Supplemental Remedial Investigation Work Plan
Operable Unit-03 McCaffrey Street Facility

Revised May 2026

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Acronyms

COC(s)	constituent(s) of concern
CSM	conceptual site model
FSP	field sampling plan
I&I	infiltration and inflow
ng/L	nanograms per liter
NYSDEC	New York State Department of Environmental Conservation
OU(s)	Operable Unit(s)
OU-01	Operable Unit 01
OU-02	Operable Unit 02
OU-03	Operable Unit 03
PFAS	per- and polyfluoroalkyl substances
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonate
PFHxS	perfluorohexanesulfonic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
SPDES	State Pollutant Discharge Elimination System
TOC	total organic carbon
WTP	water treatment plant
WWTP	wastewater treatment plant

1.0 Introduction

This Supplemental Remedial Investigation (RI) Work Plan for the McCaffrey Street Facility (Facility) has been prepared in response to a request from the New York State Department of Environmental Conservation (NYSDEC) in their letter dated November 18, 2025 (NYSDEC, 2025b). The Facility (NYSDEC Site #442046) is located at 14 McCaffrey Street in the Village of Hoosick Falls (the Village) in Rensselaer County. Per- and polyfluoroalkyl substances (PFAS) are the primary constituents of concern (COCs) at the Facility. The NYSDEC has established three Operable Units (OUs) related to the Facility as follows (NYSDEC, 2021):

- Operable Unit 01 (OU-01) includes the 6.41–acre Site, as well as groundwater and soil contamination directly attributable to on-Site disposal of hazardous waste.
- Operable Unit 02 (OU-02) includes the existing municipal water supply, which has a NYSDEC-selected remedy presented in a Record of Decision (NYSDEC, 2021).
- Operable Unit 03 (OU-03) includes off-Site contamination related to the atmospheric deposition of Site-related contaminants and direct off-Site disposal of Site-related liquid and/or solid wastes.

The OU definitions above refer to the 6.41-acre tax parcel located at 14 McCaffrey Street as the “Site”; however, NYSDEC has since defined “the Site” as the area within the OU-01 boundary (NYSDEC, 2025a). Therefore, the 6.41-acre tax parcel at 14 McCaffrey Street is referred to as the “Facility” in this document.

This Supplemental RI Work Plan for OU-03 is designed to investigate the extent to which COCs related to the Facility may be present in the Village of Hoosick Falls' (Village) sewer system and to address potential gaps in the current conceptual site model (CSM).

2.0 Village Sewer System

This section provides a summary of existing information and the current understanding of the Village sewer system. It focuses on the general history, potential contaminant sources, and prior sampling results.

2.1 General History

The municipal sewer system was designed to transport domestic, commercial, and industrial wastewater from the Village to the wastewater treatment plan (WWTP). Based on publicly available information, the current extent of the Village sewer system and the direction of flow within the sewer lines are depicted on Figure 1.

Historical records indicate that the Village of Hoosick Falls has had a sewer system in operation since at least the early 1900s. This sewer system is in part a combined system that receives both wastewater and stormwater. Based on a historical sewer map (Morrell Vrooman Engineers, 1960), wastewater from the Village was discharged directly to the Hoosic River before the original Village WWTP was constructed in the late 1960s. The historical sewer map shows five sewer sections discharging to the Hoosic River. These sewer discharge lines are referred to as the River Road Outlet, Water Street Outlet, Geer Outlet, Kokley Avenue Outlet, and Carey Avenue Outlet (Figure 1). The Carey Avenue Outlet is located near the Facility and is still used as an overflow pipe for Carey Avenue.

After construction of the WWTP in the late 1960s, several lift stations were constructed in lower areas of the Village to collect and pump the wastewater into the larger downstream gravity sewers and ultimately to the WWTP. For example, the Carey Avenue lift station (near the Facility; see Figure 1) was constructed in approximately 1970 and replaced in 2005. Several other lift stations are located throughout the Village, but little information is publicly available regarding the history, construction, replacement, and use of these lift stations.

The Village sewer system has likely been extended and improved (e.g., separating wastewater and stormwater connections) in phases over time. Based on historical sewer maps, the sewer lines located closest to the Hoosic River likely represent the oldest portions of the sewer system. During the OU-01 RI, the sewer overflow pipe from Carey Avenue was found to be constructed of bell-end concrete pipe sections. One manhole connecting sections of this overflow piping was constructed of unmortared brick with a soil bottom. It is unclear if the sewer piping and manholes installed in the oldest sections of the Village sewer system are of similar construction. Publicly available information indicates that the Village has recently implemented a large-scale sanitary sewer improvement project to address excessive infiltration and inflow (I&I)[1] and to upgrade lift stations (MRB, 2016). Municipal sewer expansions also appear to have been contemplated and potentially executed by the Village (MRB, 2016).

In June 2021, PFAS was detected in wastewater flowing into the WWTP. Sections of the municipal sewer system were investigated as part of the OU-01 RI in 2023, and this work is described in Section 2.3.

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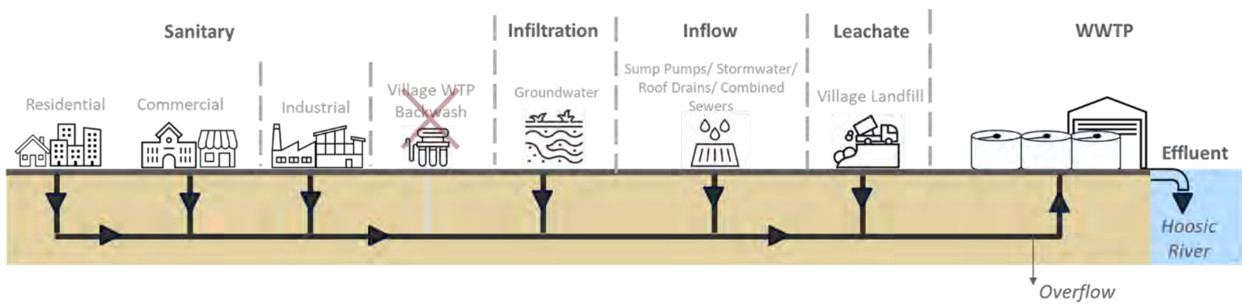
[1] Infiltration and inflow refer to the respective processes through which groundwater and stormwater enter sanitary sewer systems, causing an increase in wastewater volume.

2.2 Potential Contaminant Sources

The NYSDEC request for this Supplemental RI Work Plan stated that an objective for the additional investigation was to further evaluate the nature and extent of Site-related contaminants that may be present in the Village sewer system and wastewater effluent. While PFAS are the primary COCs related to the Facility, the Facility is not the only potential source of PFAS to the Village sewer and wastewater.

As depicted below (Graphic 1), the current CSM for the Village sewer system identifies the following potential sources of PFAS to the Village sewer system: domestic sanitary waste from residences, commercial wastewater discharges (e.g., car washes, laundromats, cleaners), industrial waste discharges, leachate from the Hoosick Falls landfill, inflow of stormwater runoff, and infiltration of impacted groundwater. Backwash from the Village water treatment plant (WTP) is no longer a source of PFAS to the Village sewer system since connection of the WTP to a new well field was completed and the new well field began operation in March 2025.



Graphic 1: Current CSM for the Village sewer system.

2.3 Existing Sewer Dataset

After PFAS was detected in wastewater flowing into the WWTP in June 2021, the municipal sewer system was evaluated to determine whether the sewer system functions as a transport pathway for PFAS under two potential scenarios:

- ***Transport of PFAS-containing wastewater from Village homes and/or businesses to the WWTP.*** This scenario was investigated by sampling major branches, or sewersheds, of the sewer system during peak (i.e., high flow) and non-peak (i.e., low flow) flow conditions to identify PFAS-contributing areas of the sewer system. This investigation is discussed in Section 2.3.2. A sewershed is an area contributing stormwater and/or wastewater to a single downstream point within a sewer system.

- ***Transport of PFAS-impacted groundwater through the sewers to the WWTP.*** This scenario was investigated by sampling segments of the sewer piping system with a high probability of the piping invert elevations being below the shallow groundwater table and thus potentially allowing infiltration of PFAS-impacted groundwater into the sewer system depending on the integrity of the piping. This investigation is discussed in Section 2.3.3.

2.3.1 WWTP Samples

Two influent wastewater samples were collected by ERM Inc. from the Village WWTP on June 23, 2021, and submitted for laboratory analysis. PFOA was detected in these samples at 210 nanograms per liter (ng/L) and 190 ng/L. The State Pollutant Discharge Elimination System (SPDES) permit for the Village WWTP requires the collection of quarterly influent and effluent samples for the analysis of PFAS. The first quarterly samples collected in February 2025 reported 189 ng/L PFOA in the influent and 220 ng/L in the effluent. The Village will be contacted for subsequent quarterly sample results.

2.3.2 Sewershed Samples

In accordance with the approved work plan (C.T. Male Associates and BEC, 2021) and subsequent input from the NYSDEC (Appendix A), wastewater samples were collected during peak and non-peak flow conditions from 11 sewersheds of the municipal sewer system prior to discharge into the main sewer line and ultimately the WWTP. Timing of peak and non-peak flow conditions was determined based on typical wastewater system flow characteristics. Details of the sewershed sampling activities are provided in Appendix A, and described below. Complete analytical data tables for the previous sewershed samples are provided in Appendix B. The sewershed areas, flow patterns between the sewersheds, and concentrations of PFOA, PFOS, and other PFAS in the sewershed samples are shown on Figures 2A through 2C. As depicted on these figures, numbers were assigned to each sewershed for ease of reference and they do not reflect Village designations.

As shown on Figure 2A, PFOA was detected throughout the municipal sewer system during peak and non-peak flow conditions. In general, lower PFOA concentrations were observed in newer, more residentially developed areas (Sewersheds 5 through 8), and higher PFOA concentrations were observed in older, more commercially developed areas of the Village (Sewersheds 1, 2, 3, 9, and 10). The highest concentrations of PFOA were detected in Sewersheds 9 and 10, which are located on the west side of the Hoosic River and are not connected to the Facility. While the concentrations of PFOA detected in individual sewersheds exhibited some variability with flow conditions, there was no clear flow-based pattern in PFOA concentrations. Overall, flow conditions within the sewersheds did not substantially affect the concentrations of PFOA within the sewer system, as the range of PFOA concentrations was 86-400 ng/L during peak flow conditions and 110-420 ng/L during non-peak flow conditions.

As shown on Figure 2B, PFOS concentrations were lower than PFOA concentrations throughout the sewer system and exhibited less variability than the PFOA results. PFOS was detected throughout the municipal sewer system during non-peak flow conditions and was not detected in three sewersheds during peak flow conditions, although those samples had elevated reporting limits. Flow conditions within the sewer system did not substantially affect the overall concentrations of PFOS as the range of PFOS concentrations was 1.9-5.9 ng/L during peak flow conditions and 1.3-5.3 ng/L during non-peak flow conditions.

As shown on Figure 2C, other PFAS (i.e., total PFAS excluding PFOA and PFOS concentrations) were detected throughout the municipal sewer system during peak and non-peak flow conditions. Flow conditions within the sewer system did not substantially affect the total concentrations of other PFAS as the range of total concentrations (excluding PFOA and PFOS) was 2.1-35 ng/L during peak flow conditions and 1.9-28 ng/L during non-peak flow conditions. Notably, several of these other PFAS were detected at their highest concentrations in sewersheds with mostly residential development. For example, PFBA was detected at its highest concentration (12 ng/L) in Sewershed 8 but was not detected in Sewershed 2.

2.3.3 Groundwater Infiltration Evaluation

In accordance with an approved work plan (C.T. Male Associates and BEC, 2021) and subsequent input from the NYSDEC (Appendix A), wastewater samples were collected from carefully selected segments of the municipal sewer to evaluate the potential for PFAS to enter the municipal sewer via infiltrating groundwater. Samples were collected from sewer segments that would have the highest probability of being subject to groundwater infiltration (i.e., older sewer construction, elevated PFOA in groundwater[2], and groundwater elevations higher than the sewer invert elevation). These high-probability samples were collected from manholes downstream of potential infiltration segments (i.e., "after" infiltration has occurred). Samples were also collected from segments with a lower probability of groundwater infiltration (i.e., sewer invert elevation is higher than the groundwater elevation and the sewer segment is located upstream of the higher probability segments, "before" potential infiltration). Details of these sampling activities, including selection of sewer sample locations, are provided in Appendix A, and key findings are described below. Analytical data tables for the previous municipal sewer wastewater samples are provided in Appendix B. Eight manholes in three different segments of the sewer were selected for sampling to represent areas of high and low groundwater infiltration probability, as shown on Figures 3A through 3C.

The following observations were made regarding this sampling:

- The PFOA concentrations measured in the sewer samples are significantly lower than groundwater concentrations measured in nearby monitoring wells. The shallow monitoring well associated with the Facility located closest to the high-probability sewer samples is MW34S. PFOA concentrations detected in this well have ranged from 490 ng/L to 2,000 ng/L with an average PFOA concentration of 1,150 ng/L.
- The concentrations of PFOA in the high-probability samples (110 ng/L to 270 ng/L) were lower than the sample representing all of Sewershed 2 (340 ng/L; Figure 2A) during similar peak flow conditions.
- Several other PFAS (e.g., PFBS, PFHxS, and PFOS) were detected at higher concentrations in the sewer samples than in nearby groundwater (i.e., MW32S, MW33S, and MW34S).

As noted above, the groundwater infiltration evaluation did not determine if groundwater is a significant source of PFAS in the portion of the sewer system investigated. However, detailed evaluation of flow across all sewersheds was not completed and remains a data gap. NYSDEC has requested additional investigation of data gaps to further define the CSM, thus the next step is a more detailed evaluation of flow characteristics within the sewer system as described in Section 3. This additional evaluation may provide additional information to identify if groundwater infiltration is occurring within the sewer system, and, if so, where such infiltration may be occurring.

[2] All groundwater infiltration sewer samples were collected from Sewershed 2, which includes some of the highest concentrations of PFOA in groundwater (Figure 2A).

3.0 Proposed Scope of Work

The purpose of this proposed supplemental scope of work is to further inform the current CSM by collecting additional data about the Village sewer system to further evaluate the extent to which Facility-related COCs may be present in the Village sewer system. The measurable goals (i.e., objectives) that will help achieve this purpose are summarized below.

- **Characterize and quantify flow components:** Obtain metered flow measurements from the Village WWTP, obtain municipal water flow measurements (e.g., metered usage) from the Village for water users in individual sewersheds, and estimate groundwater infiltration and stormwater inflow by deploying flow monitors at select locations throughout the sewer system to quantify these components of the total sewer flow.
    - **Evaluate spatial patterns**: Measure and compare flow rates between sewersheds or specific neighborhoods in combination with previous PFAS sampling data to evaluate relative loading within the sewer system.
    - **Evaluate temporal patterns**: Measure and compare municipal water flow, stormwater inflow, and groundwater infiltration based on temporal patterns (e.g., diurnal patterns, storm event response, groundwater elevation by season).
- **Characterize nature of solids within the sewer system**: Conduct a visual survey of the Village sewer manholes for the presence of accumulated solids and collect samples of sewer solids at select manholes for laboratory analysis of PFAS.

