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WATER MONITORING AND STANDARDS ELEMENT
BUREAU OF FRESHWATER AND BIOLOGICAL MONITORING
P.O. Box 420; Mail Code 35-01
TRENTON, NEW JERSEY

QUALITY ASSURANCE PROJECT PLAN
Ambient Macroinvertebrate Network (AMNET),
Lower Delaware Water Region, 2021-22

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1.0 Project Name: Ambient Macroinvertebrate Network (AMNET), Lower Delaware Water Region

2.0 Requesting Agency: NJDEP, Bureau of Freshwater and Biological Monitoring (BFBM)

3.0 Date of Project: July, 2021 – June, 2022 (in part)

4.0 Project Fiscal Information: 7W106CXX

5.0 Project Oversight:

Project Officer, Field and Laboratory- Anna Marie Signor, BFBM
Project Supervisor- Dean Bryson, BFBM
Project Data Analysis- Tom Miller, BFBM
Project Data Manager- Leigh Lager, BFBM
Quality Assurance Officer – Melissa Hornsby, NJDEP- OQA

6.0 Special Training Needs/Certification

All personnel assisting with field sampling and/or laboratory processing of samples for this project will be trained on all applicable methods and techniques. For physical/ chemical analysis, the training will entail calibration of meters, deployment techniques, and data retrieval from the equipment. Assistants will also be trained in the proper methods for benthic macroinvertebrate sample collection and performing habitat assessments and observations. Training in the laboratory will entail the proper sorting of a subsample. Safety training and safety requirements will comply with Bureau of Freshwater and Biological Monitoring Field Work Health and Safety Plan (HASP) Version #2 August 2019 and any addendums to address covid-19 precautions. The Project Officer will be responsible for all necessary training.

Only designated, experienced, full-time professional staff will perform taxonomic identifications.

BFBM is certified by the Office of Quality Assurance (certified lab ID # 11896) for all physical/chemical parameters to be measured.

7.0 Project Description/ Objective

The major goal of the AMNET program is to provide a cost-efficient means of gauging the biological condition of streams and watershed areas throughout the state. This objective is accomplished through sampling and analysis of macroinvertebrate communities from a stream network representative of New Jersey’s five (5) major Water Regions (Northwest, Lower Delaware, Northeast, Raritan, and Atlantic). In addition to assessing the major Water Regions, sites were also selected to represent and assess individual sub-watersheds (HUC 14 scale). The study area of the Lower Delaware Water Region includes WMA’s 17, 18, 19, and 20.

The spatial distribution of stations is adequate to provide biological data on a long-term, region-wide or statewide scale. It is likely not sufficient, however, to assess the biological impact(s) of any one potential source of pollution, as this would be better served by a site-specific or intensive survey of the stream segment in question. The designated sampling interval for AMNET, of five years, reflects a realistic temporal lag between cessation of an environmental perturbation and recovery of the impacted biological community.

The program is based on the USEPA's Rapid Bioassessment Protocols (RBP) (USEPA, 1999), which provides guidance on field sampling and laboratory processing methods, habitat assessment, and index development.

The AMNET program was initiated in 1992. To date, five full rounds have been completed. Sampling of the Lower Delaware Water Region in 2021-22 continues the sixth round of AMNET monitoring.

Nutrient samples will also be collected at all sites designated in this QAPP for the Biological Nutrient Correlation Project. A grab sample, collected from center-of-flow, will be taken place during the macroinvertebrate sampling visit. Total Phosphorus and Total Nitrogen (calculated) samples will be collected.

7.1.Data Usage

Data obtained will be used by NJDEP in the generation of the biennial Integrated Water Quality Monitoring and Assessment Report (includes 305(b) report and 303(d) list), to support sound policy decisions in water quality/watershed management, in designation of Category One (C1) waters based on "exceptional ecological significance", to track environmental trends with water quality, to inform regulatory or "permit" activities, and to correlate nutrient concentrations with biological impairments. Once all samples are analyzed and the data thoroughly reviewed, the datasheet for each site with taxa and counts present, index and habitat scores and ratings, field and laboratory chemistry results, and other observations will be posted in BFBM's Data Inventory, nj.gov/dep/wms/bfbm.

8.0 Network Design/Site Selection

The Lower Delaware Water Region includes 180 sites for this round of sampling (See Appendix A, Table 1). Sites were initially selected using a stratified approach to ensure complete and representative coverage of the Water Region. Round-to-round, some changes have been made, with additions and/or subtractions to better assess the subwatersheds (HUC14 scale) of the Water Region for Aquatic Life Use attainment in the Integrated Water Quality Monitoring and Assessment Report. With this round, some sites have been relocated to alleviate the potential influence of lakes or impoundments. Also, to address specific data needs in this Water Region from BEARS, some additional sites have been added for this round of sampling. Sites have been added in previously unmonitored HUC14's or where additional data is needed in a specific HUC14. Furthermore, some sites have been added to provide data to inform possible Category One (C1) designations.

Exact AMNET site locations were initially determined via the Global Positioning System (GPS) using a Trimble unit and the appropriate correction sources utilized by NJDEP. All positions were logged into the Geographic Information System (GIS). Hand-held GPS units, such as Garmin model “GPSMAP 62s”, Garmin nuvi 2797, or Trimble “Geo XT”, will be used to confirm correct locations at the time of sampling.

9.0 Sampling Procedures

Macroinvertebrate Sampling

Benthic macroinvertebrates will be sampled from each site focusing on the most productive habitats present at the site, as outlined in Rapid Bioassessment Protocols for Use in Streams and Rivers, Second edition (USEPA1999), and Standard Operating Procedures (SOP) For Ambient Biological Monitoring Using Benthic Macroinvertebrates (NJDEP 2007). All sites for the Lower Delaware Water Region are within the Inner Coastal Plain ecoregion of New Jersey and are on low gradient rivers and streams. These low gradient sites typically lack riffle/run habitat. Therefore, the most productive habitats will be submerged vegetated banks, macrophytes, and submerged snags (woody debris such as logs and branches). An 800x900µm mesh D-frame net will be used to collect samples, using the “jab and sweep” method (Maxted *et al.*, 2000). Approximately one liter of sample will be collected into a one-liter wide-mouth plastic container and preserved on site using a 5-10% formalin solution. Specimens fixed with formalin will remain preserved indefinitely. Each site in the Lower Delaware Water Region will be sampled one time for the project, within the April through November sampling window. Sampling will be postponed at a site if flow conditions have increased due to a storm event, making it temporarily unsafe to wade. Sampling will be rescheduled when the stream returns to normal wadable flow conditions.

