Essex County Schools of Technology
BOARD OF EDUCATION

June 28, 2022

Essex County Schools of Technology
West Caldwell Tech
620 Passaic Ave., West Caldwell, NJ 07006

Dear West Caldwell Tech Community,

Our school system is committed to protecting student, teacher, and staff health. To protect our community and in compliance with the Department of Education regulations, Essex County Schools of Technology tested our schools' drinking water for lead in February 2022.

In accordance with the Department of Education regulations, West Caldwell Tech will implement immediate remedial measures for any drinking water outlet with a result greater than the US Environmental Protection Agency established action level of 15 µg/l (parts per billion [ppb]) for lead. This includes turning off the outlet unless it is determined the location must remain on for non-drinking purposes. In these cases, a "DO NOT DRINK – SAFE FOR HANDWASHING ONLY" sign will be posted.

Results of our Testing

Following instructions given in technical guidance developed by the New Jersey Department of Environmental Protection, we completed a plumbing profile for each of the buildings within Essex County Schools of Technology schools. Through this effort, we identified and tested all drinking water and food preparation outlets. Of the **68** samples taken, all but **3** tested below the lead action level of 15 ppb.

The table below identifies the drinking water outlets that tested above 15 ppb for lead, the actual lead level, and what temporary remedial action Essex Schools of Technology has taken to reduce the levels of lead at these locations.

Sample Location	First Draw Result in µg/l (ppb)	Remedial Action

Point of Entry Sample in Water Room.	48.5	POE Flush sample tested under the permissible limit, indicating a high value due to possible stagnancy. No further remediation needed since this is not a drinking water outlet.
Handwash sink in Kitchen (127) serving area. ID: 01-KI-IN-127-HW (A)	20.4	Outlet taken out of commission. NOT a drinking water outlet and is not used for food preparation.
Steamer in Culinary Classroom (113) ID: 01-KI-IN-113-ST	15.4	Possible exceedance due to stagnancy and rare usage. Outlet taken out of commission permanently.

Health Effects of Lead

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

In other words, it is the fetus that is at risk because developing fetuses receive lead from the mother's bones. Children and fetuses absorb more lead into their bodies than adults and are more susceptible to its effects on brain development; however, most children with elevated blood lead levels do not exhibit any symptoms, but effects may appear later in life.

How Lead Enters our Water

Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipes, brass, and chrome-brass faucets, and in some cases, pipes made of or lined with lead.

When water remains in contact with lead pipes or plumbing materials containing lead over time, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, may contain elevated levels of lead.

- Homes and buildings in New Jersey built before 1987 are more likely to have lead pipes and/or lead solder.
- Service lines, which may also contain lead, are the individual pipes that run from the well to a home or building. The property owner may also be the owner of the service line. Lead service lines are not typically found in non-community systems (e.g., school, office, restaurant, or other buildings on their own well).
- Brass faucets, fittings, and valves, including those advertised as "lead-free", may also contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, that contain a maximum of 0.25 percent lead to be labeled as "lead free". However, prior to January 4, 2014, "lead free" allowed up to 8 percent lead content of the wetted surfaces of plumbing products including those labeled National Sanitation Foundation (NSF) certified. Consumers should be aware of their current fixtures and take appropriate precautions.

Lead in Drinking Water

Lead is a common metal found in the environment. Drinking water is one possible source of lead exposure. The main sources of lead exposure are lead-based paint and lead-contaminated dust or soil. In addition, lead can be found in certain types of pottery, pewter, brass fixtures, cosmetics, imported spices and other food. Other sources include exposure in the workplace and exposure from certain hobbies like shooting ranges and fishing (lead can be carried on clothing or shoes). Lead is found in some toys, some playground equipment, and some children's metal jewelry.

EPA estimates that 10 to 20 percent of a person's potential exposure to lead may come from drinking water. Infants who consume mostly formula mixed with lead-containing water may receive 40 to 60 percent of their exposure to lead from

drinking water When there are elevated levels of lead in your water, drinking water is likely to be a more important source of exposure.

For More Information

A copy of the test results is available in our central office for inspection by the public, including students, teachers, other school personnel, and parents, and can be viewed between the hours of 8 a.m. and 3 p.m. and are also available on our website. For more information about water quality in our schools, contact Bruce Scrivo at Facilities & Operations, 973-412-2258.

For more information on reducing lead exposure around your home and the health effects of lead, visit EPA's Web site at **www.epa.gov/lead**, call the National Lead Information Center at 800-424-LEAD or Safe Drinking Water Act hotline at 1-800-426-4791, or contact your health care provider.

If you are concerned about lead exposure at this facility or in your home, you may want to ask your health care providers about testing children to determine levels of lead in their blood.

Sincerely,

Bruce Scrivo

Bruce Scrivo,
Director of Facilities & Operations

ESSEX COUNTY SCHOOLS OF TECHNOLOGY

Quality Assurance Project Plan (QAPP)
for
WEST CALDWELL TECH HIGH SCHOOL

March 2022

Approvals

School District Representatives:

Program Manager: Bernetta Davis — Print Name | Signature | 6/28/22 — Date

Project Manager(s): Bruce Scrivo — Print Name | Signature | 6/27/22 — Date

Individual School Project Officer(s) (See page iii)

Third Party Sampling Firm: Precision Analytical Services
(Note N/A if Third Party not involved) Name of Firm

Basit Rehman — Print Name | Signature | 3/13/22 — Date

Laboratory: Precision Analytical Services
Name of Laboratory

Laboratory Manager: Mark Fietelson — Print Name | Signature | 03/28/22 — Date

Laboratory QA Officer: Kelly Hogan — Print Name | Signature | 3/28/22 — Date

Table of Contents

1. OBJECTIVE & GOALS / BACKGROUND

Key:

Quality Assurance Project Plan - QAPP
US Environmental Protection Agency - USEPA
School District Lead Water Testing Sampling Plan - Sampling Plan
School District Project Manager - Project Manager
Individual School Project Officer - Project Officer

1.1 Objective and Goals

A Quality Assurance Project Plan (QAPP) is a document that describes the planning, implementation and evaluation steps involved in the acquisition of data that will be used to arrive at a specific goal. The overall objective for this QAPP is to determine the lead concentration at drinking water outlets within the District's schools so that corrective action(s) may be implemented at any drinking water outlets found to exceed the US Environmental Protection Agency (USEPA) drinking water lead action level of 15 micrograms per liter (µg/L).

The lead sampling will consist of the collection of a first draw (initial) sample according to this QAPP and the West

For the purposes of compliance, any concentration greater than 15 µg/L is considered to exceed the lead action level.

Caldwell Tech Sampling Plan for Lead Drinking Water Testing (Sampling Plan). The drinking water outlets can be faucets, drinking water fountains (or bubblers) and water coolers (see Sampling Plan for details).

Follow-up sampling will also be covered by this QAPP and the Sampling Plan. An optional follow-up flushed sample may be analyzed at selected drinking water outlets after flushing for 30 seconds. (An exception to the 30 second follow-up flushed sample is for a water cooler which requires a different follow-up sampling timeframe).

The analytical results and field data will be used by the Project Manager and the District (See Section 2.2) to determine whether drinking water distributed from drinking water outlets such as water fountains (bubblers), faucets, food preparation areas and water coolers have concentrations of lead that exceed 15 µg/L. If a first draw (initial) or follow-up flushed cold water sample is found to contain lead at a concentration greater than 15 µg/L, the Project Manager will instruct the Individual School Project Officer (Project Officer) (See Section 2.3) to isolate the source of drinking water by turning off the device or providing a barrier to the consumption of the water (tape and bag) until appropriate remediation is determined.

1.2 Background

Lead is a toxic metal that can be harmful to human health when ingested. Young children are particularly sensitive to the effects of lead because their bodies are still undergoing development. Lead can get into drinking water by being present in the source water or by interaction of the water with plumbing materials containing lead (through corrosion). Common sources of lead in drinking water include solder, fluxes, pipes and pipe fittings, fixtures, and

sediments. It is possible that different drinking water outlets in a given building could have dissimilar concentrations of lead.

