Groundwater Pre-Design Investigation Report

and

Groundwater Remediation Work Plan

for

Former Ithaca Gun Factory
121 – 125 Lake Street
City of Ithaca, Tompkins County, New York
Site No. C755019

Prepared by:

C&S Engineers, Inc.
499 Colonel Eileen Collins Blvd
Syracuse, New York 13212

Prepared on Behalf of:

121-125 Lake Street, LLC
226 Cecil Malone Drive, Suite 3
Ithaca, New York 14850

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CERTIFICATION

I, H. Nevin Bradford, III, certify that I am currently a NYS Registered Professional Engineer as defined in New York Codes, Rules, and Regulations (NYCRR) Part 375-6 and that this Groundwater Pre-Design Investigation Report and Groundwater Remediation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10).

H. Nevin Bradford, III, P.E.
State of New York Professional Engineer No. 086008

Registration Expires: 04.31.2026

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List of Acronyms

ABC®	Anaerobic BioChem®
AMSL	Above Mean Sea Level
ASP	Analytical Services Protocol
AWQS	Ambient Water Quality Standards
BCP	New York State Brownfield Cleanup Program
BGS	Below Ground Surface
BMP	Best Management Practice
BTOR	Below Top of Riser
bvcA	*BAV1 VC Reductase*
C&S	C&S Engineers, Inc.
C12	Carbon-12
C13	Carbon-13
CAMP	Community Air Monitoring Plan
cell/mL	Cells per Milliliter
cDCE	Cis-1,2-Dichloroethene
cm/sec	Centimeters per Second
CME	CME Associates, Inc.
CO_2	Carbon Dioxide
COC	Contaminant of Concern
CSIA	Compound Specific Isotope Analysis
CVOC	Chlorinated Volatile Organic Compound
DCA	1,1-Dichloroethane
DCE	1,1-Dichloroethene
Deco	*Dehalobium Chloroercia*
DER-10	Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation
Dhc	*Dehalococcoides*
Dhg	*Dehalogenimonas*
DO	Dissolved Oxygen

List of Acronyms

DUSR	Data Usability Summary Report
EDD	Electronic Data Deliverable
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EVO	Emulsified Vegetable Oil
FER	Final Engineering Report
ft/day	Feet per Day
GHG	Greenhouse Gas
GRT	Green Remediation Technique
HAP	Hazardous Air Pollutant
HASP	Health and Safety Plan
IDW	Investigation Derived Waste
IFR	IFR Development, LLC
L/min	Liters per minute
lbs	Pounds
mg/L	Milligrams per Liter
MMBtu	Metric Million British Thermal Unit
mS/cm	MilliSiemens per centimeter
MS / MSD	Matrix Spike / Matrix Spike Duplicate
mV	Millivolts
NOx	Nitrogen Oxides
NTU	Nephelometric turbidity units
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OBG	O'Brien & Gere, Inc.
ORP	Oxidation Reduction Potential
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene

List of Acronyms

PDI	Pre-Design Investigation
PID	Photoionization Detector
PM	Particulate Matter
ppb	Parts Per Billion
PPE	Personal Protective Equipment
QA / QC	Quality Assurance / Quality Control
qPCR	Quantitative Polymerase Chain Reaction
RAA	Remedial Alternatives Analysis
RAWP	Remedial Action Work Plan
Redox	Redox Tech, LLC
RI	Remedial Investigation
ROI	Radius of Influence
RQD	Rock Quality Designation
RWP	Remediation Work Plan
SEFA	Spreadsheets for Environmental Footprint Analysis
Site	Former Ithaca Gun Factory – 121-125 Lake Street, Ithaca, Tompkins County, New York
SOx	Sulfur Oxides
su	Standard Units
SVOC	Semi-Volatile Organic Compound
TCA	Trichloroethane
TCE	Trichloroethylene
tceA	*TCE Reductase*
TCL	Targe Compound List
tDCE	Trans-1,2-Dichloroethene
TOC	Total Organic Carbon
TOGS	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
VC	Vinyl Chloride