The flow measurements and analytical results described above will be used - in combination with previous PFAS sampling data, flow monitoring, and elevation/construction survey data - to refine the sewer CSM and potentially identify areas for additional targeted investigation if needed.

The methods that will be used to collect the measurements described above are discussed in the following sections. It is anticipated that several tasks will be coordinated to be conducted at the same time as depicted on Figure 4.

3.1 Flow Monitoring

3.1.1 Obtain Flow Information from Village

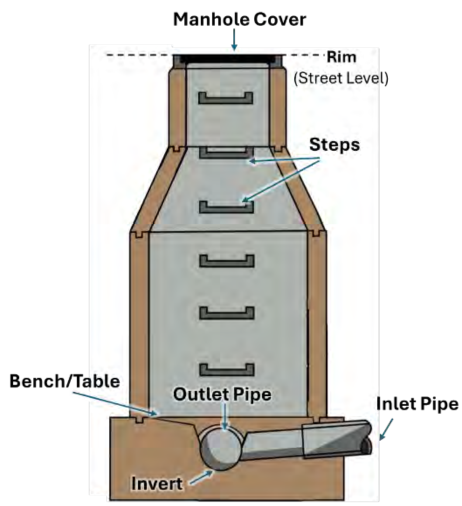
To understand flow within the Village sewer system, it will be necessary to obtain basic system inflow and outflow measurements from the Village, specifically: (1) metered municipal water supply usage data (i.e., water meter data) to estimate average municipal water flow into the sewer system, and (2) WWTP metered discharge to quantify the effluent flow out of the sewer system. This basic system information will be requested from the Village for the previous two years to understand typical flow patterns and for the period coinciding with the duration of this supplemental investigation.

3.1.2 Deploy Flow Monitors in Sewer System Infrastructure

Flow monitoring locations will be assessed and identified concurrently with the surveys described in Section 3.2. Flow monitoring devices will be deployed at the four target flow monitoring locations identified on Figure 5 with the goal of capturing flow rates across as much of the sewer system as possible. Manholes in each of these four areas will be inspected to locate a manhole that is suitable for installation of a flow monitor. After a suitable manhole has been identified, flow monitors will be installed in the selected manholes and flow data from the manhole will be collected and reviewed for 2-4 months while providing periodic updates to NYSDEC. The actual timeframe of data collection will depend on capturing a range of flow conditions (e.g., diurnal patterns, storm event response, high groundwater elevations).

Flow monitoring equipment consists of a meter, data logger, and transmitter (Graphic 2). An open-channel metering device will be installed in the outlet pipe of the manhole (Graphic 3) and ultrasonic technology will be used to measure water depth and velocity. The meter will be calibrated to the diameter of the pipe so flow can be computed. The meter will be installed within the outlet pipe using a spring-loaded mounting ring, which can usually be installed from ground level using a specialized rod to mitigate the risk of confined space entry within the manhole.

Graphic 2: Deployment of example flow monitoring equipment.



Graphic 3: Cross-sectional diagram of a modern manhole (may not be representative of all manholes in the Village system).

The data logging equipment, battery, and transmitter are typically mounted to the manhole steps, manhole frame or other methods and left in the manhole for the duration of the flow metering period. Flow information will be transmitted continuously to a dashboard for live, remote viewing of the flow data.

Due to the location of manholes in and near roadways, traffic control and work zone safety measures will consist of appropriate signage, flagging, cones, and a third-party traffic safety contractor, depending on the location and timing of work at each applicable manhole. Portable lighting may also be required depending on the time of day in which work is performed. Notification of work activities and locations will be provided to the Village of Hoosick Falls Police, Fire, and Emergency personnel prior to data collection commencement to coordinate and confirm safe working conditions and traffic flow. Road closures are not expected to be necessary.

3.1.3 Record Other Potential Flow Components

While the flow monitors are deployed in the sewer system, the potential contributions of groundwater and stormwater will be evaluated by continuous measurement of groundwater elevations at select wells and precipitation data recorded at the weather station located at the Facility.

Transducers will be deployed in seven wells screened in the uppermost unit in representative areas of the Village. The proposed wells for groundwater elevation monitoring in conjunction with sewer system flow monitoring are MC-MW-34S, MC-MW-36S, MC-MW-38S, MC-MW-44, FS-MW-005A, LS-MW-04, LS-MW-37S as shown on Figure 5. Monitoring wells MC-MW-36S, MC-MW-38S, and MC-MW-44 are installed in the upland areas on the east side of the Hoosic River, monitoring wells MC-MW-34S, FS-MW-005A, and LS-MW-37S are installed at lower elevations closer to the Hoosic River, and monitoring well LS-MW-04 is installed in the upland area on the west side of the Hoosic River. Available information from the boring logs, periodic groundwater measurements, and area-wide groundwater contouring indicates these monitoring wells can provide representative groundwater elevation data at the time of sewer system flow measurements to support evaluation of the potential influence of groundwater infiltration on sewer system flow at the four monitoring locations. Transducers will be installed and connected to a telemetry system to allow remote review of groundwater data.

The Facility weather station consists of a MetOne, All In One Sonic Weather Sensor (Model AIO-2) and a precipitation gauge (Model 360). Data are recorded continuously and transmitted every 15 minutes to a local on-Site server via the Comet Cloud Service Modem (CCS Modem Model: 2-9800). The data are then imported into Vista Data Vision software where the parameters are monitored to ensure the sensors are functioning properly and the modem is communicating. Data monitoring, visual inspections, and annual audits are conducted in accordance with the station's Operation and Maintenance Plan (C.T. Male Associates, 2019). Use of precipitation data from the Facility weather station for the sewer investigation assumes that data from the Facility weather station are representative of the Village. As the precipitation gauge is not heated, precipitation measurements in freezing conditions are less reliable than those in non-freezing conditions.

3.1.4 Data Evaluation

The data collected through the activities described in Sections 3.1.1 through 3.1.3 will be used to estimate (1) baseflow in the sewer system, (2) groundwater infiltration and stormwater inflow to the sewer system, and (3) relative loading within the sewer system considering previous PFAS sampling data from sewersheds. This information will be reviewed in consultation with the NYSDEC to determine whether additional flow monitoring is necessary in the original or alternate locations. It is anticipated that similar data evaluation will be conducted in an iterative manner with the NYSDEC following each phase of field investigation.

3.2 Surveys

Approximately 50 manholes throughout the Village sewer system are proposed to be inspected, surveyed, and photographed to document invert elevations, general condition of construction material, and the presence of sewer solids for potential sampling (described in Section 3.3). These 50 potential manhole locations are shown on Figure 6.

The manhole locations to be surveyed will be located throughout the sewersheds and represent high, mid and low elevations within the sewersheds (i.e., higher invert elevations are expected at the margins of a gravity-drained sewer system). At each manhole, the rim elevation will be surveyed, the depths of inverts will be measured, the type and condition of the construction material will be recorded through field notes and photographs, the presence of solids, and location of any solids (e.g. within channel, atop the bench) will be recorded through field notes and photographs.

The survey data described in this section will be used to create an invert elevation map and a map of sewer construction materials. This information will be compared to groundwater elevation data (including the data collected as described in Section 3.1.3 and historical synoptic groundwater data) to identify areas of potential groundwater infiltration (i.e., inverts in potential contact with groundwater) to the sewer system.

3.3 Sampling of Sewer Solids

Prior to sampling sewer solids, the results of the survey (described in Section 3.2) will be reviewed in consultation with the NYSDEC to select sample locations. Selection criteria may include geographic coverage of the sewer system, solid material type, amount of solids, location of solids within manhole, and age/condition of the sewer. Up to 10 samples of sewer solids will be collected according to the methods specified in the approved Field Sampling Plan (FSP; C.T. Male Associates and BEC, 2020a). Samples of sewer solids will be submitted for laboratory analysis of PFAS and total organic carbon (TOC). EPA Method 1633A will be used for the analysis of PFAS. TOC analysis will be conducted in accordance with the most recent Quality Assurance Project Plan (QAPP; C.T. Male Associates and BEC, 2020b).

4.0 Data Validation, Reporting, and Schedule

4.1 Data Validation and Reporting

Analytical data validation will be conducted by an independent data validator in accordance with previously approved methods (C.T. Male, 2016). Analytical data gathered during the work described in this Supplemental RI Work Plan will be shared with NYSDEC as part of the periodic data submittals and ongoing scope discussions. A detailed evaluation of the data, conclusions, and recommendations will ultimately be included in the OU-03 RI Report.

4.2 Schedule and Ongoing Evaluations

Upon NYSDEC acceptance of this Supplemental RI Work Plan, the work will be scheduled with the goal of capturing seasonally high groundwater conditions. The data collected will be reviewed on an ongoing basis, with updates to NYSDEC provided as a part of periodic project coordination meetings. Evaluation of data gathered during activities described above will be reviewed with NYSDEC to discuss conclusions and determine the need for any future evaluations/data collection in support of the OU-03 RI.

5.0 References

C.T. Male, 2016. Final Remedial Investigation/Feasibility Study Work Plan: Saint-Gobain McCaffrey Street Site. NYSDEC Site No. 442046. 14 McCaffrey Street, Hoosick Falls, Rensselaer County. C.T. Male Associates. Revised August 30, 2016.

C.T. Male Associates, 2019. Final Regional Air Deposition Study Work Plan for the Village of Hoosick Falls. C.T. Male Associates, August 23, 2019.

C.T. Male Associates and BEC, 2020a. Field Sampling Plan, 14 McCaffrey Street (Site No. 442046) and 1 Liberty Street (Site No. 442048), Village of Hoosick Falls. March 2020.

C.T. Male Associates and BEC, 2020b. Quality Assurance Project Plan, 14 McCaffrey Street (Site No. 442046) and 1 Liberty Street (Site No. 442048), Village of Hoosick Falls. March 6, 2020.

C.T. Male Associates and BEC, 2021. Remedial Investigation/Feasibility Study Work Plan – OU-01 Addendum. December 2021. Revised June 2022 and August 2022.

Morrell Vrooman Engineers, 1960. Village of Hoosick Falls. Construction of Intercepting Sewers and Force Mains. Contract 2. Schedule of Drawings. Revised 1968.

MRB, 2016. Engineering Report for the Village of Hoosick Falls Sewer System Expansion. August 2016.

NYSDEC, 2021. Record of Decision Saint-Gobain McCaffrey Street, Operable Unit Number 02: Municipal Water Supply, State Superfund Project, Hoosick Falls, Rensselaer County, Site No. 442046, December 2021.

NYSDEC, 2025a. Letter from Barbara Firebaugh (NYSDEC) to Christopher Angier (Saint-Gobain Performance Plastics) and Sasa Jazic (Honeywell) Re: Saint-Gobain Performance Plastics ~ McCaffrey Street (Site No. 442046, EPA ID#NYD004986741) - Former Well Field Groundwater Monitoring Plan. September 2, 2025.

NYSDEC, 2025b. Letter from Barbara Firebaugh (NYSDEC) to Christopher Angier (Saint-Gobain Performance Plastics) and Sasa Jazic (Honeywell) Re: Saint-Gobain Performance Plastics ~ McCaffrey Street (Site No. 442046, EPA ID#NYD004986741) – Village of Hoosick Falls Wastewater. November 18, 2025.

Figures

The drawing has been prepared based on information provided through several sources, including the documented sources below and anecdotal information provided by the Village of Hoosick Falls. The information presented is not intended to be a record of as-built conditions nor is it based on accurate as-built information. A current comprehensive sewer as-built map is not available from the Village. The portrayed sewer layout, information, and flow directions are based on a 1960 Village sewer map (Reference 1), a 2006 CHA sewer diagram (Reference 2), and discussions on December 20, 2022 between the Village (Niel Stowell, Highway Superintendent and Ken Holbrook, WWTP Superintendent) and C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male) staff. BEC Engineering & Geology, P.C. (BEC) and C.T. Male make no claims as to the accuracy of the information shown. The information from the above sources has been overlaid on aerial photography obtained from the New York State GIS Clearinghouse. The information is for illustrative purposes only for showing approximate manhole locations, sizes of sewershed tributary areas, and direction of flow of sanitary sewage.

Reference Documents

1. Morrell Vrooman Engineers, 1960. Sewer System General Plan, Village of Hoosick Falls, Resselaer County, New York, July 1960, Signed by Morrell Vrooman, Jr., Scale: 1"=300'.
2. Clough Harbour & Associates LLP (CHA), 2006. Storm and Sanitary Sewer Rehabilitation Project - Manhole Recovery, Village of Hoosick Falls, New York. September 2006, Scale: 1"=40'.