In April 1994, USEPA prepared two guidance documents to assist municipalities in meeting the requirements of the Lead Contamination and Control Act (LCCA): *Lead in Drinking Water in Schools and Non-Residential Buildings (*EPA 812-B-94-002) and *Sampling for Lead in Drinking Water in Nursery Schools and Day Care Facilities* (EPA 812-B-94-003). In December 2005, amended October 2006, EPA issued the revised technical guidance document *3Ts for Reducing Lead in Drinking Water in Schools (EPA 816-B-05- 008)* which replaced the *Lead in Drinking Water in Schools and Non-Residential Buildings* (EPA 812-B-94- 002). The 3Ts Revised Technical Guidance document is meant to assist school officials in implementing programs and policies to reduce children's exposure to lead in drinking water in schools.

2. PROJECT/TASK ORGANIZATION

Key:

School District Program Manager - Program Manager
School District Project Manager - Project Manager
Individual School Project Officer - Project Officer
Laboratory Report & Data Package - LRDP
Laboratory Quality Assurance Officer - LQAO

2.1 School District Program Manager (Program Manager)

The School District Program Manager is the overall authority in the execution of the District's lead sampling project. The Program Manager is responsible for:

- the initial notification to the District of the testing program;
- obtaining funds for testing;
- assigning the Project Manager/Environmental Consultant;
- requesting/enlisting the assistance from other District departments if needed;
- approving the District's QAPP(s);
- approving the Final Report for each school and coordinating with other District officials to make the results of the testing are available to the public.

2.2 School District Project Manager (Project Manager)

The Project Manager is responsible for overseeing the execution of lead sampling at each of the district's schools. This involves the prioritization of schools to be sampled, and adherence with the District's Sampling Plan and QAPP. The Project Manager report to the Program Manager and serves as the liaison between the School District, State agencies, local Health Departments, laboratories and public water systems (if applicable). The Project Manager is responsible for overseeing the execution of the work performed by the Environmental Consultant.

The Environmental Consultant's responsibilities include:

- Preparing the District's Specific QAPP
- Managing the Sampling Plan and QAPP

- Oversight of Individual School Project Officers (Project Officers) to ensure that they adhere to the Sampling Plan procedures and the QAPP
- Purchasing of equipment needed for district lead sampling
- Coordination with New Jersey laboratories certified for lead in drinking water
- Coordination with Project Officers to establish sampling schedules
- Ensuring properly signed QAPPs are in place prior to initiation of sampling
- Verify that officials from each school are aware when sampling is scheduled and the expected duration
- Review of the School Field Sampling Summary Reports prepared by Project Officers
- Review of Laboratory Data Reports (LDR) from Laboratory Managers
- Review of Final Project Reports prepared by Project Officers. Identify limitations in the use of any laboratory data due to information provided in the accompanying School Field Sampling Summary Report
- Maintain the original signed QAPP(s)
- Maintain documents, reports and records listed in Section 14 of the QAPP
- Copy of Field Sampling Summary Report with copies of field logbooks, field Walk-Through reports including Attachments B, C, D, E, and F of the Lead Sampling Plan, chains of custody and flush tags
- Maintenance of other relevant records such as:
    - Purchase orders for analytical costs (copy).
    - Agreement with laboratory to sample/analyze/report with details for payment

2.3 Individual School Project Officer(s)

The Individual School Project Officer's responsibilities include:

- General project oversight for assigned school(s).
- Generate field log book for each assigned school. Document field activities including any changes to procedures outlined in the Sampling Plan or QAPP.
- Ensure proper completion of the Plumbing Profile for assigned school(s) - See Attachment B of the Sampling Plan.
- Oversight of completion of the following reports found in the Sampling Plan which require sign–off by Project Officer:
    - Drinking Water Outlet Inventory (Sampling Plan Attachment C)
    - Filter Inventory Report (Sampling Plan Attachment D)
    - Flushing Log (Sampling Plan Attachment E)
    - Pre-Sampling Water Use Certification (Sampling Plan Attachment F)
- Prepare labels for drinking water outlets to be sampled
- Prepare for walk-thru including acquisition of School Floor Plan
- Ensure proper completion of Walk-Thru documentation including identification of drinking water outlets on Floor Plan, and Sampling Location Inventory with coding according to the Sampling Plan (Attachment C of Sampling Plan)
- Supervision of field activities such as Walk- Thru, flushing (if required), locking school prior to sampling, and sample collection
- Identify drinking water outlets to be flushed and attach flush tag
- Ensure that Field Sampling Team has all relevant sampling supplies including sampling bottles, labels, proper reagent water and chains of custody prior to collection of samples
- Ensure that all drinking water outlets to be sampled prior to sampling event are labeled
- Ensure that any low-use drinking water outlets identified for sampling had been flushed

- Responsible for ensuring water remains motionless for a minimum of eight hours (last to leave
- the school) prior to sampling event by following procedures in Section 8 of Sampling Plan Verify that the Sampling Plan was followed prior to initiating sampling by completing the Pre-Sampling Water Use Certification (Attachment F in Sampling Plan)
- Supervision of sampling event
- Documentation of issues during sampling event in field log book
- Preparation of Field Walk-Thru Report, School Field Sampling Summary Report and Final Project Report for assigned school(s)
- Maintenance of field log books for each school
- Prepare samples for shipment and delivery to laboratory per certified laboratory instructions
- Ensure that samples are delivered to laboratory within the time period specified by the certified laboratory

2.4 Field Sampler or Field Sampling Team

The Field Sampler or Field Sampling Team, whether affiliated with the District, NJ certified laboratory, and/or Environmental Consulting Firm, is responsible for ensuring that field activities are conducted in accordance with this QAPP and the Sampling Plan.

2.5 Laboratory Manager

The Laboratory Manager is responsible for:

- ❖ Supervising laboratory analyses to be performed in the Laboratory. This includes oversight of all QA requirements in the laboratory, data review, and qualification of the data.
- ❖ Providing the Laboratory Data Report Package to the Project Manager and Project Officer.

2.6 Laboratory's Quality Assurance Officer (LQAO)

The Laboratory's Quality Assurance Officer (LQAO) is responsible for reviewing the QAPP and resolving any QA issues that may arise during the project.

3. SPECIAL TRAINING NEEDS/CERTIFICATION

Sampling will be performed by the District, a certified Laboratory, or an Environmental Consulting Firm designated Sampling Team staff. Staff performing the sample collection will be properly trained in sampling techniques.

Laboratory personnel designated to analyze the samples will have successfully completed required demonstrations of capability for the methods used. The Laboratory must be a drinking water laboratory certified by New Jersey for the analysis and reporting of lead using USEPA drinking water methods which are listed in Section 8.

Assessments of the Laboratory capability are conducted on a bi-annual basis by the NJDEP Office of Quality Assurance. The Laboratory Manager has responsibility for correction of all deficiencies in their laboratory program.

4. PROJECT / TASK DESCRIPTION

Drinking water samples will be collected from drinking water outlets including water fountains (bubblers), food preparation outlets (located in the cafeteria, kitchen, and home economics classrooms) and other outlets where there is the possibility of drinking the water such as in the special education classrooms, the medical office, the teachers' lounge, and ice machines. Concession stands and outside water fountains (such as in playgrounds and athletic fields) may also be considered for sampling. The custodian sink faucet may also be considered for sampling if it is used for filling large water coolers to provide water at school events. Outside hose spigots are not appropriate sampling locations for the purpose of this QAPP. The Sampling Plan provides more detail on appropriate sampling locations.

The Field Sampler or Team will conduct first draw (initial) sample collection and, as appropriate, follow up flushed sample collection at the drinking water outlets specified in the Sampling Plan. The Sampling Team will consist of the Project Officer and the Sampler who will be affiliated with either the District, Laboratory, or the Environmental Consulting Firm. The NJ Certified Laboratory specified in the QAPP will perform the analysis for lead.

5. LEAD DATA QUALITY OBJECTIVES AND CRITERIA FOR MEASUREMENT

Key:

Quality Control - QC
Field Reagent Blank - FRB

5.1 Precision

The NJ Certified Laboratory will perform replicate analysis of the Laboratory Control Standard (LCS) for every set of individual school samples to assess method precision. This is not a requirement of any of the USEPA approved methods for lead analysis. The acceptance criterion for replicate analysis is a maximum of 20 percent (%) Relative Percent Difference (RPD). In addition to the LCS data, a duplicate laboratory fortified blank (LFB) or a matrix spike and a matrix spike duplicate (MS/MSD) will also provide precision information.

5.2 Bias

As part of the analytical methodology, the NJ Certified Laboratory will perform analysis of laboratory fortified blanks (LFB) to assess accuracy/bias. The acceptance criterion for accuracy is for the results to be within plus or minus 15% recovery of the known value.