List of Acronyms

vcrA	*VC Reductase*
VOC	Volatile Organic Compound
VPDB	Vienna Pee Dee Belemnite
ZVI	Zero-Valent Iron
°C	Degrees Celsius
µg/L	Micrograms per Liter
δ ‰	Per Mil

1. Introduction

C&S Engineers, Inc. (C&S) has prepared this Groundwater Pre-Design Investigation (PDI) Report and Groundwater Remediation Work Plan (RWP) on behalf of 121 – 125 Lake Street, LLC for the Former Ithaca Gun Factory located at 121 – 125 Lake Street, in the City of Ithaca, Tompkins County, New York (the "site"). PDI activities were conducted in accordance with the approved PDI Work Plan dated June 10, 2024 and were employed to collect supplemental information that was necessary to finalize the groundwater remediation design. The PDI Report summarizes the methodologies and findings of the PDI activities conducted at the site and the Groundwater RWP outlines the scope and methodologies that will be employed to remediate the site's chlorinated solvent impacted groundwater through in-situ enhanced bioaugmentation.

1.1. Site Background

The site is located at 121 – 125 Lake Street in the City of Ithaca, Tompkins County, New York. The site consists of 1.63 acres of vacant land that was acquired by 121-125 Lake Street, LLC. The site was previously utilized as a gun and munition manufacturing facility by Ithaca Gun Company. This use dates to the late 1800s and continued until the company filed for bankruptcy in 1979.

The original Ithaca Gun Company property consisted of approximately 2.6 acres, but approximately one acre of the original property was transferred to the City of Ithaca and was subsequently remediated under New York State's Environmental Restoration Program (ERP) by the City between 2008 and 2018. This remediation site was identified as the Ithaca Falls Overlook Site and was further identified by Site No. E755018.

The numerous buildings that occupied the site were later demolished in 2009, except for a small one-story building and the stack of the former boiler house that remains in the northwestern portion of the site.

The site was entered into New York State's Brownfield Cleanup Program (BCP) by the previous property owner, IFR Development, LLC (IFR), in 2013. The site is identified by Site No. C755019. On behalf of IFR, O'Brien & Gere, Inc. (OBG) / Ramboll conducted a site-wide Remedial Investigation (RI), performed a Remedial Alternatives Analysis (RAA) to compare various approaches to site remediation, and prepared a Remedial Action Work Plan (RAWP) describing the remedial approach that was selected as a result of the RAA. The Decision Document was later issued by the New York State Department of Environmental Conservation (NYSDEC) in February 2021.

The site was purchased from IFR Development, LLC by the current owner, 121-125 Lake Street, LLC, in December 2021. In March 2022, the BCP Agreement was amended to add 121-125 Lake Street, LLC as an applicant and to reflect the change in site ownership. 121-

125 Lake Street, LLC plans to complete the remediation and redevelop the property. The eastern property will be redeveloped to include an apartment building with an underground car garage, outdoor parking, and common areas. The western parcel may be redeveloped to support the use as a public area for the Ithaca Gorge Overlook.

The RI characterized the lateral and vertical extent of contamination across both portions of the site with sufficient detail to allow scoping of the soil remediation, with limited exceptions. These exceptions were addressed by C&S and are presented under separate covers in the *Pre-Design Investigation Work Plan (Soil)*, dated August 9, 2022, and *Pre-Design Investigation Report (Soil)*, dated January 2024. The soil remedial design was prepared in August 2022 and the soil remedial work on the eastern parcel was completed in 2023. The soil remedial work on the western parcel is anticipated to occur in late 2024 or early 2025.