- Sewer System Outlet
- WWTP Outfall
- Lift Station
- Sewer Line With Flow Direction
- DEC Class 2, Class P or Class N Site
- Wastewater Treatment Plant
- Hoosick Falls Village Limits

Aerial Imagery: USDA NAIP 2024

N

0 500 1,000 1,500 2,000

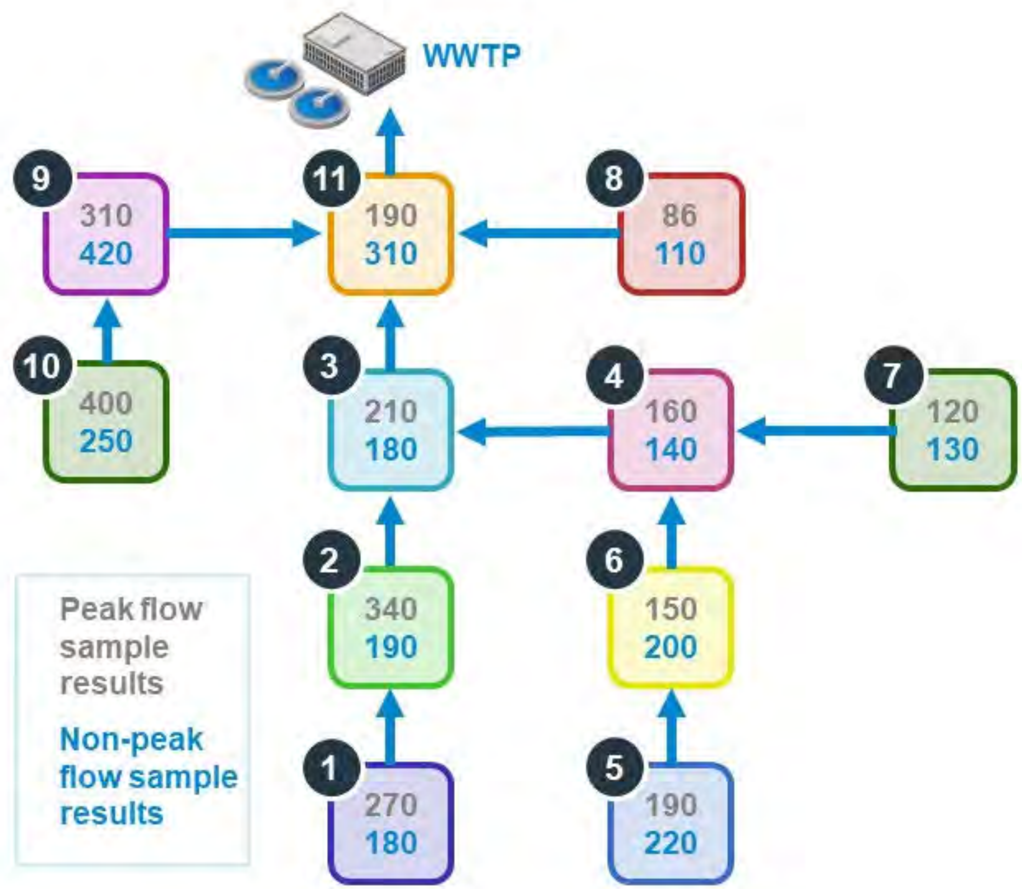
Feet

FIGURE 1

MUNICIPAL SEWER SYSTEM

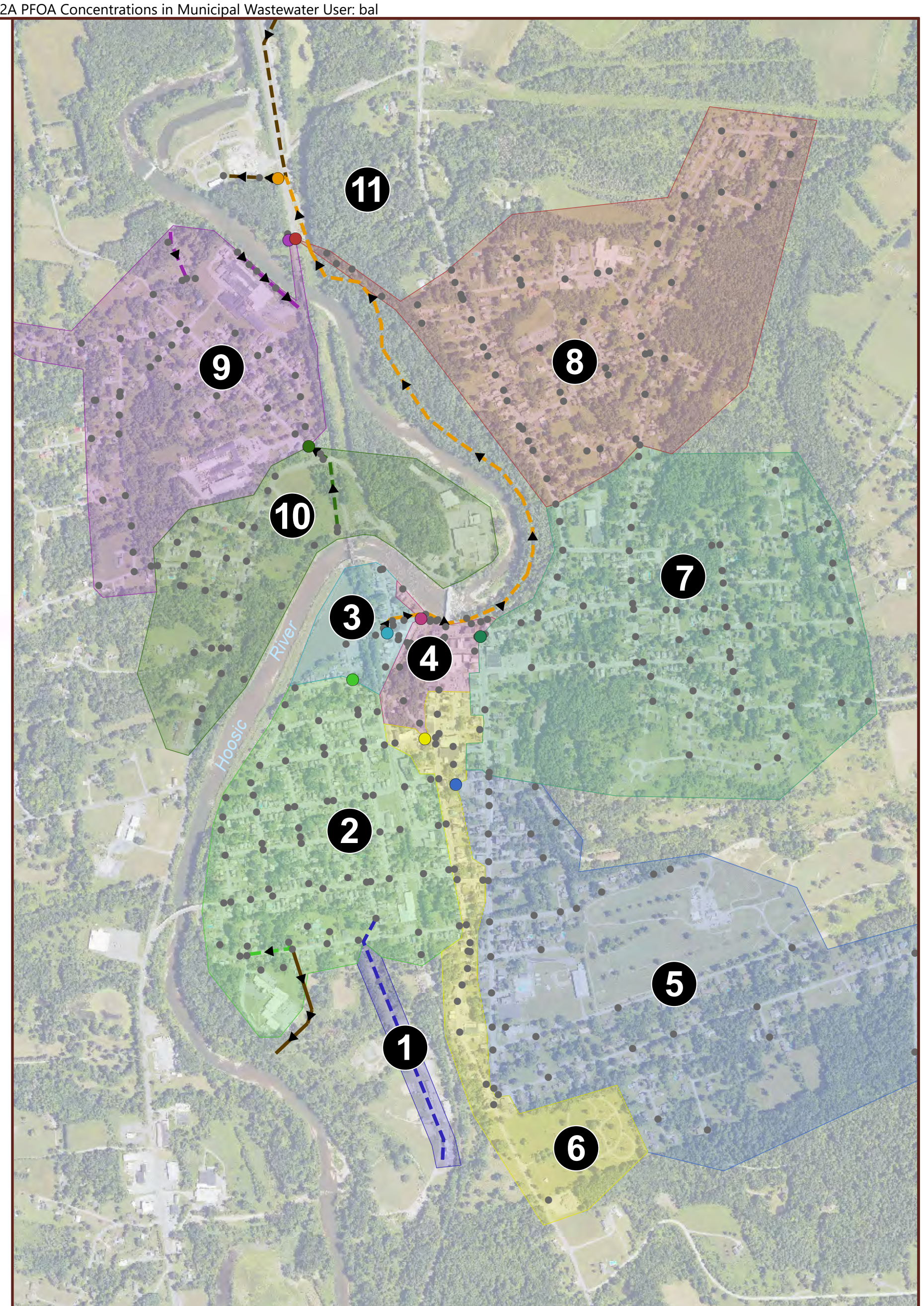
McCaffrey Street Site OU-03

Hoosick Falls, NY



All concentrations in ng/L

1 Sewershed Reference Number



Aerial Imagery: USDA NAIP 2024

N

0 1,500 3,000

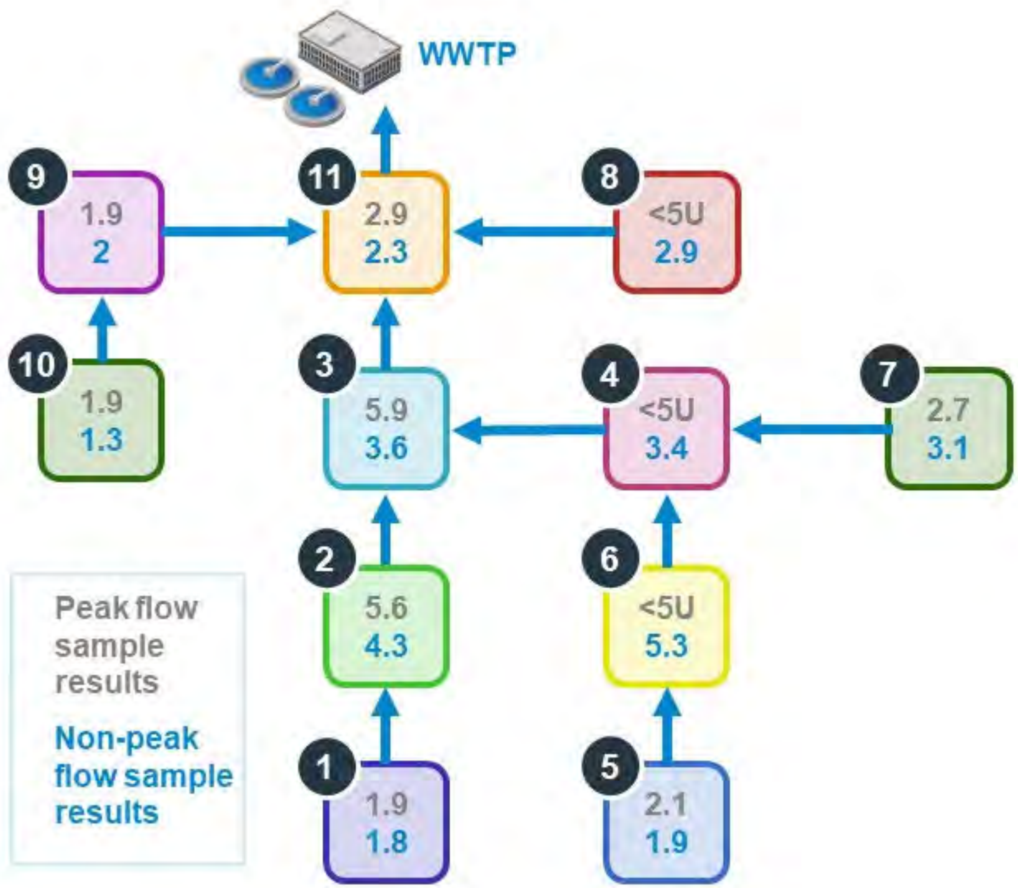
Feet

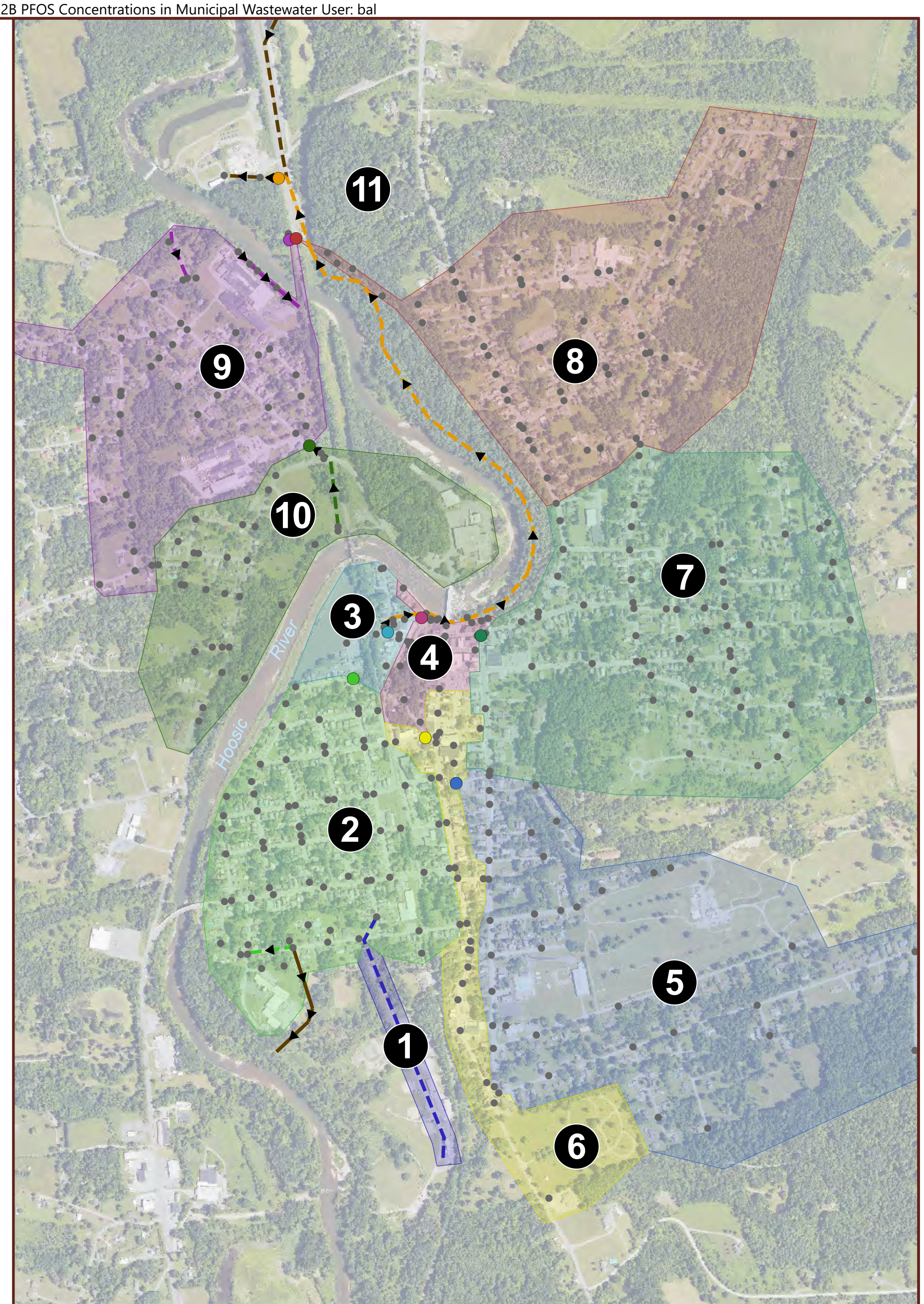
FIGURE 2A

PFOA CONCENTRATIONS IN MUNICIPAL WASTEWATER

McCaffrey Street Site OU-03

Hoosick Falls, NY





All concentrations in ng/L

1 Sewershed Reference Number

Aerial Imagery: USDA NAIP 2024

N

0 1,500 3,000

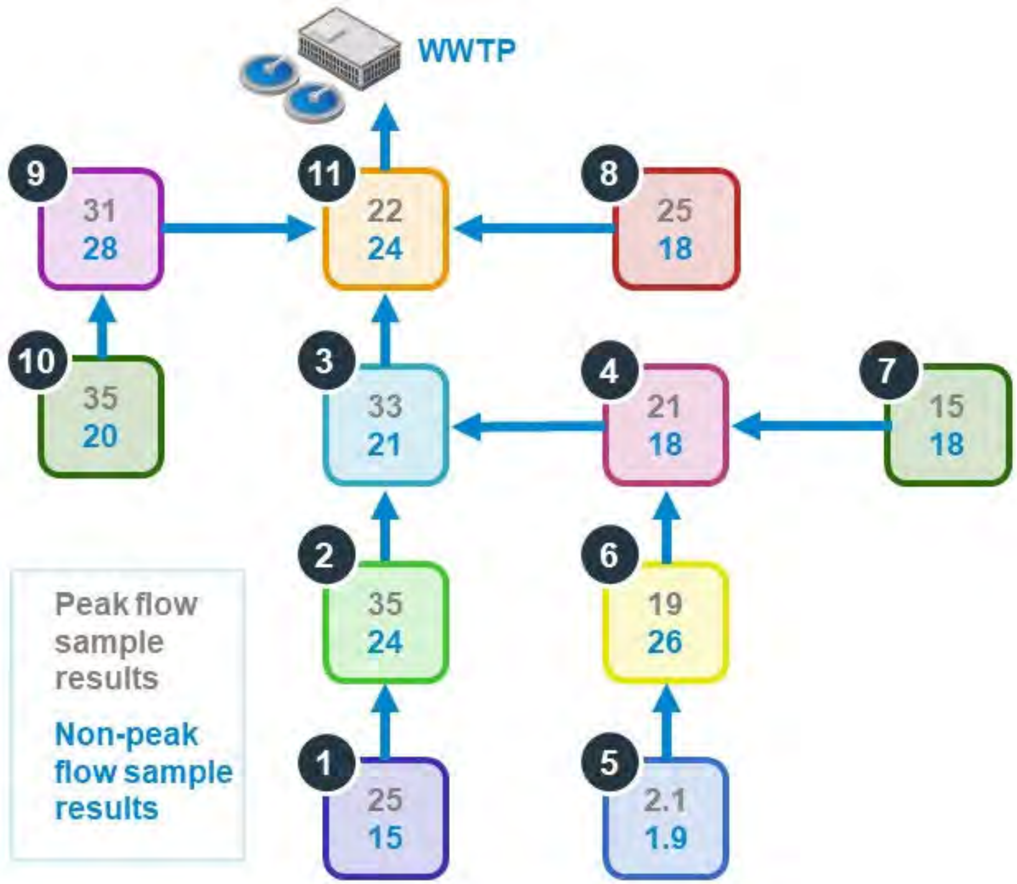
Feet

FIGURE 2B

PFOS CONCENTRATIONS IN MUNICIPAL WASTEWATER

