



NPDES Compliance Sampling Inspection Report

Marsh Creek Wastewater Treatment Plant

45 Doran Avenue & 120 Middle Street
Geneva, NY 14456

NPDES Permit #: NY0027049

Inspection Dates: June 10-11, 2021

Report Prepared by:

THUAN TRAN

Digitally signed by THUAN TRAN
Date: 2021.08.04 13:08:29
-04'00'

Thuan Tran; Physical Scientist

Date: ___ Wednesday, August 4, 2021 ___

Report Approved by:

PHILIP COCUZZA

Digitally signed by PHILIP
COCUZZA
Date: 2021.08.04 10:49:06 -04'00'

Phil Cocuzza, Chief
Monitoring Operations Section

Date: _____

1.0 OBJECTIVE

On June 10-11, 2021, at the request of the New York State Department of Environmental Conservation (NYSDEC), the United States Environmental Protection Agency (USEPA) conducted a National Pollutant Discharge Elimination System (NPDES) Compliance Sampling Inspection (CSI) at the Marsh Creek Wastewater Treatment Plant (WWTP) located at 45 Doran Avenue and 120 Middle Street. The objective of the CSI was to gather information necessary to determine compliance with the requirements and limitations of NPDES Permit; NY0027049.

2.0 KEY PARTICIPANTS

Listed below are key inspection participants and contact information, grouped by organization.

U.S. Environmental Protection Agency
Thuan Tran; Physical Scientist, Lead Inspector
732-321-4455; email: tran.thuan@epa.gov
Robert Morrell; Geologist

New York State Department of Environmental Conservation (NYSDEC)
Pradeep Jangbari; Environmental Engineer
585-226-5321; email: Pradeep.jangbari@dec.ny.gov

Marsh Creek Wastewater Treatment Plant (WWTP)
William Czaplak; Chief Plant Operator
315-789-8040; email: wcc@geneva.ny.us
Nick DeMaria; Assistance Plant Operator

3.0 FACILITY DESCRIPTION

3.1 General Information

The Marsh Creek WWTP began operating in 1972 as a 4.0 million gallons per day (MGD) secondary wastewater treatment plant. The facility is located at 45 Doran Avenue that replaced the Gulvin Park primary treatment system that has been operating since 1935. The Gulvin Park treatment system; located at 120 Middle Street, was modified into a pump station when the Marsh Creek WWTP was built, and then upgraded to assist in handling high flows during wet weather and tertiary treatment during normal flow. The Marsh Creek WWTP utilizes an activated sludge treatment process with tertiary treatment and is categorized as Standard Industrial Classification (SIC) 4952. Marsh Creek WWTP employs nine (9) personnel and operates one (1) shift; 7:00AM to 3:30PM (Monday to Friday) and 7:00AM to 9:30/10:00PM (Saturday, Sunday, & Holidays).

The treatment plant serves the City of Geneva, portion of the Town of Geneva and the

Town of Waterloo. Wastewater is gravity feed and assisted by pump stations to the wastewater treatment plant. There are four (4) pump stations in the City of Geneva, one (1) in the Town of Geneva, and 1 in the Town of Waterloo. All pump stations are powered through the grid. In case of emergencies, 3 of the 4 pump stations in the City of Geneva are backed up by stand-by emergency generator. The fourth pump station in the City of Geneva is backed up by a portable generator. The Town of Geneva pump station is backed up by an emergency generator.

The Marsh Creek WWTP receives on average about 3.5 million gallons per day (MGD) of wastewater. Majority of the incoming wastewater is from domestic and small businesses. The plant also receives pretreated process wastewater from Henkel Corporation – Geneva Site (formerly Zotos International) and Guardian Glass. In addition, the plant also accepts leachate from Ontario County Landfill and Septic waste from septic haulers.

3.2 Process Information

All waste streams within the City of Geneva Sewer Collection System converge and are screened at the Marsh Creek and Gulvin Park Pump Stations. Waste streams intercepted at the South Plant Pump Station is ground into fine particles before continuing to the Gulvin Park Pump Station. The incoming wastewater from the Marsh Creek and Gulvin Park Pump Stations is conveyed to the centrifugal grit removal system at the Marsh Creek WWTP. The overflow from the grit removal system is distributed between 2 circular primary settling tanks for phase separation. As heavy solids settled, the wastewater overflows the primary settling tank V-notch weirs and is conveyed to the anoxic zone of the step-aeration activated sludge process. Microbes in the anoxic zone convert ammonia (NH₃) into nitrogen and water. From the anoxic zone, the wastewater continues to the aeration zone where air is introduced through fine bubble diffusers to generate a mixed liquor suspended solids (MLSS). The MLSS in the aeration zone is conveyed to the secondary clarifiers where retention time is provided to allow the sludge to settle out. A portion of the settled sludge in the secondary clarifiers is pumped to the head of the step-aeration activated sludge process, before the anoxic zone, as return activated sludge (RAS) to continue the biological process. The effluent from the secondary settling tanks is chlorinated in the manhole that is piped to the Three (3) Stage Tertiary Treatment System at Gulvin Park Pump Station. Disinfection time is provided inside the pipe and continued in the 3-Stage Tertiary Treatment System. The polished effluent overflows the rectangular weirs into the aerated effluent chamber where sulfur dioxide (SO₂) is added as a dechlorinating reagent. From the aerated effluent chamber, the treated effluent flows into the discharge channel where the discharge is monitored by a Parshall Flume with a flow sensor before diffusing into Seneca Lake via Outfall 001. During high water flows, the polished effluent is unable to discharge into Seneca Lake. As a result, the polished effluent is redirected to Marsh Creek via Outfall 002, which flows into Seneca Lake.

A portion of the settled sludge in the secondary settling tanks is pumped onto the gravity belt filter press as waste activated sludge (WAS). Alum is added to the sludge to enhance solid content. The thickened sludge is pumped into the Thermophilic Aerobic Digester with sludge and scum from the primary settling tanks. The Thermophilic Aerobic Digester operates between 145-to-150 degrees Fahrenheit (°F) for about 14 days with constant air supply for mixing. The digested sludge from the Thermophilic Aerobic Digester is pumped into the Sludge Nitrification De-Nitrification Reactor where the temperature is maintained between 95-to-100°F for about 14 days. The digested sludge from the Sludge Nitrification De-Nitrification Reactor is pumped onto the belt filter press. A polymer is added at the head of the belt filter press to enhance solid content and increase liquid removal. The sludge cake of the belt filter press ranges between 20-30 percent solids. The biosolids, considered Class A, is reclaimed for beneficial reuse.