The RI identified elevated concentrations of chlorinated volatile organic compounds (CVOCs) in groundwater. These contaminants are present in the fractured bedrock formation beneath the site, with the highest concentrations present beneath the northern portion of the eastern parcel. To collect additional data to support and inform the remedial design process for the contaminated groundwater at the site, C&S prepared a *Pre-Design Investigation Work Plan (Groundwater)*, dated June 10, 2024. The Groundwater PDI Report summarizes the findings of the PDI activities and the Groundwater RWP outlines the scope and methodologies that will be employed to remediate the site's CVOC impacted groundwater through in-situ enhanced bioaugmentation.

1.2. Existing Conditions

The 1.63-acre site is divided into two separate parcels. For purposes of discussion, the two separate parcels are referred to herein as the eastern parcel and the western parcel. The eastern parcel is located on the northern side of Lake Street and to the south of Fall Creek. The western parcel is located northwest of the eastern parcel and is accessed at the back of a parking lot located off Lake Street. The two-parcel site is located in the northeastern portion of the City of Ithaca and west of Cornell University.

The eastern parcel was formerly occupied by the main manufacturing building of the Ithaca Gun Company. The building encompassed majority of the eastern parcel and extended to the City of Ithaca Island and Raceway property. The smaller western parcel housed the former boiler house, boiler stack, and turbine house.

The soil remediation was completed in summer of 2023 for the eastern parcel. The eastern parcel is currently an open vacant parcel with exposed bedrock terraces. The western parcel soil remediation has yet to be completed. The western parcel is currently overgrown with vegetation covering remnants of the former retaining walls, former boiler

house foundations, boiler stack, and turbine house.

The site is bordered to the north by Fall Creek and the City of Ithaca Natural Area, to the south and east by multi-family residential properties, and to the west by parking areas. Properties surrounding the site are predominately residential with some commercial and multi-family properties.

The area immediately north of the eastern parcel, commonly referred to as the "Island and Raceway", and a narrow strip of land between the two parcels had historically been part of the Ithaca Gun Company property; however, this area was granted to the City of Ithaca Urban Renewal Agency to be developed into a walkway and public park and overlook area for the adjacent Ithaca Falls. The Urban Renewal Agency received grant funding to conduct an investigation of potential contamination through the New York State's ERP (Ithaca Falls Overlook Site, NYSDEC Site Number E755018) and investigation and remedial activities were conducted under this program from approximately 2012 through 2018. Various institutional and engineering controls (cover system) were implemented, and this site remains subject to ongoing site management and periodic review requirements.

Figure 1 depicts the location of the site and **Figure 2** depicts the brownfield limits / parcel boundaries and general site layout.

1.3. Site Geography, Geology, and Hydrology

The site is located on the eastern side of a broad glacial valley. The site is bounded to the north by a deep gorge. Fall Creek is located at the base of this gorge, approximately 200 to 250 feet north of the two parcels. Ithaca Falls is located to the east along the gorge. Fall Creek flows in a general western direction and discharges into the southern basin of Cayuga Lake at a point approximately 1.05 miles northwest of the site, as depicted on **Figure 1**.

The topography of the site and surrounding area is characterized by steep grades and intermittent terraces. Since the completion of the soil remediation, the current surface elevation on the eastern parcel ranges from 550 feet above mean sea level (amsl) at the southeastern portion to 511 feet amsl at the northwestern portion. The western parcel sits at a lower elevation than the eastern parcel, at approximately 494 feet amsl at its highest elevation at its southern boundary. The western parcel slopes gently to the north then abruptly descends towards Fall Creek dropping to an approximate elevation of 491 feet amsl. **Figure 3** depicts the general topography of the site and the adjacent parcels.

According to the Surficial Geology Map of New York, Finger Lakes Sheet (Ernest H. Muller and Donald H. Cadwell, 1986), the overburden material at and in the vicinity of the site is classified as bedrock. This material is described as "exposed or within 1 meter of surface, the following types of rock may be exposed: Paleozoic limestone, sandstone, shale". The

Geologic Map of New York, Finger Lakes Sheet (Lawrence V. Rickard and Donald W. Fisher, 1970) identifies the local bedrock beneath and in the immediate vicinity of the site as West River shale of the Ithaca Formation.