McCaffrey Street Site OU-03

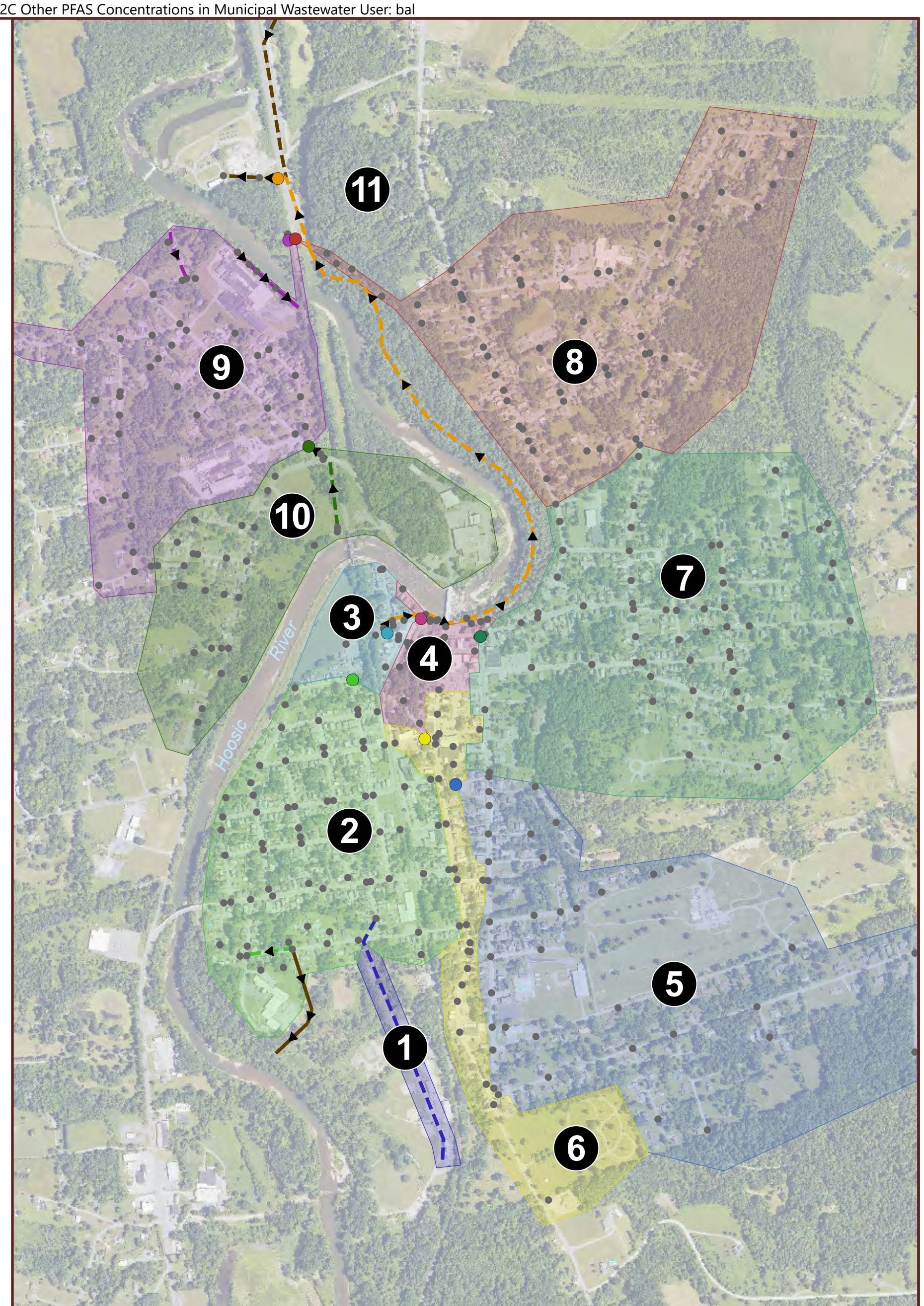
Hoosick Falls, NY



Total PFAS concentrations, excluding PFOA and PFOS

All concentrations in ng/L

1 Sewershed Reference Number



Aerial Imagery: USDA NAIP 2024

N

0 1,500 3,000

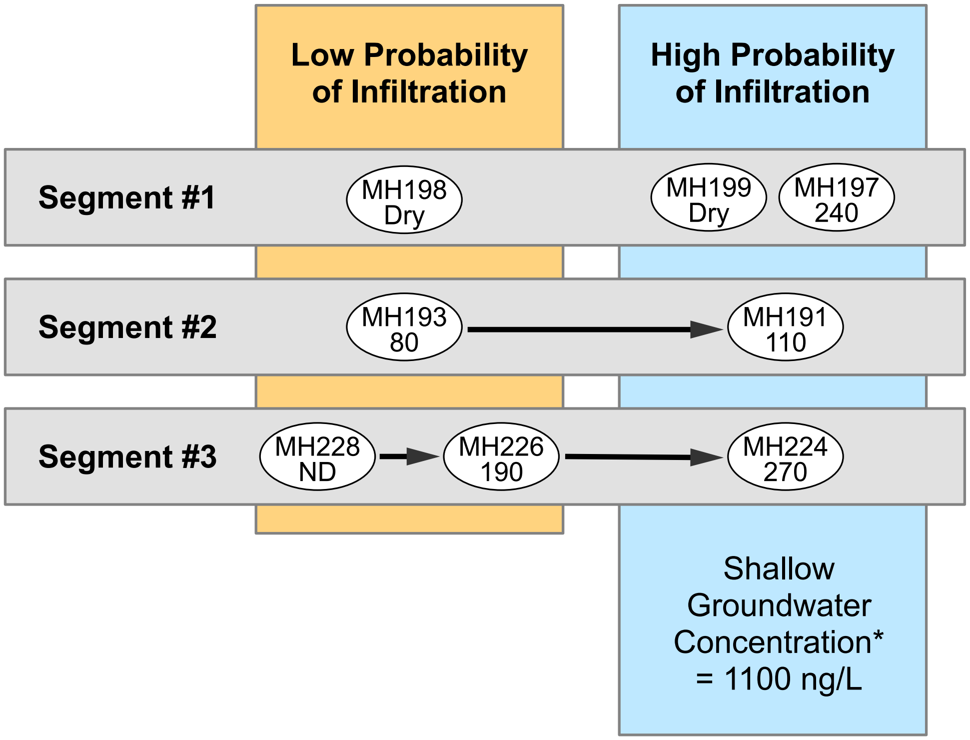
Feet

FIGURE 2C

OTHER PFAS CONCENTRATIONS IN MUNICIPAL WASTEWATER

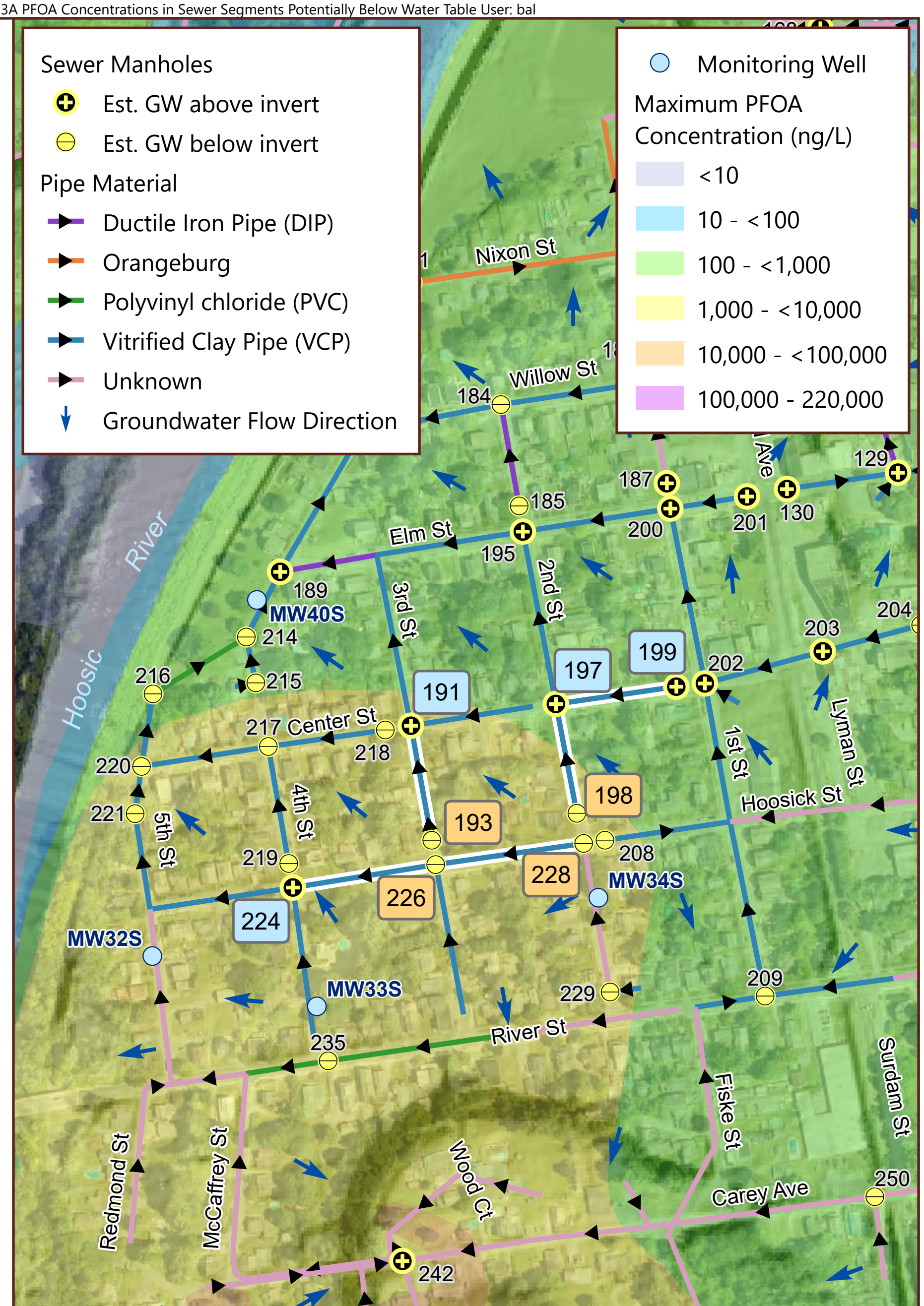
McCaffrey Street Site OU-03

Hoosick Falls, NY



MH193 = Manhole Number
80 = Sewer Concentration in ng/L

*Sample collected from MW34S on 05/14/2021



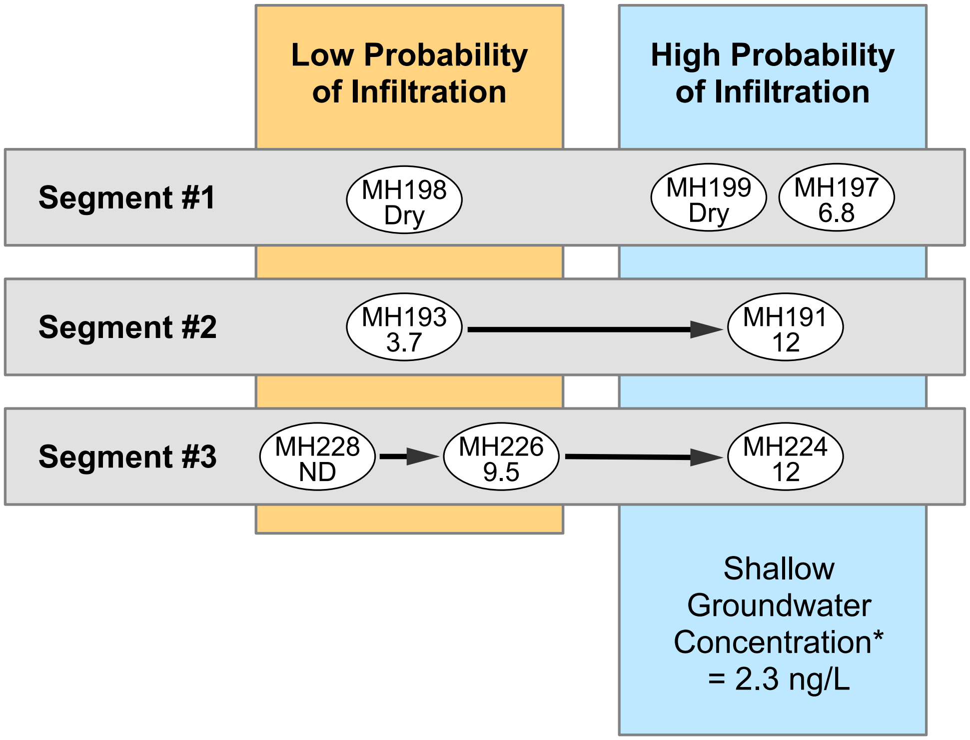
Aerial Imagery: USDA NAIP 2024

0 200 400 600
Feet

FIGURE 3A

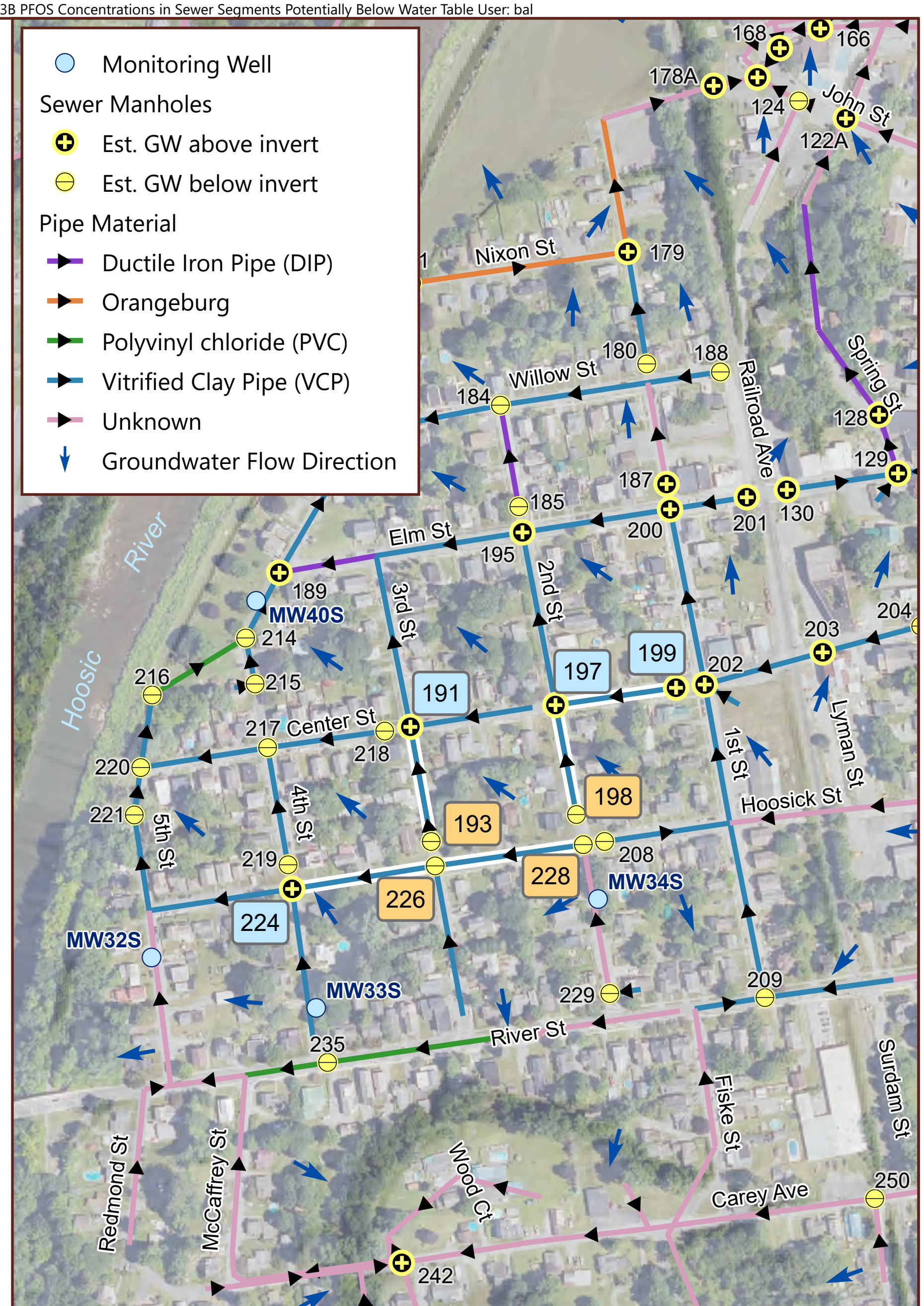
PFOA CONCENTRATIONS IN SEWER SEGMENTS POTENTIALLY BELOW WATER TABLE

McCaffrey Street Site OU-03
Hoosick Falls, NY



MH193 = Manhole Number
3.7 = Sewer Concentration in ng/L

*Sample collected from MW34S on 05/14/2021



Aerial Imagery: USDA NAIP 2024

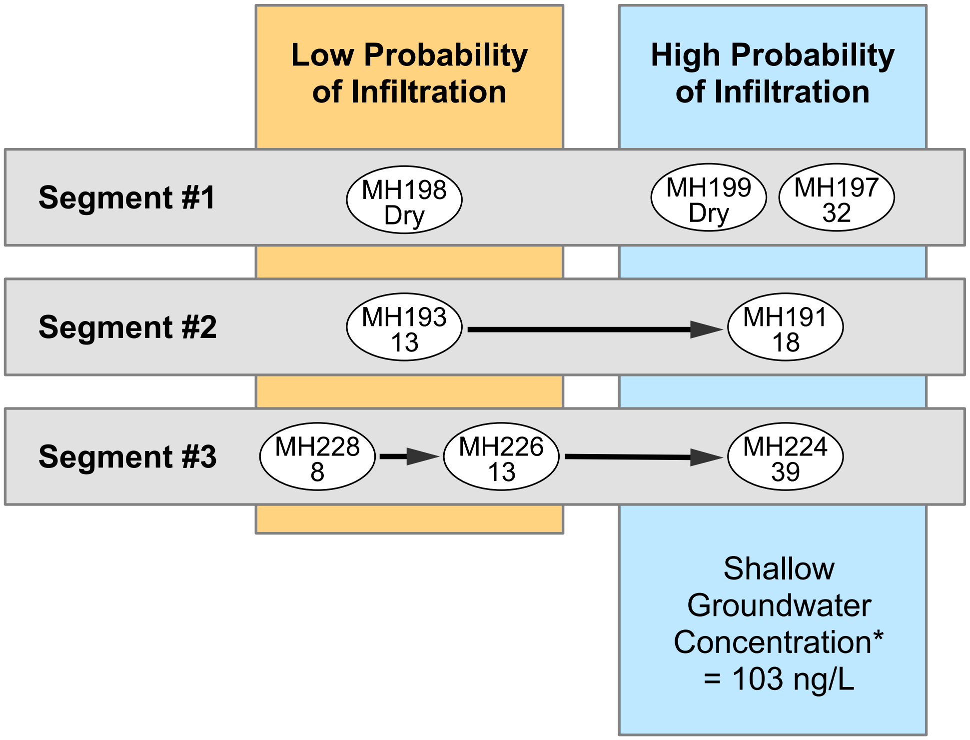
0 200 400 600
Feet

FIGURE 3B

PFOS CONCENTRATIONS IN SEWER SEGMENTS POTENTIALLY BELOW WATER TABLE

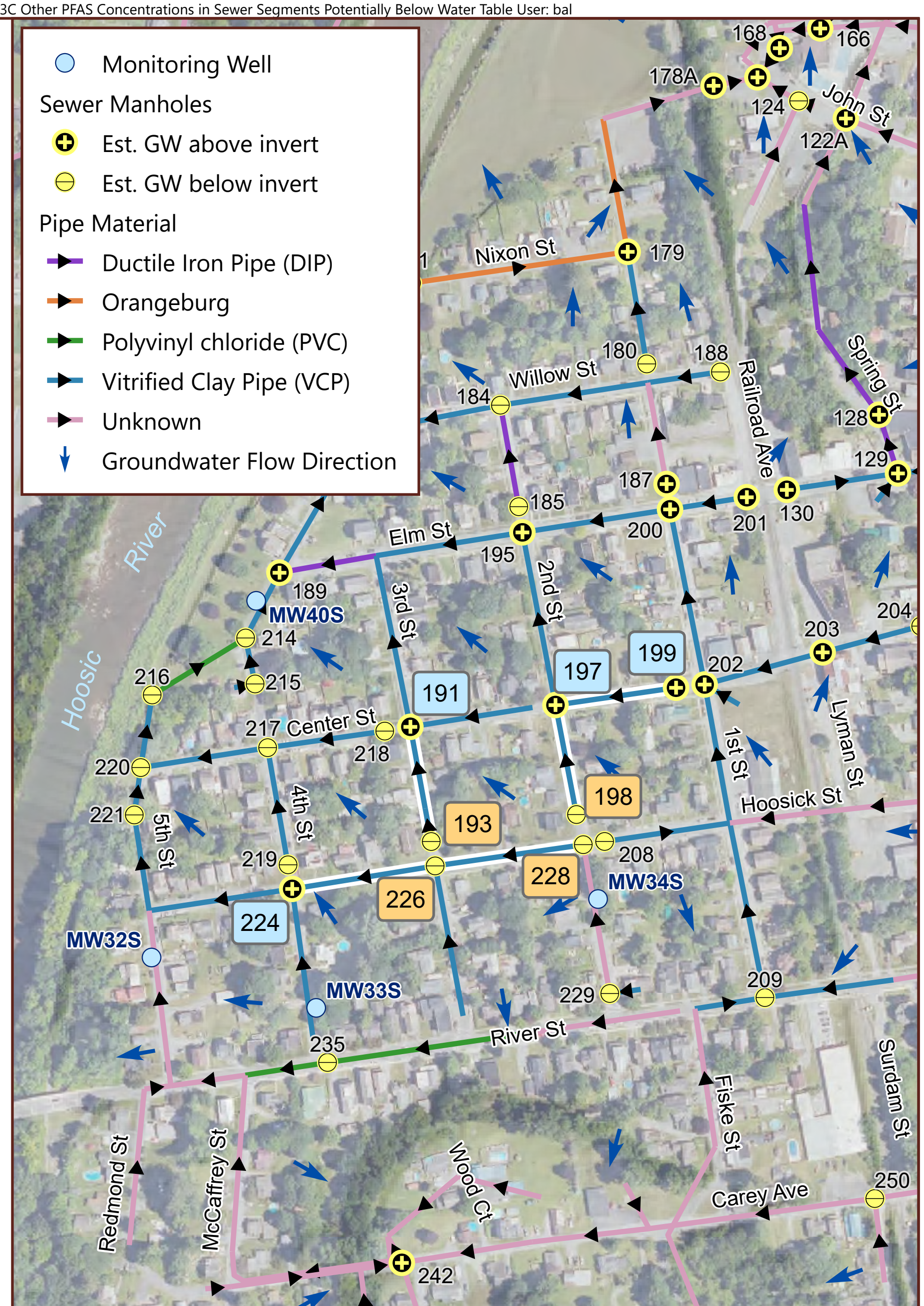
McCaffrey Street Site OU-03
Hoosick Falls, NY

BEC Footer: ArcGISPro 3.6.1, 2026-01-26 20:31 File: I:\Client\Saint_Gobain\Hoosick_Falls_NY\Maps\Reports\2026\Sewers Work Plan\Sewers Work Plan.aprx Layout: Figure 3C Other PFAS Concentrations in Sewer Segments Potentially Below Water Table User: bal



MH193 = Manhole Number
13 = Sewer Concentration in ng/L

*Sample collected from MW34S on 05/14/2021
Total PFAS concentration excluding PFOA and PFOS



Aerial Imagery: USDA NAIP 2024

0 200 400 600
Feet

FIGURE 3C

OTHER PFAS CONCENTRATIONS IN SEWER SEGMENTS POTENTIALLY BELOW WATER TABLE

McCaffrey Street Site OU-03
Hoosick Falls, NY

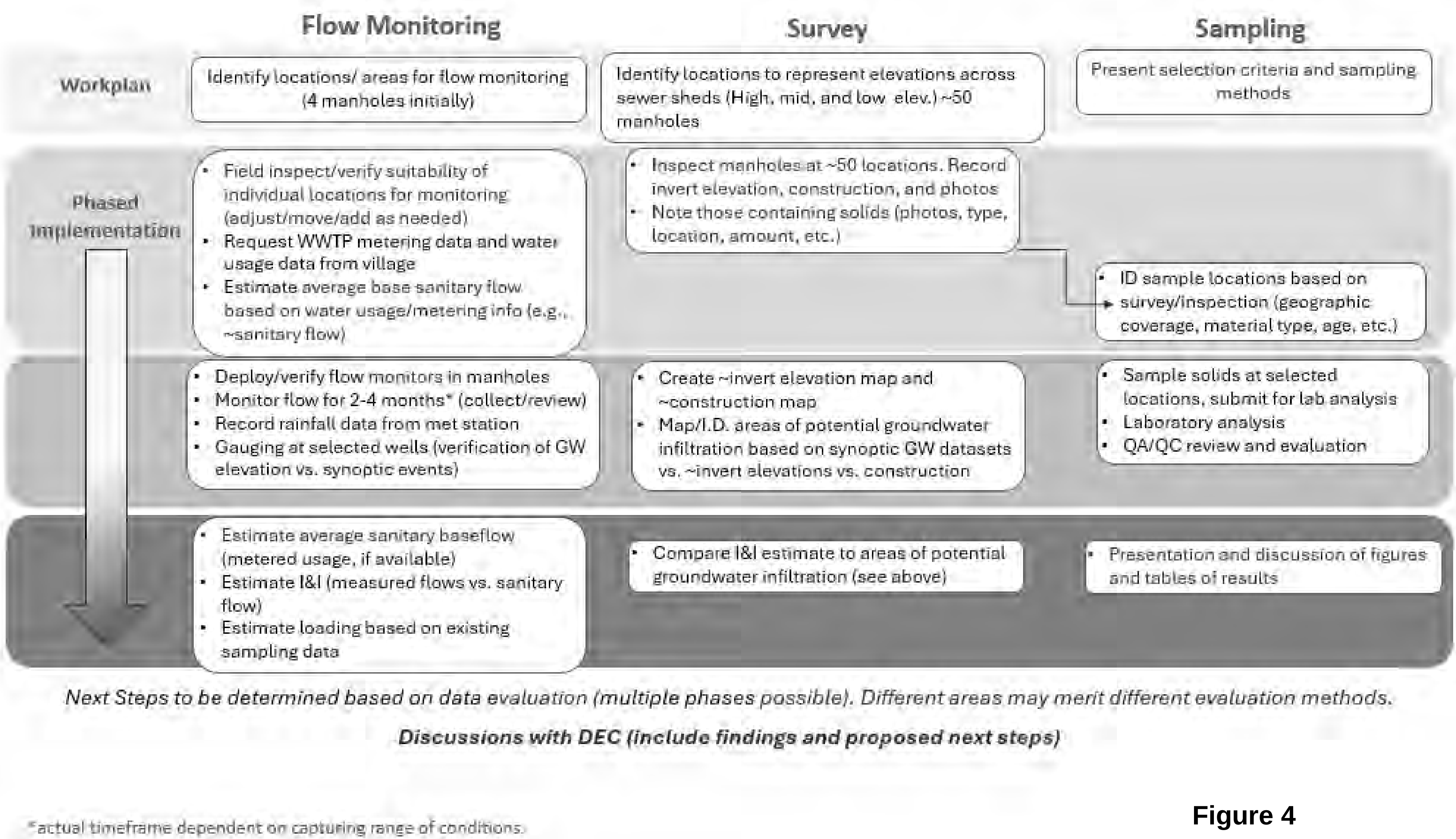
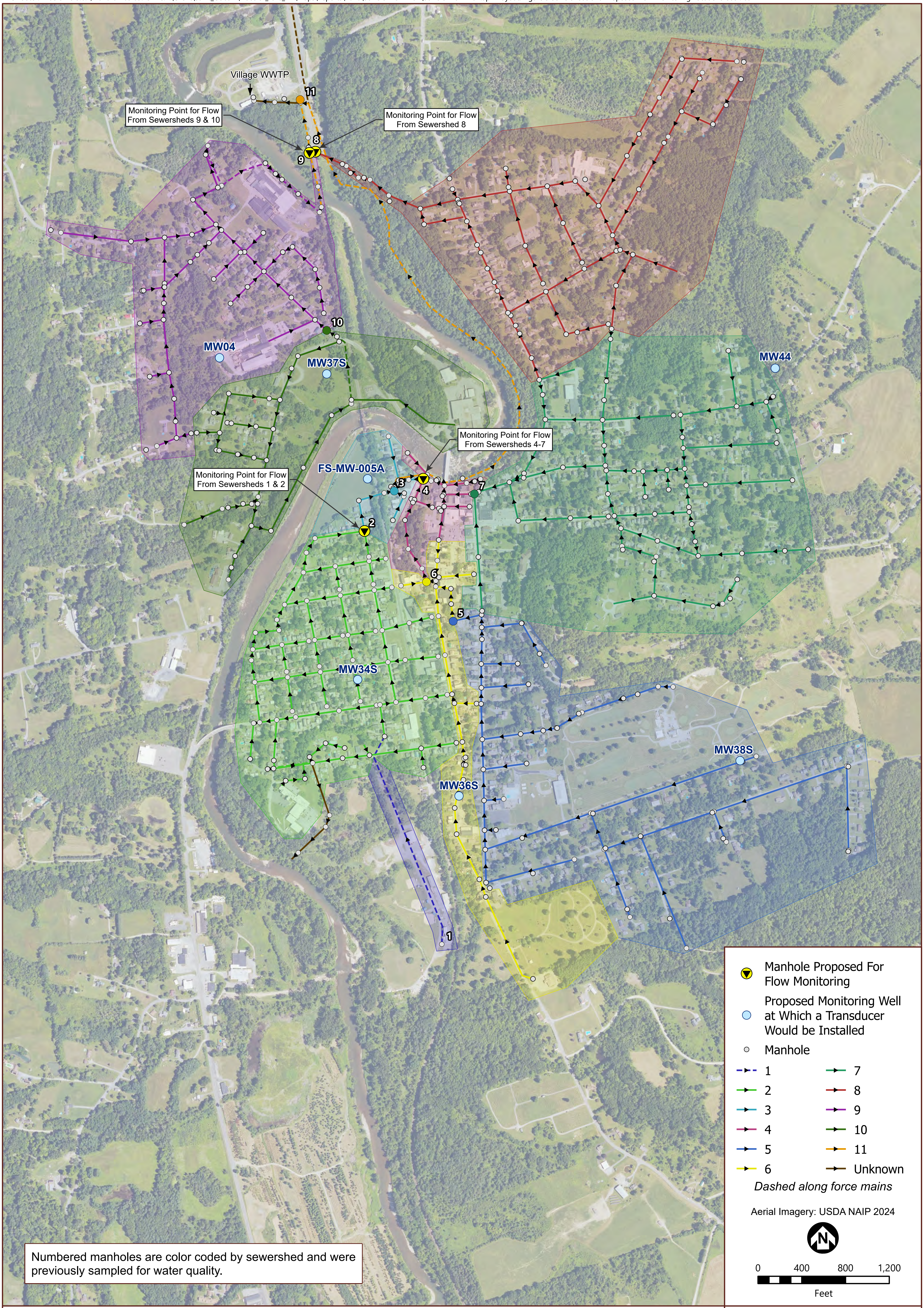