A field reagent blank (FRB) must be collected for each school. The FRB is normally only a requirement for USEPA Method 200.8, however the collection of a FRB is required with any of the other approved lead methods for this sampling event. The information provided by the results is used to determine whether the field or sample transporting procedures and environmental effects have contributed to contamination of the sample.

If any sample result(s) are qualified, this must be clearly indicated on the report and all final reports such as the field summary report. The Project Manager must be consulted to determine how to deal with the qualified results.

5.3 Representativeness

The sampling effort is designed to identify all drinking water outlets, within a school, where there is a potential for water consumption such as at water fountains (bubblers) that may require corrective action due to first draw and/or follow-up flushed sample results that exceed 15 µg/L of lead (as defined as greater than or equal to 15.5 µg/L or greater). Food preparation outlets and other potential ingestion outlets such as special education classrooms, the medical office and bathroom sinks are to be considered for sampling.

5.4 Comparability

The analytical methods for lead analysis in drinking water are found in the federal Safe Drinking Water Regulations at 40 CFR141.86 and 40 CFR 141 Attachment A to Subpart C. Use of these methods allows for the comparison of data to USEPA's drinking water action level for lead of greater than 15 µg/L. Analytical results from the first draw (initial) and, if required, the follow-up flushed samples, will be compared to assist in determining the source of lead contamination. Appropriate corrective measures must then be taken by the District. For those school facilities with their own source (classified as a non-transient non-community water system), the results should be submitted to the NJDEP and used to assess compliance with the action levels in EPA's Lead and Copper Rule.

5.5 Completeness

In order to satisfy the objective of the project, samples will be collected from drinking water outlets according to the Sampling Plan.

One hundred percent (100%) of collected and verified samples will be analyzed and reported.

5.6 Sensitivity

The Laboratory's Reporting Limit (RL) for the determination of lead in drinking water samples must be no higher than 2 µg/L which is lower than the regulatory Practical Quantitation Level for lead of 5 µg/L. The Practical Quantitation Level for Lead is stated in the National Primary Drinking Water Contaminant Regulations 40 CFR141 Subpart I. The required reporting limit of 2 µg/L for this QAPP is achievable with any of the approved USEPA methods listed in 11.1.

6. SECONDARY DATA

Secondary data for the District would be their historical lead data.

7. FIELD MONITORING REQUIREMENTS

Key:

Field Reagent Blank - FRB
Chain of Custody - COC

Sampling may occur in the morning hours before schools are open or on weekdays or weekends when no school activities are expected. This will minimize the potential for people in the building to use water during the sampling

survey. While sampling is underway it is advisable to prohibit any persons other than the sampling team to enter the building in order to ensure that no toilets or water outlets are being used.

7.1 Monitoring Process Design

The sampling design, described in detail in the Sampling Plan (Attachment B) is based in part upon the 3T's Guidance for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance, December 2005; Errata to 3Ts, October 2006 (see Attachment A).

7.2 Monitoring Methods

Equipment and supplies that will be needed to perform the sampling survey are ASTM Type I reagent grade water for the field reagent blank (FRB), latex non-colored gloves, pre-cleaned HDPE wide-mouth 250 mL single use rigid sample containers ("sample container") and chain of custody (COC forms- Attachment C or lab may use their own) and indelible ink/marker.

The Sampling Team will consist of the Individual School Project Officer and the Sampler who will be affiliated with the Environmental Consulting Firm.

The Sampler from the Environmental Consulting Firm will generate a field logbook which will be utilized to document school walk-through, sampling activities and relevant observations. In addition, the Sampler will be required to implement the following, under the oversight of the Individual School Project Officer:

- Transcribing the sample location identifier and/or code, in indelible marker, on the underside of the sampling fixture (for cases where the fixture is not already labeled) in the event the Essex County Schools of Technology has to re-sample an outlet.
- Removing the "flush tag" (if applicable) from the sampled outlet and providing it to the Project Officer. Flushing will need to be performed, prior to sampling, in buildings that have not been used for more than 48 hours. This is done in order to simulate normal use patterns. Flush tags are installed at all outlets that have been flushed in order to alert facility occupants that water should remain unused for at least 8 hours but no more than 48 hours before a sample is taken.

The Sampler will also have the following responsibilities:

- Prior to the sampling event, the Sampler will obtain ASTM Type I reagent-grade water (RGW) from the laboratory to be used for the field reagent blank (FRB). The Sampler will transport the container with RGW to the school to be sampled. Before the first sample is collected the RGW will be transferred to another sample container near the first sample location inside the school building. This FRB sample will be stored and transported in the same cooler, handled and preserved in the same manner as the samples collected at that school.
- For this project, a chain of custody (COC) form found in Attachment C, was developed to include field sampling information. If a Laboratory or Environmental Consulting Firm is using their company's COC, the information required on the COC found in Attachment C must be included. A unique sample location identifier and/or code will be recorded, with indelible ink, onto the preprinted waterproof labels and schematic diagram.

- Communicating to the Individual School Project Officer outlet observations such as: any automatic sensors, odors, change in water color, low water flow, outlet water leaks, irregular water spray, presence of a filter, a missing or removed screen/aerator from the outlet or if the water becomes warm/hot.
- For each outlet sampled, a new pair of non-colored latex gloves will be used to collect both the first draw (initial) and follow-up second draw samples if required. This is to minimize the potential for cross contamination of sample outlets by sampling personnel. The water will be collected from the outlet directly into each container.

7.2.1 Faucets, Bubblers and Bubblers with Individual Chillers:

- Should a drinking water fountain have multiple outlets, only one outlet is to be selected for sampling. The outlet to be sampled will be the furthest from the source of the water, or if indeterminate, the outlet on the left side will be sampled for the purpose of consistency.
- For faucets, bubblers and bubblers with individual chillers having a reservoir less than 500 mL, the sampling procedure is as follows:
- For the first-draw (initial), water is collected into a sample container. The water will be collected immediately after turning the outlet on without allowing any water to run into the drain. This analytical result will indicate whether the outlet, valves, fittings and/or the section of plumbing closest to the outlet, is the source of any lead (Pb). If any of the first-draw samples exceed the 15 µg/L threshold, follow-up samples will be taken at the fixtures that had an exceedance.
- For the follow-up second draw sample, water will be collected into another sample container after allowing the water to flow for 30 seconds. The result will be used to determine whether the header/riser pipe that supplies that outlet with water is a source of lead (Pb).This sample will also indicate the extent to which a brief flush can provide temporary remediation at outlets where elevated lead (Pb) levels are detected in the first draw (initial) sample. This follow-up sample should be differentiated from the first draw sample by appending the sample code for that location with the word "FLUSH."

If there are circumstances, such as water pressure loss or a discharge pattern that prevents water from being collected within the sample container, that information will be communicated to the Individual School Project Officer. This information should also be recorded into the field logbook by the Individual School Project Officer.

7.2.2 Water Coolers

For water coolers (or water fountains with chillers having a reservoir greater than 500mL) the sampling procedure is as follows:

- For the first-draw sample, water is collected into a wide-mouth 250 mL sample container before any water is used. Collect the water immediately after turning the water cooler on without allowing any water to run into the drain. Once the 250 mL sample container is filled, turn off the water cooler. If any of the first-draw samples exceed the 15 µg/L threshold, follow-up samples will be taken at the fixtures that had an exceedance.
- NOTE: After the last school sampling outlet has been collected, then water cooler follow-up (15 minute) samples will be collected.
- For the follow-up second draw (15 minute) sample, let the water from the outlet run for 15- minutes before collecting the sample into another 250 mL sample container. The 15 minute flush is necessary to ensure that no stagnant water is left in the storage unit and the water collected will be in contact with the

header and riser piping upstream of the cooler. This follow up sample should be differentiated from the first draw sample by appending the sample location code with the word "FLUSH".

7.2.3 Ice Machines

The procedure for sampling ice machines is found in the EPA document 3Ts for Reducing Lead in Schools at Exhibit 4.7. If an ice machine has been in continual use, the sampling can be taken at any time. If the ice machine had been out of service, it must be flushed prior to sampling. The sample will be collected from the water line feeding the ice machine.

7.2.4 Point of Entry Samples

A point of entry (POE) sample will be the last sampling event at each school. After all samples are collected, return to the first water outlet sampled and allow the water to run until there is a significant change in temperature then collect a flushed sample. Alternatively, this POE sample could be collected when the water is being utilized. Sampler must include "POE Flush" in the sample code for this sample, as well as indicate "Flush" and the duration of time flush lasted on the Chain of Custody (COC).

