U.S. Environmental Protection Agency
Region 5

Purpose: Clean Water Act National Pollutant Discharge Elimination System (NPDES) Compliance Evaluation Inspection

Facility: Village of Laurelville WWTP
16111 Creamery Hill Road
Laurelville, Ohio 43135

Permittee: Village of Laurelville
16111 Creamery Hill Road
Laurelville, Ohio 43135

Permittee Mailing Address Village of Laurelville
P.O. Box 393
Laurelville, Ohio 43135

NPDES Permit: 0PA00013*HD

Federal NPDES Identifier: OH0050784

FRS ID: 110006309949

Inspection Date: March 23, 2022

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PURPOSE OF INSPECTION

The purpose of the unannounced inspection by the U.S. Environmental Protection Agency (USEPA) at the Village of Laurelville Wastewater Treatment Plant (Laurelville WWTP) was to describe, evaluate, and document compliance with the Clean Water Act (CWA), their National Pollutant Discharge Elimination System (NPDES) permit and to confirm their progress towards completing the plant upgrades under the WWTP Improvement Plan.

BACKGROUND

The Village of Laurelville owns and operates a sanitary sewer system and a WWTP that was constructed in 1980. Based on available census data, the Laurelville WWTP serves approximately 500 residents in Laurelville and another 370 residents in the adjacent Village of Adelphi. The WWTP, which is a lagoon-based WWTP with a design flow of 200,000-gallons per day, discharges treated wastewater to Brimstone Creek. According to the Ohio Environmental Protection Agency (OEPA), Brimstone Creek is in full attainment of the biological criteria of its "Warmwater Habitat" designation in the Ohio Water Quality Standards.

Based on a completed engineering evaluation, the Village of Laurelville is currently in the process of upgrading the WWTP. Construction activities were originally identified to begin in late 2020 and be completed by early 2022. The WWTP improvement project is currently behind schedule from its original intended completion date of early 2022 due to supply chain delays experienced during the Covid-19 Pandemic. The planned WWTP upgrades include replacing deteriorated lagoon liners (after removing and disposing of accumulated sludge) and upgrading the aeration system in two lagoons; installing a new headworks station with a mechanical screen for influent wastewater; a polishing reactor for treated wastewater ammonia reduction; installation of an ultraviolet (UV) light disinfection system; and pump station upgrades. Two tertiary sand filters and the headworks comminutor will be demolished during the upgrades.

The upgraded aeration systems in each lagoon will include the installation of a proprietary diffused aeration system consisting of blowers, diffusers, and in-basin piping; a modular insulated floating cover; and baffles.

According to a USEPA Enforcement and Compliance History Online (ECHO) report, the Village of Laurelville WWTP has self-reported effluent limit violations in 9 of the past 12 quarters showing Significant Noncompliance (2019: Quarters 1 and 2; 2020 Quarters 1, 2 and 3; 2021 Quarters 1, 2, 3 and 4). These self-reported violations are for Ammonia-Nitrogen. 2019 Quarter 4 identifies a permit schedule violation for "Plan, Report, or Scope of Work – Category 2" as well.

The Laurelville WWTP has a NPDES Permit (#0PA00013*HD) issued by the Ohio Environmental Protection Agency (OEPA) with an effective date of October 1, 2018. A copy of the permit is maintained on site in the office. The federal NPDES identifier is OH0050784. The SIC code for this facility is 4952 – sewerage systems.

INSPECTION

Inspectors Anne Marie Vincent (Inspector Vincent) and Megan Zale (Inspector Zale) of USEPA Region 5 arrived at the Laurelville wastewater treatment facility at 10:15 a.m. and entered the plant office where they were greeted by Mr. Dave Jarvis (Maintenance and Operations staff). Anne Marie Vincent presented her credentials to Mr. Jarvis for identification and explained the purpose of the unannounced compliance inspection. Mr. Jarvis called Mr. Joe King, the Plant Operator of Record, as he was not at the plant that day per the operator shift schedule. Inspector Vincent spoke with Mr. King over the telephone to explain the purpose of the inspection. Mr. King stated that he would come into the plant on his non-scheduled day in order to participate in the inspection as he was the primary operator of record for the facility. Mr. King advised that he could be at the facility within the next 30 minutes. Mr. King arrived at approximately 10:45 a.m.

Opening Conference

After Mr. King arrived, Inspector Vincent presented her credentials to Mr. King and again explained the purpose of the unannounced inspection. Laurelville's self-reported, monthly Discharge Monitoring Reports (DMRs) show frequent and ongoing exceedances of their NPDES permit discharge limits, most notably for Ammonia-Nitrogen. In addition, the facility is in the process of completing the construction associated with several plant upgrades as part of an overall wastewater treatment plant improvement plan which was to be completed in early 2022. USEPA staff intended to gain an understanding of the treatment system, including information about:

- How this wastewater treatment system functions,
- Potential or known causes of the effluent limit violations,
- Plans to fix, upgrade, or replace any components of the treatment system, and
- How these improvements will satisfy the requirements of Part I, C – Schedule of Compliance of their NPDES permit.

Inspector Vincent also advised Mr. King that he has a right at any time during or after the inspection to make a claim of confidential business information (CBI) for any facility information, inspection photographs or document copies that may be collected during the inspection. Mr. King did not make any claims of confidentiality during the opening conference discussion.