Figure 4
Scope of Work
2026 Sewer Investigation



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Reference Documents

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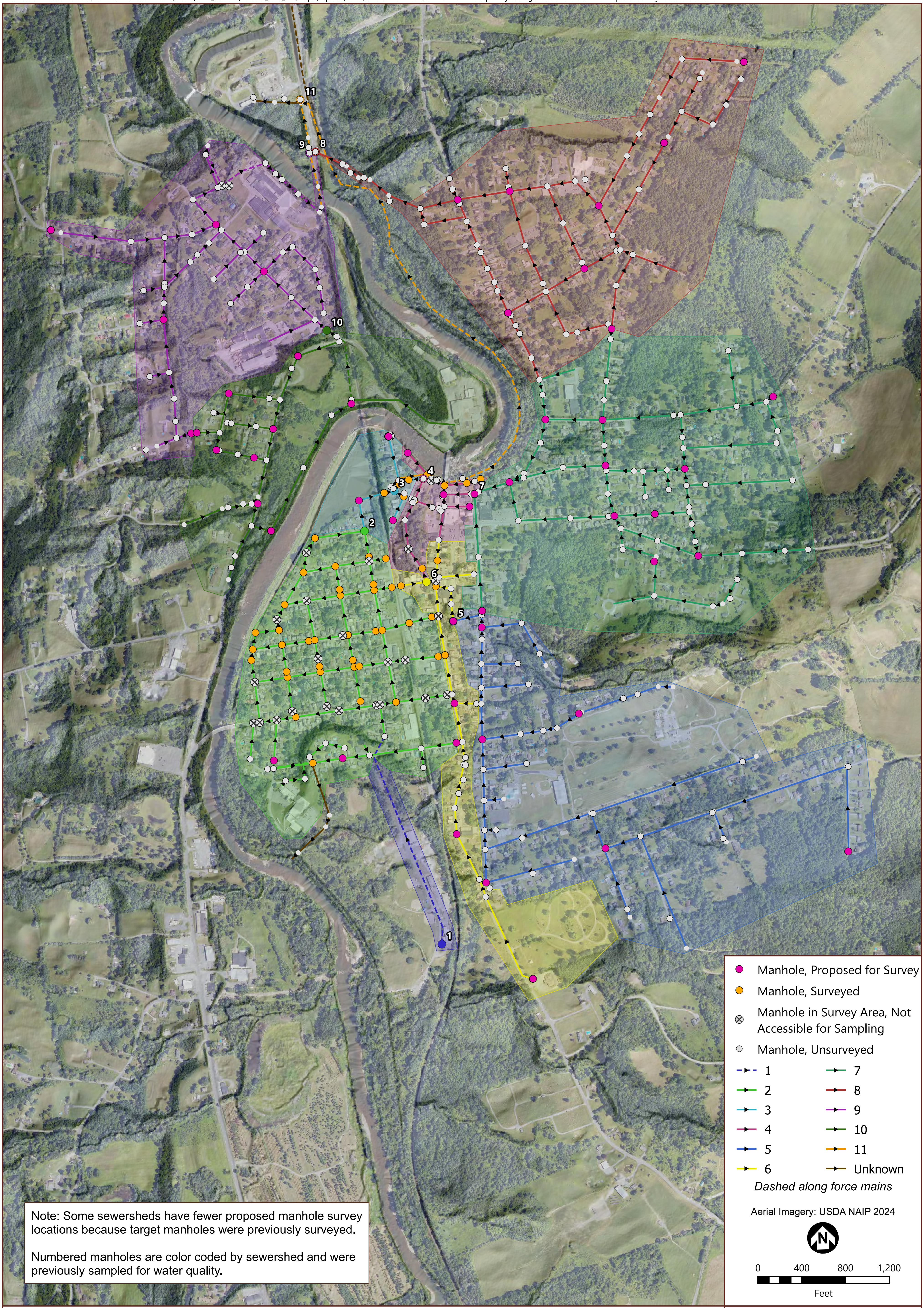
2. Clough Harbour & Associates LLP (CHA), 2006. Storm and Sanitary Sewer Rehabilitation Project - Manhole Recovery, Village of Hoosick Falls, New York. September 2006, Scale: 1"=40'.

FIGURE 5

SEWERSHEDS AND PROPOSED FLOW MONITORING LOCATIONS

McCaffrey Street Site OU-03
Hoosick Falls, NY



Note: Some sewersheds have fewer proposed manhole survey locations because target manholes were previously surveyed.

Numbered manholes are color coded by sewershed and were previously sampled for water quality.

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2. Clough Harbour & Associates LLP (CHA), 2006. Storm and Sanitary Sewer Rehabilitation Project - Manhole Recovery, Village of Hoosick Falls, New York. September 2006, Scale: 1"=40'.

FIGURE 6

SEWERSHEDS AND PROPOSED SURVEY LOCATIONS

McCaffrey Street Site OU-03

Hoosick Falls, NY

Appendices

Appendix A

Previous Municipal Sewer System Evaluations

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.

50 Century Hill Drive, Latham, NY 12110
518.786.7400 FAX 518.786.7299 www.ctmale.com

Field Activity Report

Subject: Municipal Sewer System Evaluation

Project: Saint-Gobain Performance Plastics, 14 McCaffrey Street, Village of Hoosick Falls, Rensselaer County, DEC Site No.: 442046

INTRODUCTION

This document and its attachments describe the field activities conducted to evaluate the potential transport of PFAS-containing wastewater within the municipal sewer system in relation to the facility located at 14 McCaffrey Street in the Village of Hoosick Falls, New York (the Site).

Two influent wastewater samples were collected by ERM Inc. from the Village Wastewater Treatment Plant (WWTP) on June 23, 2021, and submitted for laboratory analysis. The concentrations of each individual per- and polyfluoroalkyl substance (PFAS) was less than 10 nanograms per liter (ng/L) or parts per trillion (ppt) except for PFOA, which was detected at 210 ng/L and 190 ng/L. The municipal sewer system was evaluated as part of the OU-01 Remedial Investigation Work Plan Addendum (C.T. Male, 2022) to determine whether the sewer system functions as a transport pathway for PFAS in OU-01 under two potential scenarios. These scenarios include the transport of PFAS-containing wastewater from Village homes and/or businesses to the WWTP and/or the transport of PFAS-impacted groundwater by infiltration.

To evaluate the potential transport of PFAS-containing wastewater from Village homes and/or businesses to the WWTP, wastewater samples were collected from 11 predetermined locations during peak flow and non-peak flow events to characterize the various sewer service areas within the Village.

To evaluate the potential transport of PFAS-impacted groundwater through the sewer system via infiltration, the information from the existing groundwater monitoring well system was utilized to identify areas where contaminated groundwater infiltration into the municipal sewer system would have low probability or high probability to occur based on depth to water and PFAS concentrations. Sewer manhole sampling included the collection of a wastewater sample from three (3) segments which included four (4) manholes in the low probability zone and four (4) manholes within the high probability zone.

1.0 SCOPE OF WORK AND METHODS

In accordance with the approved OU-01 Remedial Investigation Work Plan Addendum (C.T. Male, 2022) and subsequent input from the New York State Department of Environmental Conservation (NYSDEC), wastewater samples were collected from the Village municipal sewer system during three (3) discrete events in 2023. The events included sampling during typical peak flow hours and non-peak flow hours for a municipal sewer system, and during a period of elevated shallow groundwater levels.

Due to the location of the manholes, which are generally located within public roadways, traffic control measures (flagging crews, cones, barricades, high visibility clothing, lighting, etc.) were implemented to reduce traffic hazards.

1.1 Sampling Methodology

1.1.1 Sampling Locations

The municipal sewer system was separated into 11 conceptual service areas or "sewersheds" that were strategically selected for sampling based on their position in the overall Village municipal sewer system to evaluate the potential transport of PFAS-containing wastewater from Village homes and/or businesses to the WWTP. Attachment A shows the sewersheds by different color shading and the location of the downstream manhole with a number in each sewershed. A number was assigned to each sewershed for the purposes of this evaluation and does not reflect Village designations. Sewershed 1 is the only sewershed with a single input, the Water Treatment Plant (WTP). It was selected to evaluate WTP operations and if those operations had an effect on Sewershed 2.

Eight (8) locations were strategically selected within the sewershed located to the north of Carey Avenue and west of Church Street, referred to as "Sewershed 2", for groundwater infiltration sampling. The manholes within Sewershed 2 were selected based on the invert elevation of their piping, existing groundwater data, and their position in the overall Village municipal sewer system. The selected manholes included manholes: 191, 193, 197, 198, 199, 224, 226 and 228, which are depicted on Attachment B. Manholes 191, 197, 199, and 224 were selected to evaluate PFAS-impacted groundwater infiltration in a high probability zone while manholes 193, 198, 226 and 228 were selected to evaluate a low probability zone.

1.1.2 Sampling Events

Three sampling events were completed during the municipal sewer system evaluation. Two events were utilized to evaluate the potential transport of PFAS-containing wastewater from Village homes and local businesses and one event was used to evaluate the potential infiltration and transport of PFAS-impacted groundwater to the WWTP. To collect the samples in quick succession during each event, three (3) teams of sampling personnel conducted simultaneous sampling within the sampling timeframe.

To evaluate the potential transport of PFAS-containing wastewater from Village homes and/or businesses to the WWTP, wastewater samples were collected during typical municipal sewer system peak flow and non-peak flow hours. The wastewater samples collected during the peak flow hours were collected between 12 PM (Noon) and 2PM on April 25, 2023. The wastewater samples collected during the non-peak flow hours were collected between approximately 2AM and 4AM on November 21, 2023.

The third sampling event was conducted to evaluate the potential transport of PFAS-impacted groundwater into the municipal sewer system. The wastewater samples were collected between 11AM and 1PM on September 20, 2023, during a period of high groundwater levels.

1.1.3 Wastewater Sampling Methods

The wastewater samples were collected using a peristaltic pump with low-flow sampling techniques consistent with the approved Work Plan Addendum. New peristaltic pump tubing was attached with new zip ties to the exterior of a decontaminated PVC pipe to facilitate the collection of wastewater samples from the manhole with minimal disturbances to sediment potentially present within the manholes. The PVC pipe was decontaminated prior to sample collection at each sampling location. The wastewater samples and requisite quality control samples were analyzed for the NYSDEC PFAS list of 21 compounds by EPA Method 537.1 modified.

2.0 POTENTIAL TRANSPORT OF PFAS-CONTAINING WASTEWATER TO THE WWTP

2.1 Peak Flow Sampling

Wastewater samples were collected on April 25, 2023, from the 11 sewershed locations between approximately 12PM and 2PM to evaluate the transport of PFAS-containing wastewater from Village homes and/or businesses during anticipated peak flow conditions. Wastewater was present at each of the 11 locations during the sampling event and quality control samples were collected from the Sewershed 3 manhole (MH03; field duplicate) and Sewershed 11 manhole (MH11; MS/MSD). The estimated flow rate was noted to be moderate to fast at each location with the exception of Sewershed 6 where the flow rate was noted as slow. The estimated flow rate at Sewersheds 1 and 10 could not be recorded as there was standing water within the structure. Wastewater samples were generally collected from the outlet pipe in each manhole with the exception of Sewersheds 1 and 9. The sample collected at Sewershed 1 was collected directly from the inlet pipe before mixing with the standing water in the vault during backwash of the water treatment plant micro-filters. At Sewershed 9 the wastewater sample was collected from the southern inlet pipe before confluence with flow coming from Sewershed 8.

Limitations associated with the sampling were not encountered during this event. PFOA in the wastewater samples were detected at concentrations ranging from 86 ng/L to 400 ng/L. The analytical results from the April 2023 event are provided in the accompanying RI Report.

2.2 Non-Peak Flow Event

Wastewater samples were collected on November 21, 2023, from the 11 sewershed locations to evaluate the transport of PFAS-containing wastewater from Village homes and/or businesses during typical non-peak flow hours. Wastewater was present at each of the eleven 11 locations during the sampling event and quality control samples were collected at the Sewershed 3 manhole (MH03; field duplicate) and Sewershed 4 manhole (MH04; MS/MSD). The estimated flow rate was noted to be moderate to fast at each location with the exception of manholes sampled for Sewersheds 5, 8, and 9 where the flow rate was moderate to low. Consistent with the peak flow sampling, standing water was present at the structures sampled for Sewersheds 1 and 10. Wastewater samples were generally collected from the outlet pipe in each manhole with the exception of manholes sampled for Sewersheds 1 and 9. The sample collected at Sewershed 1 was collected near the sumps within the vault. At Sewershed 9, the wastewater sample was collected from the southern inlet pipe before confluence with flow coming from Sewershed 8.

Limitations associated with the sampling were not encountered during this event. PFOA in the wastewater samples were detected at concentrations ranging from 110 ng/L to 420 ng/L. The analytical results from the November 2023 event are provided in the accompanying RI Report.

3.0 TRANSPORT OF PFAS-IMPACTED GROUNDWATER THROUGH THE MUNICIPAL SEWER SYSTEM

Wastewater samples were collected on September 20, 2023, from six (6) manholes located within the sewershed located in Sewershed 2. Eight (8) manholes were selected for sampling to include four (4) locations with a high probability of infiltration and four (4) locations with a low probability of infiltration. The high probability locations were selected at points located downstream of potential infiltration segments while low probability locations were selected at points where the sewer invert elevation is located at a higher elevation than groundwater. The low probability locations were selected at locations upstream of the higher probability sections. Wastewater was present at six (6) of the eight (8) locations during the sampling event and quality control samples were collected at MH228 (field duplicate) and MH191 (MS/MSD). The flow rate was noted to be moderate at MH191 and MH226 and slow at the remaining locations sampled. Wastewater samples were generally collected from the outlet pipe in each manhole.

Two (2) manholes were identified as dry at the time of the sampling event including MH198 and MH199. No other limitations associated with the sampling were encountered during this event. The wastewater sample results for PFOA from non-detect to 270 ng/L. The analytical results from the September 2023 event are provided in the accompanying RI Report.

4.0 CONCLUSIONS

Wastewater samples were collected in April 2023 and November 2023 to evaluate the transport of PFAS-containing wastewater from the Village residents and/or businesses to the WWTP. The ranges of PFOA concentrations within the municipal sewer system were 86 ng/L to 400 ng/L during typical peak flow hours and 110 ng/L to 420 ng/L during typical non-peak flow hours. The time of day appeared to have minimal impact on the concentration of PFAS at the influent to the WWTP.

Wastewater samples were collected in September 2023 to evaluate the potential transport of PFAS-impacted groundwater through the sewer system via infiltration. PFOA concentrations in the wastewater samples were significantly lower than the groundwater concentrations measured in nearby wells, suggesting groundwater infiltration is limited in the areas investigated as further discussed in the accompanying RI Report.

Attachments

Attachment A – Sewersheds and Sampling Locations

Attachment B – Sewer Infiltration Sampling Locations

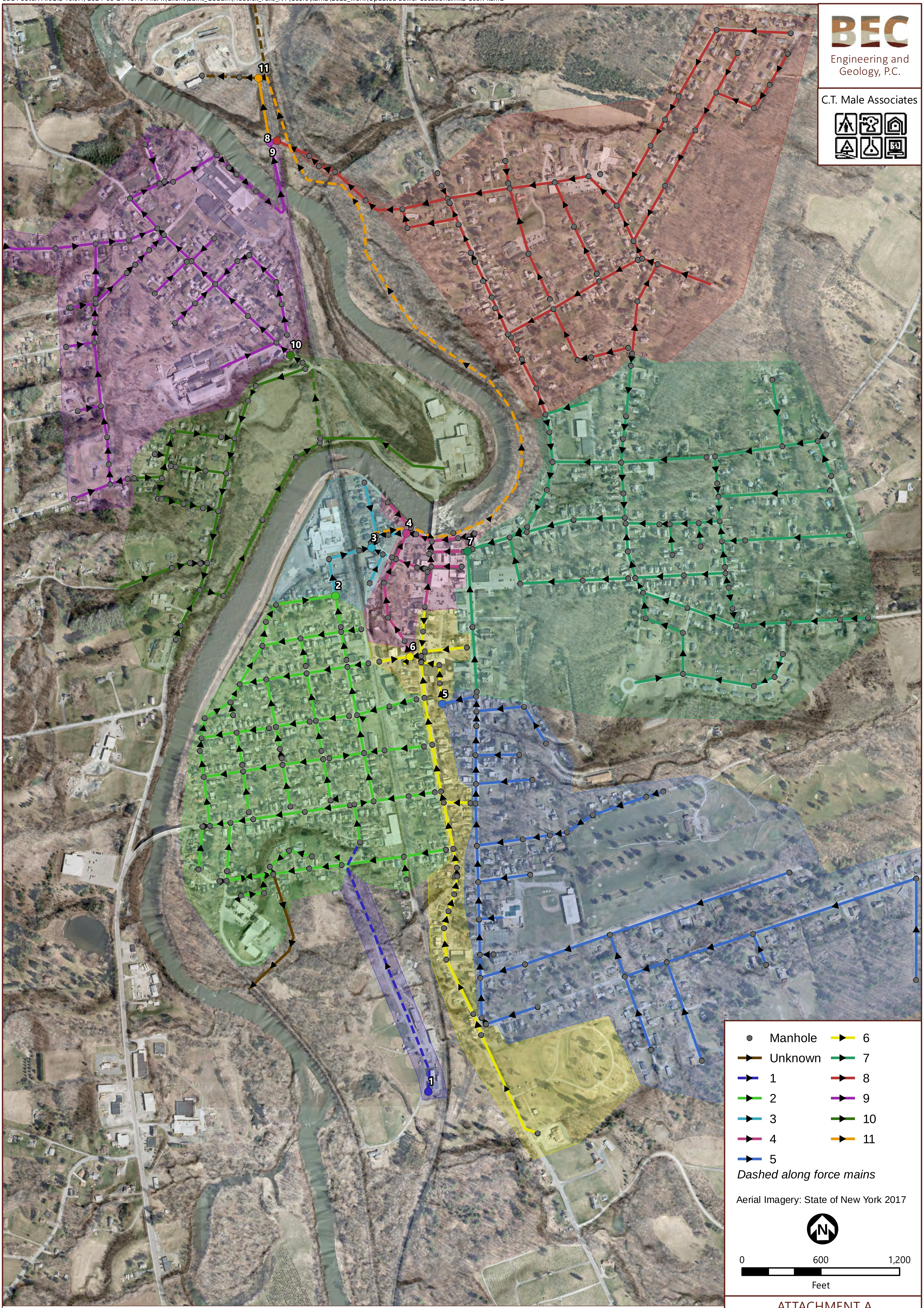
References

C.T. Male, 2022. Remedial Investigation/Feasibility Study Work Plan – OU-01 Addendum, McCaffrey Street Site. C.T. Male Associates D.P.C., BEC Engineering and Geology, P.C., Revised August 2022.

BEC Footer: ArcGIS 10.9.1, 2024-05-21 15:49 File: I:\Client\Saint_Gobain\Hoosick_Falls_NY\Users\kam2\2023_work\Updated Sewer Locations.mxd User: kam2

BEC
Engineering and Geology, P.C.

C.T. Male Associates



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2. Clough Harbour & Associates LLP (CHA), 2006. Storm and Sanitary Sewer Rehabilitation Project - Manhole Recovery, Village of Hoosick Falls, New York. September 2006, Scale: 1"=40'.

ATTACHMENT A

SEWERSHEDS AND SAMPLING LOCATIONS

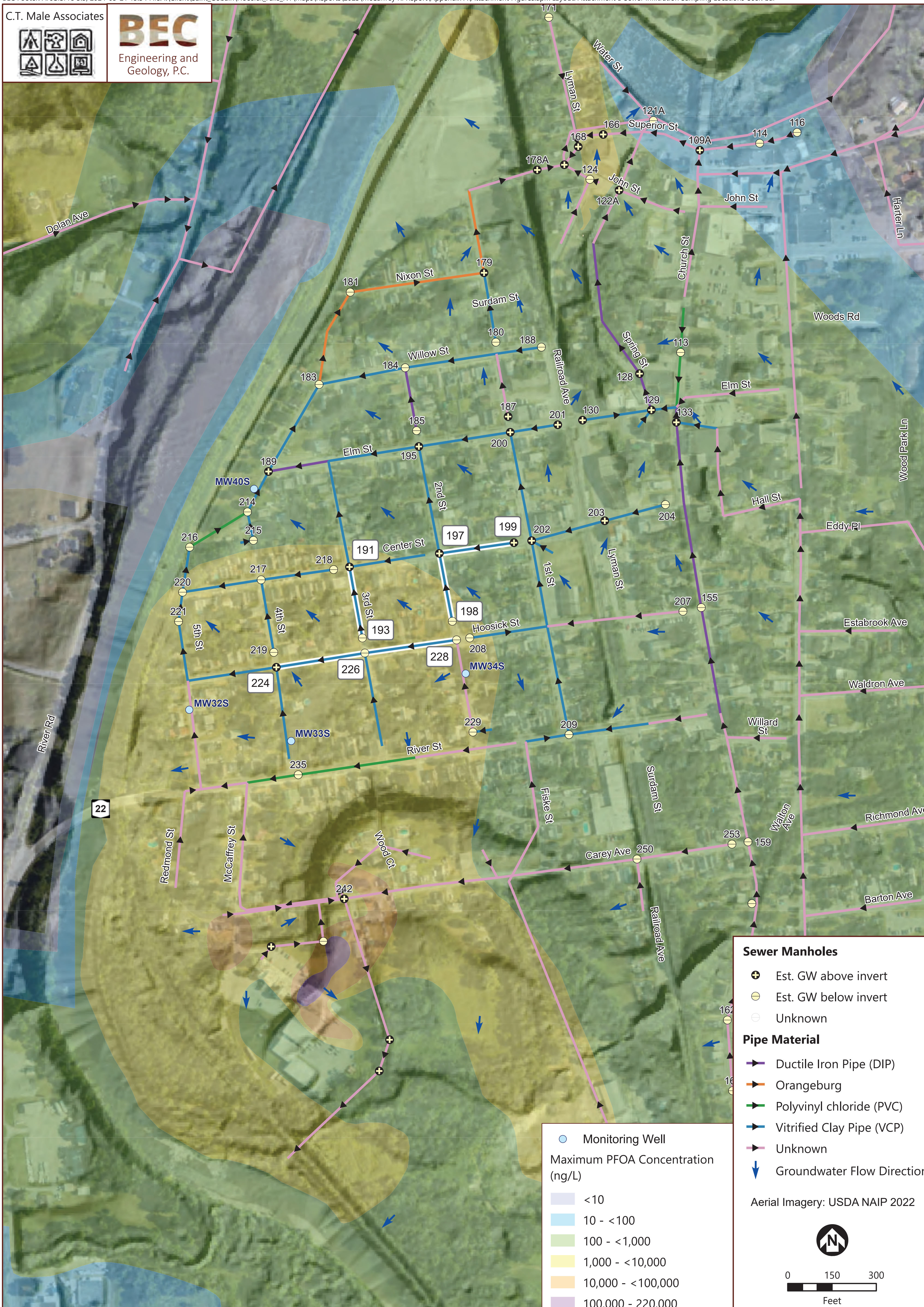
Remedial Investigation/ Feasibility Study Work Plan - OU-01 Addendum

Hoosick Falls, NY

BEC Footer: ArcGISPro 3.3, 2024-05-21 13:34 File: I:\Client\Saint_Gobain\Hoosick_Falls_NY\Maps\Reports\2023\McCaffrey RI Report\Appendix A\Attachment Figures.aprx Layout: Attachment B Sewer Infiltration Sampling Locations User: bal

C.T. Male Associates

BEC Engineering and Geology, P.C.



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2. Clough Harbour & Associates LLP (CHA), 2006. Storm and Sanitary Sewer Rehabilitation Project - Manhole Recovery, Village of Hoosick Falls, New York. September 2006, Scale: 1"=40'.

ATTACHMENT B

SEWER INFILTRATION SAMPLING LOCATIONS

Municipal Sewer Assessment
Hoosick Falls, NY

Appendix B

Analytical Results from Previous Sewer Investigations

Appendix B
Analytical Results from Previous Sewer Investigations
Remedial Investigation Report
McCaffrey Street Site
Hoosick Falls, NY