Previous site investigations and soil remedial activities revealed that the site's overburden soil is comprised of a mix of silt, sand and gravel. The overburden is believed to be native soil mixed with imported gravel fill material used for leveling surfaces during construction of the previous Ithaca Gun Company facilities. Since the completion of the soil remediation for the eastern parcel, there is no soil remaining on the parcel. The eastern parcel consists of exposed bedrock cliffs with a deep crevasse in the northwestern corner of the parcel. The depths of the overburden soil range from 0.5 feet below ground surface (bgs) to 15.5 feet bgs for the western parcel and the typical depth to bedrock is believed to be 10 feet bgs.

During previous evaluations of the monitoring wells installed at the site in 2018, one water bearing zone was identified within the bedrock formation at depths ranging from 34 to 57 feet bgs. No significant groundwater was encountered in the site's overburden. The groundwater flow direction was to the northwest, toward Cayuga Lake. Hydrogeologic evaluations conducted during the previous investigations suggest that the hydraulic conductivity of the fractured bedrock ranges from 3.48 x 10^{-6} centimeters per second (cm/sec) (0.01 feet per day [ft/day]) to 8.25 x 10^{-5} cm/sec (0.23 ft/day). Vertical migration in the bedrock seems to be limited by less fracturing of the bedrock with increasing depth.

The City of Ithaca receives its municipal water supply from the Six Mile Creek reservoir and Cornell University receives their municipal water supply from Fall Creek at a point approximately 1.5 miles upstream from the site. There are currently no groundwater drinking wells on or in the area surrounding the site.

1.4. Nature and Extent of Groundwater Contamination

A RI was conducted at the site by OBG / Ramboll between September 2016 and March 2018, to evaluate the nature and extent of contamination resulting from historic site operations. The findings of the RI were documented in a RI Report that was issued in November 2018. This report indicated the following regarding groundwater conditions:

- The existing groundwater monitoring well network consisted of ten wells, as described in the table below. The monitoring well locations are depicted on **Figure 4**.

Well I.D.	*Location*
MW-01R	Up-gradient of Source Area
MW-08, MW-09	Source Area
MW-03, MW-04R, MW-05, MW-10	Near Down-gradient of Source Area
MW-06, MW-07	Distant Down-gradient of Source Area
MW-11	Cross-Gradient of Source Area

- Several CVOCs were present in groundwater beneath the northern portion of the site at concentrations that exceeded their corresponding groundwater standards. The contaminants of concern (COCs) were trichloroethylene (TCE), tetrachloroethene (PCE), trichloroethane (TCA), vinyl chloride (VC), 1,1-dichloroethane (DCA), 1,1-dichloroethene (DCE), cis-1,2-dichloroethene (cDCE), and trans-1,2-dichloroethene (tDCE).
- The presence of TCE and PCE were attributed to the storage and use of these solvents during past operations at the site. The remaining compounds (VC, TCA, DCA, DCE, cDCE, and tDCE) are typical daughter / breakdown products of TCE and PCE and are likely present as a result of past degradation in the subsurface environment.
- Concentrations of the COCs in the source area and up-gradient, cross-gradient, near down-gradient, and distant down-gradient of the source area were as follows in 2017 / 2018:

CVOC Compound	*CVOC Concentration (µg/l or ppb)*				
	Source Area	*Up-gradient*	*Cross-gradient*	*Near Down-gradient*	*Distant Down-gradient*
TCE	910 – 9520	ND	1.6	90 – 1100	ND – 4.1
PCE	28.7 – 50	ND	ND	ND – 37	ND
TCA	8.6 – 8.9	ND	ND	ND	ND
VC	11.9 – 241	ND	ND	ND	ND
DCA	11.6 – 131	ND	ND	ND – 13	ND
DCE	12.7 – 54.1	ND	ND	ND – 11	ND
cDCE	3260 – 11600	ND	1.3	40 – 1500	ND – 0.95
tDCE	21 – 64.9	ND	ND	ND	ND

µg/L – micrograms per liter
ppb – parts per billion

- No detectable concentrations of semi volatile organic compounds (SVOCs), heavy metals, polychlorinated biphenyls (PCBs), or pesticides were identified in groundwater.
- Packer testing conducted during the installation of MW-08, MW-09, MW-10, and MW-11 indicated that the only water bearing zone was present between 34 and 57 feet bgs.