Nitric acid (HNO_3) preserved bottles will be provided by the Laboratory for sample collection. If, for any reason, the water samples are not acidified at the time of collection, the Laboratory will preserve all samples with laboratory grade concentrated nitric acid (HNO_3) to a pH of 2 standard units (SU) or less within 48 hours of sample receipt.

Each school will have a separate sample cooler or box which will contain the field reagent blank (FRB) and the other samples collected. Samples will be transported by the Samplers to the Laboratory.

7.3 Field Quality Control

The analytical results obtained from the FRB will determine whether field or sample transporting procedures is a cause of sample contamination.

Prior to the sampling event, the Sampler will collect a 250 mL ASTM Type I reagent-grade water from the Laboratory which will be used for the FRB. At the school and prior to the first sample collected at a school, the ASTM Type I reagent-grade water will be transferred into a sample container which will be identified as the FRB sample.

The ASTM Type I reagent-grade water will either be supplied by the Laboratory or purchased through a vendor. The 250 mL sample containers are purchased pre-cleaned. Sample containers are not to be reused.

8. ANALYTICAL REQUIREMENTS

Key:

Laboratory Report & Data Package - LRDP
Quality Control - QC

8.1 Analytical Methods

The Essex County Schools of Technology must use one of the USEPA approved drinking water methods listed in the table below for the analysis of lead. Any of these methods can be used provided that the Laboratory is certified to analyze and report lead by that method and that the Laboratory has a reporting limit no greater than 2 µg/L.

For the purposes of the Essex County Schools of Technology's QAPP, the analytical performance information is as follows:

Analyte	Analytical Method	Sample Matrix	Recommended Guidance Level	Reporting Level
Lead (Pb)	USEPA Method 200.8 USEPA Method 200.9 USEPA Method 200.5 SM 3113B ASTM D3559-D	Drinking Water	Greater than 15 µg/L (15.5 µg/L and above) first draw (initial) sample	2.0 µg/L (ppb)

The pH of all samples must be checked at the time of receipt at the Laboratory. If the pH is not less than 2, the pH must be adjusted with the addition of nitric acid. Samples that require the addition of nitric acid must sit for 16 hours prior to digestion (if applicable) or analysis. The pH of each sample must be documented.

The turbidity of each sample must also be checked at the time of receipt at the Laboratory. If the turbidity of the sample is greater than 1 NTU, the sample must be digested prior to analysis. The turbidity of each sample must be documented, and those samples digested must be recorded by the Laboratory.

If a sample result exceeds 90% of the linear dynamic range, the sample must be diluted and re-analyzed. The dilution factor must be included in the Laboratory report for each sample that is diluted.

8.2 Analytical Quality Control

The USEPA has established protocols for the analysis of Quality Control (QC) samples with each analytical batch of samples, generally defined as a maximum of twenty samples. All QC results must be assessed and evaluated on an on-going basis and QC acceptance criteria must be used to determine the validity of the data.

For analytical testing, the laboratory includes positive control samples Laboratory Control Sample (LCS) or Analytical Quality Control (AQC) to evaluate the total analytical system. Negative control samples (Method Blanks) are used to assess the preparation batch for possible contamination during the preparation and processing steps. A blank is considered contaminated with any result at or above the analytic reporting limit. Specific control samples (Matrix Spikes) are used to indicate the effect of the sample matrix and replicates (matrix spike, LCS replicate) are performed to assess the precision of the results generated.

Specific information regarding acceptance criteria and corrective actions is documented in the Laboratory's SOP for any of the analytical methods listed in the table above.

9. SAMPLE HANDLING AND CUSTODY REQUIREMENTS

All samples are aqueous and will be collected and labeled by the Sampler / Environmental Consultant. Standard USEPA Chain of Custody (COC) procedures will be followed according to the information provided in the District's Sampling Plan (Attachment B). The COC form found in Attachment C or equivalent is to be used for this project.

Samples will be transported by Samplers to the Laboratory.

Analyte	Sample Volume	Container	Preservation (Note1)	Holding Time
Lead (Pb)	250 mL	unused 250 mL rigid plastic wide-mouth	Reagent Grade Nitric Acid (HNO3) pH < 2	6 months

9.1 Sample Archive/Disposal

The samples received by the Laboratory for each school, including any digestates, will be eligible for disposal at a minimum 30 days, unless otherwise directed by the District, after the Laboratory Report has been distributed. Samples including any digestates will not be archived unless a written request is provided to the Laboratory.

10. INSTRUMENT/EQUIPMENT TESTING, INSPECTION, MAINTENANCE & CALIBRATION REQUIREMENTS

10.1 Instrument/Equipment Testing, Inspection and Maintenance

All laboratory equipment will be tested, calibrated, and maintained in accordance with existing SOPs approved by the laboratory.

There are no field instruments anticipated for this project.

10.2 Instrument/Equipment Calibration and Frequency

The USEPA approved analytical methods for lead listed in the National Primary Drinking Water Contaminant Regulations at 40 CFR 141.23 and Appendix A to Subpart C require that the instrument calibration be performed on a daily basis.

10.3 Inspection/Acceptance of Supplies and Consumables

250 mL sample containers are purchased pre-cleaned. Sample containers are not to be reused. Sample gloves are to be disposable, non-colored and not reused.

11. DATA MANAGEMENT

The Laboratory will immediately notify the Project Manager and Project Officer of the affected school(s) upon receipt of any validated laboratory results that exceed the action level for lead in drinking water that is greater than 15 µg/L (as defined as greater than or equal to 15.5 µg/L). For all results, the Laboratory will provide the result in micrograms per liter (µg/L) and to at least three (3) significant figures (i.e.19.6 µg/L or 20.4 µg/L).

The Laboratory will provide a final electronic copy of the Laboratory Data Report Package (LDR) for each school that will consist of: 1) PDF cover sheet that identifies the school name and all qualifiers with a description for that qualifier used by the laboratory, 2) laboratory report of the analytical results in PDF format, 3) the chain of custody in PDF format and 4) an Excel spreadsheet of the results. The Excel spreadsheet must include the information outlined in the Excel template provided in Attachment D of this document. Information required to be included in separate columns includes but is not limited to; the field ID (sample location identifier and/or code), the Laboratory sample ID, the Laboratory Name and Laboratory certification number, whether the sample was flushed, the date and time of collection and analysis, the analytical method, the analytical result in µg/L, the reporting limit in µg/L, and whether the sample was diluted or digested and any qualifiers.

The LDR Package will include the analytical results, appropriate qualifiers and reporting limits for analyses of submitted samples as requested by the District. The LDR Package must include explanations of any relevant procedural deviations or anomalies associated with the sample handling and analysis of the project. This report will be completed within the timeframe indicated in the contract.

The Environmental Consultant, under the oversight of the Individual School Project Officer, will be responsible for preparing and submitting:

I. A Field Walk-thru Report, if necessary, to the Program Manager. This report will include possible sampling locations and observations such as water leaks (that should be repaired prior to sampling). Also included must be the presence of filters and aerators on any outlet. Those must be identified by their outlet identifier code.
II. A School Field Sampling Summary Report to the Program Manager. This report will include a summary of field observations, photographs (if taken), original "flush tags" (if available), copies of the COC forms, school floor plans which have the location of each outlet sampled, plumbing profiles (if provided), and a case narrative, if warranted.
III. A Final Project Report to the Project Manager and Program Manager. The report will consist of copies of the Essex County Schools of Technology COC forms, final LDR Package (PDF and Excel spreadsheet) that includes any limitations on the use of the data and a table summarizing outlets with results exceeding the 15 ug/L action level.
IV. The field logbook that was used for the documentation of the school walk-thru, the sampling activities and relevant observations.

12. ASSESSMENTS / OVERSIGHT

Formal field audits by QA personnel may be conducted for this project. However, identification of problems related to technical performance will be the responsibility of the staff working on this project.

The Project Officer(s) will assess any problem that arises in the field. If necessary, modifications to technical procedures may be considered. Any changes in technical procedures will be documented in the field logbook, evaluated to determine if there will be any impact to the data and then highlighted in the Final Project Report.

The Laboratory personnel will perform self-audits and institute corrective actions in accordance with their respective written procedures.