	Location	VHF_MH01	VHF_MH01	VHF_MH02	VHF_MH02	VHF_MH03		VHF_MH03		VHF_MH04	VHF_MH04	VHF_MH05	VHF_MH05	VHF_MH06	VHF_MH06	VHF_MH07	VHF_MH07	VHF_MH08
	Date	4/25/2023	11/21/2023	4/25/2023	11/21/2023	4/25/2023		11/21/2023		4/25/2023	11/21/2023	4/25/2023	11/21/2023	4/25/2023	11/21/2023	4/25/2023	11/21/2023	4/25/2023
	Sample Type	N	N	N	N	N	FD	N	FD	N	N	N	N	N	N	N	N	N
	Sample Name	SG1-VHF_MH01-230425	SG1-VHF_MH01-231121	SG1-VHF_MH02-230425	SG1-VHF_MH02-231121	SG1-VHF_MH03-230425	SG1-VHF_FD01-230425	SG1-VHF_MH03-231121	SG1-FD01-231121	SG1-VHF_MH04-230425	SG1-VHF_MH04-231121	SG1-VHF_MH05-230425	SG1-VHF_MH05-231121	SG1-VHF_MH06-230425	SG1-VHF_MH06-231121	SG1-VHF_MH07-230425	SG1-VHF_MH07-231121	SG1-VHF_MH08-230425
Parameter	Units																	
Per- and Polyfluoroalkyl Substances																		
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	ng/l	< 0.53 U	< 0.56 U	< 6.0 UJ	< 0.54 U	< 6.0 UJ	< 6.0 UJ	< 0.55 U	< 0.57 U	< 6.0 UJ	< 0.57 U	< 0.52 U	< 0.54 U	< 6.0 UJ	< 0.55 U	< 0.56 U	< 0.56 U	< 6.0 UJ
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	ng/l	< 0.44 U	< 0.46 U	< 5.0 UJ	< 0.45 U	< 5.0 UJ	< 5.0 UJ	< 0.46 U	< 0.48 U	< 5.0 UJ	< 0.47 U	< 0.44 U	< 0.45 UJ	< 5.0 UJ	< 0.46 U	< 0.46 U	< 0.47 U	< 5.0 UJ
n-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ng/l	< 0.44 U	< 0.46 U	< 5.0 UJ	< 0.45 U	< 5.0 UJ	< 5.0 UJ	< 0.46 U	< 0.48 U	< 5.0 UJ	< 0.47 U	< 0.44 U	< 0.45 U	< 5.0 UJ	< 0.46 U	< 0.46 U	< 0.47 U	< 5.0 UJ
n-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ng/l	< 0.35 U	< 0.37 U	< 4.0 UJ	< 0.36 U	< 4.0 UJ	< 4.0 UJ	< 0.37 U	< 0.38 U	< 4.0 UJ	< 0.38 U	< 0.35 U	< 0.36 U	< 4.0 UJ	< 0.37 U	< 0.37 U	< 0.37 U	< 4.0 UJ
Perfluorobutanesulfonic acid (PFBS)	ng/l	**1.4 J**	**0.84 J**	**6.1 J**	**2.9**	**4.7 J**	**4.4 J**	**2.4**	**2.4**	**3.2 J**	**2.3**	**2.3**	**2.2**	**4.9 J**	**2.4**	**2.9**	**2.8**	**4.1 J**
Perfluorobutanoic acid (PFBA)	ng/l	**3.5**	**3.0 J**	< 10 UJ	**3.3**	< 10 UJ	< 10 UJ	**2.8**	**2.8**	< 10 UJ	**2.5**	**1.7**	**2.7**	< 10 UJ	**3.2**	**1.5 J**	**2.6 J**	**12 J**
Perfluorodecanesulfonic acid (PFDS)	ng/l	< 0.26 U	< 0.28 U	< 3.0 UJ	< 0.27 U	< 3.0 UJ	< 3.0 UJ	< 0.27 U	< 0.29 U	< 3.0 UJ	< 0.28 U	< 0.26 U	< 0.27 U	< 3.0 UJ	< 0.28 U	< 0.28 U	< 0.28 U	< 3.0 UJ
Perfluorodecanoic acid (PFDA)	ng/l	< 0.26 U	< 0.28 U	< 3.0 UJ	< 0.27 U	< 3.0 UJ	< 3.0 UJ	< 0.27 U	< 0.29 U	< 3.0 UJ	< 0.28 U	< 0.26 U	< 0.27 U	< 3.0 UJ	< 0.28 U	< 0.28 U	< 0.28 U	< 3.0 UJ
Perfluorododecanoic acid (PFDoA)	ng/l	< 0.35 U	< 0.37 U	< 4.0 UJ	< 0.36 U	< 4.0 UJ	< 4.0 UJ	< 0.37 U	< 0.38 U	< 4.0 UJ	< 0.38 U	< 0.35 U	< 0.36 UJ	< 4.0 UJ	< 0.37 U	< 0.37 U	< 0.37 U	< 4.0 UJ
Perfluoroheptanesulfonic acid (PFHpS)	ng/l	< 0.26 U	< 0.28 U	< 3.0 UJ	< 0.27 U	< 3.0 UJ	< 3.0 UJ	< 0.27 U	< 0.29 U	< 3.0 UJ	< 0.28 U	< 0.26 U	< 0.27 U	< 3.0 UJ	< 0.28 U	< 0.28 U	< 0.28 U	< 3.0 UJ
Perfluoroheptanoic acid (PFHpA)	ng/l	**8.2**	**4.2**	**9.0 J**	**4.6**	**10 J**	**8.2 J**	**5.6**	**5.9**	**6.6 J**	**5.6**	**7.4**	**11**	**7.2 J**	**8.8**	**5.7**	**4.8**	**3.5 J**
Perfluorohexanesulfonic acid (PFHxS)	ng/l	< 0.65 UB	**0.38 J**	< 2.0 UJ	**0.81 J**	< 2.0 UJ	< 2.0 UJ	**0.66 J**	**0.73 J**	< 2.0 UJ	**0.57 J**	< 0.17 U	< 0.18 U	< 2.0 UJ	**0.51 J**	< 0.66 UB	**0.66 J**	< 2.0 UJ
Perfluorohexanoic acid (PFHxA)	ng/l	**7.9**	**4.2**	**11 J**	**7.2**	**6.6 J**	**7.9 J**	**5.7**	**6.0**	**5.4 J**	**4.6**	**4.6**	**6.6**	**7.2 J**	**6.2**	**2.9**	**4.2**	**5.5 J**
Perfluorononanoic acid (PFNA)	ng/l	**0.32 J**	**0.31 J**	< 2.0 UJ	**0.55 J**	< 2.0 UJ	< 2.0 UJ	**0.52 J**	**0.57 J**	< 2.0 UJ	**0.44 J**	**0.52 J**	**0.45 J**	< 2.0 UJ	**0.54 J**	**0.24 J**	**0.38 J**	< 2.0 UJ
Perfluorooctanesulfonamide (PFOSA / FOSA)	ng/l	**1.2 J**	**0.90 J**	**3.8 J**	**0.38 J**	**7.7 J**	**7.9 J**	**0.28 J**	**0.31 J**	**5.4 J**	**0.31 J**	**0.86 J**	< 0.27 U	< 3.0 UJ	**0.31 J**	**0.31 J**	**0.62 J**	< 3.0 UJ
Perfluorooctanesulfonic acid (PFOS)	ng/l	**1.9 J**	**1.8 J**	**5.6 J**	**4.3**	**5.9 J**	**7.0 J**	**3.6**	**3.6**	< 5.0 UJ	**3.4**	**2.1 J**	**1.9**	< 5.0 UJ	**5.3**	**2.7 J**	**3.1 J**	< 5.0 UJ
Perfluorooctanoic acid (PFOA)	ng/l	**270**	**180**	**340 J**	**190**	**210 J**	**240 J**	**180**	**190**	**160 J**	**140**	**190**	**220**	**150 J**	**200**	**120**	**130**	**86 J**
Perfluoropentanoic acid (PFPeA)	ng/l	**2.6**	**1.5 J**	**5.1 J**	**4.7**	**4.1 J**	**4.0 J**	**2.6**	**3.0**	< 3.0 UJ	**2.1**	**1.3 J**	**1.7 J**	< 3.0 UJ	**3.6**	**1.6 J**	**1.7 J**	< 3.0 UJ
Perfluorotetradecanoic acid (PFTA)	ng/l	< 0.35 U	< 0.37 U	< 4.0 UJ	< 0.36 U	< 4.0 UJ	< 4.0 UJ	< 0.37 U	< 0.38 U	< 4.0 UJ	< 0.38 U	< 0.35 U	< 0.36 U	< 4.0 UJ	< 0.37 U	< 0.37 U	< 0.37 U	< 4.0 UJ
Perfluorotridecanoic acid (PFTrDA)	ng/l	< 0.35 U	< 0.37 U	< 4.0 UJ	< 0.36 U	< 4.0 UJ	< 4.0 UJ	< 0.37 U	< 0.38 U	< 4.0 UJ	< 0.38 U	< 0.35 U	< 0.36 UJ	< 4.0 UJ	< 0.37 U	< 0.37 U	< 0.37 U	< 4.0 UJ
Perfluoroundecanoic acid (PFUnA)	ng/l	< 0.26 U	< 0.28 U	< 3.0 UJ	< 0.27 U	< 3.0 UJ	< 3.0 UJ	< 0.27 U	< 0.29 U	< 3.0 UJ	< 0.28 U	< 0.26 U	< 0.27 U	< 3.0 UJ	< 0.28 U	< 0.28 U	< 0.28 U	< 3.0 UJ

Appendix B
Analytical Results from Previous Sewer Investigations
Remedial Investigation Report
McCaffrey Street Site
Hoosick Falls, NY

Location		VHF_MH08	VHF_MH09	VHF_MH09	VHF_MH10	VHF_MH10	VHF_MH11	VHF_MH11	VHF_MH191	VHF_MH193	VHF_MH197	VHF_MH224	VHF_MH226	VHF_MH228	
Date		11/21/2023	4/25/2023	11/21/2023	4/25/2023	11/21/2023	4/25/2023	11/21/2023	9/20/2023	9/20/2023	9/20/2023	9/20/2023	9/20/2023	9/20/2023	
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	FD
Sample Name		SG1-VHF_MH08-231121	SG1-VHF_MH09-230425	SG1-VHF_MH09-231121	SG1-VHF_MH10-230425	SG1-VHF_MH10-231121	SG1-VHF_MH11-230425	SG1-VHF_MH11-231121	SG1-VHF_MH191-230920	SG1-VHF_MH193-230920	SG1-VHF_MH197-230920	SG1-VHF_MH224-230920	SG1-VHF_MH226-230920	SG1-VHF_MH228-230920	SG1-VHF_FD01-230920
Parameter	Units														
Per- and Polyfluoroalkyl Substances															
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	ng/l	< 0.59 U	< 0.54 U	< 0.59 U	< 0.53 U	< 0.55 U	< 0.53 U	< 0.55 U	< 6.0 U	< 0.59 U	< 0.52 U	< 0.55 UJ	< 6.0 U	< 6.0 U	< 6.0 U
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	ng/l	< 0.49 U	< 0.45 U	< 0.49 U	< 0.44 U	< 0.46 U	< 0.44 U	< 0.46 U	< 5.0 U	< 0.49 U	< 0.43 U	< 0.46 UJ	< 5.0 U	< 5.0 U	< 5.0 U
n-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ng/l	< 0.49 U	< 0.45 U	< 0.49 U	< 0.44 U	< 0.46 U	< 0.44 U	< 0.46 U	< 5.0 U	< 0.49 U	< 0.43 U	< 0.46 U	< 5.0 U	< 5.0 U	< 5.0 U
n-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ng/l	< 0.40 U	< 0.36 U	< 0.39 U	< 0.35 U	< 0.36 U	< 0.36 U	< 0.37 U	< 4.0 U	< 0.40 U	< 0.35 U	< 0.37 U	< 4.0 U	< 4.0 U	< 4.0 U
Perfluorobutanesulfonic acid (PFBS)	ng/l	**2.5**	**1.9**	**1.7 J**	**1.4 J**	**1.1 J**	**2.2**	**1.8**	**3.2 J**	**1.2 J**	**4.1**	**10**	**3.5 J**	< 3.0 U	< 3.0 U
Perfluorobutanoic acid (PFBA)	ng/l	**3.4**	**2.8**	**3.3**	**3.4**	**3.2**	**2.3 J**	**3.0**	< 10 U	**3.3**	**4.1**	**4.5**	< 10 U	< 10 U	< 10 U
Perfluorodecanesulfonic acid (PFDS)	ng/l	< 0.30 U	< 0.27 U	< 0.29 U	< 0.26 U	< 0.27 U	< 0.27 UJ	< 0.27 U	< 3.0 U	< 0.30 U	**0.28 J**	< 0.28 U	< 3.0 U	< 3.0 U	< 3.0 U
Perfluorodecanoic acid (PFDA)	ng/l	< 0.30 U	< 0.27 U	< 0.29 U	< 0.26 U	< 0.27 U	< 0.27 U	< 0.27 U	< 3.0 U	**0.43 J**	**0.29 J**	**0.48 J**	< 3.0 U	< 3.0 U	< 3.0 U
Perfluorododecanoic acid (PFDoA)	ng/l	< 0.40 U	< 0.36 U	< 0.39 U	< 0.35 U	< 0.36 U	< 0.36 U	< 0.37 U	< 4.0 U	< 0.40 U	< 0.35 U	< 0.37 U	< 4.0 U	< 4.0 U	< 4.0 U
Perfluoroheptanesulfonic acid (PFHpS)	ng/l	< 0.30 U	< 0.27 U	< 0.29 U	< 0.26 U	< 0.27 U	< 0.27 U	< 0.27 U	< 3.0 U	< 0.30 U	< 0.26 U	< 0.28 U	< 3.0 U	< 3.0 U	< 3.0 U
Perfluoroheptanoic acid (PFHpA)	ng/l	**3.5**	**12**	**10**	**9.9**	**6.0**	**6.4**	**8.1**	**4.6 J**	**2.7**	**5.6**	**6.0**	**4.0 J**	< 3.0 U	< 3.0 U
Perfluorohexanesulfonic acid (PFHxS)	ng/l	**0.76 J**	< 0.61 UB	**0.51 J**	< 0.18 U	**0.38 J**	< 0.68 UB	**0.62 J**	**3.7 J**	**0.22 J**	**0.97 J**	**1.3 J**	< 2.0 U	**7.9 J**	**7.2 J**
Perfluorohexanoic acid (PFHxA)	ng/l	**5.1**	**9.5**	**9.3**	**6.5**	**6.1**	**6.6**	**7.1**	< 10 U	**2.0**	**9.8**	**8.4**	< 10 U	< 10 U	< 10 U
Perfluorononanoic acid (PFNA)	ng/l	**0.69 J**	**1.8 J**	**0.58 J**	**9.0**	**0.43 J**	**1.3 J**	**0.50 J**	**2.0 J**	**1.5 J**	**0.93 J**	**1.5 J**	< 2.0 U	< 2.0 U	< 2.0 U
Perfluorooctanesulfonamide (PFOSA / FOSA)	ng/l	< 0.30 U	**1.1 J**	**0.36 J**	**0.75 J**	< 0.27 U	**0.76 J**	**0.33 J**	< 3.0 U	< 0.30 U	**0.29 J**	< 0.28 U	< 3.0 U	< 3.0 U	< 3.0 U
Perfluorooctanesulfonic acid (PFOS)	ng/l	**2.9 J**	**1.9 J**	**2.0 J**	**1.9 J**	**1.3 J**	**2.8 J**	**2.3**	**12 J**	**3.7**	**6.8**	**12**	**9.5 J**	< 5.0 U	< 5.0 U
Perfluorooctanoic acid (PFOA)	ng/l	**110**	**310**	**420**	**400**	**250**	**190**	**310**	**110**	**80**	**240**	**270**	**190**	< 3.0 U	< 3.0 U
Perfluoropentanoic acid (PFPeA)	ng/l	**2.4**	**2.1**	**2.3**	**1.8**	**2.6**	**2.2**	**2.6**	**4.4 J**	**1.9 J**	**5.3**	**6.7**	**5.8 J**	< 3.0 U	< 3.0 U
Perfluorotetradecanoic acid (PFTA)	ng/l	< 0.40 U	< 0.36 U	< 0.39 U	**0.43 J**	< 0.36 U	< 0.36 U	< 0.37 U	< 4.0 U	< 0.40 U	< 0.35 U	< 0.37 U	< 4.0 U	< 4.0 U	< 4.0 U
Perfluorotridecanoic acid (PFTrDA)	ng/l	< 0.40 U	< 0.36 U	< 0.39 U	< 0.35 U	< 0.36 U	< 0.36 U	< 0.37 U	< 4.0 U	< 0.40 U	< 0.35 U	< 0.37 U	< 4.0 U	< 4.0 U	< 4.0 U
Perfluoroundecanoic acid (PFUnA)	ng/l	< 0.30 U	< 0.27 U	< 0.29 U	**1.6 J**	< 0.27 U	< 0.27 U	< 0.27 U	< 3.0 U	< 0.30 U	< 0.26 U	< 0.28 U	< 3.0 U	< 3.0 U	< 3.0 U