- In-situ hydraulic conductivity testing performed indicated that rates of hydraulic conductivity in the bedrock ranged from 3.48 x 10^{-6} cm/sec (0.01 ft/day) at MW-08 to 8.25 x 10^{-5} cm/sec (0.23 ft/day) at MW-09.
- The microbiome at MW-08 (well with the highest CVOC concentrations) contained a population of *Dehalococcoides* (Dhc) in the range of 2.78 x10^{2} cells per milliliter (cell/mL). *Dehalogenimonas* (Dhg) was also present at an approximate population of 4.16 x 10^{3} cell/mL, and *dehalobium chloroercia* (Deco) was present at an approximate population of 4.63 x 10^{2} cell/mL. The functional genes inherent to Dhc, including *TCE reductase* (tceA), *BAV1 VC reductase* (bvcA), and *VC reductase* (vcrA), were present at rates of 4.00 x 10^{-1}, 9.69 x 10^{1}, and 3.00 cell/mL, respectively. Total eukaryote populations were in the order of 3.55 x 10^{6} cell/mL.

A comparison of the historical groundwater data and the groundwater data collected during the PDI is further discussed in **Section 5**.

1.5. Selected Groundwater Remediation Action

A RAA was completed for the site by OBG / Ramboll in January 2020. Based on the findings of the RI and the RAA, the Decision Document for the site was issued by NYSDEC in February 2021. The Decision Document presented the selected groundwater remedy for the site, to include:

- **Remedial Design:** *A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:*
    - *Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;*
    - *Reducing direct and indirect greenhouse gases and other emissions;*
    - *Increasing energy efficiency and minimizing use of non-renewable energy;*
    - *Conserving and efficiently managing resources and materials;*
    - *Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;*
    - *Maximizing habitat value and creating habitat when possible;*
    - *Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;*

- *Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and*
- *Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier / waterproofing membrane on the foundation to improve energy efficiency as an element of construction.*

- **Enhanced Bioremediation:** *In-situ enhanced biodegradation will be employed on the eastern parcel to treat contaminants in groundwater directly in the source area. The biological breakdown of contaminants through anaerobic reductive dechlorination will be enhanced by injecting emulsified vegetable oil (EVO) or a similar material into the subsurface to promote microbe growth. The treatment amendment will be placed in direct contact with contaminated groundwater via five injection wells screened at a depth interval of 42.5 to 57 feet below grade. Other amendments or additives may be necessary to achieve conditions for contaminant degradation and will be determined in remedial design and, if necessary, a pilot scale study. For example, if appropriate aquifer pH (6-8) and total organic carbon (TOC) concentration (greater than 50 milligrams per liter [mg/l]) cannot be simultaneously maintained, the injection solution will be buffered with sodium bicarbonate to counteract the organic acids generated from biological activity. Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring will be conducted for contaminants of concern and other groundwater parameters that are used as measures of effectiveness for the in-situ treatment method determined during remedial design.*

The purpose of the Groundwater PDI was to support and inform the development of a detailed remedial design to facilitate the in-situ enhanced bioremediation of the target CVOCs in groundwater, consistent with the intent of the Decision Document. The findings from the Groundwater PDI were used to develop the Groundwater RWP.

1.6. Planned Future Use

The current property owner, 121-125 Lake Street, LLC, plans to remediate and redevelop the property. The eastern parcel will be redeveloped with an apartment building with an underground car garage, outdoor parking, and common areas. The western parcel will be redeveloped to support the use as a public area for the Ithaca Gorge Overlook.