13. DATA REVIEW, VERIFICATION, VALIDATION, AND USABILITY

Key:

Laboratory Quality Assurance Officer - LQAO
Laboratory Report & Data Package - LRDP

13.1 Data Review, Verification and Validation

The Project Manager will evaluate the School Field Sampling Summary Reports against the final analytical results to determine if any field observations may have contributed to lower or higher analytical results.

The Project Manager will review the analytical report and determine any limitations on the use of the data (see Section 5.2 Bias of this QAPP) and include these limitations in the Final Project Report.

Data review of all laboratory generated data is performed by the Laboratory Quality Assurance Officer (LQAO) who is not associated with the actual measurement operations for the given analytical batch but knowledgeable in the analytical processes employed. It is the responsibility of the LQAO to ensure that all data generated are correct and of known and documented quality. Once the review is completed, the LQAO will sign and date the appropriate QA/QC checklist according to the Laboratory's SOP. Any limitations on the use of data (e.g. data qualifiers) will be included in the Final Project Report.

13.2 Reconciliation with User Requirements

As long as the Field Sampling Summary Report, LDR Package and Final Project Report of this QAPP are satisfied, the data will be useable for the purpose intended and no further assessment is required. If any data are determined to be unusable by the Project Manager, re-sampling may be required.

14. REPORTING, DOCUMENTS AND RECORDS

Original documents (X) will be stored as follows:

Document:	Individual School *Project Officer*	School District *Project Manager*	School District *Program Manager*
QAPP	Copy	X	Copy
Field Walk-Thru Report	X	Copy	Copy
Field Logbook	X		
Chains of Custody	X	Copy	Copy
Flushing Notification/ Flushing Log Tags/Procedure	X	Copy	Copy
Field Sampling Summary Report	X	Copy	Copy
Flush Tags	X	Copy	Copy
Floor Diagrams	X	Copy	Copy
Plumbing Profile	X	Copy	Copy
Filter Inventory	X	Copy	Copy
Drinking Water Outlet Inventory	X	Copy	Copy
Pre Sampling Water Use Certification	X	Copy	Copy
Laboratory Data Report	X	Copy	Copy
Final Project Report	Copy	X	Copy

Attachment A

3Ts for Reducing Lead in Drinking Water in Schools:

3Ts for Reducing Lead in Drinking Water in Schools:

Revised Technical Guidance, December 2005; Errata to 3Ts, October 2006

Available online at:

- https://www.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf

- http://www.nj.gov/dep/watersupply/dwc-lead-schools.html

Attachment B

Essex County Schools of Technology

Lead Water Testing Sampling Plan

Essex County Schools of Technology Lead Water Testing Sampling Plan

Available under separate cover

Attachment C

Chain of Custody Forms

CHAIN OF CUSTODY

Customer: Essex County Schools of Technology
Address: 60 Nelson Place, Newark, NJ, 07102
Phone: 973-412-2050

School Name: West Caldwell Tech
School Address: 620 Passaic Ave West Caldwell, NJ 07006
Sampled By: B R
Print Name: Basil Rehmann
RESULTS TO: basil.rehmann@gmail.com

Sample ID Location	Date: 2/15/22 Time Sampled	Matrix Code	Grab or Comp	Flush Sample	Filter Present	# Containers	Glass or Plastic	Analysis	LAB ID
(01) - Field Blank	10:45 AM	DW	Grab			1	250 ml Plastic	Lead	P22 01241-01
(02) - 01 - POE - IN - Water RM - F	10:55 AM	DW	Grab			1	250 ml Plastic	Lead	-02
(03) - 01 - HA - IN - 102 - WF (A)	11:21	DW	Grab			1	250 ml Plastic	Lead	-03
(04) - 01 - HA - IN - 102 - WF (B) Rerun	11:22	DW	Grab			1	250 ml Plastic	Lead	-04
(05) - 01 - HA - IN - 102 - WF (C)	11:24	DW	Grab			1	250 ml Plastic	Lead	-05
(06) 01 - CF - IN - 126 - FP	11:30	DW	Grab			1	250 ml Plastic	Lead	-06
(07) 01 - CF - IN - 126 - HW	11:32	DW	Grab			1	250 ml Plastic	Lead	-07
(08) 01 - K1 - IN - 127 - FP (A)	11:33	DW	Grab			1	250 ml Plastic	Lead	-08
(09) 01 - K1 - IN - 127 - FP (B)	11:35	DW	Grab			1	250 ml Plastic	Lead	-09
(10) 01 - K1 - IN - 127 - HW (A)	11:36	DW	Grab			1	250 ml Plastic	Lead	-10
(11) 01 - K1 - IN - 127 - FP (C)	11:38	DW	Grab			1	250 ml Plastic	Lead	-11
(12) 01 - K1 - IN - 127 - FP (D)	11:39	DW	Grab			1	250 ml Plastic	Lead	-12
(13) 01 - K1 - IN - 127 - HW (B)	11:41	DW	Grab			1	250 ml Plastic	Lead	-13
(14) 01 - K1 - IN - 127 - FP (E)	11:43	DW	Grab			1	250 ml Plastic	Lead	-14
(15) 01 - CR - IN - 135 - FP	11:47	DW	Grab			1	250 ml Plastic	Lead	P22-01241-15

SAMPLES RECEIVED PRESERVED W/HNO3

Page 1 of 5

Deliverables: PDF Std. X | PDF Reduc | PDF Full | EDD | Date/Time Preserved

MATRIX CODES: GW = Ground Water, WW = Waste Water, SW = Surface Water, DW = Drinking Water, S = Soil, L = Liquid, SD = Sludge, B = Blank, K = Solid (specify):

PRESERVATIVE CODES: 0 = Ice, 1 = HCl, 2 = H2SO4, 3 = NaOH, 4 = HNO3, 5 = Other

	Print Name:	Signature:	Company	Date + Time
Relinquished:	Basil Rehmann			2/15/22; 3:15 PM
Received:	Mark Feitelson			
Relinquished:				
Received:				
Relinquished:				
Received:				

CHAIN OF CUSTODY

Customer: Essex County Schools of Technology
Address: 60 Nelson Place, Newark, NJ, 07102
Phone: 973-412-2050

School Name: West Caldwell Tech
School Address: 620 Passaic Ave. in Caldwell, NJ
Sampled By: B R
Print Name: Brent Rahman
RESULTS TO: brent.rahman@gmail.com

Sample ID Location	Date/Time Sampled	Matrix Code	Grab or Comp	Field Filtered	Field Preserved	# Containers	Glass or Plastic	Analysis	LAB ID
(16) 01-CR-IN-137A-FP	2/3/22 11:49	DW	Grab			1	250 ml Plastic	Lead	P22-01241-16
(17) 01-HA-IN-164-WF(A)	11:53	DW	Grab			1	250 ml Plastic	Lead	-17
(18) 01-HA-IN-164-WF(B)-bottler	11:54	DW	Grab			1	250 ml Plastic	Lead	-18
(19) 01-HA-IN-164-WF(C)	11:56	DW	Grab			1	250 ml Plastic	Lead	-19
(20) 01-CR-IN-136A-WF(A)	11:59	DW	Grab			1	250 ml Plastic	Lead	-20
(21) 01-CR-IN-136A-WF(B)-Bottler	11:59	DW	Grab			1	250 ml Plastic	Lead	-21
(22) 01-TL-IN-120F-FP	12:01	DW	Grab			1	250 ml Plastic	Lead	-22
(23) 01-HA-IN-159A-WF(A)	12:04	DW	Grab			1	250 ml Plastic	Lead	-23
(24) 01-HA-IN-159A-WF(B)-bottler	12:05	DW	Grab			1	250 ml Plastic	Lead	-24
(25) 01-HA-IN-159A-WF(C)	12:06	DW	Grab			1	250 ml Plastic	Lead	-25
(26) 01-HA-IN-155-WF(A)	12:09	DW	Grab			1	250 ml Plastic	Lead	-26
(27) 01-HA-IN-155-WF(B)-bottler	12:11	DW	Grab			1	250 ml Plastic	Lead	-27
(28) 01-HA-IN-155-WF(C)	12:12	DW	Grab			1	250 ml Plastic	Lead	-28
(29) 01-OF-IN-154A-F	12:15	DW	Grab			1	250 ml Plastic	Lead	-29
(30) 01-HA-IN-159-WF-(A)	12:18	DW	Grab			1	250 ml Plastic	Lead	P22-01241-30