Off-gas from the Thermophilic Aerobic Digester and the Sludge Nitrification De-Nitrification Reactor is collected and treated through the bio-filter before releasing into the atmosphere. The filtrates from the belt filter press and the gravity belt filter press are direct to the Marsh Creek Pump Station. Grits from the centrifugal grit removal system are dumped onto a drying bed. The liquid flows to into the floor drain, then back to the headworks. Dried solids from the drying bed are landfilled. The 3-Stage Tertiary Treatment System is taken off-line once a week to remove accumulated sludge. The sludge slurry is pumped to the Gulvin Park Pump Station for treatment. While the 3-Stage Tertiary Treatment System is temporary off-line, the disinfected effluent is redirected to a side channel that continues to the aerated effluent chamber for dechlorination.

3.3 Facility Self-Monitoring Information

The Marsh Creek WWTP operators perform sample collection for process control, permit compliance, and industrial user compliance verification. Collected samples are analyzed in-house, as well as, contracted out. Parameters analyzed in-house are Total Solids (TS), Total Suspended Solids (TSS), pH, Total Volatile Solids (TVS), Reactive and Total Phosphorus, Chemical Oxygen Demand (COD), Total Residual Chlorine (TRC), Temperature, Settleable Solids (SS), Settrometer, and Dissolved Oxygen (DO).

Contracted laboratories are Pace Analytical Laboratory in Melville, Aquatox Environmental Laboratory in Syracuse, Alloway Laboratory in Newark, and Certified Environmental Services Laboratory in Syracuse, New York. Parameters analyzed by contract laboratories are Metals (Antimony, Aluminum, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Potassium, Silver, Selenium, Iron, & Zinc), Hexavalent Chromium, Toxicity, TSS, Total Phosphorus, Biochemical Oxygen Demand (BOD), Total Kjeldahl Nitrogen (TKN), Cyanide, Ammonia-N₂ (NH₃), Total Phenolics, Fecal Coliform, Low-Level Mercury, Volatile Organics Analytes (VOAs), Oil & Grease (O&G), Total Organic Compounds (TOC), Sulfide (hydrogen, total, dissolved), COD, Nitrate (NO₃), Low-Level Mercury, TVS, TS, Salmonella, Flashpoint, Reactivity, PCBs, and TCLP.

The contract laboratories delivered the preserved and unpreserved sample containers to the Marsh Creek Wastewater Treatment Plant. The composite sample is distributed between the sample containers by the facility operators and are refrigerated. The couriers come to the facility and package the samples for shipment and deliver them to the laboratories.

4.0 EPA SAMPLING/INSPECTION ACTIVITIES

4.1 Sampling Activities

ISCO automatic composite samplers were programmed to take 96 sample aliquots during the 24-hour sampling event from the effluent monitoring location. The 24-hour composite sample was collected and analyzed for 5-Day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), Ammonia (NH₃), Phosphorus, Total Kjeldahl Nitrogen (TKN), and Metals (Cadmium, Chromium, Copper, Iron, Lead, Nickel, Selenium, Silver, and Zinc). Grab-Composite samples representing the 24-hour sampling event were collected and analyzed for Cyanide and Total Phenolics. Multiple grab samples were collected during the 24-hour sampling event for Volatile Organic Analytes (VOAs). The VOAs grab samples were composited in the laboratory. Grab samples were collected and analyzed for Low-Level Mercury and Fecal Coliform.

On-site grab samples were collected and analyzed for pH, Temperature, Settleable Solids (SS), Dissolved Oxygen (DO), and Total Residual Chlorine (TRC).

In addition, an ISCO automatic composite sampler was programmed to take 96 sample aliquots during the 24-hour sampling event from the influent monitoring location. The 24-hour composite sample was collected and analyzed for BOD₅, TSS, NH₃, and TKN.

All sample containers, preservation techniques and holding times were in accordance with USEPA requirements specified in 40 CFR Part 136. Signed and dated custody seals were placed across the lids and along the sides of the sample containers. The custody sealed sample containers were placed inside plastic sample bags and sealed up. All samples were transported on ice to the USEPA Laboratory in Edison, New Jersey for analysis.

Effluent flow monitoring data were obtained directly from Marsh Creek WWTP instrumentation which was last calibrated on June 7, 2021.

Split samples were collected and given to the facility representative.

4.2 Inspection Activities

An NPDES Compliance Sampling Inspection at Marsh Creek Wastewater Treatment Plant was conducted on June 10-11, 2021. The inspector met with William Czaplak, Marsh Creek WWTP Chief Operator, Nick DeMaria; Marsh Creek WWTP Assistant Operator, and Pradeep Jangbari; NYSDEC Environmental Engineer. Inspector's credentials were presented, and business cards were provided. The facility's representatives were explained that the inspection purpose with supporting on-site activities was to determine if Marsh

Creek WWTP is in compliance with their NPDES Permit; NY0027049, and State and Federal Regulations.

Supporting on-site activities consist of collecting samples from the treatment plant influent and effluent monitoring locations, observing and evaluating the monitoring locations, observing and evaluating the flow monitoring equipment, observation and evaluation of the facility’s sampling protocol, touring and evaluating the wastewater treatment plant, reviewing and evaluating the chain-of-custody, sample containers, sample preservation, and analytical data, and interviewing the facility’s representatives.

The facility’s representatives were briefed on the inspection activities throughout the inspection and during the closing conference. On-site sample results and concerns discovered during the inspection were communicated so that the facility’s representatives understood their responsibilities to comply with the conditions and limitations set forth in the NPDES Permit, and State and Federal Regulations.

4.3 Deviations and/or Environmental Conditions

Although the permit requires low-level mercury to be analyze using EPA Method 1631, the EPA Laboratory will be analyzing low-level mercury using EPA Method 245.1. Therefore, the low-level mercury result will be use as data and not permit compliance.