For quality control, a duplicate macroinvertebrate sample will be taken at an adjacent reach at approximately 10% of the samples. This adjacent reach for the duplicate sampling, will usually be immediately upstream from point where sampling for primary sampling ended. The reaches for both the primary and duplicate samples should be similar in terms of habitat, riparian zone condition, and land use. The results from only the primary sample will be reported. The duplicate results will be stored internally and used to provide precision estimates of the individual metrics and overall index scores and ratings (Stribling, 2008).

Physical/Chemical Parameters

Dissolved oxygen, pH, Water Temperature, and Specific Conductivity will be measured *in situ*, at each site as per procedures outlined in N.J.A.C. 7:18, Subchapter 8 and NJDEP Field Sampling Procedures Manual (2005). BFBM (#11896) is certified by NJDEP’s OQA to perform these analyze-immediately parameters. The measurements are made mid-depth, mid-stream. Turbidity will also be measured from a grab sample taken mid-depth, mid-stream.

Habitat Assessment

A visual-based habitat assessment will be performed at each site using the format given in USEPA's Rapid Bioassessment Protocols for Use in Streams and Rivers, second edition (USEPA,1999) for high gradient or low gradient streams. This method, which assesses 10 different in-stream and riparian zone parameters, is tabulated for each site. Based on the score, the habitat is rated as optimal, suboptimal, marginal, or poor. The habitat assessment is performed concurrent with the collection of the benthic macroinvertebrate sampling. The stream reach sampled plus the immediate upstream area which can be adequately observed, will be assessed using the respective protocol. The habitat assessment score and rating will be presented along with the index score and rating. The habitat scores and ratings do not factor into the calculation of the index scores but are collected as additional information in the assessment of sampling results, along with photographs and observations related to potential stressors.

Nutrient Samples

A grab sample for Total Phosphorus (TP) and Total Nitrogen (Nitrite-Nitrate (NO₂-NO₃) plus Total Kjeldahl Nitrogen (TKN) analyses will be collected at each AMNET site on the same day as macroinvertebrate sampling. Sample will be collected at the downstream boundary of the biological sampling reach, at mid-depth, center-of-flow, prior to the biological sampling and any disturbance of bottom substrate upstream. Samples will be collected directly into a dedicated 500 ml single-use sample bottle as per "NJDEP Field Sampling Procedures Manual", 2005. The nutrient sample will be preserved in the field with 12-14 drops sulfuric acid (H₂SO₄) and placed in cooler with ice. Upon returning to the lab, the sample will be stored in the sample refrigerator at less than 4.0 degrees C until delivery to the New Jersey Department of Health (NJDOH) Public Health and Environmental Laboratories (#11036) within the prescribed holding time. The NJDOH laboratory is certified to perform the requested nutrient analyses in non-potable water.

Total Nitrogen is considered the sum of inorganic nitrogen (NO₂-NO₃) and organic nitrogen (TKN) concentrations. This nutrient data, collected concurrent with macroinvertebrate sampling, will be used to establish possible relationships between nutrient concentrations and biological impairments (as part of Biological Nutrient Correlation Project).

Field Precautions for Invasive Organisms

To prevent the potential spread of nuisance or invasive organisms such as *Didymosphenia* sp. from stream to stream, all nets, waders, etc. will be decontaminated in the field between sites by spraying with an antibacterial spray such as Fantastik (heavy duty) and rinsing with tap water. Also, the use of felt-soled waders will be avoided.

10.0 Data Quality/Quality Control Requirements

Water Temperature, pH, Specific Conductivity, and Dissolved Oxygen (DO) are measured

using a Hydrolab MS5 or equivalent multi-parameter water quality meter. The Hydrolab MS5 combines temperature, pH, Specific Conductivity and Luminescent DO probes into one device that is submersible to the desired depth. All equipment will be calibrated, maintained, and used following manufacturer's instructions and in accordance with the specifications given in N.J.A.C. 7:18-3 and 7:18-8 (NJDEP, as amended September, 2018).

Conductivity: This probe is calibrated on a weekly basis per the manufacturer recommendations. The probe is also checked each day of use with a certified standard which corresponds to the expected range of the values to be measured. Records of all calibrations and calibration checks shall be maintained in a bound field logbook, signed and dated by the field technician. Expected range of measurements is 20-6,000 $\mu\text{S}/\text{cm}$.

Dissolved Oxygen: A Winkler check is performed on a weekly basis and the meter is barometrically calibrated once on day of use. A calibration check is performed once daily. A 100% oxygen saturated water bath is checked at the beginning and end of day when in use. Records of all calibrations and calibration checks shall be maintained in a bound field logbook, signed and dated by the field technician. Expected range of measurements is 0.20–16.00 mg/L.

pH: The probe is calibrated on a weekly basis with two certified buffers that bracket the expected range of the value being measured per the manufacturer recommendations. A third certified pH buffer, within the bracket, is then used to check the calibration. After three hours of continuous use, the pH of the third certified buffer will be checked. Records of all calibrations and calibration checks shall be maintained in a bound field logbook, signed and dated by the field technician. Expected range of measurements is 3.0-9.5.

Temperature: The probe is calibrated with a NIST-certified thermometer on a quarterly basis. Records of the calibration shall be maintained by the BFBM. Expected range of measurements is 1.0-35.0°C.

Barometer: Thommen TX Mechanical Barometer.

Turbidity meter: Hach Model 2100P turbidimeter is calibrated once a month per manufacturer recommendations. The meter is then checked with certified standards for accuracy within the calibration range during each day of use. Records of all calibrations and calibration checks shall be maintained in a bound field logbook, signed and dated by the field technician. Expected range of measurement is 0.2-900 NTU.

Chain of Custody

The results of this project will not be used for compliance or enforcement actions. Therefore, no chain of custody will be used for the macroinvertebrate samples. However, a chain of custody is required for the nutrient samples since they are being submitted to the NJDOH laboratory (#11036) for analysis. Nutrient data will not be used for regulatory purposes. The project officer and project supervisor are responsible for sampling and laboratory method validation.

11.0 Macroinvertebrate Identification/QAQC

Macroinvertebrate Identification

In the laboratory, a 100-organism subsample will be randomly sorted from each sample, as described in USEPA (1999); all individuals will be identified to the lowest possible taxonomic level (usually genus or species). Only designated, experienced, staff will perform taxonomic identifications. A thorough program for taxonomic quality control, as given in the biomonitoring laboratory Standard Operating Procedures (SOP) is practiced (NJDEP, 2007). A comprehensive collection of over 50 major references (including books and monographs), by recognized experts in invertebrate taxonomy, is maintained in the laboratory; new references are added when appropriate to keep abreast of taxonomic advances.