SAMPLES RECEIVED PRESERVED W/HNO3 (YES)

Page 2 of 5

Deliverables:	PDF Std.	PDF Reduc			PDF Full	EDD	Date/Time Received
	X						

MATRIX CODES: GW = Ground Water, WW = Waste Water, SW = Surface Water, DW = Drinking Water, S = Soil, L = Liquid, SD = Sludge, B = Blank, K = Solid (specify)

PRESERVATIVE CODES: 0 = Ice, 1 = HCl, 2 = H2SO4, 3 = NaOH, 4 = HNO3, 5 = Other

	Print Name:	Signature:	Company	Date + Time
Relinquished:	Basit Rahman			2/3/22; 3:15 PM
Received:	Mark Feiteisen			
Relinquished:				
Received:				
Relinquished:				
Received:				

PQSI
Specialists in Drinking Water Testing Technologies • Radiation • Asbestos • Microbial
1561 WHITESVILLE ROAD TOMS RIVER, NJ 08755 PHONE 732-914-1515 FAX 732-914-1616

CHAIN OF CUSTODY

Customer:	Essex County Schools of Technology
Address:	60 Nelson Place, Newark, NJ, 07102
Phone:	973-412-2050

School Name:	West Caldwell Tech
School Address:	620 Passaic Ave, W. Caldwell, NJ
Sampled By:	B.R. / 07006
Print Name:	Basit Rehman
RESULTS TO:	basit.rehman@gmail.com

	Sample ID Location	Date: Time Sampled	Matrix Code	Grab or Comp	Flush Sample	Filter Present	# Containers	Glass or Plastic	Analysis	LAB ID
31	01-HA-IN-159-WF(B)-Bubbler	12:18	DW	Grab			1	250 ml Plastic	Lead	P22-01241-31
32	01-HA-IN-159-[illegible]	12:21	DW	Grab			1	250 ml Plastic	Lead	-32
33	01-TL-IN-115-FP	12:25	DW	Grab			1	250 ml Plastic	Lead	-33
34	01-CR-IN-112-FP(A)	12:30	DW	Grab			1	250 ml Plastic	Lead	-34
~~35~~	~~01-CR-IN-112-HW(A)~~ OUT of ORDER		DW	Grab			~~1~~	250 ml Plastic	~~Lead~~	
36	01-CR-IN-112-FP(B)	12:31	DW	Grab			1	250 ml Plastic	Lead	-35
37	01-CR-IN-112-FP(C)	12:33	DW	Grab			1	250 ml Plastic	Lead	-36
38	01-CR-IN-112-FP(D)	12:33	DW	Grab			1	250 ml Plastic	Lead	-37
39	01-CR-IN-112-FP(E)	12:34	DW	Grab			1	250 ml Plastic	Lead	-38
40	01-CR-IN-112-FP(F)	12:35	DW	Grab			1	250 ml Plastic	Lead	-39
41	01-CR-IN-112-FP(G)	12:37	DW	Grab			1	250 ml Plastic	Lead	-40
42	01-CR-IN-112-FP(H)	12:39	DW	Grab			1	250 ml Plastic	Lead	-41
43	01-CR-IN-112-FP(I)	12:41	DW	Grab			1	250 ml Plastic	Lead	-42
44	01-CR-IN-112-IM-	12:42	DW	Grab			1	250 ml Plastic	Lead	-43
45	01-~~CR~~ KI-IN-113-IM	12:43	DW	Grab			1	250 ml Plastic	Lead	P22-01241-44

SAMPLES RECEIVED PRESERVED W/HNO₃ (initialed)

Page 3 of 5

Deliverables:	PDF Std.	PDF Reduc			PDF Full	EDD	Date/time Preserved
	X						

MATRIX CODES: GW = Ground Water, WW = Waste Water, SW = Surface Water, DW = Drinking Water, S = Soil, L = Liquid, SD = Sludge, B = Blank, K = Solid (specify) :

PRESERVATIVE CODES: 0 = Ice 1 = HCl 2 = H2SO4 3 = NaOH 4 = HNO3 5 = Other

	Print Name:	Signature:	Company	Date + Time
Relinquished:	Basit Rehman			2/13/22 ; 3:15PM
Received:	Mark Feitelson	(signature)		
Relinquished:				
Received:				
Relinquished:				
Received:				

CHAIN OF CUSTODY

Customer: Essex County Schools of Technology	School Name: West Caldwell Tech
Address: 60 Nelson Place, Newark, NJ, 07102	School Address: 620 Passaic Ave, W. Caldwell, NJ, 07006
	Sampled By: B.R
	Print Name: Basit Rehman
Phone: 973-412-2050	RESULTS TO: basit rehman@gmail.com

	Sample ID Location	Date: 2/13/22 Time Sampled	Matrix Code	Grab or Comp	Blank Sample	Filter Present	# Containers	Glass or Plastic	Analysis	LAB ID
46	01-KI-IN-113-FP(A)	12:45	DW	Grab			1	250 ml Plastic	Lead	P22-01241-45
47	01-KI-IN-113-FP(B)	12:47	DW	Grab			1	250 ml Plastic	Lead	-46
48	01-KI-IN-113-FP(C)	12:48	DW	Grab			1	250 ml Plastic	Lead	-47
49	01-KI-IN-113-FP(D)	12:49	DW	Grab			1	250 ml Plastic	Lead	-48
50	01-KI-IN-113-FP(E)	12:51	DW	Grab			1	250 ml Plastic	Lead	-49
51	01-KI-IN-113-FP(F)	12:52	DW	Grab			1	250 ml Plastic	Lead	-50
52	01-KI-IN-113-FP(G)	12:54	DW	Grab			1	250 ml Plastic	Lead	-51
53	01-KI-IN-113-FP(H)	12:55	DW	Grab			1	250 ml Plastic	Lead	-52
54	01-KI-IN-113-FP(I)	12:56	DW	Grab			1	250 ml Plastic	Lead	-53
55	01-KI-IN-113-FP(J)	12:57	DW	Grab			1	250 ml Plastic	Lead	-54
56	01-KI-IN-113-FP(K)	12:59	DW	Grab			1	250 ml Plastic	Lead	-55
57	01-KI-IN-113-FP(L)	1:01	DW	Grab			1	250 ml Plastic	Lead	-56
58	01-KI-IN-113-FP(M)	1:02	DW	Grab			1	250 ml Plastic	Lead	-57
59	01-KI-IN-113-FP(N)	1:03	DW	Grab			1	250 ml Plastic	Lead	-58
60	01-KI-IN-113-FP(O)	1:04	DW	Grab			1	250 ml Plastic	Lead	P22-01241-59

SAMPLES RECEIVED PRESERVED W/HNO₃ Ⓨ

Page 4 of 5

Deliverables:	PDF Std.	PDF Reduc			PDF Full	EDD	Date/time Preserved
	X						

MATRIX CODES: GW = Ground Water, WW = Waste Water, SW = Surface Water, DW = Drinking Water, S = Soil, L = Liquid, SD = Sludge, B = Blank, K = Solid (specify):

PRESERVATIVE CODES: 0 = Ice 1 = HCl 2 = H2SO4 3 = NaOH 4 = HNO3 5 = Other

	Print Name:	Signature:	Company	Date + Time
Relinquished:	Basit Rehman.			2/13/22; 3:15PM
Received:	Mark Feitelson	[signature]		
Relinquished:				
Received:				
Relinquished:				
Received:				

Specialists in Drinking Water Testing Technologies [illegible]

1161 WHITESVILLE ROAD TOMS RIVER, NJ 08755 PHONE 732-914-1515 FAX 732-914-1616

CHAIN OF CUSTODY

Customer: Essex County Schools of Technology
Address: 60 Nelson Place, Newark, NJ, 07102
Phone: 973-412-2050

School Name: West Caldwell Tech
School Address: 620 Passaic Ave, W-Caldwell, NJ
Sampled By: B.R. | 01/22
Print Name: Basit Rehman
RESULTS TO: basit.rehman@gmail.com

