



TOWN OF NORTH CASTLE

WATER & SEWER DEPARTMENT

15 Business Park Drive
Armonk, New York 10504



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Member
American Water Works Association
N.Y. Rural Water Association
N.Y. Water Environment Association
Westchester Water Works Conference

MEMORANDUM

To: Kevin Hay, Town Administrator

From: Sal Misiti

Date: October 26, 2022

Cc: Roland Baroni, Jr., Town Attorney

Re: **Amendment of agreement, Consulting Services with WSP USA, Inc.
For services in WD4 related to School Street Well 1- PFOA treatment**

We have an agreement with the Consultant WSP USA, Inc. which we entered into in December of 2021 for a corrective action plan related to PFOA remediation. The work is specific to Water District No. 4 School Street Well #1. The WSP corrective action plan which was provided within the designated timeframe detailed the methods for remediation. This has been acknowledged by the Health Department as acceptable methods for PFOA treatment.

At this point we need to move to the next step in this process. The first step in the corrective action plan included the concept of drilling the well deeper to seek additional water bearing fractures in the bedrock well which may dilute the concentration of PFOA. I believe that as the PFOA regulations evolve the drilling may not be our best option. The funds would be much better spent on adding the required treatment.

Our treatment options are Granular Activated Carbon filtration or Ion Exchange filtration both accepted by County Health. The next step would be to move in that direction and begin the design of the modified treatment system for the School Street facility. I have asked WSP for a proposal which is attached.

I respectfully request that the Town Board approve the attached proposal as an amendment to our current agreement with WSP for the services as required.

If you should have any questions or require any additional information, please give me a call.

Attachment



October 26, 2022

Mr. Sal Misiti
Director of Water and Sewer Operations
North Castle Water and Sewer Department
15 Business Park Drive
Armonk, NY 10504

Via Electronic Transmission

RE: School Street Well Field
Water District No. 4, Town of North Castle, Armonk, New York

Dear Mr. Misiti:

WSP USA Inc. (WSP) is pleased to provide this amendment to our existing December 2021 proposal related to PFOA-impacted water documented in the Water District No. 4 (District) School Street Bedrock Well (Well 1). PFOA (Perfluorooctanoic acid) is one of many PFAS (per- and polyfluoroalkyl) substances commonly used in manufacturing of a variety of products over the past several decades. In April 2022, WSP developed a Corrective Action Plan (CAP) in response to a Notice of Violation issued by Westchester County Department of Health (WCDOH) regarding the exceedance of perfluorooctanoic acid (PFOA) detected above the New York State maximum contaminant level (MCL) of 10 ng/l (nanograms per liter) in water samples collected from Well 1. As part of the CAP, WSP evaluated and presented three viable options to address the water-quality issues.

BACKGROUND

SCHOOL STREET WELL FIELD

Well 1 and Well 2 were installed by the United States Environmental Protection Agency (USEPA) in 1988 on the Town-owned property located on School Street. Well 1 (aka 1A) is a bedrock well that has a total depth of 145 feet. Well 2 (aka 1C) is a sand and gravel well located approximately 20 feet away from Well 1. Well 2 is screened from approximately 46 to 68 ft bg (feet below grade). The well screen is 10 inches in diameter with a 0.25-inch slot size, surrounded by a 3-inch envelope of 0.25-inch Morie gravel pack.

The existing water treatment equipment consists of four greensand filters and two granular activated carbon (GAC) adsorption vessels that were installed to mitigate potential contamination. The purpose of the greensand filters is to reduce iron and manganese in Well 1 and Well 2. The capacity of the treatment system limits the combined production of the School Street wells to 100 gallons per minute (gpm).

As part of the CAP, three alternatives were evaluated to address the MCL exceedance: drilling Well 1 deeper, the installation of a GAC filtration system or an ion exchange (resin) filtration system as described below.

- **Deepen Well 1**

The purpose of drilling Well 1 deeper would be to encounter deeper water bearing fractures that may dilute the PFOA concentrations that have been detected that slightly exceed the MCL in Well 1; therefore, it would be reasonable to conclude that drilling the well deeper has the potential to decrease the PFOA concentration in the groundwater from Well 1.

- **Install GAC Filtration System**

GAC is one of the most studied and effective treatment options for removal of PFOA and is currently the most common treatment method. GAC's highly porous nature provides large surfaces to which contaminants adsorb. In light of the limited space available in the existing School Street facility and the layout of the existing treatment equipment, modifications to the existing building or an additional structure would be necessary to accommodate the larger pressure vessels associated with the two GAC treatment trains.



- **Install Ion Exchange Filtration System**

Ion exchange uses synthetic resins made up of highly porous, polymeric material that is acid, base, and water insoluble with a fixed charge which is used to remove charged contaminant ions through the exchange sites of the media. Groundwater pumped from Wells 1 and Well 2 would flow through high-pressure vessels filled with resin to reduce the PFOA concentrations below the MCL.

At the time that the CAP was finalized, WSP concluded the best alternative to reduce the PFOA concentration in Well 1 would be to deepen the well with the intent of encountering deeper water bearing fractures that have the potential to introduce better water quality to the well. Since the CAP was issued, the regulatory framework for PFAS continues to evolve, with indications that there will be regulations for an increased number of substances, and lower MCLs.

The NY Drinking Water Quality Council on May 2, 2022 recommended the following MCLs to the New York State Department of Health (NYSDOH):

- 10 ppt for PFNA
- 10 ppt for PFHxS
- 10 ppt for PFDA
- 10 ppt for PFHpA

It has been speculated that NYSDOH likely will include a cumulative MCL for the 6 PFAS with an MCL (PFOA, PFOS, plus the four above).

In addition, the Council recommended the following notification levels, which would require water districts to provide notification to customers, where:

- the total of PFHpS, PFUnA, PFDoA, Genx, 9CL-PF3ONS, 11CL-PF3OUdS collectively exceed 30 ppt, or
- the total of 13 short chain PFAS (PFBA, PFBS, PFPeA, PFPeS, PFHxA, ADONA, 4:2 FTS, 6:2FTS, 8:2FTS, NFDHA, PFEESA, PFMPA, PFMBA) collectively exceed 100 ppt.

On June 15, 2022, the US EPA released new Health Advisory Criteria for certain PFAS compounds in drinking water. The new final health advisory for Gen-X is 10 ppt. New final health advisory for PFBS is 2,000 ppt. Interim health advisory levels were also issued for PFOA at 0.004 ppt and PFOS at 0.02 ppt. Please note, these interim levels are not currently measurable by available laboratory methods. US EPA is understood to be preparing to issue an MCL for these PFAS compounds, potentially within a year.

Based on the regulatory changes that were announced after the CAP was issued, deepening the well is no longer considered the preferred alternative. Deepening and testing the well would cost an estimated \$70,000, with no guarantees of improved water quality and/or meeting the anticipated proposed regulatory changes. This proposal focuses on implementing groundwater treatment and assumes that any PFOA water treatment equipment that is installed would be used to treat the water supply from both Well 1 and Well 2.

SCOPE OF WORK

TASK 1: EVALUATION OF TREATMENT OPTIONS, PREPARATION OF ENGINEER'S REPORT, PLANS AND SPECIFICATIONS

Because the CAP identified two potential treatments, WSP will contact GAC and ion exchange vendors to obtain a cost proposal for each treatment system. The vendor proposals will include the replacement of the media based on usage and estimated PFOA breakthrough. Based on the evaluation of the vendor proposals and a review of the modifications to the existing system that would be required to accommodate the treatment system, WSP would provide the District with an opinion of probable cost (OPC) for a GAC treatment system and an ion exchange treatment system and our recommendation for the proposed PFOA water treatment system for Well 1 and Well 2. Once the District has approved the recommended treatment, WSP will prepare an Engineer's Report, plans and technical specifications (design package) for the selected water treatment system. The design package will build upon previous work at the property that included development of an as-built drawing of the water treatment building. The Engineer's Report, plans and specifications will be presented in a suitable format for submission to the WCDOH to obtain authorization for the installation, and the design package will be suitable for use by the District in obtaining cost proposals from prospective contractors. The technical specifications will be completed in Construction Standard Institute (CSI) format. The scope of work includes structural engineering services associated with reviewing as-built drawings of the treatment building slab/foundation to confirm that the slab/foundation can support the weight



of the proposed treatment equipment. The structural engineering services assume that as-built drawings of the treatment building slab/foundation are available for review. If as-built drawings are not available for review, an amendment to our scope of services will be provided to describe the additional services and the associated cost to evaluate the existing treatment building slab/foundation.

Task 1 – WSP Estimated Cost.....\$22,000

TASK 2: RESPOND TO COMMENTS FROM THE REGULATORY AGENCIES

WSP will respond to the comments that are received from the WCDOH regarding the design package. The estimated cost for this task assumes that the comments can be addressed with 4 hours of Principal time, 8 hours of project manager time, 40 hours of /engineer time, 20 hours of drafting (AutoCAD) time and 8 hours of secretarial time.

Task 2 – WSP Estimated.....\$10,000

TASK 3: BIDDING, CONSTRUCTION PHASE SERVICES AND PROJECT CERTIFICATION

WSP will prepare and submit complete Contract Documents for the project including plans, technical specifications, and “front-end” documents consisting of an advertisement, information for bidders, proposal, bidder qualifications, agreement, general conditions and special conditions. We will incorporate Town of North Castle “front-end” documents into the Contract Documents as appropriate. One pdf file copy and up to six original file copies of the complete Contract Documents will be provided to the Town for their use in obtaining public bids for the construction work. We will schedule and conduct a single pre-bid meeting at the site, and will prepare up to one addendum to respond to bidder questions. We will review the bid tabulation provided by the Town of North Castle and will review the qualifications and references provided by the three lowest apparent bidders. Based on our review of bids, we will prepare and submit a recommendation on award of contract to the Town.

During the Construction Phase, WSP will provide construction administration services consisting of review of the contractor’s schedule, shop drawing submittals, schedule of values and requests for payment, review and approval of the contractor’s change order requests, scheduling and conducting up to three progress meetings with the Town and the contractor, and preparing minutes of progress meetings. We will also respond to the contractor’s requests for information as appropriate. In addition, WSP will provide part-time resident observation of construction of the water treatment system to determine if the construction has been performed in general conformance with the approved Contract Documents. We will coordinate resident observation work with the contractor, and will generally be on-site to observe installation of work once per week and it is assumed that construction will require 4 weeks to complete (assuming that the treatment system does not require significant building construction). A daily report will be prepared documenting construction work and any issues observed, submitted on an approximate weekly basis. Our proposal includes a total of 32 hours for resident observation services.

At the conclusion of construction, WSP will prepare and submit the necessary project certification documents to the WCDOH and attend the final inspection with the WCDOH. The certification documents will consist of a letter documenting that the construction was completed in accordance with the approved plans and specifications, as-built drawings for submission to the WCDOH and documentation certifying that all water mains have been disinfected.

Task 3 – WSP Estimated Cost..... \$45,000

The scope of services does not include:

- Engineering design services for a building expansion, or a new treatment building, if required;
- Electrical engineering services; and
- Responding to more than one round of comments from the WCDOH.

For planning purposes, the budgetary construction cost for a redundant GAC filtration system and ion exchange system would be \$540,000 and \$330,000, respectively.



Please note that the WCDOH requires a professional engineer to certify that the water treatment system was constructed in accordance with approved plans in order to approve the treatment system for use. In order for WSP to provide the certification, WSP would need to be onsite to observe the work being done on a full-time basis during the installation of any below grade work, and on a part-time basis for above-grade work.

TERMS AND CONDITIONS

As is our policy, WSP only charges for the time and expenses that are incurred in the course of completing the scope of work. Any services beyond those specified will be billed in accordance with our standard fees, but only after approval by the District. The cost assumes that the District will be contracting with the subcontractors directly. WSP will still coordinate and manage the subcontractors on your behalf. WSP can begin work on these tasks upon your email or written approval.

Feel free to contact me directly at (475) 882-1706 with any questions or comments.

Kind regards,

WSP USA

A handwritten signature in blue ink, reading 'Michael J. Shortell'.

Michael J. Shortell
Senior Lead Consulting Environmental Engineer

A handwritten signature in blue ink, reading 'Karen B. Destefanis'.

Karen Destefanis, PG(NY)
Supervising Hydrogeologist

Affirmed by:

A handwritten signature in black ink, reading 'Thomas P. Cusack'.

Thomas P. Cusack, PG(NY)
Vice President

KD:cm

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