5.0 ANALYTICAL RESULTS

**Marsh Creek WWTP
Inspection Dates: June 10-11, 2021**

| Parameter | Units | Permit Limit | EPA Result |
|------------------|--------------|------------------------|-------------------|
| Flow | MGD | 6.0 | 2.21 |
| BOD5 | mg/L | 30 (Monthly Average) | 4.92 |
| BOD5 | “ | 45 (7-Day Average) | 4.92 |
| BOD5 Loading | lbs./day | 1501 (Monthly Average) | 90.7 |
| BOD5 Loading | “ | 2252 (7-Day Average) | 90.7 |
| BOD5 Removal | % | >/= 85 | 97 |
| TSS | mg/L | 30 (Monthly Average) | U (10 RL) |
| TSS | “ | 45 (7-Day Average) | U (10 RL) |
| TSS Loading | lbs./day | 1501 (Monthly Average) | 184 |
| TSS Loading | “ | 2252 (7-Day Average) | 184 |
| TSS Removal | % | >/= 85 | 93 |
| Ammonia | mg/L | Monitor | 0.556 |
| TKN | “ | Monitor | 1.66 |
| Phosphorus | “ | 1.0 | 0.142 |
| Cyanide | ug/L | 51 | U |
| Phenolics, T | “ | 30 | U |
| Lead | “ | 60 | U |
| Cadmium | “ | 23 | U |

| Parameter | Units | Permit Limit | EPA Result |
|------------------------|------------|-----------------------------|------------------------------|
| Chromium | mg/L | 0.17 (Type I) | U |
| Copper | “ | 0.062 (Type II) | U |
| Nickel | “ | 0.0467 (Type II) | U |
| Silver | “ | 0.019 (Type II) | U |
| Zinc | “ | 0.059 (Type II) | 0.033 (32.7 ug/L) |
| Selenium | “ | 0.005 (Type II) | U |
| Iron | “ | 1.2 (Type II) | 0.051 (51 ug/L) |
| Bromodichloromethane | “ | 0.017 (Type I) | U |
| Dibromochloromethane | “ | 0.062 (Type I) | U |
| 1,1,1-Trichloroethane | “ | 0.0467 (type I) | U |
| Benzene | “ | 0.008 (Type I) | U |
| Ethyl Benzene | “ | 0.02 (Type I) | U |
| Dichlorobenzene | “ | 0.017 (Type I) | U |
| Bromoform | “ | 0.071 (Type I) | U |
| Xylenes | “ | 0.12 (Type I) | No Data |
| Chloroform | “ | 0.014 (Type II) | U |
| Methyl Chloride | “ | 0.034 (Type II) | U |
| Toluene | “ | 0.015 (Type II) | U |
| Fecal Coliform | No./100 ml | 200 (30-day geometric mean) | 2 |
| | | 400 (7-day geometric mean) | 2 |
| Mercury | ng/L | 50 | U |
| TRC | mg/L | 0.7 | Zero |
| Disolved Oxygen (DO) | “ | Monitor | D1: 7.4 D2: 6.6 (Average) |
| Settleable Solids (SS) | ml/L | 0.3 | Zero |
| pH | SU | 6.0 to 9.0 | D1: 6.77 D2: 7.69 |
| Temperature | °C | Monitor | D1: 19 D2: 19 |

U = analyte was not detected at or above the reporting limit.

RL = Reporting Limit

D1 = Day 1

D2 = Day 2

6.0 FINDINGS

6.1 Sampling Result Findings

The EPA analytical results obtained during this inspection are within the acceptable limits.

6.2 Inspection Findings

In addition to the sampling, an inspection of the facility operations was conducted as discussed in Section 4.2. During this inspection the following observations were noted which may contravene the requirements of the permit or the applicable regulations:

6.2.1 The overflow of the primary settling tank V-Notch weirs is not uniform. Some areas were observed to have high flow while others have little to no flow. This situation could potentially create an underflow streams to areas of high overflow that could prevent solids from settling evenly at the bottom of the primary settling tanks. According to 40 CFR Part 122.41(e) – Proper operation and maintenance, it states, “ *The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.*” Furthermore Title 6 of the NYCRR Part 750-2.8(a)(2)(i) - Disposal System Operation and Quality Control, it states, “*The permittee shall, at all times, properly operate and maintain all disposal facilities, which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance also includes as a minimum, the following:*

- (i) *A preventative maintenance program for all critical facilities and systems of treatment and control (or related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. A facility or system is critical if it contains process equipment that is essential for proper operation and necessary to achieve compliance with the applicable SPDES permit effluent limits.”*

6.2.2 The overflow of the secondary settling tank V-Notch weirs is not uniform. Some areas were observed to have high flow while others have little to no flow. This situation could potentially create an underflow streams to areas of high overflow that could prevents solids from settling evenly at the bottom of the secondary settling tanks. According to 40 CFR Part 122.41(e) – Proper operation and maintenance, it states, “ *The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.*” Furthermore Title 6 of the NYCRR Part 750-2.8(a)(2)(i) - Disposal System Operation and Quality Control, it states, “*The permittee shall, at all times, properly operate and maintain all disposal facilities, which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance also includes as a minimum, the following:*

- (i) *A preventative maintenance program for all critical facilities and systems of treatment and control (or related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. A facility or system is critical if it contains process equipment that is essential for proper operation and necessary to achieve compliance with the applicable SPDES permit effluent limits.”*

6.2.3 The thermometer in the effluent sampling refrigerator does not contain a correction factor sticker/tag or not visible. A correction factor/tag should accompany the thermometer to ensure the correction factor is taken into consideration when reading/logging the preservation temperature during composite sampling. According to 40 CFR Part 136 footnote 2 of Table II- Required Containers, Preservation Techniques, and Holding Times, it states, “ *Except when noted in this Table II and the method of the parameter, preserve each grab sample within 15 minutes of collection. For a composite sample collected with automated sample (e.g. using a 24-hr composite; see 40 CFR Part 122.21(g)(7)(i) or 40 CFR Part 403 appendix E), refrigerate the sample $\leq 6^{\circ}\text{C}$ during collection unless specified otherwise in this Table II or in the method(s).*” Furthermore Title 6 of the NYCRR Part 750-2.5(a)(5)- Routine Monitoring, Recording, and Reporting, it states, “ *For instrumentation that is not used by a certified laboratory, but which is used to measure discharges to the environment as specified in SPDES permit, the permittee shall periodically calibrate and perform maintenance procedures to ensure accuracy of the measurements., Verification of maintenance shall be logged into the record book(s) of the facility.*”

7.0 ATTACHMENTS

Attachment #1. Incoming waste streams are treated through the wastewater treatment process and discharges into Seneca Lake.