Sample ID Location	Date Time Sampled	Matrix Code	Grab or Comp	[illegible]	[illegible]	# Containers	Glass or Plastic	Analysis	LAB ID
(61) 01-KI-IN-113-FP(P)	1:05	DW	Grab			1	250 ml Plastic	Lead	P22-01241-60
(62) 01-KI-IN-113-FP(Q)	1:07	DW	Grab			1	250 ml Plastic	Lead	-61
(63) 01-KI-IN-113-HW	1:09	DW	Grab			1	250 ml Plastic	Lead	-62
(64) 01-KI-IN-113-ST	1:10	DW	Grab			1	250 ml Plastic	Lead	-63
(65) 01-MO-IN-102-F	1:14	DW	Grab			1	250 ml Plastic	Lead	-64
(66) 02-HA-IN-213-WF(A)	1:18	DW	Grab			1	250 ml Plastic	Lead	-65
(67) 02-HA-IN-213-WF(B)-Bottler	1:19	DW	Grab			1	250 ml Plastic	Lead	-66
(68) 02-HA-IN-213-WF(C)	1:20	DW	Grab			1	250 ml Plastic	Lead	-67
(69) 01-POE-IN-Water RM-F-FLUSH	1:38	DW	Grab	K		1	250 ml Plastic	Lead	P22-01241-68
		DW	Grab			1	250 ml Plastic	Lead	
		DW	Grab			1	250 ml Plastic	Lead	
		DW	Grab			1	250 ml Plastic	Lead	
		DW	Grab			1	250 ml Plastic	Lead	
		DW	Grab			1	250 ml Plastic	Lead	
		DW	Grab			1	250 ml Plastic	Lead	

SAMPLES RECEIVED PRESERVED W/HNO_3 (initials)

Page 5 of 5

Deliverables:	PDF Std.	PDF Reduc			PDF Full	EDD	Date/time Preserved
	X						

MATRIX CODES: GW = Ground Water, WW = Waste Water, SW = Surface Water, DW = Drinking Water, S = Soil, L = Liquid, SD = Sludge, B = Blank, K = Solid (specify):

PRESERVATIVE CODES: 0 = Ice 1 = HCl 2 = H2SO4 3 = NaOH 4 = HNO3 5 = Other

	Print Name:	Signature:	Company	Date + Time
Relinquished:	Basit Rehman	[signature]		2/13/22; 3:15 PM
Received:	Mark Feitelson			
Relinquished:				
Received:				
Relinquished:				
Received:				

Attachment D

Excel Template for Lead Results

Appendix D
Excel Template for Lead Results

Client : Essex County Schools of Technolgy
Project ID : West Caldwell Tech, 620 Passaic Ave., West Caldwell, NJ 07006