For taxonomic quality control, 10% of the samples are sent to an outside qualified consultant for parallel identifications. Results of the parallel identifications will be analyzed by calculating the Percent Taxonomic Disagreements (%PTD), using procedure defined by Stribling *et al.*, 2003. The project goal is less than 15% disagreements. Data from the duplicate identifications will be stored internally, with only the BFBM identifications being reported.

Equipment for Macroinvertebrate Identification

Macroinvertebrates will be identified using a stereomicroscope capable of up to 40x magnification. The biomonitoring laboratory uses Leica Model MZ6 stereomicroscopes, each with fiber optic illumination. A compound microscope with 100x, 200x, 400x, and 1000x magnification will be used for very detailed identifying features. The biomonitoring laboratory currently uses Leica models DMLS (with phase contrast) and DME.

12.0 Resource Needs: BFBM will need one hourly staff to complete this project.

13.0 Sampling Schedule

All sites in the Lower Delaware Water Region will be sampled once between July 1st, 2021 and June 30th, 2022, within the April through November index period.

14.0 Data Analysis

Multi-metric indices were developed for use in New Jersey, with guidance from the Rapid Bioassessment Protocols (USEPA, 1999), to assess the taxonomic data. The Pinelands Macroinvertebrate Index (PMI) and the Coastal Plain Macroinvertebrate Index will be used for the appropriate sites in the Lower Delaware Water Region. Based on the index score, a rating is assigned, Excellent, Good, Fair, and Poor. Detailed methods for analysis are outlined in the biomonitoring laboratory Standard Operating Procedures (NJDEP, 2007).

15.0 Data Validation

The Project Officer and the Project Supervisor are responsible for data validation. If apparent anomalous data is suspected, the Project Officer and/or the Project Supervisor will review the sampling procedures with the field sampler to make sure the proper collection and preservation procedures were followed. If the data is still suspect, an internal review of the laboratory procedures and/or calculations used in the analysis of the suspect sample, with special emphasis on transcription of data to assure that no transposition of figures occurred will be conducted. If no problems are found in the laboratory procedures, the data may then be compared to any historical data that might have been collected at the same site prior to the most recent sampling event to see if similar anomalies might have been found previously. The suspect data may also be compared to literature values or standard analytical treatises to verify whether the results are within the limits of accuracy of the test method.

If no obvious problems are found after these reviews, the complete data set will be reported with the suspect data identified as it relates to the objective(s) and data accuracy required in this project.

16.0 Performance System Audits

BFBM is subject to audits and guidelines of the Office of Quality Assurance's Laboratory Certification Program as well as internal performance evaluations.

17.0 Data Storage and Distribution

All habitat assessment data, physical/chemical analysis, and site observations will be recorded on the BFBM's Biological Field Observations and Data Sheet, and also recorded electronically in a Microsoft Access database. All macroinvertebrate identifications will be recorded on the BFBM's Macroinvertebrate Laboratory Data Sheet and entered into a Microsoft Access database. Taxonomic data and counts, metric scores, index scores and ratings, habitat assessment scores and ratings, and analyze-immediately field parameters will be uploaded into NJDEP's Water Quality Data Exchange (WQDE) for submission to USEPA's water monitoring data repository, and transferred to STORET(WQX). This data will also be posted on BFBM's Data Inventory (nj.gov/dep/wms/bfbm) after all analyses for round are completed and data validation.

Following the QA/QC validation of results, data will be uploaded into New Jersey's Water Quality Data Exchange (WQDE) for submission to USEPA's water quality data repository, now called the Water Quality Exchange (WQX), by June of the year following verification. The data will be available for download from the Water Quality Portal, (waterqualitydata.us/portal). All raw data records shall be maintained for a period of no less than five years.

18.0 Data Reporting

Results and data analysis for the entire Water Region will be issued and will contain at a minimum: datasheets for each site with taxa and counts of benthic macroinvertebrates, field chemistry results and observations, PMI or CPMI100 scores and index ratings, habitat assessment scores and ratings. The appropriate GIS shapefiles of the study area will be updated to reflect these results.

<u>Assessment Rating</u>	<u>PMI Score</u>	<u>CPMI100 Score</u>
Excellent	≥63	≥75
Good	56-<63	41-<75
Fair	34-<56	21-<41
Poor	<34	<21

19.0 Assessment, Oversight, and Response

The Project Officer will be responsible for the oversight of all activities related to this project. The Project Officer will assess field collections functions and make corrections when necessary to maintain the data accuracy as defined in this plan. If any changes or modifications are made to this plan regarding data collection, as it relates to the objective(s) and data accuracy required in this project, all original signees of the QAPP will be notified.

20.0 References

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NJDEP, as amended, September 2018. Regulations governing the certification of laboratories and environmental measurements. N.J.A.C. 7:18. NJDEP. Trenton, NJ.

NJDEP, 2007. Standard operating procedures (SOP) for the ambient biological monitoring using benthic macroinvertebrates. Doc.#BMNJ2, NJDEP, BFBM. Trenton, NJ. www.state.nj.us/dep/wms//bfbm/download/AMNET_SOP.pdf

Stribling, J. B., S. R. Moulton, and G. L. Lester, 2003. Determining the quality of taxonomic data. J.N. Am. Benthol. Soc. 22:621-631.

Stribling, J.B., B.K. Jessup, and D.L. Feldman, 2008. Precision of benthic macroinvertebrate indicators of stream condition in Montana. J.N. Am. Benthol. Soc. 27(1):58-67.

Tetra Tech, 2014. Monitoring Design and Application of the CPMI, Upper Salem River, NJ in a Technical Memorandum from Tetra Tech, dated 6/18/2014.

USEPA, 1999. Rapid bioassessment protocols for use in streams and rivers: periphyton, benthic macroinvertebrates, and fish. Second edition. EPA 841-B-99-002. U.S. Environmental Protection Agency. Washington, D.C. Ch. 1–11 and appendices.

Appendix A Data Management Tables

For Data Management purposes, Water Chemistry is defined as parameters analyzed by a laboratory; Field measurements are defined as analyze-immediately parameters.

