

Spruce Run Reservoir Characterization Laboratory Services

Scope of Work WSA B24031

Introduction

Spruce Run Reservoir (SRR), located in Clinton Township and Union Township, Hunterdon County, is owned by the State of New Jersey and operated by the New Jersey Water Supply Authority (NJWSA) as part of the Raritan Basin Water Supply Complex. The Raritan Basin Water Supply Complex provides the basic source of water supply to several public and private water utilities serving more than 1,500,000 people in central New Jersey.

SRR has been increasingly plagued by harmful algal blooms (HAB), including a persistent HAB since first being identified in Fall 2018. Due to the persistent nature of the HAB, it is likely that both internal and external loads are providing a nutrient source for the cyanobacteria. The goal of this project is to develop the Spruce Run Reservoir Characterization Plan that will serve as the basis for in-reservoir HAB management and further prioritize watershed-based efforts in the future that will improve the quality of the water supply and restore recreational opportunities.

NJWSA will collect physical, chemical, and biological samples to evaluate the water quality of the reservoir. This work will be conducted every two weeks, nine (9) months of out the year (March-November), and once per month at a minimum for the other three (3) months out of the year (December-February) with the option of increasing the frequency to every two weeks, for two and a quarter (2.25) years for a total of approximately **53 sampling events (sampling events are 2 days per event, requiring pick up at the end of both days)**. Four (4) reservoir sites will be sampled at the surface and two (2) sites will be sampled at the epilimnion, metalimnion, hypolimnion, and bottom. Tributary samples will be collected on the same schedule at five (5) sites.

NJWSA received funding for this project from the New Jersey Department of Environmental Protection's Lakes Management Grant Program to improve water quality and reduce the impacts of nonpoint source pollution from stormwater on publicly accessible lakes throughout New Jersey.

Scope of Work

For this project, NJWSA must contract with a laboratory for analysis of surface water samples from approximately May 2024 through March 2026. The final sampling plan, including sampling frequency, are subject to approval of the Quality Assurance Project Plan (QAPP) by New Jersey Department of Environmental Protection's Office of Quality Assurance (NJDEP OQA) and the grant project manager at NJDEP.

- It is anticipated that this project will have approximately 53 sampling events (2 pick up days per event for a total not to exceed 106 pick up dates), with at least 20 samples per event for a total not to exceed **1070 samples** over the time period of May 2024 through March 2026. Sampling events will occur in all seasons. The final start date is yet to be determined, and a delayed start date may result in fewer sampling events and samples than anticipated.
- Each sample (not to exceed 1070 samples) will be analyzed for the following parameters in **non-potable water**: total phosphorus, orthophosphate, total Kjeldahl nitrogen, nitrate-nitrite, ammonia, total suspended solids, alkalinity, hardness, and total iron. A subset of samples will also be analyzed for chlorophyll, not to exceed 318 samples. Nitrate-nitrite may be analyzed separately, but this must be noted on Bid Form A.
- The laboratory must have a current certification and maintain certification by NJDEP OQA for the parameters required by the project, except for chlorophyll.
- Laboratories that do not maintain current certification for chlorophyll in NJ will be acceptable under the following conditions:
 - The laboratory must use an approved method for chlorophyll (e.g., EPA 445.0, SM 10200H –1 plus 2; 1 plus 3, etc.) and specify which method will be used on the bid form. All method-specific QC must be followed.
 - The laboratory must provide the full standard operation procedure for inclusion within the Authority's Quality Assurance Project Plan to be reviewed by NJDEP Office of Quality Assurance.
 - The laboratory must be certified by NJDEP in all other parameters specified in this IFB.
- The laboratory must provide courier service to pick up samples at NJWSA's office at **1851 State Route 31, Clinton, NJ 08809**. As sampling will be conducted the day of the pick-up, pick-up must be in the later afternoon.
- Sample events are subject to weather conditions, and NJWSA will attempt to schedule in advance; however, adjustments to the schedule may be necessary.
- The laboratory will provide bottles, bottle labels, and chain of custody forms. Bottles provided by the laboratory will include preservatives when appropriate.

- **Low-level detections and reporting limits for nutrients are required.** Laboratories that do not meet the minimum laboratory reporting limits specified will be determined to be technically non-responsive. Samples will be from surface water (stream / non-potable water). Laboratories must provide their lowest reporting limit based on their current procedures for certified methods on Bid Form A. The required minimum reporting limits for the nutrients are:

Parameter	Minimum Laboratory Reporting Limit
Total Phosphorus	0.01 mg/L
Orthophosphate	0.005 mg/L
Total Kjeldahl Nitrogen (TKN)	0.3 mg/L
Nitrate-Nitrite	0.05 mg/L
Ammonia	0.01 mg/L

- Standard turnaround times are requested. No expedited turnaround will be necessary.
- Some parameters required have 24 hour holding times, so every effort should be made where possible to meet that holding time requirement. If the holding time is exceeded, results must be noted with a qualifier as exceeding the holding time.
- External quality controls will be performed by the contract laboratory by using method blanks, spikes, duplicate samples, maintenance of holding times, and records of analytical equipment calibration. A results-only data package and a non-conformance summary report is required for each sampling event. A full data package is not required. Conformance summary reports will be reviewed by the NJWSA's QA/QC Officer and the Project Manager for possible errors and omissions. Any uncertainty relating to the laboratory data and/or QA report will immediately be presented to the laboratory manager for verification or, if necessary and possible, for reprocessing of the sample. All laboratory instrument and process blanks, control samples, calibrations, and duplicates will conform to the laboratory's NELAP or ELCP requirements for QC.
- The contract Laboratory QA/QC Officer will be required to provide any necessary data for the QAPP, and review and approve the QAPP and provide their signature. The QAPP will be prepared by NJWSA.
- Respondents agree that submission of a quote warrants acceptance of the above general terms and considerations and guaranteed pricing for the duration of the project.

Quotation Requirements

Bidders must provide fee proposal as follows:

Bidders must delineate a unit cost per parameter per sample. Bidders should include their NJDEP OQA-approved analytical method per parameter and the laboratory reporting limit (low-level nutrient detections are required. The laboratory must provide proof of certification by NJDEP OQA. Bidders should include any additional fees and delineate such fees separately with description of frequency (e.g., one-time fee, per sampling event, etc.). The following table should be filled out for the assumptions detailed below and a total cost for the project tallied as indicated below.

NJWSA reserves the right to not accept a bid if the analytical method or laboratory reporting limits do not meet the criteria of the project, or if a copy of laboratory certification is not provided with the quote.

Assumptions (not to exceed): 53 sampling events with up to 106 pick-up dates, 1070 total samples for **total phosphorus, orthophosphate, total Kjeldahl nitrogen, nitrate-nitrite, ammonia, total suspended solids, alkalinity, hardness, and total iron**; 318 samples for **chlorophyll**.

**the final number of sampling events and samples may vary depending on the actual project start date.