Field ID	Flushed (Y/N)	Lab. Sample ID	Lab. Name	Lab. ID	Date Sampled	Time Sampled	Analytical Method	Date of Analysis	Time of Analysis	Conc. (ug/L)	Rpt. Limit (ug/L)	DF	Digested (Y/N)	Qfr.
Field Blank	N	P22-01241-01	PAS	NJDEP 15001	2/13/2022	10:50	SM 3113 B	2/15/2022	15:14	-0.98	2.00	1	N	ND
01-POE-IN-WATER RM-F	N	P22-01241-02	PAS	NJDEP 15001	2/13/2022	10:55	SM 3113 B	2/15/2022	16:41	**48.5**	10.0	5	N	
01-HA-IN-162-WF (A)	N	P22-01241-03	PAS	NJDEP 15001	2/13/2022	11:21	SM 3113 B	2/15/2022	15:22	-0.20	2.00	1	N	ND
01-HA-IN-162-WF (B) BOTTLER	N	P22-01241-04	PAS	NJDEP 15001	2/13/2022	11:22	SM 3113 B	2/15/2022	15:26	-0.98	2.00	1	N	ND
01-HA-IN-162-WF (C)	N	P22-01241-05	PAS	NJDEP 15001	2/13/2022	11:24	SM 3113 B	2/15/2022	15:38	-0.98	2.00	1	N	ND
01-CF-IN-126-FP	N	P22-01241-06	PAS	NJDEP 15001	2/13/2022	11:30	SM 3113 B	2/15/2022	15:42	0.580	2.00	1	N	ND
01-CF-IN-126-HW	N	P22-01241-07	PAS	NJDEP 15001	2/13/2022	11:32	SM 3113 B	2/15/2022	15:46	14.4	2.00	1	Y	
01-KI-IN-127-FP (A)	N	P22-01241-08	PAS	NJDEP 15001	2/13/2022	11:33	SM 3113 B	2/15/2022	15:50	-0.98	2.00	1	N	ND
01-KI-IN-127-FP (B)	N	P22-01241-09	PAS	NJDEP 15001	2/13/2022	11:35	SM 3113 B	2/15/2022	15:54	1.10	2.00	1	N	J
01-KI-IN-127-HW (A)	N	P22-01241-10	PAS	NJDEP 15001	2/13/2022	11:36	SM 3113 B	2/15/2022	16:45	**20.4**	4.00	2	N	
01-KI-IN-127-FP (C)	N	P22-01241-11	PAS	NJDEP 15001	2/13/2022	11:38	SM 3113 B	2/15/2022	16:06	0.840	2.00	1	N	ND
01-KI-IN-127-FP (D)	N	P22-01241-12	PAS	NJDEP 15001	2/13/2022	11:39	SM 3113 B	2/15/2022	16:10	-0.46	2.00	1	N	ND
01-KI-IN-127-HW (B)	N	P22-01241-13	PAS	NJDEP 15001	2/13/2022	11:41	SM 3113 B	2/15/2022	17:37	0.320	2.00	1	N	ND
01-KI-IN-127-FP (E)	N	P22-01241-14	PAS	NJDEP 15001	2/13/2022	11:43	SM 3113 B	2/15/2022	17:41	1.62	2.00	1	N	J
01-CR-IN-135-FP	N	P22-01241-15	PAS	NJDEP 15001	2/13/2022	11:47	SM 3113 B	2/15/2022	17:45	0.320	2.00	1	N	ND
01-CR-IN-137A-FP	N	P22-01241-16	PAS	NJDEP 15001	2/13/2022	11:49	SM 3113 B	2/15/2022	17:49	0.580	2.00	1	N	ND
01-HA-IN-164-WF (A)	N	P22-01241-17	PAS	NJDEP 15001	2/13/2022	11:53	SM 3113 B	2/15/2022	17:53	0.059	2.00	1	N	ND
01-HA-IN-164-WF (B) BOTTLER	N	P22-01241-18	PAS	NJDEP 15001	2/13/2022	11:54	SM 3113 B	2/15/2022	17:57	-0.46	2.00	1	N	ND
01-HA-IN-164-WF (C)	N	P22-01241-19	PAS	NJDEP 15001	2/13/2022	11:56	SM 3113 B	2/15/2022	18:02	-0.20	2.00	1	N	ND
01-CR-IN-136A-WF (A)	N	P22-01241-20	PAS	NJDEP 15001	2/13/2022	11:59	SM 3113 B	2/15/2022	18:14	-0.46	2.00	1	N	ND
01-CR-IN-136A-WF (B) BOTTLER	N	P22-01241-21	PAS	NJDEP 15001	2/13/2022	11:59	SM 3113 B	2/15/2022	18:22	-0.20	2.00	1	N	ND
01-TL-IN-120F-FP	N	P22-01241-22	PAS	NJDEP 15001	2/13/2022	12:01	SM 3113 B	2/15/2022	18:26	0.580	2.00	1	N	ND
01-HA-IN-159A-WF (A)	N	P22-01241-23	PAS	NJDEP 15001	2/13/2022	12:04	SM 3113 B	2/15/2022	18:31	-0.46	2.00	1	N	ND
01-HA-IN-159A-WF (B) BOTTLER	N	P22-01241-24	PAS	NJDEP 15001	2/13/2022	12:05	SM 3113 B	2/15/2022	18:35	-0.46	2.00	1	N	ND
01-HA-IN-159A-WF (C)	N	P22-01241-25	PAS	NJDEP 15001	2/13/2022	12:06	SM 3113 B	2/15/2022	18:39	-0.20	2.00	1	N	ND
01-HA-IN-155-WF (A)	N	P22-01241-26	PAS	NJDEP 15001	2/13/2022	12:09	SM 3113 B	2/15/2022	18:43	-0.20	2.00	1	N	ND
01-HA-IN-155-WF (B) BOTTLER	N	P22-01241-27	PAS	NJDEP 15001	2/13/2022	12:11	SM 3113 B	2/15/2022	18:47	0.059	2.00	1	N	ND
01-HA-IN-155-WF (C)	N	P22-01241-28	PAS	NJDEP 15001	2/13/2022	12:12	SM 3113 B	2/16/2022	12:29	-0.60	2.00	1	N	ND
01-OF-IN-154A-F	N	P22-01241-29	PAS	NJDEP 15001	2/13/2022	12:15	SM 3113 B	2/16/2022	12:45	4.30	2.00	1	N	
01-HA-IN-159-WF (A)	N	P22-01241-30	PAS	NJDEP 15001	2/13/2022	12:18	SM 3113 B	2/16/2022	12:57	-0.92	2.00	1	N	ND
01-HA-IN-159-WF (B) BOTTLER	N	P22-01241-31	PAS	NJDEP 15001	2/13/2022	12:18	SM 3113 B	2/16/2022	13:01	-0.60	2.00	1	N	ND
01-HA-IN-159-WF (C)	N	P22-01241-32	PAS	NJDEP 15001	2/13/2022	12:21	SM 3113 B	2/16/2022	13:05	-0.92	2.00	1	N	ND
01-TL-IN-115-FP	N	P22-01241-33	PAS	NJDEP 15001	2/13/2022	12:25	SM 3113 B	2/16/2022	13:09	-0.92	2.00	1	N	ND
01-CR-IN-112-FP (A)	N	P22-01241-34	PAS	NJDEP 15001	2/13/2022	12:30	SM 3113 B	2/16/2022	13:13	8.22	2.00	1	Y	
01-CR-IN-112-FP (B)	N	P22-01241-35	PAS	NJDEP 15001	2/13/2022	12:31	SM 3113 B	2/16/2022	13:17	4.63	2.00	1	N	
01-CR-IN-112-FP (C)	N	P22-01241-36	PAS	NJDEP 15001	2/13/2022	12:33	SM 3113 B	2/16/2022	13:21	4.96	2.00	1	N	
01-CR-IN-112-FP (D)	N	P22-01241-37	PAS	NJDEP 15001	2/13/2022	12:33	SM 3113 B	2/16/2022	13:25	-0.60	2.00	1	N	ND
01-CR-IN-112-FP (E)	N	P22-01241-38	PAS	NJDEP 15001	2/13/2022	12:34	SM 3113 B	2/16/2022	13:29	-0.92	2.00	1	N	ND
01-CR-IN-112-FP (F)	N	P22-01241-39	PAS	NJDEP 15001	2/13/2022	12:35	SM 3113 B	2/16/2022	13:41	-0.27	2.00	1	N	ND
01-CR-IN-112-FP (G)	N	P22-01241-40	PAS	NJDEP 15001	2/13/2022	12:37	SM 3113 B	2/16/2022	14:25	0.057	2.00	1	N	ND
01-CR-IN-112-FP (H)	N	P22-01241-41	PAS	NJDEP 15001	2/13/2022	12:39	SM 3113 B	2/16/2022	14:29	-0.27	2.00	1	N	ND
01-CR-IN-112-FP (I)	N	P22-01241-42	PAS	NJDEP 15001	2/13/2022	12:41	SM 3113 B	2/16/2022	14:33	14.8	2.00	1	Y	
01-CR-IN-112-IM	N	P22-01241-43	PAS	NJDEP 15001	2/13/2022	12:42	SM 3113 B	2/16/2022	14:37	-0.60	2.00	1	N	ND
01-KI-IN-113-IM	N	P22-01241-44	PAS	NJDEP 15001	2/13/2022	12:43	SM 3113 B	2/16/2022	14:42	-0.92	2.00	1	N	ND
01-KI-IN-113-FP (A)	N	P22-01241-45	PAS	NJDEP 15001	2/13/2022	12:45	SM 3113 B	2/16/2022	14:54	-0.60	2.00	1	N	ND
01-KI-IN-113-FP (B)	N	P22-01241-46	PAS	NJDEP 15001	2/13/2022	12:47	SM 3113 B	2/16/2022	14:58	-0.27	2.00	1	N	ND
01-KI-IN-113-FP (C)	N	P22-01241-47	PAS	NJDEP 15001	2/13/2022	12:48	SM 3113 B	2/16/2022	15:02	-0.60	2.00	1	N	ND
01-KI-IN-113-FP (D)	N	P22-01241-48	PAS	NJDEP 15001	2/13/2022	12:49	SM 3113 B	2/16/2022	15:06	-0.27	2.00	1	N	ND
01-KI-IN-113-FP (E)	N	P22-01241-49	PAS	NJDEP 15001	2/13/2022	12:51	SM 3113 B	2/16/2022	15:14	4.96	2.00	1	N	
01-KI-IN-113-FP (F)	N	P22-01241-50	PAS	NJDEP 15001	2/13/2022	12:52	SM 3113 B	2/16/2022	15:18	0.057	2.00	1	N	ND
01-KI-IN-113-FP (G)	N	P22-01241-51	PAS	NJDEP 15001	2/13/2022	12:54	SM 3113 B	2/16/2022	15:22	6.91	2.00	1	N	
01-KI-IN-113-FP (H)	N	P22-01241-52	PAS	NJDEP 15001	2/13/2022	12:55	SM 3113 B	2/16/2022	15:26	7.57	2.00	1	N	
01-KI-IN-113-FP (I)	N	P22-01241-53	PAS	NJDEP 15001	2/13/2022	12:56	SM 3113 B	2/16/2022	15:38	1.04	2.00	1	N	J
01-KI-IN-113-FP (J)	N	P22-01241-54	PAS	NJDEP 15001	2/13/2022	12:57	SM 3113 B	2/16/2022	15:42	1.04	2.00	1	N	J
01-KI-IN-113-FP (K)	N	P22-01241-55	PAS	NJDEP 15001	2/13/2022	12:59	SM 3113 B	2/16/2022	15:46	0.380	2.00	1	N	ND
01-KI-IN-113-FP (L)	N	P22-01241-56	PAS	NJDEP 15001	2/13/2022	13:01	SM 3113 B	2/16/2022	15:50	0.057	2.00	1	N	ND
01-KI-IN-113-FP (M)	N	P22-01241-57	PAS	NJDEP 15001	2/13/2022	13:02	SM 3113 B	2/16/2022	15:54	1.36	2.00	1	N	J
01-KI-IN-113-FP (N)	N	P22-01241-58	PAS	NJDEP 15001	2/13/2022	13:03	SM 3113 B	2/16/2022	15:58	0.380	2.00	1	N	ND
01-KI-IN-113-FP (O)	N	P22-01241-59	PAS	NJDEP 15001	2/13/2022	13:04	SM 3113 B	2/16/2022	16:06	-0.27	2.00	1	N	ND
01-KI-IN-113-FP (P)	N	P22-01241-60	PAS	NJDEP 15001	2/13/2022	13:05	SM 3113 B	2/16/2022	16:32	0.380	2.00	1	N	ND
01-KI-IN-113-FP (Q)	N	P22-01241-61	PAS	NJDEP 15001	2/13/2022	13:07	SM 3113 B	2/16/2022	16:36	8.87	2.00	1	Y	
01-KI-IN-113-HW	N	P22-01241-62	PAS	NJDEP 15001	2/13/2022	13:09	SM 3113 B	2/16/2022	16:40	0.380	2.00	1	N	ND
01-KI-IN-113-ST	N	P22-01241-63	PAS	NJDEP 15001	2/13/2022	13:10	SM 3113 B	2/16/2022	16:44	**15.4**	2.00	1	Y	
01-MO-IN-102-F	N	P22-01241-64	PAS	NJDEP 15001	2/13/2022	13:14	SM 3113 B	2/16/2022	16:48	4.30	2.00	1	N	
02-HA-IN-213-WF (A)	N	P22-01241-65	PAS	NJDEP 15001	2/13/2022	13:18	SM 3113 B	2/16/2022	16:52	-0.27	2.00	1	N	ND
02-HA-IN-213-WF (B) BOTTLER	N	P22-01241-66	PAS	NJDEP 15001	2/13/2022	13:19	SM 3113 B	2/16/2022	16:56	-0.27	2.00	1	N	ND
02-HA-IN-213-WF (C)	N	P22-01241-67	PAS	NJDEP 15001	2/13/2022	13:20	SM 3113 B	2/16/2022	17:08	-0.60	2.00	1	N	ND
01-POE-IN-WATER RM-F-FLUSH	Y	P22-01241-68	PAS	NJDEP 15001	2/13/2022	13:38	SM 3113 B	2/16/2022	17:12	3.00	2.00	1	N	