Table 1 Site List

WMA	Station	Stream/Location	D-Latitude	D-Longitude	County	Site exists in WQDE already ?	Location Type
20	AN0119	Crosswicks Ck (Jumping Bk) @ Bunting Bridge Rd	40.04615643	-74.53963283	Burlington	Yes	River/Stream
20	AN0119A	South Run @ Browns Mills-Cookstown Rd	40.02738407	-74.55983744	Burlington	Yes	River/Stream
20	AN0119B	Jumping Bk @ Cranberry Cannery Rd	40.04023	-74.50619	Ocean	No	River/Stream
20	AN0120	North Run @ Main St	40.04963087	-74.5625462	Burlington	Yes	River/Stream
20	AN0120B	North Run @ Rt. 680	40.0393549	-74.58908007	Burlington	Yes	River/Stream
20	AN0121	Crosswicks Ck @ Rt 537	40.08421574	-74.54087444	Ocean	Yes	River/Stream
20	AN0123A	Lahaway Ck @ Emleys Hill Rd.	40.13023917	-74.47063461	Monmouth	Yes	River/Stream
20	AN0124	Lahaway Ck @ New Egypt-Allentown Rd (Holms Mill Rd CR27)	40.10710617	-74.53647744	Monmouth	Yes	River/Stream
20	AN0125	Crosswicks Ck @ Extonville Rd	40.13691253	-74.6002687	Burlington & Mercer	Yes	River/Stream
20	AN0125B	Miry Run @ Holmes Mill Rd	40.13390481	-74.54235457	Monmouth	Yes	River/Stream
20	AN0126A	UNT to Crosswicks Ck @ Iron Bridge Rd	40.13603313	-74.61821872	Burlington	Yes	River/Stream
20	AN0126B	Pleasant Run @ Extonville Rd	40.14850489	-74.59932998	Mercer	Yes	River/Stream
20	AN0126C	Crosswicks Ck @ NJ Tpk North	40.15990827	-74.65518588	Mercer & Burlington	Yes	River/Stream
20	AN0127B	Doctors Ck @ Haven Hollow Rd.	40.17529063	-74.45907672	Monmouth	Yes	River/Stream
20	AN0128A	Doctors Ck @ Sharon Station Rd.	40.15786418	-74.53952356	Monmouth	Yes	River/Stream

20	AN0129B	Doctors Ck @ S Broad St. off Rt. 130	40.1763971	-74.66860521	Mercer	Yes	River/Stream
20	AN0131A	Back Ck @ Yardville-Hamilton Square Rd	40.1921952	-74.66532728	Mercer	Yes	River/Stream
20	AN0132E	UNT to Blacks Creek @ Rt. 528	40.1013553	-74.61529162	Burlington	Yes	River/Stream
20	AN0133	Bacons Run @ White Pine Rd	40.10745226	-74.68503863	Burlington	Yes	River/Stream
20	AN0134A	Sucker Run @ Rt. 206	40.1325752	-74.70448907	Burlington	Yes	River/Stream
20	AN0134C	Blacks Ck @ Rt. 545	40.1145455	-74.67991453	Burlington	Yes	River/Stream
20	AN0134E	Crystal Creek @ Rt. 660 (Old York Rd.)	40.11311735	-74.72286238	Burlington	Yes	River/Stream
20	AN0136	Crafts Ck @ Island Rd	40.07388497	-74.70132347	Burlington	Yes	River/Stream
20	AN0137	Crafts Ck @ Old York Rd	40.10045638	-74.75599053	Burlington	Yes	River/Stream
20	AN0141	Assiscunk Ck @ Jacksonville Rd	40.06471415	-74.75683371	Burlington	Yes	River/Stream
20	AN0141A	Assiscunk Ck @ Rt. 206	40.04603889	-74.72664722	Burlington	Yes	River/Stream
20	AN0141E	UNT to Barkers Brook @ Rt. 628	40.04173333	-74.76718056	Burlington	Yes	River/Stream
20	AN0141O	Barkers Bk @ Jacksonville-Smithville Rd	40.02150047	-74.75154994	Burlington	Yes	River/Stream
20	AN0142C	UNT to Assiscunk Ck @ Oxmead Rd	40.05221631	-74.82048927	Burlington	Yes	River/Stream
19	AN0143A	N Br Rancocas Ck @ North Lakeshore Dr	39.97656	-74.53423	Burlington	No	River/Stream
19	AN0144A	Pole Bridge Branch @ end of Tecumseh Trail	39.94404	-74.56617	Burlington	No	River/Stream
19	AN0144B	Cranberry Br @ Lakehurst Rd	39.9565	-74.52378	Burlington	No	River/Stream
19	AN0145	Mt Misery Bk @ Rt 70	39.9290815	-74.53099797	Burlington	Yes	River/Stream
19	AN0145A	N Br Mt. Misery Bk @ Butler Place Road	39.91777174	-74.44534673	Ocean	Yes	River/Stream

19	AN0145B	UNT to N Br Mt. Misery Bk @ Butler Place Road	39.91929419	-74.443464	Ocean	Yes	River/Stream
19	AN0145C	N Br Mount Misery Bk @ Glassworks Rd.	39.92228355	-74.47832521	Burlington	Yes	River/Stream
19	AN0145D	S Br Mt. Misery Bk @ Mt. Misery Rd	39.9162106	-74.51466393	Burlington	Yes	River/Stream
19	AN0146	McDonalds Br @ Lebanon St For (Butterworth Rd)	39.8850592	-74.50543849	Burlington	Yes	River/Stream
19	AN0147	Bisphams Mill Ck @ Turkey Buzzard Bridge Rd	39.92388982	-74.59170188	Burlington	Yes	River/Stream
19	AN0148	Greenwood Br @ New Lisbon Rd	39.95634132	-74.62766037	Burlington	Yes	River/Stream
19	AN0149	North Br Rancocas Ck @ below dam in park off Main St	39.97009578	-74.68422985	Burlington	Yes	River/Stream
19	AN0149A	Ong Run @ West Lakeshore Dr.	39.97650061	-74.57665251	Burlington	Yes	River/Stream
19	AN0149C	N Br Rancocas Ck @ New Lisbon Rd.	39.96015346	-74.62908939	Burlington	Yes	River/Stream
19	AN0150	Budds Run @ Hanover St (Main St)	39.97636268	-74.68092878	Burlington	Yes	River/Stream
19	AN0151	North Br Rancocas Ck @ Iron Works Park	39.99233739	-74.77948824	Burlington	Yes	River/Stream
19	AN0151A	Indian Run @ Birmingham Rd	39.98063467	-74.71108017	Burlington	Yes	River/Stream
19	AN0152	Friendship Ck @ Friendship Rd (Powell Place Rd)	39.87103507	-74.6930341	Burlington	Yes	River/Stream
19	AN0153	Burrs Mill Bk @ Sooy Place/Hedgerhouse Rd	39.85941052	-74.59811629	Burlington	Yes	River/Stream
19	AN0154	Burrs Mill Bk @ Sooy Place Rd Off Rt 70	39.88183308	-74.67503005	Burlington	Yes	River/Stream
19	AN0155	Friendship Ck @ Retreat Rd	39.91653884	-74.71431589	Burlington	Yes	River/Stream
19	AN0155A	S Br Rancocas Ck @ Burrs Mill Rd	39.91568	-74.68037	Burlington	No	River/Stream