2. PDI Objectives and Scope

The purpose of the PDI was to collect additional data to support and inform the remedial design process for the contaminated groundwater at the site. The nature and extent of site contamination was previously characterized in the RI conducted by OBG / Ramboll, as discussed in **Section 1.4**. This PDI Report has been prepared consistent with Division of Environmental Remediation "*Technical Guidance for Site Investigation and Remediation*" (DER-10). The PDI portion of this report discusses the following:

- Objectives and Scope for PDI activities
- Existing Well Inspection and Baseline Groundwater Assessment
- Injection Well Construction Design and Installation
- Injection Well Treatability Study
- Community Air Monitoring Plan (CAMP) Results
- Green Remediation Summary

2.1. PDI Objectives

The objectives of the PDI were as follows:

- Evaluate the condition of the existing groundwater monitoring well network and identify any required repairs or well replacements that may be necessary;
- Assess the current groundwater conditions at and down-gradient of the site, including CVOC concentrations, groundwater geochemistry, and microbial populations that may facilitate contaminant degradation through anaerobic reductive dechlorination and / or aerobic degradation processes;
- Verify site hydrogeologic conditions (water bearing zone(s), hydraulic conductivity) and their potential impacts to contaminant distribution / migration patterns and introduction / distribution of amendments that may enhance in-situ biodegradation of COCs;
- Determine amendment requirements (i.e., microbes, nutrients, buffers, electron donors), design volumes, and injection methods to be used in a full-scale bio-stimulation or bioaugmentation program;
- Implement quality control / quality assurance (QA / QC) protocols for analytical and sampling methods during PDI monitoring and sampling; and
- Implement health and safety procedures and work practices to protect site workers and the local community during PDI activities.

2.2. PDI Scope

The development of the PDI was based on information previously gathered regarding historical operations at the site, the results of the previous subsurface investigations, and the PDI objectives. The PDI included the following activities:

- **Existing Well Inspection:** Prior to installation of the injection wells, an inspection of the conditions of the existing groundwater monitoring wells was completed. The existing groundwater monitoring wells were located and inspected for signs of damage or vandalism. The depth to water table and total well depth was recorded and compared to well construction logs / details. This was used to determine whether significant sediment buildup had occurred since the last evacuation and sampling event. An inventory of required well repairs or replacements was developed and occurred at the time of the injection well installations.

- **Baseline Groundwater Assessment:** Prior to installation of the injection wells, the existing groundwater monitoring wells were evacuated and sampled to establish current COC and geochemical analyte concentrations and microbial populations.

- **Injection Well Installation:** Injection wells were installed to facilitate the future delivery of the amendment to directly impact the CVOC groundwater plume within the eastern parcel. Five injection wells were advanced to intersect the impacted groundwater plume at a depth of 42.5 to 57 feet bgs. Packer testing was conducted to confirm the groundwater bearing zone was met.

- **Injection Well Treatability Study:** Following the installation of the injection wells, a treatability study was conducted to aid in the development of the full-scale in-situ enhanced bioremediation program and to determine if any additional amendments or additives may be necessary. Groundwater samples were collected and analyzed to establish current COC and geochemical analyte concentrations and microbial populations. Hydraulic conductivity testing was also conducted at the five injection well locations.

The groundwater monitoring well and injection well locations are depicted on **Figure 4**. The PDI activities were completed in a manner consistent with New York Codes, Rules, and Regulations (/) Part 375-6 and DER-10.

3. PDI Methodologies

This section describes the methodologies implemented at the site to collect additional data to support and inform the remedial design process to meet the groundwater remedial goals established in the Decision Document.

All findings from the field activities were recorded on field logs, which are provided in **Appendix A**. All work was performed in conformance with the approved PDI Work Plan and within guidance of any pertinent regulatory guidance documents cited herein.

3.1. