBA PERMITTEE has the right to review and

comment on work, data or reports prepared by any contractor on behalf of the LNBA PERMITTEES and to notify the DWQ of any objection or disagreement with any portion of the work, data, or reports. Unless such notice is made within thirty (30) days of submission of each annual report (or other reports) to the DWQ, it shall be deemed to be waived and the work, data and reports submitted shall be deemed to be approved by the LNBA PERMITTEES. Failure by the LNBA PERMITTEES or the LNBA to collect or analyze the water quality data as described in this MOA or to provide the data to the DWQ in the required format may result in the revocation of this MOA by the DWQ and the return to individual upstream and downstream monitoring requirements, as specified in the individual NPDES permits of the LNBA PERMITTEES.

The LNBA shall submit an annual written report that summarizes the previous calendar year's sampling results and formally finalizes the water quality data. The report shall be submitted no later than April 30th each year that this MOA is in effect. The annual report shall include the NPDES permit number of each actively participating permit holder and a contact name and phone number for each member. Appendix C of this MOA describes the required annual report content. Two copies, signed by the LNBA chairman, of these and any other reports required herein shall be submitted to the DWQ Coalition Coordinators at 1621 Mail Service Center, Raleigh, NC 27699-1621.

Stream sampling may be discontinued at such times as flow conditions in the receiving waters or extreme weather conditions will result in a substantial risk of injury or death to persons collecting samples. Sampling may also be discontinued when environmental conditions, such as a dry stream, prevent sample collection. In such cases, on each day that sampling is discontinued, the DWQ Coalition Coordinators shall be notified within one week of the discontinuance and written justification for the discontinuance shall be submitted with the monthly data submittal. This provision shall not be utilized to avoid the requirements of this MOA when performance of these requirements is attainable. When there is a sampling discontinuance pursuant to this provision, sampling shall be resumed at the first opportunity.

This MOA may be modified by the written consent of the DWQ and the LNBA. The DWQ or the LNBA may determine that it is necessary to request changes in monitoring frequency, parameters or sites to be sampled. Any such changes can only be made by a written amendment to this MOA agreed to by the DWQ and the LNBA. The amendment shall be signed by the LNBA chairman and by the DWQ. Such amendments may be entered into at any time.

The following additional dischargers may enter into this MOA subsequent to the effective date hereof:

1) Dischargers who receive a NPDES permit within the Lower Neuse River Basin, or
2) Dischargers who have NPDES permits within the Lower Neuse River Basin but are not parties to this Agreement.

The addition of such dischargers to this MOA may be made only with the consent of the DWQ and the LNBA and shall require a written amendment to this MOA signed by the LNBA chairman, by the DWQ, and by an authorized representative of any such discharger

who wishes to enter into the MOA. The DWQ will not unreasonably withhold consent to the addition of a discharger to the MOA. The DWQ will consider modification of the existing monitoring program described in this MOA for the addition of a discharger to the MOA. Such amendments may be made at any time that this MOA is in effect. The LNBA PERMITTEES included in this MOA are listed in Table 1.

This MOA shall be effective until July 31, 2014 unless extended by the consent of both the DWQ and the LNBA. Upon sixty (60) days written notice, the DWQ or the LNBA may terminate this MOA for any reason. Upon termination of this MOA, the monitoring requirements contained in the individual NPDES permit of each LNBA PERMITTEE shall become effective immediately. An individual permit holder may terminate and cancel its participation in this MOA by providing sixty (60) day written notice to the LNBA, the DWQ Coalition Coordinators, the appropriate DWQ Regional Office, and the DWQ NPDES Unit. The monitoring requirements contained in the individual NPDES permit shall become effective immediately upon such cancellation or termination. In the event a permit holder terminates or cancels its participation in this MOA or its membership in the LNBA is terminated for any reason, the LNBA may request that DWQ review the monitoring plan described in this MOA for a possible reduction in sampling effort or requirements.

IN WITNESS WHEREOF, the parties have caused the execution of this instrument
by authority duly given, to be effective as of the date executed by the DWQ

DIVISION OF WATER QUALITY	**LOWER NEUSE BASIN ASSOCIATION**
By: signed 7/29/2009	By: signed 7/28/2009
Coleen Sullins	**Daniel F. McLawhorn**
Director	**Chairman**
Division of Water Quality	**Lower Neuse Basin Association**
Date: _____	Date: _____

LNBA PERMITEE SIGNATURES

Permittee	NPDES Number	Signature
Carolina Power and Light (CP&L) d/b/a Progress Energy Carolinas, Inc. Lee Steam Electric Plant	NC0003417	received 6/09/2009 Kris Edmondson Plant Manager

Permittee	NPDES Number	Signature
EI DuPont Kinston Facility	NC0003760	received 6/30/2009 Harold Thomas Plant Manager

Permittee	NPDES Number	Signature
Town of Benson Benson WWTP	NC0020389	received 6/02/2009 Keith Langdon Town Manager

Permittee	NPDES Number	Signature
City of Havelock Havelock WWTP	NC0021253	received 6/04/2009 Jim Freeman City Manager

Permittee	NPDES Number	Signature
Town of La Grange La Grange WWTP	NC0021644	received 6/02/2009 John Craft Town Manager

LNBA PERMITEE SIGNATURES

Permittee	NPDES Number	Signature
City of Wilson Wilson WWTP	NC0023906	received 6/04/2009 Grant Goings City Manager

Permittee	NPDES Number	Signature
City of Goldsboro Goldsboro WWTP	NC0023949	received 6/08/2009 Joseph Huffman City Manager

Permittee	NPDES Number	Signature
City of Kinston Kinston Regional WRF	NC0024236	received 6/19/2009 Scott Stevens City Manager

Permittee	NPDES Number	Signature
City of New Bern New Bern WWTP	NC0025348	received 6/16/2009 Walter B. Hartman, Jr. City Manager

Permittee	NPDES Number	Signature
Town of Clayton Little Creek WWTP	NC0025453	received 6/09/2009 Steve Biggs Town Manager

LNBA PERMITEE SIGNATURES

Permittee	NPDES Number	Signature
City of Raleigh Neuse River WWTP	NC0029033	received 7/2/2009 Dale Crisp Public Utilities Director

Permittee	NPDES Number	Signature
Town of Farmville Farmville WWTP	NC0029572	received 6/08/2009 Richard Hicks Town Manager

Permittee	NPDES Number	Signature
Johnston County Central Johnston County WWTP	NC0030716	received 6/11/2009 Rick J. Hester County Manager

Permittee	NPDES Number	Signature
City of Raleigh Smith Creek WWTP	NC0030759	received 7/2/2009 Dale Crisp Public Utilities Director

Permittee	NPDES Number	Signature
Contentnea Metropolitan Sewerage District Contentnea MSD WWTP	NC0032077	received 6/03/2009 Charles M. Smithwick, Jr. District Manager

LNBA PERMITEE SIGNATURES

Permittee	NPDES Number	Signature
Town of Cary North Cary WRF	NC0048879	received 6/03/2009 Benjamin T. Shivar Town Manager

Permittee	NPDES Number	Signature
Town of Apex Apex WRF	NC0064050	received 6/10/2009 Bruce Radford Town Manager

Permittee	NPDES Number	Signature
Town of Kenly Kenly Regional WWTP	NC0064891	received 6/11/2009 Scott Shelton Town Manager

Permittee	NPDES Number	Signature
Town of Cary South Cary WRF	NC0065102	received 6/03/2009 Benjamin T. Shivar Town Manager

Permittee	NPDES Number	Signature
Town of Fuquay-Varina Terrible Creek WWTP	NC0066516	received 7/24/2009 Andy Hedrick Town Manager

LNBA PERMITEE SIGNATURES

Permittee	NPDES Number	Signature
City of Raleigh Little Creek WWTP	NC0079316	received 7/2/2009 Dale Crisp Public Utilities Director

Permittee	NPDES Number	Signature
Johnston County Johnston County WTP	NC0084735	received 6/11/2009 Rick J. Hester County Manager

Permittee	NPDES Number	Signature
Town of Fuquay Varina Brighton Forest Subdivision WWTP	NC0066150	received 9/30/2013 Jay T. Meyers Public Utilities Director

Table 1. LNBA PERMITTEES

NPDES Permit Number	Lower Neuse Basin Association Permittees Ownership and Facility	Authorized Representative and Title	County	Region	8 Digit HUC
NC0003417	Carolina Power and Light (CP&L) d/b/a Progress Energy Carolinas, Inc. ─ Lee Steam Plant	Kris Edmondson Plant Manager	Wayne	WaRO	03020201
NC0003760	E. I. DuPont ─ Kinston Plant	Harold Thomas Plant Manager	Lenoir	WaRO	03020202
NC0020389	Town of Benson ─ Benson WWTP	Keith Langdon Town Manager	Johnston	RRO	03020201
NC0021253	City of Havelock ─ Havelock WWTP	Jim Freeman City Manager	Craven	WaRO	03020204
NC0021644	Town of La Grange ─ La Grange WWTP	John Craft Town Manager	Lenoir	WaRO	03020202
NC0023906	City of Wilson ─ Wilson WWTP	Grant Goings City Manager	Wilson	RRO	03020203
NC0023949	City of Goldsboro ─ Goldsboro WWTP	Joseph Huffman City Manager	Wayne	WaRO	03020202
NC0024236	City of Kinston ─ Regional Water Reclamation Facility	Scott Stevens City Manager	Lenoir	WaRO	03020202
NC0025348	City of New Bern ─ New Bern WWTP	William B. Hartman, Jr. City Manager	Craven	WaRO	03020204
NC0025453	Town of Clayton ─ Little Creek WWTP	Steve Biggs Town Manager	Johnston	RRO	03020201
NC0029033	City of Raleigh ─ Neuse River WWTP	Dale Crisp Public Utilities Director	Wake	RRO	03020201
NC0029572	Town of Farmville ─ Farmville WWTP	Richard N. Hicks Town Manager	Pitt	WaRO	03020203
NC0030716	Johnston County ─ Central Johnston County WWTP	Rick J. Hester County Manager	Johnston	RRO	03020201
NC0030759	City of Raleigh ─ Smith Creek WWTP	Dale Crisp Public Utilities Director	Wake	RRO	03020201
NC0032077	Contentnea Metropolitan Sewerage District ─ Contentnea MSD WWTP	Charles M. Smithwick, Jr. District Manager	Pitt	WaRO	03020203
NC0048879	Town of Cary ─ North WWTP	Benjamin T. Shivar Town Manager	Wake	RRO	03020201
NC0064050	Town of Apex ─ Apex WRF	Bruce Radford Town Manager	Wake	RRO	03020201
NC0064891	Town of Kenly ─ Kenly Regional WWTP	Scott Shelton Town Manager	Johnston	RRO	03020201
NC0065102	Town of Cary ─ South WWTP	Benjamin T. Shivar Town Manager	Wake	RRO	03020201
NC0066516	Town of Fuquay Varina ─ Terrible Creek WWTP	Andy Hedrick Town Manager	Wake	RRO	03020201
NC0079316	City of Raleigh ─ Little Creek WWTP	Dale Crisp Public Utilities Director	Wake	RRO	03020203
NC0084735	Johnston County ─ Johnston County WTP	Rick J. Hester County Manager	Johnston	RRO	03020201
NC0066150	Town of Fuquay-Varina – Brighton Forest Subdivision WWTP	Jay T. Meyers Public Utilities Director	Wake	RRO	03020201

APPENDIX A - LNBA MONITORING PROGRAM

Table A-1 LNBA Sampling Stations, Parameters and Sampling Frequency (Revised)

STATION NUMBER	LOCATION	Station Comments	LATITUDE (dd.dddd)	LONGITUDE (dd.dddd)	COUNTY	8 Digit HUC	STREAM CLASS	Field Measurements (Temp, DO, pH, Conductivity)	*Nutrients	**Metals	Turbidity	Suspended Residue	Fecal Coliform	Chlorophyll a
J2230000	SMITH CRK AT SR 2045 BURLINGTON MILL RD NR WAKE FOREST	DWQ benthic and fish station.	35.9182	-78.5348	WAKE	03020201	C NSW	M+2SM	M		M	M	M	
J2330000	NEUSE RIV AT SR 2215 BUFFALO RD NR NEUSE	dns Smith Creek WWTP	35.8479	-78.5302	WAKE	03020201	C NSW	M+2SM	M		M	M	M	
J3210000	CRABTREE CRK AT LASSITER MILL DAM AT RALEIGH	dns North Cary WRF	35.8272	-78.6508	WAKE	03020201	C NSW	M+2SM	M		M	M	M	
J3970000	WALNUT CRK AT SR 2551 BARWELL RD NR RALEIGH	DWQ benthic station	35.7493	-78.5345	WAKE	03020201	C NSW	M+2SM	M	M	M	M	M	
J4050000	NEUSE RIV AT SR 2555 AUBURN KNIGHTDALE RD NR RALEIGH	ups Neuse River WWTP	35.7266	-78.5139	WAKE	03020201	C NSW	M+2SM	M	M	M	M	M	
J4080000	POPLAR CRK AT SR 2049 BETHLEHEM RD NR KNIGHTDALE	last bridge before Neuse	35.7309	-78.4776	WAKE	03020201	C NSW	M+2SM	M		M	M	M	
J4130000	NEUSE RIV AT SR 1700 COVERED BRIDGE RD NR ARCHERS LODGE	dns Neuse River WWTP, ups Little Creek (Clayton) WWTP	35.6749	-78.4364	JOHNSTON	03020201	WS-V NSW	M+2SM	M	M	M	M	M	
J4170000	NEUSE RIV AT NC 42 NR CLAYTON	dns Little Creek (Clayton) WWTP, DWQ benthic station, DWQ AMS station, USGS gage	35.6473	-78.4056	JOHNSTON	03020201	WS-IV NSW	M+2SM	M	M	M	M	M	
J4190000	NEUSE RIV AT SR 1908 FIRE DEPT DR NR WILSONS MILLS	ups Johnston County WTP	35.6067	-78.3374	JOHNSTON	03020201	WS-IV NSW	M+2SM	M		M	M	M	
J4414000	SWIFT CRK AT SR 1152 HOLLY SPRINGS RD NR MACEDONIA	ups Lake Wheeler, DWQ benthic station, USGS gage	35.7187	-78.7527	WAKE	03020201	WS-III NSW	M+2SM	M		M	M	M	
J4580000	SWIFT CRK AT SR 1501 SWIFT CREEK RD NR SMITHFIELD		35.5442	-78.3970	JOHNSTON	03020201	C NSW	M+2SM	M		M	M	M	
J4619000	MIDDLE CRK AT LUFKIN RD NR APEX	ups Apex WWTP, dns Hwy 1	35.71311	-78.8381	WAKE	03020201	C NSW	M+2SM	M		M	M	M	
J4690000	MIDDLE CRK AT SR 1152 HOLLY SPRINGS RD NR HOLLY SPRINGS	ups South Cary WRF, dns Apex WWTP	35.6609	-78.8042	WAKE	03020201	C NSW	M+2SM	M		M	M	M	
J4868000	MIDDLE CRK AT SR 1375 LAKE WHEELER RD NR BANKS	dns South Cary WRF, ups Terrible Creek	35.6356	-78.7279	WAKE	03020201	C NSW	M+2SM	M	M	M	M	M	
J4980000	MIDDLE CRK AT SR 1006 OLD STAGE ROAD NR WILLOW SPRINGS	dns of Terrible Creek	35.6091	-78.6866	WAKE	03020201	C NSW	M+2SM	M		M	M	M	
J5010000	MIDDLE CRK AT NC 210 NR SMITHFIELD	ups of Neuse River	35.5075	-78.4013	JOHNSTON	03020201	C NSW	M+2SM	M		M	M	M	
J5170000	BLACK CRK AT SR 1162 BLACK CREEK RD NR FOUR OAKS	dns Holts Lake, ups Neuse River, USGS gage	35.46925	-78.45681	JOHNSTON	03020201	C NSW	M+2SM	M		M	M	M	
J5250000	NEUSE RIV AT SR 1201 RICHARDSON BRIDGE RD NR COX MILL	dns for Johnston County WWTP, ups for Progress Energy and Goldsboro WWTP, DWQ benthic station	35.3741	-78.1962	JOHNSTON	03020201	WS-IV NSW	M+2SM	M	M	M	M	M	
J5390000	HANNAH CRK AT SR 1158 ALLENS CROSSROADS DR NR BENSON	ups Benson WWTP	35.3868	78.5110	JOHNSTON	03020201	C NSW	M+2SM	M		M	M	M	
J5390800	HANNAH CRK AT SR 1227 IVEY RD NR BENSON	dns Benson WWTP	35.4025	-78.4952	JOHNSTON	03020201	C NSW	M+2SM	M		M	M	M	
J5410000	MILL CRK AT SR 1200 RICHARDSON BRIDGE RD NR BENTONVILLE	USGS gage	35.3420	-78.2162	JOHNSTON	03020201	C NSW	M+2SM	M		M	M	M	
J5500000	FALLING CRK AT SR 1219 OLD GRANTHAM RD NR GRANTHAM		35.3224	-78.1282	WAYNE	03020201	WS-IV NSW	M+2SM	M		M	M	M	
J5620000	LITTLE RIV AT SR 2333 SMITHFIELD RD NR ZEBULON		35.8577	-78.3665	WAKE	03020201	WS-II HQW NSW	M+2SM	M		M	M	M	

APPENDIX A - LNBA MONITORING PROGRAM

Table A-1 LNBA Sampling Stations, Parameters and Sampling Frequency (Revised)

STATION NUMBER	LOCATION	Station Comments	LATITUDE (dd.dddd)	LONGITUDE (dd.dddd)	COUNTY	8 Digit HUC	STREAM CLASS	Field Measurements (Temp, DO, pH, Conductivity)	*Nutrients	**Metals	Turbidity	Suspended Residue	Fecal Coliform	Chlorophyll a
J5690000	LITTLE RIV AT US 301 NR KENLY	ups Kenly Regional WWTP	35.5829	-78.1593	JOHNSTON	03020201	WS-V NSW	M+2SM	M		M	M	M	
J5750000	LITTLE RIV AT SR 2339 BAGLEY RD NR LOWELL MILL	dns Kenly Regional WWTP	35.5613	-78.1594	JOHNSTON	03020201	WS-V NSW	M+2SM	M		M	M	M	
J5900000	LITTLE RIV AT SR 1234 CAPPS BRIDGE RD NR CROSSROADS		35.4662	-78.0942	WAYNE	03020201	WS-IV NSW	M+2SM	M		M	M	M	
J5930000	LITTLE RIV AT NC 581 NR ASYLUM	DWQ benthic station	35.3930	-78.0258	WAYNE	03020201	C NSW	M+2SM	M		M	M	M	
J6010950	WALNUT CRK AT SR 1730 SAINT JOHNS CHURCH RD NR WALNUT CREEK	significant tributary	35.2817	-77.8686	WAYNE	03020202	C NSW	M+2SM	M		M	M	M	
J6024000	NEUSE RIV AT SR 1731 PINEY GROVE RD NR SEVEN SPRINGS	dns Goldsboro WWTP	35.2290	-77.8460	WAYNE	03020202	C NSW	M+2SM	M		M	M	M	
J6044500	BEAR CRK AT SR 1311 BEAR CREEK RD NR KINSTON	DWQ benthic and fish stations	35.2489	-77.7843	LENOIR	03020202	WS IV Sw NSW	M+2SM	M		M	M	M	
J6055000	MOSLEY CRK AT SR 1327 WILLEY MEASLEY RD NR LA GRANGE	dns LaGrange WWTP	35.3119	-77.7313	LENOIR	03020202	C Sw NSW	M+2SM	M		M	M	M	
J6150000	NEUSE RIV AT NC 11 BYPASS AT KINSTON	DWQ AMS station, ups Kinston Regional WRF	35.2587	-77.5835	LENOIR	03020202	C NSW	M+2SM	M		M	M	M	
J6250000	NEUSE RIV AT NC 55 NR GRAINGERS	dns Kinston Regional WRF, ups DuPont	35.2957	-77.4962	LENOIR	03020202	C NSW	M+2SM	M		M	M	M	
J6410000	LITTLE CRK AT NC 97 AT ZEBULON	ups Little Creek (Raleigh) WWTP	35.8279	-78.3025	WAKE	03020203	C NSW	M+2SM	M		M	M	M	
J6450000	LITTLE CRK AT NC 39 AT ZEBULON	dns Little Creek (Raleigh) WWTP	35.8125	-78.2681	WAKE	03020203	C NSW	M+2SM	M		M	M	M	
J6500000	MOCCASIN CRK AT SR 1131 ANTIOCH CHURCH RD NR CONNER		35.7301	-78.1895	WILSON	03020203	C NSW	M+2SM	M		M	M	M	
J6680000	TURKEY CRK AT SR 1101 CLAUDE LEWIS RD NR MIDDLESEX	load to Buckhorn Reservoir	35.7519	-78.1597	NASH	03020203	C NSW	M+2SM	M		M	M	M	
J6764000	CONTENTNEA CRK AT US 301 WARD BLVD NR DIXIE	ups Wilson WWTP, dns Wiggins Mill Reservoir	35.6879	-77.9477	WILSON	03020203	C Sw NSW	M+2SM	M		M	M	M	
J6890000	CONTENTNEA CRK AT SR 1622 EVANSDALE RD NR WILSON	dns Wilson WWTP	35.6429	-77.8902	WILSON	03020203	C Sw NSW	M+2SM	M		M	M	M	
J7210000	CONTENTNEA CRK AT NC 58 NR STANTONSBURG	DWQ benthic station	35.5861	-77.8111	WILSON	03020203	C Sw NSW	M+2SM	M		M	M	M	
J7240000	TOISNOT SWAMP AT SR 1539 SAND PIT RD NR STANTONSBURG	major trib to Contentnea Creek	35.5976	-77.7947	WILSON	03020203	C Sw NSW	M+2SM	M		M	M	M	
J7325000	NAHUNTA SWAMP AT NC 58 NR CONTENTNEA	major trib to Contentnea Creek	35.5081	-77.7455	GREENE	03020203	C Sw NSW	M+2SM	M		M	M	M	
J7330000	CONTENTNEA CRK AT US 13 AT SNOW HILL		35.4585	-77.6753	GREENE	03020203	C Sw NSW	M+2SM	M		M	M	M	
J7690000	LITTLE CONTENTNEA CRK AT SR 1218 CHINQUAPIN RD NR FARMVILLE	ups Farmville WWTP	35.5881	-77.5416	PITT	03020203	C Sw NSW	M+2SM	M		M	M	M	
J7740000	LITTLE CONTENTNEA CRK AT SR 1110 HWY 903 AT SCUFFLETON	ups of Contentnea Ck	35.4567	-77.4854	PITT	03020203	C Sw NSW	M+2SM	M		M	M	M	
J7850000	NEUSE RIV AT SR 1470 MAPLE CYPRESS RD NR FORT BARNWELL	dns Contentnea Creek and Contentnea MSD WWTP, DWQ AMS station, ups New Bern WWTP	35.3124	-77.3022	CRAVEN	03020202	C Sw NSW	M+2SM	M		M	M	M	M
J8870000	TRENT RIV AT SHERATON MARINA DOCK A		35.1013	-77.0412	CRAVEN	03020204	SB Sw NSW	M+2SM	M***		M	M	M	M***
J9330000	SLOCUM CRK AT SLOCUM RD AT CHERRY POINT	dns Havelock and Cherry Pt. WWTPs	34.9177	-76.9115	CRAVEN	03020204	SC Sw NSW	M+2SM	M***		M	M	M	M***

*Nutrients include Ammonia as N (NH_3), Nitrate/Nitrite as N (NO_2/NO_3), Total Kjeldahl Nitrogen (TKN), and Total Phosphorus as P (TP)

**Metals analysis will include the following metals: Aluminum (Al), Arsenic (As), Cadmium (Cd), Chromium (Cr) (total), Copper (Cu), Iron (Fe), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), and Zinc (Zn) - Metals monitoring was suspended per DWQ's March 2009 letter at the agreement of DWQ and LNBA

*** These nutrient and chlorophyll *a* samples shall be collected as a composite sample over the photic zone (photic zone = twice the secchi depth)

M=Monthly, M+2SM=Monthly with Twice Monthly Summer Sampling during May, June, July, August, and September. Samples are to be collected at least ten days apart except when extenuating conditions arise.

ups=upstream, dns=downstream

APPENDIX A - LNBA MONITORING PROGRAM

Table A-1 LNBA Sampling Stations, Parameters and Sampling Frequency (Revised)

<u>These LNBA voluntary stations and the associated monitoring are provided here only for convenience and communication: they are not part of the MOA requirements.</u>
Any changes made by the LNBA to this voluntary monitoring program will be reported to the DWQ, but no amendment of the MOA is required to change the voluntary monitoring program.

STATION NUMBER	LOCATION	Station Comments	LATITUDE (dd.dddd)	LONGITUDE (dd.dddd)	COUNTY	8 Digit HUC	STREAM CLASS	Field Measurements (Temp, DO, pH, Conductivity)	*Nutrients	Metals	Turbidity	Suspended Residue	Fecal Coliform	Chlorophyll a
J4110000	Marks Creek at SR 1714 (Pritchard Rd) nr Wilson	City of Raleigh Sampling & Monitoring Program	35.7062	-78.4312	Johnston	03020201	C NSW	M+2SM	M		M	M	M	
J4500000	Swift Creek at Indian Creek discharge nr Garner	City of Raleigh Sampling & Monitoring Program	35.6476	-78.6041	Wake	03020201	C NSW	M+2SM	M		M	M	M	
J4510000	Swift Creek at NC 42 nr Clayton	City of Raleigh Sampling & Monitoring Program	35.6131	-78.5486	Johnston	03020201	C NSW	M+2SM	M		M	M	M	
J4511000	White Oak Creek at NC 42 nr Clayton	City of Raleigh Sampling & Monitoring Program	35.6176	-78.5281	Johnston	03020201	C NSW	M+2SM	M		M	M	M	
J4520000	Swift Creek at SR 1562 (Steel Bridge Rd) nr Smithfield	City of Raleigh Sampling & Monitoring Program	35.5515	-78.4600	Johnston	03020201	C NSW	M+2SM	M		M	M	M	
J5002000	Middle Creek off SR 1517 (Old Sanders Hse) nr Edmonson	City of Raleigh Sampling & Monitoring Program	35.5626	-78.5756	Johnston	03020201	C NSW	M+2SM	M		M	M	M	
J5790000	Buffalo Creek at SR 2358 (Lake glad Rd) at Wendell	City of Raleigh Sampling & Monitoring Program	35.7697	-78.3769	Wake	03020201	C NSW	M+2SM	M		M	M	M	

*Nutrients include Ammonia as N (NH_3), Nitrate/Nitrite as N (NO_2/NO_3), Total Kjeldahl Nitrogen (TKN), and Total Phosphorus as P (TP)
M=Monthly, M+2SM=Monthly with Twice Monthly Summer Sampling during May, June, July, August, and September. Samples are to be collected at least ten days apart except when extenuating conditions arise.
ups=upstream, dns=downstream

APPENDIX B- SAMPLE COLLECTION AND ANALYSIS

Sample Collection Procedures

Sample collection shall be performed by trained personnel employed with NC DWQ certified laboratories in accordance with the DWQ NPDES Discharge Monitoring Coalition Program Field Monitoring Guidance Document (May 2008) and subsequent documents. Alternate collection procedures require the approval of the DWQ coalition coordinators prior to use. Nutrient and chlorophyll-*a* samples should be collected as a composite sample from the photic zone (photic zone = twice the secchi depth) at stations J8870000 (Trent River at Sheraton Marina Dock A at New Bern) and J9330000 (Slocum Creek at Slocum Rd at Cherry Point).

Laboratory Analysis

All laboratory analyses shall be performed at a DWQ certified laboratory using approved methods as prescribed by section 40 of the Code of Federal Regulations part 136 (40CFR136) or other methods certified by the DWQ Laboratory Certification Branch (http://h2o.enr.state.nc.us/lab/cert.htm) or the Director of DWQ. 40CFR136 can be accessed on the web at http://h2o.enr.state.nc.us/lab/MethodsUpdateRuleMUR.htm.

Reporting levels will be at least as stringent as the reporting levels used by the DWQ Laboratory. For guidance purposes Table B-1 lists target reporting levels for each parameter based on the reporting levels of the DWQ Laboratory. The lowest possible analytical limits for all the parameters should be pursued.

Table B-1 Continued -DWQ Laboratory Reporting Limits

Parameters	Target Reporting Level	Comments
Temperature		Resolution to 0.1 degree Celsius
Dissolved Oxygen		Report results to the nearest 0.1 mg/L
pH		Report results to the nearest 0.1 SU
Specific Conductivity		Report results to the nearest whole µmho/cm at 25°C
Turbidity	1.0 NTU	
TSS	2.5 mg/L	
Fecal Coliform	1 colony/100 mL	At least 3 dilutions should be used to achieve optimum colony counts per membrane filter of 20-60 colonies.
Chlorophyll a	1 µg/L	Report Chlorophyll *a* values free from pheophytin and other chlorophyll pigments. Analysis by HPLC is not approved by DWQ
Ammonia (NH_3 as N)	0.02 mg/L	Address distillation requirement. See 40CFR136 Table 1B footnote
Nitrate/Nitrite (NO_2/NO_3) as N	0.02 mg/L	
Total Kjeldahl Nitrogen (TKN) as N	0.20 mg/L	
Total Phosphorus (TP)	0.02 mg/L	
Al	50 µg/L	
As	2 µg/L	A reporting level of 5 µg/L is acceptable.
Cd	1 µg/L	
Cr	10 µg/L	
Cu	2 µg/L	
Fe	50 µg/L	
Pb	10 µg/L	
Mn	10 µg/L	
Hg	0.2 µg/L	
Ni	10 µg/L	
Zn	10 µg/L	

Data Qualification Codes

When reporting data, the DWQ's data qualifier codes must be used to provide additional information regarding data quality and interpretation. The current set (codes are subject to change) of qualifier codes to be used is provided in Table B-2. Review the data remark codes at least annually and utilize the most current set. A copy of this table can be found at http://h2o.enr.state.nc.us/lab/qa.htm .

Table B-2 Data Remark Codes for Use with Coalition Data (current as of May 21, 2009)

Data Remark Code	Code Definition
A	Value reported is the mean (average) of two or more determinations. This code is to be used if the results of two or more discrete and separate samples are averaged. These samples shall have been processed and analyzed independently (e.g. field duplicates, different dilutions of the same sample). This code is not required for BOD or coliform reporting since averaging multiple dilutions for these parameters is fundamental to those methods.
B	Results are based upon colony counts outside the acceptable range and should be used with caution. This code applies to microbiological tests and specifically to membrane filter (MF) colony counts. It is to be used if less than 100% sample was analyzed and the colony count is generated from a plate in which the number of coliform colonies exceeds the ideal ranges indicated by the method. These ideal ranges are defined in the method as: *Fecal coliform bacteria: 20-60 colonies* *Total coliform bacteria: 20-80 colonies* B1. Countable membranes with less than 20 colonies. Reported value is estimated or is a total of the counts on all filters reported per 100 mL. B2. Counts from all filters were zero. The value reported is based on the number of colonies per 100 mL that would have been reported if there had been one colony on the filter representing the largest filtration volume (reported as a less than "<" value). B3. Countable membranes with more than 60 or 80 colonies. The value reported is calculated using the count from the smallest volume filtered and reported as a greater than ">" value. B4. Filters have counts of both >60 or 80 and <20. Reported value is a total of the counts from all countable filters reported per 100 mL. B5. Too many colonies were present; too numerous to count (TNTC). TNTC is generally defined as > 150 colonies. The numeric value represents the maximum number of counts typically accepted on a filter membrane (60 for fecal and 80 for total), multiplied by 100 and then divided by the smallest filtration volume analyzed. This number is reported as a greater than value. B6. Estimated Value. Blank contamination evident. B7. Many non-coliform colonies or interfering non-coliform growths are present. In this competitive situation, the reported coliform value may under-represent actual coliform density.
C	Total residual chlorine was present in sample upon receipt in the laboratory; value is **estimated**. Generally applies to cyanide, phenol, NH_3, TKN, coliform, and organics)

Table B-2 Data Remark Codes For Use With Coalition Data (current as of January 16, 2009)

Data Remark Code	Code Definition
G	A single quality control failure occurred during biochemical oxygen demand (BOD) analysis. The sample results should be used with caution. G1. The dissolved oxygen (DO) depletion of the dilution water blank exceeded 0.2 mg/L. G2. The bacterial seed controls did not meet the requirement of a DO depletion of at least 2.0 mg/L and/or a DO residual of at least 1.0 mg/L. G3. No sample dilution met the requirement of a DO depletion of at least 2.0 mg/L and/or a DO residual of at least 1.0 mg/L. G4. Evidence of toxicity was present. This is generally characterized by a significant increase in the BOD value as the sample concentration decreases. The reported value is calculated from the highest dilution representing the maximum loading potential and should be considered an **estimated** value. G5. The glucose/glutamic acid standard exceeded the range of 198± 30.5 mg/L. G6. The calculated seed correction exceeded the range of 0.6 to 1.0 mg/L. G7. Less than 1 mg/L DO remained for all dilutions set. The reported value is an **estimated** greater than value and is calculated for the dilution using the least amount of sample. G8. Oxygen usage is less than 2 mg/L for all dilutions set. The reported value is an **estimated** less than value and is calculated for the dilution using the most amount of sample. G9. The DO depletion of the dilution water blank produced a negative value.
J	**Estimated** value; value may not be accurate. This code is to be used in the following instances: J1. Surrogate recovery limits have been exceeded; J2. The reported value failed to meet the established quality control criteria for either precision or accuracy; J3. The sample matrix interfered with the ability to make any accurate determination; J4. The data is questionable because of improper laboratory or field protocols (e.g. composite sample was collected instead of grab, plastic instead of glass container) J5. Temperature limits exceeded (samples frozen or >6° C) during transport or not verifiable (e.g., no temperature blank provided);, non-reportable for NPDES compliance monitoring. J6. The laboratory analysis was from an unpreserved or improperly chemically preserved sample. The data may not be accurate. J7. This qualifier is used to identify analyte concentration exceeding the upper calibration range of the analytical instrument/method. The reported value should be considered estimated. J8. Temperature limits exceeds (samples frozen or >6°C during storage. The data may not be accurate. J9. The reported value is determined by a **one-point estimation** rather than against a regression equation. The estimated concentration is less than the laboratory practical quantitation limit and greater than the laboratory method detection limit. J10. Unidentified peak; estimated value. J11. The reported value is determined by a **one-point estimation** rather than against a regression equation. The estimated concentration is less than the laboratory practical quantitation limit and greater than the laboratory method detection limit. *This code is used when an MDL has not been established for the analyte in question.* J12. The calibration verification did not meet the calibration acceptance criterion for **field parameters**. Note: A "J" value shall not be used if another code applies (ex. N, V, M).

Table B-2 Data Remark Codes For Use With Coalition Data (current as of January 16, 2009)

Data Remark Code	Code Definition
M	Sample and duplicate results are "out of control." The sample is non-homogenous (e.g. VOA soil). The reported value is the lower value of duplicate analyses of a sample.
N	Presumptive evidence of presence of material; **estimated** value. This code is to be used if: N1. The component has been tentatively identified based on mass spectral library search; N2. There is an indication that the analyte is present, but quality control requirements for confirmation were not met (i.e., presence of analyte was not confirmed by alternate procedures). N3. This code shall be used if the level is too low to permit accurate quantification, but the **estimated** concentration is less than the laboratory practical quantitation limit and greater than the laboratory method detection limit. *This code is not routinely used for most analyses.* N4. This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is less than the laboratory practical quantitation limit and greater than the instrument noise level. *This code is used when an MDL has not been established for the analyte in question.* N5. The component has been tentatively identified based on a retention time standard.
P	Elevated practical quantitation limit (PQL)* due to matrix interference and/or sample dilution.
Q	Holding time exceeded. These codes shall be used if the value is derived from a sample that was received, prepared and/or analyzed after the approved holding time restrictions for sample preparation and analysis. The value does not meet NPDES requirements. Q1. Holding time exceeded prior to receipt by lab Q2. Holding time exceeded following receipt by lab
S	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD).
U	Indicates that the analyte was analyzed for but not detected above the reported practical quantitation limit (PQL)*. The number value reported with the "U" qualifier is equal to the laboratory's PQL*.
V	Indicates the analyte was detected in both the sample and the associated method blank. Note: The value in the blank shall not be subtracted from the associated samples.
X	Sample not analyzed for this constituent. This code is to be used if: X1. Sample not screened for this compound. X2. Sampled, but analysis lost or not performed-field error X3. Sampled, but analysis lost or not performed-lab error
Y	Elevated PQL* due to insufficient sample size
Z	The presence or absence of the analyte cannot be verified. The sample analysis/results are not reported due to: Z1. Inability to analyze the sample. Z2. Questions concerning data reliability.

*PQL The Practical Quantitation Limit (PQL) is defined as the lowest level achievable among laboratories within specified limits during routine laboratory operation. The Practical Quantitation Limit (PQL) is "about three to five times the method detection limit (MDL) and represents a practical and routinely achievable detection level with a relatively good certainty that any reported value is reliable." (APHA, AWWA, WEF. 1992. Standard Methods for the Examination of Water and Wastewater, 18th ed.)

APPENDIX C - DATA FORMAT AND REPORTING REQUIREMENTS

Data Format for Monthly submittals

Table C-1 provides the required data submittal spreadsheet format with sample data. Do not use commas, tabs, pipes or other common file delimiters anywhere in the table. The first row should contain the column headings only. Column headings must include appropriate information on measurement units (mg/l, µg/l, cfu/100ml, etc.). The second row must contain the method code. It is very important that the format of the headings and the number and order of columns is consistent among all monthly submissions. The DWQ station number must be provided (e.g. B6140000). An additional column containing the location description is acceptable as long as it is consistently included. Include a comment column for describing pertinent information related to the sampling event or specific samples. Ensure no missing values for station, date, time, and depth. Place all remark codes in a separate column as demonstrated in Table C-1. If there is no result for a particular parameter leave the cell blank. Screen all data for inappropriate or improbable values, such as a pH of 21.2.

Annual Report

The LNBA will be required to submit an annual report by April 30th for each year the MOA is in effect. The annual report will summarize all data collected in the past calendar year and contain the following elements:

- Monitoring Station List to include station number, station description, county, accurate coordinates (in decimal degrees to 4 decimal places), stream classification, and 8 digit hydrologic unit code (HUC).
- List of all certified laboratories that conducted work for the coalition in the past year. Identify time frames for all laboratories and analysis methods used during the year. Summarize any laboratory certification issues for individual parameters.
- Submit a CD that includes all monitoring data for the past year with a statistical summary for each station. These data should be combined into a single table containing the year's reviewed and finalized data. The annual statistical summary must describe for each parameter at each location:
    - Number of observations (N)
    - Number of observations less than the laboratory reporting level (N<RL)
    - Identify the water quality standard, action level, or other reference level (Ref)
    - Identify the number of observations that do not meet the reference level (N>Ref) or (N<Ref)
    - Maximum observed value (Max) and Minimum observed value (Min)
    - Annual arithmetic mean value (except for fecal coliform where geometric mean values should be calculated and pH)
- Include a list of active LNBA members with authorized representative updates, contact names, email addresses and phone numbers. Identify the facility name and permit number.
- Provide a list of members that are no longer active in the LNBA and their permit numbers.
- Provide a list of changes in members' names, ownerships, and discharge locations.
- Summarize all quality assurance and quality control issues and any field audits conducted.
- Summarize any significant issues, special studies, or projects.
- Describe any required data collection that was missed and provide an explanation.
- Review and update the monitoring program and suggest potential MOA modifications.
- Provide the Coalition's Website Address.

Table C-1 File Format For Coalition Data Reporting

				Temp (°C)	Temp_rmk	DO (mg/l)	DO_rmk	pH (su)	pH_rmk	Conductivity (µS/cm)	Conductivity_rmk	Fecal Coliform	Fecal Coliform_rmk	Suspended Residue (mg/l)	Suspended Residue_rmk	Turbidity (NTU)	Turbidity_rmk	Chlorophyll a (µg/l)	Chlorophyll_rmk	NH3_N (mg/l)	NH3_N_rmk	TKN_N (mg/l)	TKN_N_rmk	NO2_NO3_N (mg/l)	NO2_NO3_N_rmk	TP_P (mg/l)	TP_P_rmk
Station	**Date (m/d/yyyy)**	**Time (hh:mm)**	**Depth (m)**	**10**	**10 rmk**	**300**	**300 rmk**	**400**	**400 rmk**	**94**	**94 rmk**	**31616**	**31616 rmk**	**530**	**530 rmk**	**82079**	**82079 rmk**	**32230**	**32230 rmk**	**610**	**610 rmk**	**625**	**625 rmk**	**630**	**630 rmk**	**665**	**665 rmk**
A1234567	8/19/2002	15:30	0.1	25.2		7.8		6.9		133		110		45		22		23	Q1	0.1		0.2		0.3			
B9876543	8/20/2002	11:50	0.1	27.2		7.1		7.2		125		30		4		5.6		5		0.14		0.6		0.31			
B9876543	8/20/2002	11:50	1	28		6.5		7		122																	
B9876543	8/20/2002	11:50	2	25		6.7		6.9		119																	
B9876543	8/20/2002	11:50	3	17		5.5		6.7		120																	
C1357924	8/21/2002	16:10	0.1	22.1		3.1		6.2		233		15	B1	55		11											
C0246813	9/1/2002	9:30	0.1	19.7		8.3		7		99		6000	B5	410		36				0.26		0.4		0.57			
C0246813	10/1/2002	11:30	0.1	12		8.9		7.3		115		1200	B3	95	A		X3			0.16	J2	0.2		0.09			

The reporting format table continues with metals and comment columns on the next page.

Table C-1 Continued. File Format For Coalition Data Submittals

Cadmium, Cd (µg/l)	Cadmium, Cd_rmk	Chromium, Cr (µg/l)	Chromium, Cr_rmk	Copper, Cu (µg/l)	Copper, Cu_rmk	Nickel, Ni (µg/l)	Nickel, Ni_rmk	Lead, Pb (µg/l)	Lead, Pb_rmk	Zinc, Zn (µg/l)	Zinc, Zn_rmk	Aluminum, Al (µg/l)	Aluminum, Al_rmk	Iron, Fe (µg/l)	Iron, Fe_rmk	Manganese, Mn (µg/l)	Manganese, Mn_rmk	Arsenic, As (µg/l)	Arsenic, As_rmk	Mercury, Hg (µg/l)	Mercury, Hg_rmk	Comments
1027	1027 rmk	1034	1034 rmk	1042	1042 rmk	1067	1067 rmk	1051	1051 rmk	1092	1092 rmk	1105	1105 rmk	1045	1045 rmk	1055	1055 rmk	1002	1002 rmk	71900	71900 rmk	
130		11		3		27		4.4		610		10				0.21		12		12		
120		10	U	2	U	25	U	2	U	510		10	U	10	U	0.2	U	10	U	10	U	
																						Secchi depth 1.2 meters
333		10	U	2	U	25	U	2	U	624		10	U	10	U	0.2	U	10	U	10	U	Nutrient Sample Spilled
120		10	U	2	U	25	U	2	U	510		10	U	10	U	0.2	U	10	U	10	U	2.5” of rain on 8/31/2002
120		10	U	2	U	25	U	2	U	510		10	U	10	U	0.2	U	10	U	10	U	