19	AN0156	South Br Rancocas Ck @ Ridge Rd(Buddtown-Beaverville Rd)	39.92322636	-74.71764974	Burlington	Yes	River/Stream
19	AN0157	Jade Run @ A Farm Rd off Rt 206	39.94068689	-74.73255633	Burlington	Yes	River/Stream
19	AN0157A	Jade Run @ Stockton Bridge Rd	39.92905274	-74.66879284	Burlington	Yes	River/Stream
19	AN0158	Little Ck @ Rt 70	39.89842394	-74.78813941	Burlington	Yes	River/Stream
19	AN0159	Bear Swamp River @ Rt 70	39.89543216	-74.77911018	Burlington	Yes	River/Stream
19	AN0159A	Bear Swamp River @ Rt. 206	39.87826	-74.73696	Burlington	No	River/Stream
19	AN0160	Little Ck @ Eayrestown Rd	39.9380086	-74.79341088	Burlington	Yes	River/Stream
19	AN0162	Southwest Br Rancocas Ck @ Elmwood Rd Next to S T P	39.89025437	-74.88361454	Burlington	Yes	River/Stream
19	AN0163A	UNT to Barton Run @ powerline trail off Braddock Mill Rd	39.8558	-74.9152	Burlington	No	River/Stream
19	AN0164	Black Run @ Kettle Run Rd	39.83303969	-74.89288271	Burlington	Yes	River/Stream
19	AN0166	Barton Run @ Tuckerton Rd & Christopher Mill Rd	39.87878459	-74.8600255	Burlington	Yes	River/Stream
19	AN0167A	UNT to Haynes Ck @ Centennial Drive	39.84687498	-74.85678396	Burlington	Yes	River/Stream
19	AN0167B	Kettle Run @ Tansborough Rd	39.82328	-74.84727	Burlington	No	River/Stream
19	AN0168A	Haynes Ck @ Tuckerton Rd	39.88519398	-74.83164135	Burlington	Yes	River/Stream
19	AN0169	Southwest Br Rancocas Ck (Haynes Ck) @ Rt 70	39.86765	-74.84175	Burlington	Yes	River/Stream
19	AN0170	Sharps Run @ Rt 541	39.90529242	-74.82449149	Burlington	Yes	River/Stream
19	AN0171A	Bobbys Run @ Smithville Rd	39.96086046	-74.75315312	Burlington	Yes	River/Stream
19	AN0173	Masons Ck @ Rt 38	39.97202991	-74.85704714	Burlington	Yes	River/Stream

19	AN0173A	UNT to S Br Rancocas Ck @ Rt. 640	39.96469	-74.82337	Burlington	No	River/Stream
19	AN0174B	Parkers Ck @ Walton Ave	39.95138828	-74.89547895	Burlington	Yes	River/Stream
19	AN0175	Mill Ck @ Levitt Pkwy	40.03597157	-74.89358806	Burlington	Yes	River/Stream
18	AN0176	Swedes Run @ Rt 130	40.01502903	-74.95622995	Burlington	Yes	River/Stream
18	AN0177	Pompeston Ck @ Rt 130	40.00343673	-74.98284276	Burlington	Yes	River/Stream
18	AN0178	North Br Pennsauken Ck @ Church Rd	39.92036841	-74.89813355	Burlington	Yes	River/Stream
18	AN0179	North Br Pennsauken Ck @ Fellowship Rd	39.9410615	-74.95389828	Burlington	Yes	River/Stream
18	AN0179A	UNT to N Br Pennsauken Ck @ Rt. 38	39.95627358	-74.94113273	Burlington	Yes	River/Stream
18	AN0183	South Br Pennsauken Ck @ Rt 41	39.94028105	-74.98278064	Burlington & Camden	Yes	River/Stream
18	AN0185A	Pochack Ck @ off Prince Ave.	39.96873451	-75.0437876	Camden	Yes	River/Stream
18	AN0187	North Br Cooper River @ Springdale Rd	39.88884886	-74.96862107	Camden	Yes	River/Stream
18	AN0188	North Br Cooper River @ River Dr	39.90873438	-75.02520684	Camden	Yes	River/Stream
18	AN0189	South Br Cooper River @ Gibbsboro Rd	39.82583213	-74.97469308	Camden	Yes	River/Stream
18	AN0190	South Br Cooper River @ Evesham Rd	39.8594296	-75.0159512	Camden	Yes	River/Stream
18	AN0191A	S Br Cooper River @ Haddonfield Public Works (off Centre St)	39.8875042	-75.0271931	Camden	No	River/Stream
18	AN0654A	Newton Ck @ nr. school athletic field off W. Cuthbert Blvd.	39.90622398	-75.06011974	Camden	Yes	River/Stream

18	AN0658	S Br Big Timber Ck @ Turnersville-Sicklerville Rd	39.77194778	-75.04939712	Gloucester	Yes	River/Stream
18	AN0659A	S Br Big Timber Ck @ Rt. 681	39.80495697	-75.07552375	Gloucester & Camden	Yes	River/Stream
18	AN0660A	Pines Run @ Rt. 168	39.81820752	-75.06784333	Camden	Yes	River/Stream
18	AN0661	N Br Big Timber Ck @ W Park Ave	39.8152783	-75.00062474	Camden	Yes	River/Stream
18	AN0662	Mason Run @ Chews Landing Rd	39.81346716	-75.02181326	Camden	Yes	River/Stream
18	AN0666	Little Timber Ck @ Devon Rd	39.86973644	-75.07281084	Camden	Yes	River/Stream
18	AN0668	Mantua Ck @ Greentree Rd	39.72547827	-75.10102131	Gloucester	Yes	River/Stream
18	AN0669	Mantua Ck @ Lambs Rd	39.75481707	-75.11748262	Gloucester	Yes	River/Stream
18	AN0670	Chestnut Br @ Lambs Rd	39.73618245	-75.14530473	Gloucester	Yes	River/Stream
18	AN0674	Edwards Run @ Jessups Mill Rd	39.78578681	-75.19792049	Gloucester	Yes	River/Stream
18	AN0675	Still Run @ Quaker Rd	39.78852013	-75.25699241	Gloucester	Yes	River/Stream
18	AN0677	Pargy Ck @ Swedesboro Ave	39.79279201	-75.2862557	Gloucester	Yes	River/Stream
18	AN0678	Little Timber Ck @ Paulsboro Rd	39.79006918	-75.30573743	Gloucester	Yes	River/Stream
18	AN0679A	Cartwheel Branch @ Elmer Barnsboro Rd	39.68464	-75.17694	Gloucester	No	River/Stream
18	AN0680	Raccoon Ck @ Rt 45 (N Main St)	39.73635867	-75.22423762	Gloucester	Yes	River/Stream
18	AN0682	S Br Raccoon Ck @ High St	39.73618926	-75.25576595	Gloucester	Yes	River/Stream
18	AN0683	Raccoon Ck @ Tomlin Station Rd	39.74040926	-75.25885851	Gloucester	Yes	River/Stream
18	AN0686	Oldmans Ck @ Swedesboro Rd	39.66231137	-75.23082057	Gloucester & Salem	Yes	River/Stream
18	AN0687A	Oldmans Ck @ Eldriges Hill Rd	39.68029	-75.28761	Gloucester & Salem	No	River/Stream
18	AN0688	Oldmans Ck @ Kings Hwy	39.6993212	-75.33322518	Gloucester & Salem	Yes	River/Stream

17	AN0690	Salem River @ Rt 581 (Commissioners Rd)	39.62158086	-75.26820517	Salem	Yes	River/Stream
17	AN0692	Nichomus Run @ Rt 45	39.63952437	-75.349233	Salem	Yes	River/Stream
17	AN0693	Salem River @ Kings Hwy	39.65275957	-75.36805516	Salem	Yes	River/Stream
17	AN0694	Major Run @ Pointers-Sharptown Rd	39.64868171	-75.37427322	Salem	Yes	River/Stream
17	AN0696A	Game Creek @ W. Quillytown Rd.	39.69961809	-75.4214926	Salem	Yes	River/Stream
17	AN0696B	Game Branch @ N Pennsville-Auburn Rd. (Rt. 551)	39.701744184	-75.43839273	Salem	Yes	River/Stream
17	AN0697	UNT to Culliers Run @ Basset Rd	39.61730746	-75.40008884	Salem	Yes	River/Stream
17	AN0698	Swedes Run @ Swedes Bridge Rd	39.59623863	-75.37592036	Salem	Yes	River/Stream
17	AN0699	Alloway Ck @ Yorktown-Friesburg Rd (Rt 672)	39.59117263	-75.29604166	Salem	Yes	River/Stream
17	AN0700	Cool Run @ Stockington-Pleasant Hill Rd	39.57873714	-75.3094455	Salem	Yes	River/Stream
17	AN0701	UNT to Alloway Ck (Cedar Bk) @ Alloway-Aldine Rd (Rt 611)	39.559802	-75.33965936	Salem	Yes	River/Stream
17	AN0703A	Deep Run @ Telegraph Rd. (Rt. 540)	39.54289157	-75.3545957	Salem	Yes	River/Stream
17	AN0705	Sarah Run @ Telegraph Rd (Rt 647)	39.4884714	-75.32682071	Salem & Cumberland	Yes	River/Stream
17	AN0707A	UNT to Canton Drain @ Rt. 626	39.50089285	-75.38463563	Salem	Yes	River/Stream
17	AN0708A	Macanippuck Run @ Macanippuck Rd	39.43277	-75.33581	Cumberland	No	River/Stream
17	AN0709	Cohansey River @ Beal Rd	39.54474198	-75.2748622	Salem	Yes	River/Stream
17	AN0710	Cohansey River @ Rt 540	39.51675731	-75.26683772	Cumberland	Yes	River/Stream

17	AN0711	Parsonage Run @ Finley Rd	39.48732195	-75.25355216	Cumberland	Yes	River/Stream
17	AN0712	Cohansey River @ Silver Lake Rd	39.47260352	-75.2553951	Cumberland	Yes	River/Stream
17	AN0712A	Shaw Branch @ Beebe Run Rd. ()	39.45837937	-75.25238207	Cumberland	Yes	River/Stream
17	AN0714	Barrett Run @ Beebe Run Rd	39.4459969	-75.2462477	Cumberland	Yes	River/Stream
17	AN0715A	Indian Fields Br @ Rt. 669	39.43447418	-75.21857289	Cumberland	Yes	River/Stream
17	AN0715B	Rocaps Run @ Burlington Rd	39.41018	-75.21021	Cumberland	No	River/Stream
17	AN0716	Island Br @ Fayette St (Dutch Neck Rd)	39.41369526	-75.24431514	Cumberland	Yes	River/Stream
17	AN0717	Pine Mount Ck @ Rt 623	39.41358944	-75.34766846	Cumberland	Yes	River/Stream
17	AN0718B	Cedar Ck @ athletic Park off East Ave. (upstream of Cedar Lake)	39.33750236	-75.1937379	Cumberland	Yes	River/Stream
17	AN0719A	Pages Run @ railroad crossing off Station Rd.	39.30944261	-75.1579661	Cumberland	Yes	River/Stream
17	AN0721	Scotland Run @ Rt 322	39.692991	-75.041035	Gloucester	Yes	River/Stream
17	AN0723	Scotland Run @ Rt 538	39.61815341	-75.05961712	Gloucester	Yes	River/Stream
17	AN0724	Indian Br @ Rt 47	39.5907673	-75.05971155	Gloucester	Yes	River/Stream
17	AN0725A	Scotland Run @ Rt 55 NB	39.56813	-75.062	Salem & Cumberland	No	River/Stream
17	AN0726	UNT to Little Ease Run @ Carpenter Rd	39.680161	-75.089372	Gloucester	Yes	River/Stream
17	AN0726A	Little Ease Run @ Carpenter Rd	39.681069	-75.085523	Gloucester	Yes	River/Stream
17	AN0726B	Little Ease Run @ Academy St. (Rt. 610)	39.65930478	-75.0674635	Gloucester	Yes	River/Stream
17	AN0727A	Beaverdam Br @ off Carpenter Rd	39.68141	-75.07832	Gloucester	No	River/Stream
17	AN0728	Little Ease Run @ Leonard Cake Rd	39.59697396	-75.07594603	Gloucester	Yes	River/Stream
17	AN0729	Still Run @ Aura Rd	39.67304459	-75.12998192	Gloucester	Yes	River/Stream