Following the opening conference, Inspector Vincent conducted an inspection interview which also included a facility walk-thorough. The information gathered from that interview process and the site walkthrough is summarized in the remaining report sections.

General Facility Information

According to Mr. King, there are approximately 300 service connections served by the Laurelville WWTP. Dry weather flow from Laurelville is estimated at 50,000 gallons per day. The dry weather flow from Adelphi is estimated at less than 25,000 gallons per day, according to Mr. King. According to Mr. King, the collection system is impacted by inflow and infiltration during wet weather events. According to Mr. King, there are no industrial users under individual industrial user permits within the collection system. There is one business in town, a local

butcher shop, that sends bloody water to the wastewater treatment plant under the general sewer use ordinance for the village. The WWTP does not accept septage waste.

This WWTP facility is classified as a Class I facility. Mr. Joe King is the primary Operator of Record for the WWTP and is a Class III certified operator. There are two additional Class III certified operators for the plant: Bryan McKee and Todd Jones. According to Mr. King, he is the responsible official that signs the monthly DMRs. Mr. King stated that he has been in this position for approximately 15 years and the other operators have been on staff more than three years. According to Mr. King, one of the three Class III licensed operators is on site 3 days per week (Monday, Wednesday, and Friday) for the minimum staffing hours of 1.5 hours per week as required by Ohio Revised Code. The three operators are on a rotating weekly schedule. On-site hours are recorded on a log sheet in the WWTP office by the operator. In addition, Mr. Dave Jarvis is on site daily for maintenance and operations activities at the plant. Mr. Jarvis is not a licensed operator. When the plant is not staffed, the entry gate is locked and only authorized personnel from the plant or village have keys for access to the plant. The facility is secured with a chain link fence that encompasses the facility on all sides.

Plant Improvement Project

The permit-to-install for the general improvement plan plant upgrades was submitted in December 2019 instead of October 2019 as required by the NPDES permit Part I, C. 2 (Schedule of Compliance to Consistently Meet Permit Effluent Limitations). The NPDES permit Part 1, C. 3 requires that Laurelville implement the recommendations of the general plan (improvement plan) not later than 24 months after the effective date of the permit (October 1, 2018), which would be October 1, 2020. Mr. King stated that the construction and implementation of the improvement projects began in the fall of 2021, approximately 1 year after the "not later than" date for this permit requirement. The NPDES permit Part I, C. 4 requires that Laurelville complete the improvements and obtain compliance with the final effluent limitations no later than 36 months from the effective date of the permit. Based on the effective date, the plant improvements should have been completed by October 1, 2021. Construction of the plant improvements is still on-going as of the date of this report. The WWTP improvement project is currently behind schedule due to supply chain issues with obtaining necessary plant components such as the new emergency generator, upgraded electrical components, and other necessary operational components. Due to these supply chain issues during the pandemic, the project timeline was continually revised, according to Mr. King. The current emergency generator on site is not powerful enough to run the new, larger-capacity blowers being installed as part of the plant improvements. The new emergency generator will be powerful enough to run the upgraded aeration systems, on-site pump station, new larger blowers, and other pumps.

Inspector Vincent contacted Mr. Michael Betts, the DLZ Corporation (DLZ) Project Engineer for the plant improvement project, via e-mail on April 8, 2022, to obtain an updated completion date for the plant improvements. In an April 11, 2022, e-mail, Mr. Betts informed Inspector Vincent that DLZ had recently been granted a time extension due to the material shortages from the supply chain delays; and the new date for "substantial" completion would be December 23, 2022. This new date is 14 months past the original completion date required by the permit.

Mr. King described the plant upgrades during the site walkthrough. The communitor (grinder) was already removed as part of the plant upgrades and a new bar screen is slated to be installed

at the head of the plant. New insulated floating covers have already been installed on Lagoons 1A and 1B to maintain a warmer temperature for the ammonia nitrification process. The upgraded proprietary diffused aeration system for both 1A and 1B is currently being installed to provide more vigorous aeration in the front half of each lagoon, with less aeration and more settling on the back portion of the lagoons. These lagoons also have new curtain baffles to maintain proper residence time and prevent short circuiting of the flow that would reduce residence time. Lagoon 2A will have the sludge removed and then be used as an equalization basin to help manage flows from larger rain events that include increased inflow/infiltration from the collection systems. A new polishing tank/denitrification box is currently being installed for improved denitrification. Mr. King described this denitrification box as having porous, plastic honeycomb media with air percolation and bacteria. A new ultraviolet light disinfection system (UV system) is on site and will be installed as part of the upgrades. The UV system will be positioned after the denitrification box and before the final effluent chamber. The original two sand filter beds and two covered ammonia removal basins (with hanging bag filters) will be removed after the upgrades to the plant are complete. With the lagoon 2A change-in-use to an equalization basin and the removal of the original ammonia removal basins, the dosing tank, which is currently used to send flow to the ammonia removal basins, will be used to receive flow from lagoon 2A (equalization basin) and then pump that flow up to lagoon 1A to enter the treatment process.

The new plant design once all construction is complete is as follows: Influent flow will come into the headworks of the plant where the flows from Adelphi and Laurelville combine. Flow will then pass through the new bar screen and then be directed into lagoon 1A, and subsequently lagoon 1B, for diffused aeration and settling. Lagoon 2A will also be available as an equalization basin to help manage large storm flows. When plant capacity is available, lagoon 2A waters will be directed to the old dosing tank/pump station on site where the flow will be pumped back to lagoon 1A to begin treatment. From lagoon 1B, flow will be directed to the denitrification box/polishing tank. From the denitrification box, flow will move through the new UV system and then through the final effluent chamber. The automatic sampler for the effluent samples and the effluent flow meter and V-notch weir will still be located after the final effluent chamber.

<u>Current Plant Flow During Construction of Plant Improvements</u>
Currently lagoons 1A and 1B are being upgraded; therefore, they are offline and the WWTP is operating with lagoons 2A and 2B for treatment. This means the plant is operating at half of its original design capacity during this construction period. Lagoon 2A is operating as the primary lagoon which flows into lagoon 2B. Both lagoon 2A and 2B are aerated. From 2B, lagoon water flows to the dosing tank/pump station where flow is then pumped to the east and the west ammonia removal basins. The ammonia removal basins are covered and consist of hanging bag filters, according to Mr. King. Flow from the east ammonia removal basin flows into the east sand filter bed and flow from the west ammonia removal basin flows to the west sand filter bed. Flows from both sand filter beds are then directed into the final effluent chamber. From there the final effluent flows past a v-notch weir for flow measurement and a refrigerated autosampler collects the effluent samples at the identified sampling location from the permit.

Plant Operations

The construction activities to complete the improvements to the plant were continuing on the day of the inspection. Mr. King stated that the lagoons are inspected daily when operators are present. A bound notebook is used for the operational logbook to document activities that occur when the operators are onsite. The notebook entries include the date and times of inspections, name of the operator, any problems identified during inspections or operations, and the actions taken to mitigate any problems identified. Logbook entries also include when preventative maintenance is performed on equipment in the facility. Logbook entries are made in ink. Separate equipment calibration reports are maintained within the equipment files when performed by contract companies. There is also a separate operational logbook for the lift station.

Operators also keep a monthly record sheet (loose paper) where they record daily data such as Adelphi influent and plant effluent flow rates, monitoring results and sample analysis results for individual days during the given month identified on the sheet. The operators also logged their times when they were present on site on this same sheet titled "Laurelville Wastewater Plant." Mr. King stated that they do not keep a formal inventory list of spare parts, but they do maintain a supply of routine spare parts including items such as lift station pumps and gaskets.

The logbooks and paper log sheets are maintained on site. The last 5 years of logs were available for review during the inspection.

According to Mr. King, the alarm system at the plant is not operating. Once the plant upgrades are complete, the new lift station, blowers, and emergency generator will be linked to a new alarm system. That alarm system will be capable of notifying plant staff and operators that there is an issue via an auto-call system. Mr. King stated that there are no written procedures for responding to emergencies such as power failures, floods, fires, and other natural disasters. The plant currently has emergency generator power for the lift stations and current plant equipment. However, the new larger blowers will require more power than the current emergency generator can provide. Therefore, a larger generator has been purchased as part of the plant upgrades. The shipment of the new emergency generator has been delayed by supply chain issues. The current emergency generator is set up to run an automatic test on Wednesdays.

During the site walkthrough, Inspector Vincent did not observe excessive scum build-up, grease, foam, or floating sludge on any of the treatment units. There were no observed noxious odors at the plant. Inspector Vincent did not observe any evidence that there had been potential spills at the plant that would impact storm drains. Inspector Vincent did not observe any leakage from the lagoon, animal burrows in the berms of the lagoons or excessive erosion of the berms for the lagoons. The vegetation on the berms for lagoons 2A and 2B was well managed and not overgrown. Inspector Vincent did not observe rooted plant growth in the waters of lagoons 2A and 2B. The covers over the ammonia removal basins had signs of minimal vegetation growth. There was also a minimal amount of plant growth in the corners and at the edges of both sand filter beds, but the majority of the surface area of the sand filter beds was free of vegetation.

Flow Measurement

Influent flows from the villages of Adelphi and Laurelville combine at the headworks to the WWTP. According to Mr. King, the volume of influent flow from the Village of Adelphi is measured by a magmeter located in a manhole just outside of the WWTP fence. The influent flow from the Village of Laurelville is not measured according to Mr. King. The WWTP effluent flow is measured using a V-notch weir with an ultrasonic Pulsar flow measuring system. The flow charts and flow totalizer are located on a wall inside the WWTP office. Continuous flow is measured for Outfall 001.

According to Mr. King, the flow meters which measure influent flow from Adelphi and the WWTP effluent are calibrated annually by a contract company (Hoskins Solutions, Columbus, Ohio). The calibration reports were available on site with the most recent annual calibrations completed in 2021. The totalizer is also calibrated annually at the same time as the flow meters. The effluent flow meter is routinely inspected by the operator during daily sampling. The Adelphi influent flow meter is not observed regularly by the operator. Mr. King stated that the flow monitoring systems and charts are able to accommodate the maximum flow rates that are normally seen at the plant.

Sampling/Analysis

Based on the inspection, influent and effluent sampling locations are consistent with the permit and representative of the waste stream. For sampling at influent monitoring location 601, the sample is collected after the influent flows from Adelphi and Laurelville are combined at the headworks. The influent sample is a composite sample comprised of 3 grab samples collected over 4 hours as defined by the permit conditions. According to Mr. King, the influent samples are collected by plant personnel weekly, although the permit only requires samples once every 2 weeks. Mr. King stated that he is reporting the additional sample results.

According to Mr. King, a refrigerated automatic sampler for Outfall 001 (photographs 13 and 14) is programmed by an on-site licensed operator (normally himself) to collect flow proportioned composite samples. The temperature for the refrigeration is programmed through the control module for the sampler as well. According to Mr. King, there are two composite collection jugs for use with the autosampler. After a composite sample from the automatic sampler is collected, that jug is removed, and a second clean composite collection jug is placed in the automatic sampler. In between uses, the composite sample collection bottles are washed on site by the operator with lab soap and then rinsed with distilled water before they are used again. Once a composite sample collection cycle is finished, the operators record information from the automatic sampler in the onsite operations log including whether a full collection cycle was completed. The collected composite samples are poured off into individual sample jars for each parameter to be analyzed.

During the site walkthrough, there did not appear to be a separate thermometer in the refrigerated collection unit of the autosampler to monitor and verify the temperature of the sample. Composite sampler tubing appeared to be free of debris and loops.

Mr. King stated that daily grab samples are collected using a single sample collection bottle. For quarterly Oil and Grease samples, Mr. King stated that the operators are collecting the oil and

grease grab sample in a sample collection bottle and then pouring off the necessary amount into the sample jar that will be sent to Alloway for analysis. Inspector Vincent explained to Mr. King that oil and grease samples must be collected in the actual sample container that will go to the lab for analysis and there should be no transfer from one bottle to another when collecting oil and grease samples.

Once grab and composite samples are collected, the operators measure dissolved oxygen (DO) and temperature using a YSI 5100 DO meter and pH using a Thermo Scientific™ Orion™ 3-Star Benchtop pH meter within 15 minutes of the sample collection time, according to Mr. King. The DO and pH meters are calibrated by the licensed operators on site. A 3-point calibration is used for the pH meter. Calibrations are documented in the daily operations logbook. Monitoring results for pH, DO and temperature are recorded on the monthly "Laurelville Wastewater Plant" log sheet in the plant office.

Samples for analysis are stored in a small refrigerator in the WWTP lab until they are ready to drive the samples to the appropriate contract laboratory for analysis. Inspector Vincent did not observe a thermometer in the refrigerator used for temporary sample storage. While in transit, sample bottles are transported with ice and frozen gel packs in a small sample cooler with a completed chain of custody (COC) for each contract lab. COCs are filled out by the individual collecting the samples.

The licensed WWTP operators conduct total suspended solids (TSS) and carbonaceous biochemical oxygen demand – 5 day (CBOD5) analyses on site in the WWTP lab. The results from these analyses are recorded on the "Laurelville WWTP Laboratory Analysis Benchsheet" and the monthly "Laurelville Wastewater Plant" log sheets. Mr. King stated that in house analysis is done following the applicable standard methods. The balance used for solids measurements for TSS is calibrated to three different weights according to Mr. King. Two of the licensed operators, Bryan McKee and Todd Jones, are former or current chemists, according to Mr. King. Inspector Vincent observed that the buffers for pH calibration were not expired, and the lab bench work area was clean. Instructions for using the pH and DO/temperature meters are posted on the wall above the counter where the instruments are located in the lab.

E. coli analysis is completed by the City of Circleville WWTP lab. According to Mr. King, the E. coli samples (preserved with $Na_2S_2O_3$) are transported on ice as soon as the samples are collected with a completed chain of custody form (COC) to the Circleville WWTP for analysis. The COCs for E. coli samples are returned to Laurelville WWTP with the analysis results filled in on the COCs. Todd Jones is employed as a lab analyst at the Circleville WWTP and is also one of the licensed operators for Laurelville WWTP. Mr. Jones returns the COCs including the analysis results when he works his shifts at the Laurelville WWTP. All other parameters (oil and grease, ammonia, nitrite/nitrate, and metals) are analyzed by Alloway in Marion, Ohio. According to Mr. King, the Circleville WWTP and Alloway provide pre-preserved sample jars as needed based on the parameter to be analyzed.

The operators are collecting upstream (801) and downstream samples as required by the permit to measure temperature, DO and pH (on site); ammonia (NH_3), Nitrogen and hardness (Alloway); and E. coli (Circleville WWTP Lab).

In addition to permit required sample analyses, the operators also conduct internal system check sample analysis for ammonia, BOD, TSS and pH. These samples are not collected at the permit identified outfalls or monitoring points. These samples are taken from other areas within the plant to track operational parameters internally.

Sewage Sludge Management

According to Mr. King, the WWTP has not used land application for the disposal of sewage sludge in the last 20 years. In association with the plant improvement project, sludge was removed form the lagoons 1A and 1B. The removed sludge was sampled and analyzed by a contractor and the dry tonnage was reported by Mr. King to Ohio EPA through the electronic Discharge Monitoring Report (eDMR) system. According to Mr. King, this was the first time sludge had been removed from the lagoons since he has been an operator here for approximately 14 years. Mr. King stated that the WWTP does not regularly waste sludge from the lagoons.

Sanitary Sewer Overflows

During pre-inspection research, Inspector Vincent reviewed a February 2019 Sanitary Sewer Overflow (SSO) 5-Day Follow-up Report for an event which occurred on February 12, 2019 through February 14, 2019. The report indicates that 0.342 million gallons were discharged directly to a receiving water from the pump station due to heavy rains. This 2019 5-Day Report was submitted on February 21, 2019, seven days after the SSO event ended.

During the inspection interview, Mr. King stated that inflow and infiltration impacted the collection system. Mr. King stated that there have been no SSOs and as such, he has not filed any annual SSO reports. Mr. King made a similar statement in an inspection follow-up e-mail on May 9, 2022.

Effluent/Receiving Waters

During the site walkthrough, Inspectors Vincent and Zale walked to the location of the effluent discharge into Brimstone Creek. The final effluent outfall discharge point is located outside of the facility fence on the bank of Brimstone Creek.

USEPA observed a permanent sign installed on the streambank at the outfall discharge. However, the wording on the sign only faces towards the plant and would not be visible to persons viewing the outfall from the creek. Some of the lettering for the wording on the sign (permit number, outfall number, contact telephone number) did not appear to meet the permit required minimum of 2-inches in height. Refer to photograph 15 of the photograph log.

USEPA did not observe any oil sheen, floating solids, or abnormal color in the effluent. There were small patches of bubbles (Photograph Log, Photograph 16), but USEPA did not observe thick foam in the effluent. There were no observable floating solids, oil sheen, color, foam, or recognizable plumes in the receiving waters. The receiving waters are accurately described in the permit.

Self-Monitoring Records/Records Review

During the inspection discussion with Mr. King on what records are maintained for operations and monitoring for the facility, Mr. King stated that he is using his personal e-mail for e-mail

correspondence with Ohio EPA on behalf of the plant. Mr. King stated that occasionally he deletes emails from his inbox to keep the size manageable, so he may not have copies of all plant related e-mail correspondence between the facility and Ohio EPA as far back as three years. This would include the e-mail correspondence between Mr. King and Ohio EPA regarding monthly Ammonia-Nitrogen permit limit exceedances noted on the DMRs. Mr. King described that he receives an e-mail notification from Ohio EPA after a DMR is submitted for a specific month. Alex DelValle (Ohio EPA) contacts Mr. King via e-mail and asks him to respond to the notice of violation. Mr. King stated that he then replies to Mr. Alex DelValle directly via e-mail regarding the cause of the exceedance.

Mr. King stated that the authorization letter for signing of the electronic DMRs for submission to Ohio EPA was submitted with the permit renewal application. Inspector Vincent reviewed DMR records available on site.

Inspector Vincent noted that although the pH and DO monitoring results are recorded, the specific time of the sample collection for the sample used for pH and DO measurements and the time for when the measurements of pH and DO were taken do not appear to be noted on the Laurelville Wastewater Plant logs or the entries in the operations logbook. For samples that are collected and taken to the Circleville WWTP or Alloway for analysis, the sample names, collection times and other sampling information is recorded on the chain of custody forms that are completed for those samples. The operations logbook includes general entries that samples were collected on a specific day.

After reviewing several months of operational and sampling documentation, Inspector Vincent identified inconsistencies with the completion of COCs and documentation of sampling information. Specifically, on the Alloway COC for samples collected on 12/15/21, the sample for oil and grease analysis is identified as a composite sample and the sample for Ammonia-Nitrogen analysis is identified as a grab. Per the permit, oil and grease should be a grab sample and Ammonia-Nitrogen should be a composite sample. On the Alloway COC from 12/22/21, the upstream sample to be analyzed for Ammonia-Nitrogen is identified as a composite sample and the sample collection time, although noted, had been crossed out. The upstream sampling samples are all listed as grab samples in the permit, not composite samples.

On the Alloway COCs for 7/7/21, 8/18/21, 12/3/21 and 1/5/22, the sample times are not noted for the composite samples. On the Alloway COC for 6/16/22, there are no sample times noted for the grab samples and composite samples. For influent monitoring and sample analysis for TSS and CBOD5, the benchsheets do not specifically identify the sample collection times or time of analysis.

During the inspection, Inspector Vincent reviewed and collected photographed copies of the sampling and lab analysis documentation for the months of June 2021, July 2021, August 2021, December 2021, and January 2022. Inspector Vincent verified the presence of the most recent 2021calibration report for the flow meters and reviewed the operational logbook covering the years of 2021 and 2022. Inspector Vincent also reviewed the monthly "Laurelville Wastewater Plant" log sheets for June 2021, July 2021, August 2021, December 2021, January 2022, and March 2022 which document flow measurements, analysis and monitoring results and operator

times on site. Inspector Vincent also collected photograph copies of the monthly "Laurelville Wastewater Plant" log sheets for June 2021, July 2021, August 2021, December 2021, and January 2022. Inspector Vincent reviewed the flow monitoring readouts in the office and collected a copy of the flow chart covering February 21, 2022 through February 28, 2022 which recorded flows from a storm event (Photograph Log Photograph 17). Mr. King also provided Inspector Vincent with a copy of the Laurelville WWTP operational flow diagram.

After the inspection, Mr. King e-mailed Inspector Vincent digital copies of the DMRs for June 2021, August 2021, December 2021, January 2022, February 2022 and March 2022; and copies of his e-mail responses to Alex DelValle (Ohio EPA) for the DMR exceedances in the months of November 2021, December 2021, January 2022 and March 2022. Mr. Betts, the Project Engineer for plant improvements project, e-mailed Inspector Vincent a digital copy of the *Village of Laurelville Wastewater Treatment Plant Improvements 2020* plan document and a copy of the April 2022 Ohio EPA change order approval letter for the 180-day project timeline extension.

Closing Conference

USEPA staff relayed the following preliminary comments during the closing conference:

- Although improvements are being made, there are still ongoing effluent violations resulting in self-reported noncompliance.

- USEPA noted that there was no visible thermometer in the refrigerated automatic sampler to verify the temperature in the refrigerator is consistent to what it is set at on the control module for the unit. The autosampler configuration allows for setting the refrigerator for a specific temperature and therefore may have an internal thermometer.

- USEPA noted that there is no thermometer in the sample refrigerator within the office/lab area where samples are stored after they are initially collected until the operator is ready to drive them to the outside labs for analysis on the same day.

- USEPA noted that according to Mr. King's description, the oil and grease grab sample is collected in a sample collection container and then poured off into the actual sample jar. Oil and grease grab samples must be collected directly into the sample jar that will be sent off for analysis. It is not appropriate to transfer a liquid from a collection jar into an actual sample jar for oil and grease samples.

- USEPA noted that Mr. King stated that he is using his personal e-mail for e-mail correspondence with Ohio EPA on behalf of the plant. Mr. King had stated that every so often he deletes emails from his inbox to keep the size manageable, so he may not have copies of all plant related e-mail correspondence as far back as three years. This would include the e-mail correspondence between Mr. King and Ohio EPA regarding monthly permit/DMR exceedance notifications. USEPA noted to Mr. King that any records associated with the monitoring and operation of the plant should be retained according to the records requirements within the NPDES permit Part III 7. D and E - "The permitee shall retain all of the following records for the wastewater treatment works for a minimum of three years except those records that pertain to sewage sludge disposal, use,

storage, or treatment, which shall be kept for a minimum of five years, including: …All plant operation and maintenance records…" and "All reports required by this permit…".

- USEPA noted that the final effluent outfall notification sign only faces towards the plant and would not be visible to persons viewing the outfall from the creek.

Inspector Vincent reviewed with Mr. King that the Village of Laurelville would receive a copy of the final inspection report. Mr. King requested that a copy of the inspection report also be sent to him directly at 21433 Wintergreen Drive, Circleville, Ohio 43113.

USEPA staff left the facility at approximately 4:00 p.m.

Areas of Concern

- Although improvements are being made, there are still ongoing effluent violations resulting in self-reported noncompliance.

- The permit-to-install (PTI) for the plant upgrades in the improvement plan was submitted in December 2019. The NPDES permit Part I, C. 2 required that an approvable application and detail plans for the improvements be submitted not later than 12 months from the effective date (October 1, 2018) of the permit. The PTI was submitted in December 2019, two months late.

- The NPDES permit Part 1, C. 3 requires that Laurelville implement the recommendations of the general plan (improvement plan) not later than 24 months after the effective date of the permit (October 1, 2018), which would be October 1, 2020. Mr. King stated during the inspection that the construction and implementation of the improvement projects began in the fall of 2021, which was approximately 12 months later than the permit required "not later than" date.

- The NPDES permit Part I, C. 4 requires that Laurelville complete the improvements and obtain compliance with the final effluent limitations no later than 36 months from the effective date of the permit. Based on the effective date, the plant improvements should have been completed by October 1, 2021. Construction of the plant improvements is still on-going as of the date of this report. The WWTP improvement project is currently behind schedule due to supply chain issues. The DLZ Project Engineer for the plant improvements informed Inspector Vincent in an April 11, 2022 e-mail that DLZ had been granted a time extension due to the material shortages from the supply chain delays; and the new date for "substantial" completion would be December 23, 2022. The December 23, 2022 date is 14 months past the original completion date required by the permit. Mr. Ryan Laake, Ohio EPA Division of Environmental and Financial Assistance, completed a review of a recent change order to the Laurelville WWTP Improvements Project. The Ohio EPA approval letter for the change order was dated April 15, 2022. The following changes were approved: an extension of the contract length for 180 days; the installation of a grinder pump at the WWTP; and the installation of a telemetry system at the WWTP lift station for monitoring.

- There was no visible thermometer in the refrigerated automatic sampler to verify the temperature in the refrigerator is consistent to what it is set at on the control module for the unit. The autosampler configuration allows for setting the refrigerator for a specific temperature and therefore may have an internal thermometer. Following the inspection, in an e-mail dated May 9, 2022, Mr. King informed USEPA that a thermometer has been placed in the refrigerated housing of the autosampler.

- There is no thermometer in the sample refrigerator within the office/lab area where samples are stored after they are initially collected until the operator is ready to drive them to the outside labs for analysis on the same day. Following the inspection, in an e-mail dated May 9, 2022, Mr. King informed USEPA that there was still no thermometer in the sample fridge in the lab, but one will be placed in this sample refrigerator "in the next few days."

- The oil and grease grab sample is collected in a sample collection container and then poured off into the actual sample jar. Oil and grease grab samples must be collected directly into the sample jar that will be sent off for analysis. It is not appropriate to transfer a liquid from a collection jar into an actual sample jar for oil and grease samples.

- Although the pH and DO monitoring results are recorded, the specific time of sample collection for the sample used for pH and DO measurements and the time when the measurements of pH and DO were taken do not appear to be noted on the Laurelville Wastewater Plant logs or the entries in the operations logbook.

- There are inconsistencies with the completion of COCs and documentation of sampling information. Specifically, on the Alloway COC for samples on 12/15/21, the sample for oil and grease analysis was identified as a composite sample and the sample for Ammonia-Nitrogen analysis was identified as a grab. Per the permit, oil and grease should be a grab sample and Ammonia-Nitrogen should be a composite sample. On the Alloway COC from 12/22/21, the upstream sample to be analyzed for Ammonia-Nitrogen was identified as a composite sample. The upstream sampling samples are all listed as grab samples in the permit, not composite samples.

- There are inconsistencies in recording sample collection times on the Alloway COCs. On the Alloway COCs for 7/7/21, 8/18/21, 12/3/21 and 1/5/22, the sample times are not noted for the composite samples. On the Alloway COC for 6/16/22, there are no sample times noted for the grab samples and composite samples. On the Alloway COC for 12/22/21, although the sample time for the Ammonia-Nitrogen sample is identified, it had been crossed out. For influent monitoring and sample analysis for TSS and CBOD5, the benchsheets do not specifically identify the sample collection times or time of analysis.

- Mr. King appears to be using his personal e-mail for e-mail correspondence with Ohio EPA on behalf of the plant. Mr. King stated that every so often he deletes emails from his inbox to keep the size manageable, so he may not have copies of all plant related e-mail correspondence as far back as three years. This would include the e-mail correspondence between Mr. King and Ohio EPA regarding monthly permit/DMR

exceedance notifications. Any official records associated with the operation and monitoring of the plant should be retained for the appropriate period of time according to the records requirements within the NPDES permit Part III 7. D and E - "The permitee shall retain all of the following records for the wastewater treatment works for a minimum of three years except those records that pertain to sewage sludge disposal, use, storage, or treatment, which shall be kept for a minimum of five years, including: …All plant operation and maintenance records…" and "All reports required by this permit…".

- The wording on the outfall 001 discharge location notification sign along the streambank only faces towards the plant and would not be visible to persons viewing the outfall from the creek (NPDES permit Part II, S.2). In addition, some of the lettering for the wording on the sign (permit number, outfall number, contact telephone number) did not appear to meet the NPDES permit Part II, S. 1 required minimum of 2-inches in height. Following the inspection, in an e-mail dated May 9, 2022, Mr. King informed USEPA that because the notification sign at the outfall is only printed on one side, plant personnel turned the sign so that it faces the receiving stream.

List of Appendices

Appendix A – Photograph Log

APPENDIX A

Photograph Log

Village of Laurelville WWTP
EPA Inspection 3/23/2022
All photos taken by Anne Marie Vincent, Inspector, U.S. EPA
Camera: Nikon Coolpix

1: DSCN0031
Description: Lagoon 1A. Floating cover added as part of plant improvements to retain heat for the ammonia nitrification process. Additional aeration lines and curtain baffles were installed. The curtain baffles are meant to prevent short circuiting of the intended residence time in the lagoon.
Location: South of WWTP office
Camera Direction: West/Southwest
Date/Time: 3/23/2022 / 11:44 a.m.

2: DSCN0032
Description: Lagoon 1B. Floating covers added as part of plant improvements to retain heat for the ammonia nitrification process. Additional aeration lines and curtain baffles were installed. The curtain baffles are meant to prevent short circuiting of the intended residence time in the lagoon.
Location: South of WWTP office
Camera Direction: North
Date/Time: 3/23/2022 / 11:45 a.m.

3: DSCN0033
Description: Lagoon 1B.
Location: South of WWTP office
Camera Direction: West
Date/Time: 3/23/2022 / 11:45 a.m.

4: DSCN0034
Description: Lagoon 2A with aeration. Currently only lagoons 2A and 2B are in operation while 1A and 1B are undergoing improvements. Flow from 2A currently flows to 2B. Once lagoons 1A and 1B are upgraded and operational, solids will be removed from lagoon 2A and this lagoon will become an equalization basin to help manage additional influent from storm events.
Location: South of WWTP office
Camera Direction: South
Date/Time: 3/23/2022 / 12:00 p.m.

5: DSCN0035
Description: Lagoon 2B. After lagoons 1A and 1 B have been upgraded, lagoon 2B will be taken offline, the sludge will be removed and the lagoon will be filled in.
Location: South of WWTP office
Camera Direction: Southwest
Date/Time: 3/23/2022 / 12:01 p.m.