Attachment #2. Incoming waste streams are separated between liquid and solids treatment pathways at the Marsh Creek WWTP.

Attachment #3. The Chain of Custody for Samples was submitted and received by the USEPA Region 2 Laboratory on Friday, June 11, 2021.

Attachment #4. The Analytical Data for the Marsh Creek WWTP sampling inspection was received on July 7, 2021.

8.0 PHOTOGRAPHS

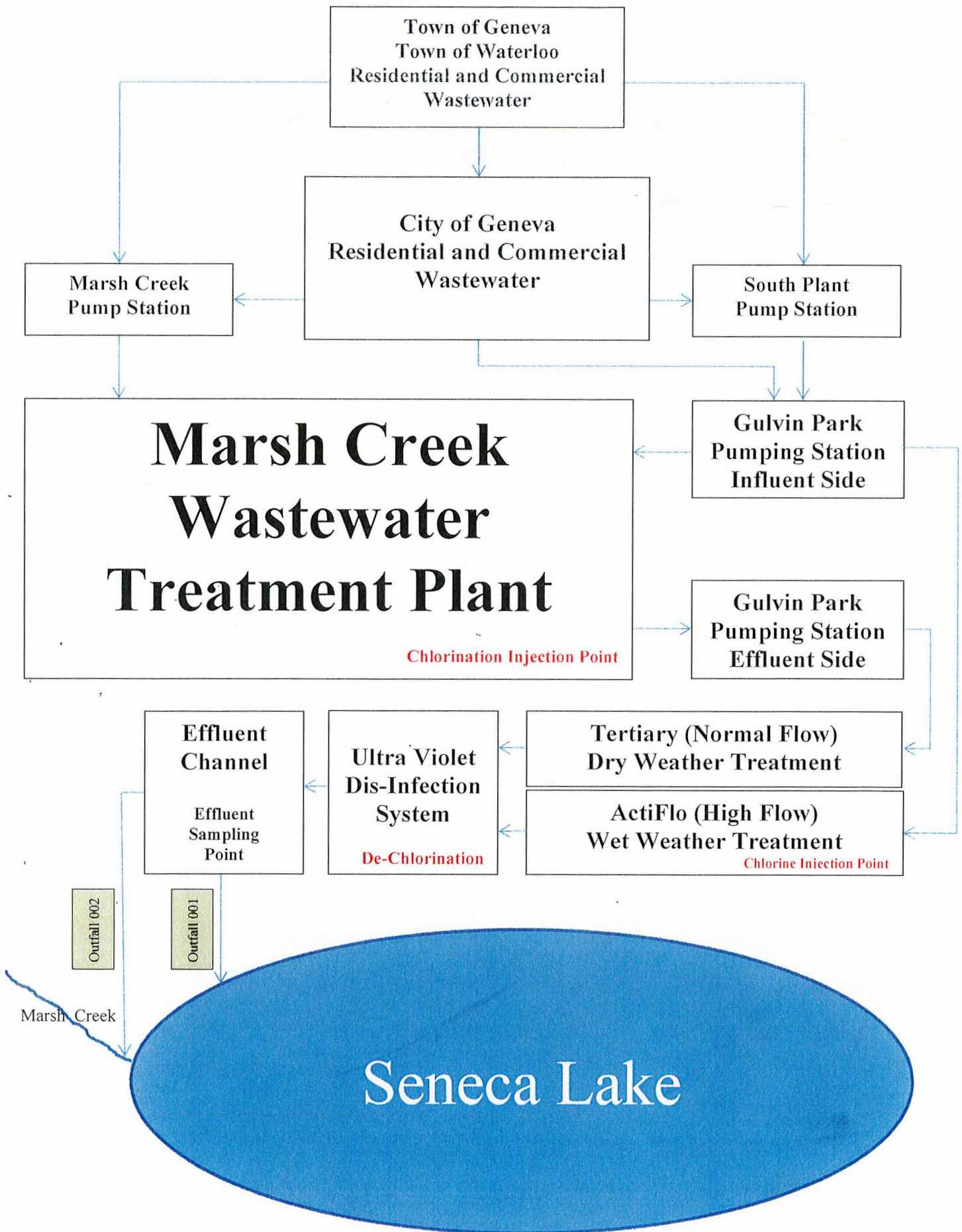
Photo #1: A correction factor/tag should accompany the thermometer inside the effluent sampling refrigerator to ensure proper preservation is maintained during sampling.

Photo #2: Solids are unevenly settling to the bottom of the primary settling tanks due to the uneven flow over the V-notch weirs.

Photo #3: Sludge is unevenly settling to the bottom of the secondary clarifier tanks due to the uneven flow over the V-notch weir.

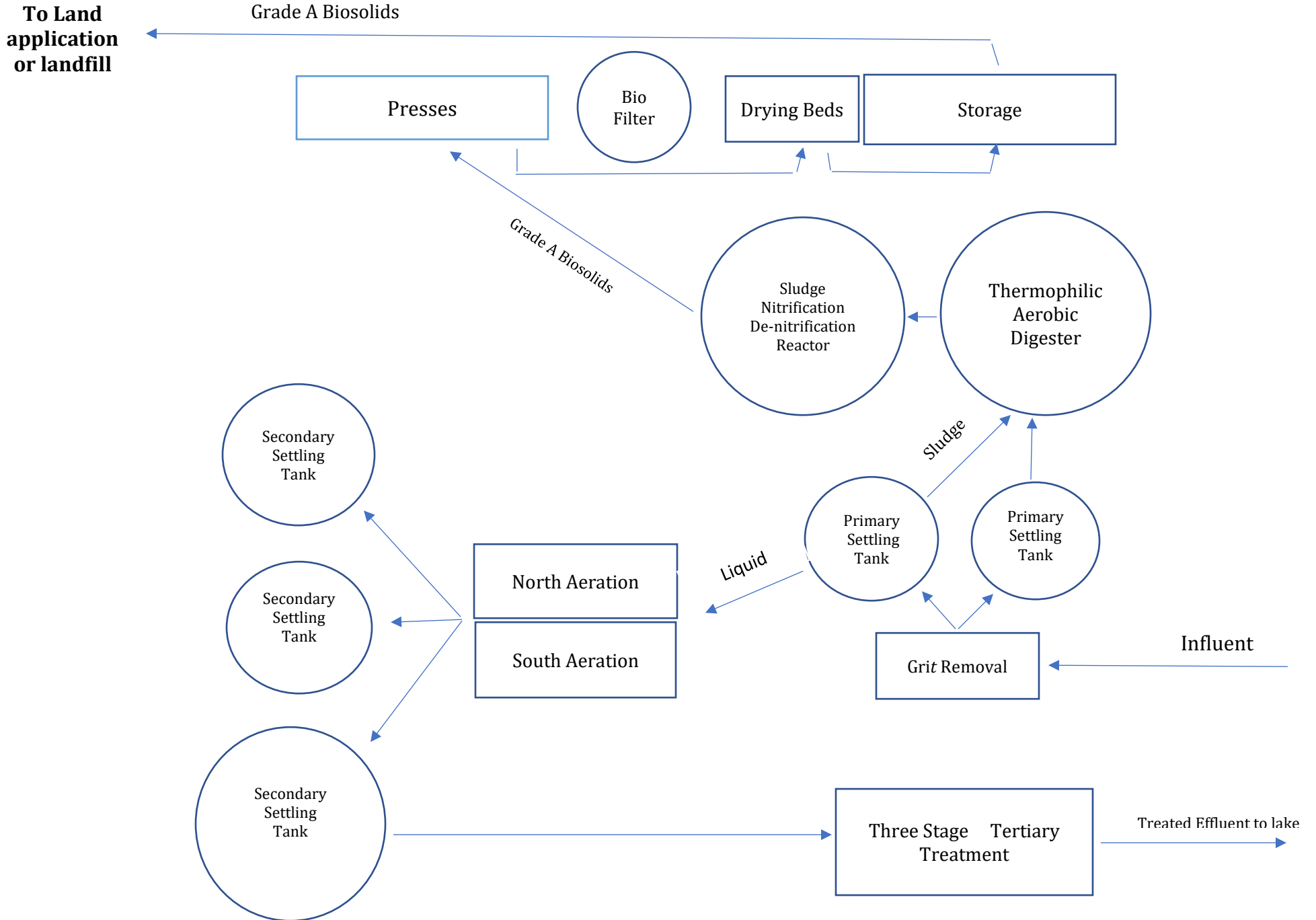
7.0 Attachments

Attachment #1. Incoming waste streams are treated and discharged into Seneca Lake.



Attachment #2. Liquid and solids pathways are separated and treated at the Marsh Creek WWTP. The effluent is further treated by the Three Stage Tertiary Treatment System.

Marsh Creek WWTP Process Diagram



CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY Marsh Creek WWTP

PROJECT LEADER Thuan Tran

PROGRAM: SF :

SITE ID _____

OPERABLE UNIT _____

PROGRAM RESULTS CODE _____

Decision Unit Code Y206 RCRA D210 RCRA ENF D307 NPDES B304 SDWA C215 AM B224 CAA A305

TSCA L306 OD B253 FIFRA CRIMINAL ENF

Permit #: NY002 7049

LAB ID/ FIELD ID

CONTAINERS
OF

MATRIX

CHECK IF
SPLIT
SAMPLE

DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS.

Res CL
Checked

Preservative
(circle)

Collection Time
(24hr clock)
Begin End

Collection
Date
mm/dd/yy

| LAB ID/ FIELD ID | CONTAINERS # OF | MATRIX | CHECK IF SPLIT SAMPLE | DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS. | Res CL Checked | Preservative (circle) | Collection Time (24hr clock) Begin End | Collection Date mm/dd/yy |
|---------------------------------------|-----------------|--------|-------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------|-----------------------|----------------------------------------|--------------------------|
| Outfall 001 - Comp. <u>2106023-01</u> | 5 | A | <input checked="" type="checkbox"/> | 2, 1-Liter plastic bottles: BOD5 | 24-Hr <input type="checkbox"/> | 012345678910 | 9:55A 9:40A | 6/10-11/21 |
| -01 | | A | <input checked="" type="checkbox"/> | 1, 500-ml plastic bottle: TSS | 24-Hr <input type="checkbox"/> | 012345678910 | ↓ ↓ | 6/10-11/21 |
| -01 | | A | <input checked="" type="checkbox"/> | 1, 500-ml plastic bottle: NH3/Phosphorus/TKN | 24-Hr <input type="checkbox"/> | 002345678910 | ↓ ↓ | 6/10-11/21 |
| -01 | | A | <input checked="" type="checkbox"/> | 1, 250-ml plastic bottle: Metals* | 24-Hr <input type="checkbox"/> | 0102345678910 | ↓ ↓ | 6/10-11/21 |
| Outfall 001 - 3Xs G-C <u>-02</u> | 2 | A | <input checked="" type="checkbox"/> | 1, 250-ml amber glass: Phenolics | 3Xs G-C <input type="checkbox"/> | 002345678910 | 11:45A 9:00A | 6/10-11/21 |
| -02 | | A | <input checked="" type="checkbox"/> | 1, 125-ml plastic bottle: Cyanide | 3Xs G-C <input type="checkbox"/> | 012345678910 | ↓ ↓ | 6/10-11/21 |
| Inflent - Comp <u>-09</u> | 3 | A | <input checked="" type="checkbox"/> | 1, 1-Liter plastic bottle: BOD5 | 24-Hr <input type="checkbox"/> | 012345678910 | 10:32A 10:17A | 6/10-11/21 |
| -09 | | A | <input checked="" type="checkbox"/> | 1, 250-ml plastic bottle: TSS | 24-Hr <input type="checkbox"/> | 012345678910 | ↓ ↓ | 6/10-11/21 |
| -09 | | A | <input checked="" type="checkbox"/> | 1, 250-ml plastic bottle: NH3/TKN | 24-Hr <input type="checkbox"/> | 002345678910 | ↓ ↓ | 6/10-11/21 |
| TRIP BLANK <u>-03</u> | 3 | A | <input checked="" type="checkbox"/> | 3, 40-ml glass vials: VOAs | Grab <input type="checkbox"/> | 012345678910 | 10:28A | 6/7/2021 |

COMMENTS & SPECIAL REQUIREMENTS:

20 6/11/21

Notes: Metals*: Pb, Cd, Cr, Cu, Ni, Ag, Zn, Se, Fe

No Chlorine

Preservative Added & Checked
 0=ice 7=FAS
 1=H2SO4 pH<2 8=ZnAc
 2=HNO3 pH<2 9=NaOH pH>12
 3=HCl pH<2 10=NH4Cl
 4=Na2S2O3
 5=NaOH pH>9
 6=Ascorbic Acid

| Matrix: | Relinquished By: | Received By: | Time | Date |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-------|---------|
| A=aqueous B=aqueous (chlorinated) C=soil D=sediment E=sludge F=multiphasic G=solvent H=biota I=oil J=other | <i>[Signature]</i> | <i>[Signature]</i> | 5:57p | 6/11/21 |
| | Relinquished By: | Received By: | 5:57p | 6/11/21 |
| | Relinquished By: | Received By: | | |
| | Relinquished By: | Received By: | | |

Survey Complete? Y N

US EPA REGION 2 LABORATORY
CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY Marsh Creek WWTP

PROJECT LEADER Thuan Tran

PROGRAM: SF :

SITE ID _____

OPERABLE UNIT _____

PROGRAM RESULTS CODE _____

Decision Unit Code Y206 RCRA D210 RCRA ENF D307 NPDES B304 SDWA C215 AM B224 CAA A305

TSCA L306 OD B253 FIFRA CRIMINAL ENF

| LAB ID/ FIELD ID | CONCENTRATIONS # OF | MATRIX | CHECK IF SPLIT SAMPLE | DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS, | Res CL Checked | Preservative (circle) | Collection Time (24hr clock) Begin End | | Collection Date mm/dd/yy |
|--------------------------------------|------------------------|--------|-------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------|------------------------|-------------------------------------------|--------|-----------------------------|
| | | | | | | | 0 | 1 | |
| Outfall 001 - Grab <u>2106023-04</u> | 11 | A | <input checked="" type="checkbox"/> | 1, 250-ml plastic bottle: Mercury | Grab <input type="checkbox"/> | 0 1 2 3 4 5 6 7 8 9 10 | | 11:57 | 6/11/2021 |
| <u>-04</u> | | | <input type="checkbox"/> | 1, 290-ml sterilized plastic bottle: Fecal Coliform | Grab <input type="checkbox"/> | 0 1 2 3 4 5 6 7 8 9 10 | | 11:57 | 6/11/2021 |
| <u>-05</u> | | | <input checked="" type="checkbox"/> | 3, 40-ml glass vials: VOAs : Grab #1 | Grab <input type="checkbox"/> | 0 1 2 3 4 5 6 7 8 9 10 | | 11:45A | 6/10/2021 |
| <u>-06</u> | | | <input checked="" type="checkbox"/> | 3, 40-ml glass vials: VOAs : Grab #2 | Grab <input type="checkbox"/> | 0 1 2 3 4 5 6 7 8 9 10 | | 8:15P | 6/10/2021 |
| <u>-07</u> | | | <input checked="" type="checkbox"/> | 3, 40-ml glass vials: VOAs : Grab #3 | Grab <input type="checkbox"/> | 0 1 2 3 4 5 6 7 8 9 10 | | 9:00A | 6/11/2021 |
| <u>6/11/21</u> | | | <input type="checkbox"/> | | | 0 1 2 3 4 5 6 7 8 9 10 | | | |
| | | | <input type="checkbox"/> | | | 0 1 2 3 4 5 6 7 8 9 10 | | | |
| | | | <input type="checkbox"/> | | | 0 1 2 3 4 5 6 7 8 9 10 | | | |
| | | | <input type="checkbox"/> | | | 0 1 2 3 4 5 6 7 8 9 10 | | | |
| | | | <input type="checkbox"/> | | | 0 1 2 3 4 5 6 7 8 9 10 | | | |
| | | | <input type="checkbox"/> | | | 0 1 2 3 4 5 6 7 8 9 10 | | | |

COMMENTS & SPECIAL REQUIREMENTS:

Notes: Fecal Coliform: Internal Lab. Lot Code is L401008

VOAs Grab #1 thru #3 must be laboratory composite

Preservative Added & Checked

- 0=ice
- 1=H2SO4 pH<2
- 2=HNO3 pH<2
- 3=HCl pH<2
- 4=Na2S2O3
- 5=NaOH pH>9
- 6=Ascorbic Acid
- 7=FAS
- 8=ZnAc
- 9=NaOH pH>12
- 10=NH4Cl

*OUTFALL 001 (Lab Composite Grab #1,2,3) = 2106023-08 No chlorine

| | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------|-------------|---------------|
| <p>Matrix:</p> <p>A=aqueous B=aqueous (chlorinated) C=soil D=sediment E=sludge</p> <p>F=multiphasic G=solvent H=biota I=oil J=other</p> | Relinquished By: <u>[Signature]</u> | Person Assuming Responsibility for Sample(s): <u>[Signature]</u> | Time: 5:57P | Date: 6/11/21 |
| | Relinquished By: | Received By: <u>[Signature]</u> | Time: 5:57P | Date: 6/11/21 |
| | Relinquished By: | Received By: | | |
| | Relinquished By: | Received By: | | |

Survey Complete? Y N

Attachment #4. Analytical Data from the USEPA Laboratory for the Mash Creek WWTP sampling inspection was received on 7/7/21.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**Region 2 Laboratory
2890 Woodbridge Avenue
Edison , New Jersey 08837
732-906-6886 Phone
732-906-6165 Fax**

August 03, 2021

Thuan Tran
Monitoring & Assessment Branch
LSASD/MAB
Edison, NJ 08837

RE: Marsh Creek WWTP - 2106023

Enclosed are the results of analyses for samples received by the laboratory on 06/11/2021. The signature below reflects the laboratory's approval of the reported results. If you have any questions concerning this report, please refer to Project Number 2106023 and contact the laboratory.

Sincerely,

A handwritten signature in black ink that reads "Gregory J. Santacroce". The signature is written in a cursive style.

Gregory J. Santacroce
Acting Chief, LSASD/LB



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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Final Report

Project: Marsh Creek WWTP - 2106023

Project Number: 2106023

Project Narrative:

The National Environmental Laboratory Accreditation Conference Institute (TNI) is a voluntary environmental laboratory accreditation association of State and Federal agencies. TNI established and promoted a National Environmental Laboratory Accreditation Program (NELAP) that provides a uniform set of standards for the generation of environmental data that are of known and defensible quality. The EPA Region 2 Laboratory is NELAP accredited. The Laboratory tests that are accredited have met all the requirements established under the TNI Standards.

Condition Comments

None

Comment(s):

The "Sample Analysis Date and Time" is included in the results section for any analyte with a prescribed holding time of 72 hours or less.

Data Qualifier(s):

- U- The analyte was not detected at or above the Reporting Limit.
- J- The identification of the analyte is acceptable; the reported value is an estimate.
- K- The identification of the analyte is acceptable; the reported value may be biased high.
- L- The identification of the analyte is acceptable; the reported value may be biased low.
- NJ- There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.



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Reporting Limit(s):

The Laboratory was able to achieve the standard laboratory reporting limits, where applicable, for each analyte requested except for the following analyte(s):

VOA GCMS

The reporting level of 0.00 ug/L was raised to 10 ug/L for the following analyte(s):

Acetone

for the following samples:

2106023-03

The reporting level of 0.00 ug/L was raised to 5 ug/L for the following analyte(s):

m,p-Xylene, o-Xylene

for the following samples:

2106023-03

SUMMARY REPORT FOR SAMPLES

| Field ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---------------------------------------|---------------|---------|------------------|------------------|
| Outfall 001 - Comp. | 2106023-01 | Aqueous | 06/11/2021 09:40 | 06/11/2021 17:57 |
| Outfall 001-3Xs G-C | 2106023-02 | Aqueous | 06/11/2021 09:00 | 06/11/2021 17:57 |
| TRIP BLANK | 2106023-03 | Aqueous | 06/07/2021 10:28 | 06/11/2021 17:57 |
| Outfall 001- Grab | 2106023-04 | Aqueous | 06/11/2021 11:59 | 06/11/2021 17:57 |
| Outfall 001(Lab Composite-Grab#1,2,3) | 2106023-08 | Aqueous | 06/11/2021 00:01 | 06/11/2021 17:57 |
| Influent - Comp. | 2106023-09 | Aqueous | 06/11/2021 10:17 | 06/11/2021 17:57 |



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SUMMARY REPORT FOR METHODS

| Analysis | Method | Certification | Matrix |
|---------------------------|-----------------------------|----------------------|---------------|
| 624.1 VOA EPA-NPDES | EPA 624.1 SOP C-89 Rev 3.6 | NELAP | Aqueous |
| Ammonia [As N] | EPA 350.1 SOP C-80 Rev 2.7 | NELAP | Aqueous |
| Biochemical Oxygen Demand | SM 5210B SOP C-21 Rev 2.7 | NELAP | Aqueous |
| Cyanide, Total | EPA 335.4 SOP C-28 Rev 2.7 | NELAP | Aqueous |
| Coliform, Fecal | SM 9221B,E SOP B-8 Rev 2.7 | NELAP | Aqueous |
| Mercury | EPA 245.1 SOP C-110 Rev 2.7 | NELAP | Aqueous |
| Metals ICP TAL NPDES/DW | EPA 200.7 SOP C-109 Rev 3.6 | NELAP | Aqueous |
| Nitrogen, Total Kjeldahl | EPA 351.2 SOP C-40 Rev2.7 | NELAP | Aqueous |
| Phenolics, Total | EPA 420.4 SOP C-29 Rev 2.7 | NELAP | Aqueous |
| Phosphorus | EPA 365.1 SOP C-68 Rev 2.7 | NELAP | Aqueous |
| Residue, Non-Filterable | SM 2540D SOP C-33 Rev 3.7 | NELAP | Aqueous |



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| Analyte | Result | Qualifier | Reporting Limit | Units | Date and Time of Analysis* |
|---------|--------|-----------|-----------------|-------|----------------------------|
|---------|--------|-----------|-----------------|-------|----------------------------|

Field ID: Outfall 001 - Comp.

Sample ID: 2106023-01

Metals ICP

| | | | | | |
|----------|------|---|------|------|--|
| Cadmium | --- | U | 3.00 | ug/L | |
| Chromium | --- | U | 5.00 | ug/L | |
| Copper | --- | U | 10.0 | ug/L | |
| Iron | 51.0 | | 50.0 | ug/L | |
| Lead | --- | U | 8.00 | ug/L | |
| Nickel | --- | U | 20.0 | ug/L | |
| Selenium | --- | U | 20.0 | ug/L | |
| Silver | --- | U | 5.00 | ug/L | |
| Zinc | 32.7 | | 20.0 | ug/L | |

Sanitary

| | | | | | |
|---------------------------|-------|---|--------|------|---------------------|
| Ammonia [As N] | 0.556 | | 0.100 | mg/L | |
| Biochemical Oxygen Demand | 4.92 | | 2.00 | mg/L | 6/12/2021 7:16:00AM |
| Nitrogen, Total Kjeldahl | 1.66 | | 0.100 | mg/L | |
| Phosphorus | 0.142 | | 0.0500 | mg/L | |
| Residue, Non-Filterable | --- | U | 10.0 | mg/L | |

Field ID: Outfall 001-3Xs G-C

Sample ID: 2106023-02

Sanitary

| | | | | | |
|------------------|-----|---|------|------|--|
| Cyanide, Total | --- | U | 10.0 | ug/L | |
| Phenolics, Total | --- | U | 20.0 | ug/L | |

Field ID: TRIP BLANK

Sample ID: 2106023-03

VOA GCMS

| | | | | | |
|------------------------|-----|---|------|------|--|
| Chloromethane | --- | U | 5.00 | ug/L | |
| Vinyl Chloride | --- | U | 5.00 | ug/L | |
| Bromomethane | --- | U | 5.00 | ug/L | |
| Chloroethane | --- | U | 5.00 | ug/L | |
| Trichlorofluoromethane | --- | U | 5.00 | ug/L | |
| 1,1-Dichloroethene | --- | U | 5.00 | ug/L | |



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| Analyte | Result | Qualifier | Reporting Limit | Units | Date and Time of Analysis* |
|---------|--------|-----------|-----------------|-------|----------------------------|
|---------|--------|-----------|-----------------|-------|----------------------------|

Field ID: TRIP BLANK

Sample ID: 2106023-03

VOA GCMS

| | | | | |
|---------------------------|-----|---|------|------|
| Methylene Chloride | --- | U | 5.00 | ug/L |
| Acrylonitrile | --- | U | 5.00 | ug/L |
| trans-1,2-Dichloroethene | --- | U | 5.00 | ug/L |
| 1,1-Dichloroethane | --- | U | 5.00 | ug/L |
| Chloroform | --- | U | 5.00 | ug/L |
| 1,1,1-Trichloroethane | --- | U | 5.00 | ug/L |
| Carbon Tetrachloride | --- | U | 5.00 | ug/L |
| 1,2-Dichloroethane | --- | U | 5.00 | ug/L |
| Benzene | --- | U | 5.00 | ug/L |
| Trichloroethene | --- | U | 5.00 | ug/L |
| 1,2-Dichloropropane | --- | U | 5.00 | ug/L |
| Bromodichloromethane | --- | U | 5.00 | ug/L |
| cis-1,3-Dichloropropene | --- | U | 5.00 | ug/L |
| Toluene | --- | U | 5.00 | ug/L |
| trans-1,3-Dichloropropene | --- | U | 5.00 | ug/L |
| 1,1,2-Trichloroethane | --- | U | 5.00 | ug/L |
| Tetrachloroethene | --- | U | 5.00 | ug/L |
| Dibromochloromethane | --- | U | 5.00 | ug/L |
| Chlorobenzene | --- | U | 5.00 | ug/L |
| Ethylbenzene | --- | U | 5.00 | ug/L |
| Bromoform | --- | U | 5.00 | ug/L |
| 1,1,2,2-Tetrachloroethane | --- | U | 5.00 | ug/L |
| 1,3-Dichlorobenzene | --- | U | 5.00 | ug/L |
| 1,4-Dichlorobenzene | --- | U | 5.00 | ug/L |
| 1,2-Dichlorobenzene | --- | U | 5.00 | ug/L |
| Acetone | --- | U | 10.0 | ug/L |
| m,p-Xylene | --- | U | 5.00 | ug/L |
| o-Xylene | --- | U | 5.00 | ug/L |



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| Analyte | Result | Qualifier | Reporting Limit | Units | Date and Time of Analysis* |
|---------|--------|-----------|-----------------|-------|----------------------------|
|---------|--------|-----------|-----------------|-------|----------------------------|

Field ID: Outfall 001- Grab

Sample ID: 2106023-04

Mercury CVAA

| | | | | | |
|---------|-----|---|-------|------|--|
| Mercury | --- | U | 0.050 | ug/L | |
|---------|-----|---|-------|------|--|

Microbiology, MPN

| | | | | | |
|-----------------|---|--|-----|------------|---------------------|
| Coliform, Fecal | 2 | | 1.8 | MPN/100 mL | 6/11/2021 6:20:00PM |
|-----------------|---|--|-----|------------|---------------------|

Field ID: Outfall 001(Lab Composite-Grab#1,2,3)

Sample ID: 2106023-08

VOA GCMS

| | | | | | |
|---------------------------|-----|---|------|------|--|
| Chloromethane | --- | U | 50.0 | ug/L | |
| Vinyl Chloride | --- | U | 50.0 | ug/L | |
| Bromomethane | --- | U | 50.0 | ug/L | |
| Chloroethane | --- | U | 50.0 | ug/L | |
| Trichlorofluoromethane | --- | U | 50.0 | ug/L | |
| 1,1-Dichloroethene | --- | U | 50.0 | ug/L | |
| Methylene Chloride | --- | U | 50.0 | ug/L | |
| Acrylonitrile | --- | U | 50.0 | ug/L | |
| trans-1,2-Dichloroethene | --- | U | 50.0 | ug/L | |
| 1,1-Dichloroethane | --- | U | 50.0 | ug/L | |
| Chloroform | --- | U | 50.0 | ug/L | |
| 1,1,1-Trichloroethane | --- | U | 50.0 | ug/L | |
| Carbon Tetrachloride | --- | U | 50.0 | ug/L | |
| 1,2-Dichloroethane | --- | U | 50.0 | ug/L | |
| Benzene | --- | U | 50.0 | ug/L | |
| Trichloroethene | --- | U | 50.0 | ug/L | |
| 1,2-Dichloropropane | --- | U | 50.0 | ug/L | |
| Bromodichloromethane | --- | U | 50.0 | ug/L | |
| cis-1,3-Dichloropropene | --- | U | 50.0 | ug/L | |
| Toluene | --- | U | 50.0 | ug/L | |
| trans-1,3-Dichloropropene | --- | U | 50.0 | ug/L | |
| 1,1,2-Trichloroethane | --- | U | 50.0 | ug/L | |
| Tetrachloroethene | --- | U | 50.0 | ug/L | |



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Project Number: 2106023

| Analyte | Result | Qualifier | Reporting Limit | Units | Date and Time of Analysis* |
|---------|--------|-----------|-----------------|-------|----------------------------|
|---------|--------|-----------|-----------------|-------|----------------------------|

Field ID: Outfall 001(Lab Composite-Grab#1,2,3)

Sample ID: 2106023-08

VOA GCMS

| | | | | | |
|---------------------------|-----|---|------|------|--|
| Dibromochloromethane | --- | U | 50.0 | ug/L | |
| Chlorobenzene | --- | U | 50.0 | ug/L | |
| Ethylbenzene | --- | U | 50.0 | ug/L | |
| Bromoform | --- | U | 50.0 | ug/L | |
| 1,1,2,2-Tetrachloroethane | --- | U | 50.0 | ug/L | |
| 1,3-Dichlorobenzene | --- | U | 50.0 | ug/L | |
| 1,4-Dichlorobenzene | --- | U | 50.0 | ug/L | |
| 1,2-Dichlorobenzene | --- | U | 50.0 | ug/L | |

Field ID: Influent - Comp.

Sample ID: 2106023-09

Sanitary

| | | | | | |
|---------------------------|------|--|------|------|---------------------|
| Ammonia [As N] | 16.9 | | 1.00 | mg/L | |
| Biochemical Oxygen Demand | 190 | | 2.00 | mg/L | 6/12/2021 7:16:00AM |
| Nitrogen, Total Kjeldahl | 27.0 | | 1.00 | mg/L | |
| Residue, Non-Filterable | 146 | | 10.0 | mg/L | |

8.0 Photographs

Photo #1. The thermometer inside the effluent composite sampling refrigerator does not have a correction factor tag.



Photo #2. Uneven flow over the V-notch weirs in the primary settling tanks was observed that could potentially cause short-circuiting.



Photo #3: Uneven flow over the V-notch weir in the secondary clarifiers was observed that could cause uneven sludge sludging.