17	AN0730	Still Run @ Little Mill Rd	39.6358171	-75.0992732	Gloucester	Yes	River/Stream
17	AN0731A	Reed Br @ Monroeville Rd	39.621685	-75.10639	Gloucester	No	River/Stream
17	AN0732	Still Run @ Rt 40	39.58542522	-75.08164413	Gloucester	Yes	River/Stream
17	AN0733A	Maurice River @ W. Garden Rd	39.52209	-75.0729	Salem & Cumberland	No	River/Stream
17	AN0735	Burnt Mill Br @ Rt 55	39.52781513	-75.06641075	Cumberland	Yes	River/Stream
17	AN0737	Green Br @ Jesse Bridge Rd	39.52718941	-75.08066016	Salem	Yes	River/Stream
17	AN0738	Blackwater Br @ Main Rd	39.51888086	-74.98961659	Gloucester	Yes	River/Stream
17	AN0739	Blackwater Br @ Maurice River Pkwy	39.50566558	-75.07220705	Cumberland	Yes	River/Stream
17	AN0740	Maurice River @ Almond Ave	39.49555072	-75.07637105	Cumberland	Yes	River/Stream
17	AN0742A	Muddy Run @ Pinyard Rd.	39.61006527	-75.16804872	Salem	Yes	River/Stream
17	AN0744	Palatine Br @ Lower Mill Rd	39.55701998	-75.17432573	Salem	Yes	River/Stream
17	AN0745A	Muddy Run @ Sheep Pen Rd.	39.55391012	-75.16400347	Salem	Yes	River/Stream
17	AN0747	Indian Run @ Husted Station Rd	39.53564011	-75.18392661	Salem	Yes	River/Stream
17	AN0748A	Muddy Run @ Parvin State Park abv Parvin Lake	39.5155	-75.14762	Salem	No	River/Stream
17	AN0749	Muddy Run @ Lebanon Rd	39.4705419	-75.0929318	Salem	Yes	River/Stream
17	AN0750	Parvin Br @ Rt 55 N.	39.45521173	-75.06832192	Cumberland	Yes	River/Stream
17	AN0751	Maurice River @ Sherman Ave	39.44808543	-75.07211208	Cumberland	Yes	River/Stream
17	AN0752	Lebanon Br (Mill Ck) @ Sherman Rd	39.43808267	-75.10753214	Cumberland	Yes	River/Stream
17	AN0752A	Chatfield Branch @ Carmel Rd.	39.43276185	-75.11810648	Cumberland	Yes	River/Stream
17	AN0753	Mill Ck @ off Rt 552	39.42600179	-75.08564036	Cumberland	Yes	River/Stream
17	AN0754	White Marsh Run @ Hogbin Rd	39.39257246	-75.10151057	Cumberland	Yes	River/Stream

17	AN0755A	Petticoat Branch @ E Broad St. (Rt. 552 spur)	39.40322357	-75.02318687	Cumberland	Yes	River/Stream
17	AN0756	Buckshutem Ck @ Rt 555	39.34769602	-75.06259276	Cumberland	Yes	River/Stream
17	AN0756A	Gravelly Run @ Battle Lane	39.33760906	-75.05122477	Cumberland	Yes	River/Stream
17	AN0757	Cedar Br @ Italia Ave	39.46118555	-74.95809007	Cumberland	Yes	River/Stream
17	AN0758	Panther Br (Manantico Ck) @ Italia Ave	39.46117808	-74.95722035	Cumberland	Yes	River/Stream
17	AN0759	Manantico Ck @ Hance Bridge Rd	39.450507	-74.956094	Cumberland	Yes	River/Stream
17	AN0759A	Manantico Ck @ Mays Landing Rd. (Rt. 552)	39.41923744	-74.96582871	Cumberland	Yes	River/Stream
17	AN0760	Manantico Ck @ Rt 49	39.38637119	-74.98931635	Cumberland	Yes	River/Stream
17	AN0761	Berryman Br @ Rt 49	39.38768905	-74.99348358	Cumberland	Yes	River/Stream
17	AN0762	Manumuskin River @ Old Mays Landing Rd	39.42410352	-74.91327922	Cumberland	Yes	River/Stream
17	AN0763	Manumuskin River @ on The Nature Conservancy property off Cumberland-Port Elizabeth Rd (Fries Mill)	39.34941312	-74.95813949	Cumberland	Yes	River/Stream
19	FIBI255	Mill Creek @ Springside-Rancocas Road	40.03119	-74.85339	Burlington	Yes	River/Stream
17	01411560	Little Robin Branch @ Rt 55	39.481996	-75.172707	Cumberland	Yes	River/Stream
17	01413032	Town Swamp Branch near Gouldtown	39.402778	-75.167222	Cumberland	Yes	River/Stream
19	01465850	S Br Rancocas Ck @ Vincentown	39.9402	-74.7631	Burlington	Yes	River/Stream
19	01465887	SW Br Rancocas Ck @ New Freedom Rd	39.912676	-74.807087	Burlington	Yes	River/Stream
18	01477100	Raccoon Ck @ Rt. 618	39.708611	-75.201111	Gloucester	Yes	River/Stream

Table 2 Sample Types

STATION ID	Field Msr/Obs	Flow	Water Chemistry	Continuous Monitoring	Biological Sampling	Sediment Collection	Bacteria Collection	Habitat	Metrics	Indices
All Sites	YES	NO	YES	NO	YES	NO	NO	YES	YES	YES

Table 3 Partners

TATION ID	Field Msr/Obs	Flow	Water Chemistry	Continuous Monitoring	Biological Sampling	Sediment Collection	Bacteria Collection
All Sites	DEP	NO	DEP	NO	DEP	NO	NO

Table 4 Field Measures

<u>Field Name</u>	<u>WQDE Name</u>	<u>Media</u>	<u>Units</u>
Water Temp	Temperature, Water	Water	deg C
Spec Cond	Specific conductance	Water	uS/cm
pH	pH	Water	None

DO	Dissolved Oxygen (DO)	Water	mg/l
Turbidity	Turbidity	Water	NTU

Table 5 Chemical Parameters

Analysis (lab name)	EPA Characteristic Name	Method Speciation Name	Result Sample Fraction	Result Measure Unit	Result Value Type	Sample Collection Type	Sample Collection Equipment
Nitrate + Nitrite as N	Inorganic nitrogen (nitrate and nitrite)	as N	Total	mg/l	Actual	Grab	Water Sampler (Other)
Total Kjeldahl Nitrogen	Kjeldahl nitrogen	as N	Total	mg/l	Actual	Grab	Water Sampler (Other)
Phosphorus, Total	Phosphate-phosphorus	as P	Total	mg/l	Actual	Grab	Water Sampler (Other)

Table 6 Laboratory

Parameter	Laboratory	Lab Number	Method	Method ID Context	Lower Reporting Limit	units	Method Detection Limit	units	Holding Time	Preservative
Nitrite + Nitrate	NJDOH-PHEL	11036	4500-NO3(F)	APHA	0.012	mg/l	0.00487	mg/l	28 days	pH<2, Ice to 4°C
TKN	NJDOH-PHEL	11036	351.2	USEPA	0.1	mg/l	0.046	mg/l	28 days	pH<2, Ice to 4°C
Total Phosphorus	NJDOH-PHEL	11036	365.1	USEPA	0.01	mg/l	0.00553	mg/l	28 days	pH<2, Ice to 4°C

Table 7 Habitat Assessment Parameters

CODE	NAME	DESCRIPTION
HAB_0221	RBP2, Low G, Bank Stability, Left Bank	RBP2, Low G, Bank Stability, Left Bank (choice list)
HAB_0222	RBP2, Low G, Bank Stability, Right Bank	RBP2, Low G, Bank Stability, Right Bank (choice list)
HAB_0223	RBP2, Low G, Channel Alteration	RBP2, Low G, Channel Alteration (choice list)
HAB_0224	RBP2, Low G, Channel Flow Status	RBP2, Low G, Channel Flow Status (choice list)
HAB_0225	RBP2, Low G, Channel Sinuosity	RBP2, Low G, Channel Sinuosity (choice list)
HAB_0226	RBP2, Low G, Epifaunal Substrate/Available Cover	RBP2, Low G, Epifaunal Substrate/Available Cover (choice list)
HAB_0228	RBP2, Low G, Pool Substrate Characterization	RBP2, Low G, Pool Substrate Characterization (choice list)
HAB_0229	RBP2, Low G, Pool Variability	RBP2, Low G, Pool Variability (choice list)
HAB_0230	RBP2, Low G, Riparian Vegetative Zone Width, Left Bank	RBP2, Low G, Riparian Vegetative Zone Width, Left Bank (choice list)
HAB_0231	RBP2, Low G, Riparian Vegetative Zone Width, Right Bank	RBP2, Low G, Riparian Vegetative Zone Width, Right Bank (choice list)
HAB_0232	RBP2, Low G, Sediment Deposition	RBP2, Low G, Sediment Deposition (choice list)
HAB_0233	RBP2, Low G, Vegetative Protection, Left Bank	RBP2, Low G, Vegetative Protection, Left Bank (choice list)
HAB_0234	RBP2, Low G, Vegetative Protection, Right Bank	RBP2, Low G, Vegetative Protection, Right Bank (choice list)

Table 8 Habitat Assessment Metrics

CODE	NAME	DESCRIPTION
HAB_0227	RBP2, Low G, habitat assessment total score	RBP2, Low G, habitat assessment total score
HAB_0241	RBP2, Low G, habitat assessment total rating	RBP2, Low G, habitat assessment total rating

Table 9 Individual Index Metrics

CODE	NAME	DESCRIPTION
PMI_001	Insect taxa	Insect taxa
PMI_002	Non-insect taxa	Non-insect taxa
PMI_003	Percent Plecoptera and Trichoptera	Percent Plecoptera and Trichoptera
PMI_004	Percent Diptera excluding Tanytarsini	Percent Diptera excluding Tanytarsini
PMI_005	Percent Mollusca and Amphipoda	Percent Mollusca and Amphipoda
PMI_006	Beck's Biotic Index (using Hilsenhoff taxa attributes)	Beck's Biotic Index (using Hilsenhoff taxa attributes)
PMI_007	Percent Filterers	Percent Filterers
CPHGMIG_001	Hilsenhoff Biotic Index	Hilsenhoff Biotic Index
CPMI_001	Total number of taxa	Total number of taxa
CPMI_002	Ephemeroptera taxa	Ephemeroptera taxa
CPMI_003	Percent Ephemeroptera taxa	Percent Ephemeroptera taxa
CPMI_004	Percent Clingers	Percent Clingers

Table 10 Overall Metrics

CODE	NAME	DESCRIPTION
PINELANDS	Pinelands Macroinvertebrate Index	Pinelands Macroinvertebrate Index
COASTAL	Coastal Plain Macroinvertebrate Index	Coastal Plain Macroinvertebrate Index
CPMIR	CPMI Rating	CPMI Rating
PMIR	PMI Rating	PMI Rating

Table 11 Data Inventory Supplement

Geographic Regions	Lower Delaware Water Region
Counties	Mercer, Burlington, Ocean, Monmouth, Camden, Gloucester, Salem, Cumberland
Dates	July 1, 2021 - June 30, 2022
Status	In progress- discrete
Sample Frequency	Other- once
Seasons Sampled	Spring, Summer, Fall
Waterbody Type	River/Stream
Salinity Category	Fresh
Tidal Influence	Non-tidal
Project Description	Through sampling and analysis of macroinvertebrate communities at a network of freshwater, non-tidal rivers and streams sites, the biological condition of these waterbodies and watersheds in the Lower Delaware Water Region is assessed.
Parameters analyzed type	Habitat; Biological- Benthic macroinvertebrates

Table 12 Data Management Supplement

QAPP network path file location?	V:\LUM\BFBM\Bfbm\Quality Assurance Plans\Calendar Year 2021 QAPPS\AMNET LDL 2021-22
Where will data be recorded in field (media)	Paper
If on tablets or phones, will download at office occur or will you connect wirelessly?	N/A
If on tablets or phones, who will do the download?	N/A
If data collected electronically, where will it be stored?	N/A
Format to be received from Lab	Data Feed
Method of receipt from lab/s	Electronic
Personnel receiving outside lab data	BFBM
Is data expected to go to WQDE/STORET?	Yes
Data manager - (Bureau and Name)	BFBM- Leigh Lager

Appendix B- Site Map

AMNET Lower Delaware Sites