6: DSCN0036
Description: New polishing tank is being installed. Will house porous plastic honeycomb media with air perculation for bacteria to improve denitrification of the effluent.
Location: South of WWTP office
Camera Direction: Northwest
Date/Time: 3/23/2022 / 12:06 p.m.

7: DSCN0037
Description: East ammonia removal basin with hanging filter bags under its cover and east sand filter bed.
Location: South of WWTP office
Camera Direction: Southeast
Date/Time: 3/23/2022 / 12:07 p.m.

8: DSCN0038
Description: East (left) and west (right) sand filter beds. Sand filter beds will be eliminated once the plant improvements are completed.
Location: South of WWTP office
Camera Direction: South
Date/Time: 3/23/2022 / 12:07 p.m.

9: DSCN0039
Description: View looking towards the west sand filter bed and the west ammonia removal basin with hanging filter bags (not visible due to basin cover).
Location: South of WWTP office
Camera Direction: Southwest
Date/Time: 3/23/2022 / 12:07 p.m.

10: DSCN0040
Description: WWTP effluent automatic sampler (left). The V-notch weir and flow meter are located in the concrete box under the metal agular roof and the white styrofoam slabs used to cover the box.
Location: South of WWTP office
Camera Direction: South
Date/Time: 3/23/2022 / 12:12 p.m.

11: DSCN0041
Description: View looking under the white strofoam slabs int the concrete box where the effluent weir is located.
Location: South of WWTP office
Camera Direction: Down
Date/Time: 3/23/2022 / 12:12 p.m.

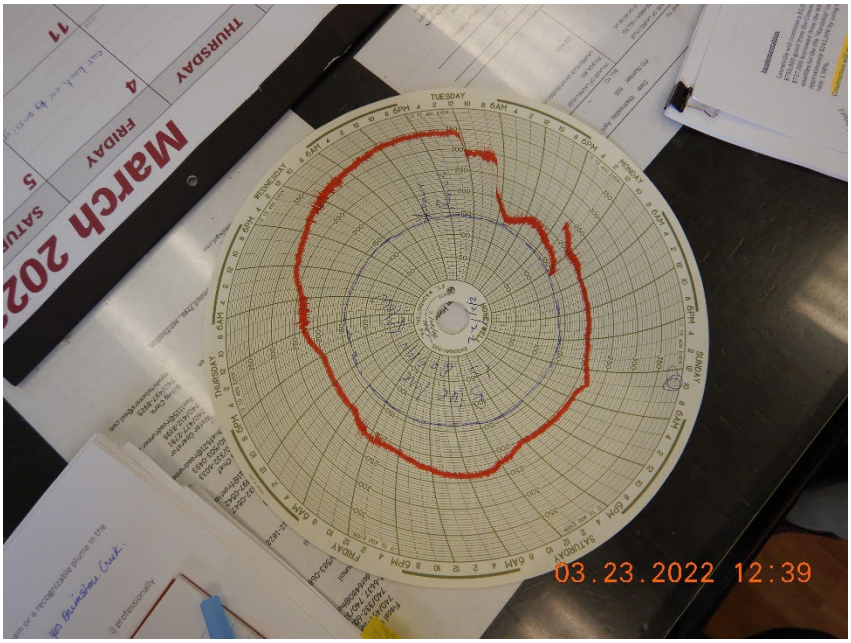
12: DSCN0042
Description: WWTP effluent after the V-notch weir (left side of the photograph). Flow is coming from the left of the photograph flowing down a stepped grade towards the final outfall. The flow meter was not visible due to the cover in place.
Location: South of WWTP office
Camera Direction: Down
Date/Time: 3/23/2022 / 12:13 p.m.

13: DSCN0043
Description: Hach Sigma SD900 automatic sampler at effluent monitoring location Outfall 001. This is a refrigerated automatic sampler unit.
Location: South of WWTP office
Camera Direction: West
Date/Time: 3/23/2022 / 12:13 p.m.

14: DSCN0044
Description: Control module for Hach Sigma SD900 automatic sampler at effluent monitoring location Outfall 001.
Location: South of WWTP office
Camera Direction: Down
Date/Time: 3/23/2022 / 12:14 p.m.

15: DSCN0045
Description: Effluent outfall discharge notification sign at Brimstone Creek. The printed side of the sign is not facing towards the waterway. Lettering does not appear to be 2 inches tall as required by the permit.
Location: North of WWTP office
Camera Direction: North
Date/Time: 3/23/2022 / 12:21 p.m.

16: DSCN0046
Description: Outfall 001 effluent discharge into Brimstone Creek. No visible color, odor, debris, or oil sheen observed.
Location: North of WWTP office
Camera Direction: Down
Date/Time: 3/23/2022 / 12:22 p.m.



17: DSCN0047
Description: Flow chart for time period from February 21, 2022 until February 28, 2022 during a rain event.
Location: in WWTP office
Camera Direction: Down
Date/Time: 3/23/2022 / 12:39 p.m.

18: DSCN0048
Description: WWTP laboratory area within the office. pH and DO/temperature meters are visible. Part of the instrcution sheet for meter use is posted above and to the right of the meters on the bench.
Location: WWTP office/laboratory
Camera Direction: South
Date/Time: 3/23/2022 / 13:21 p.m.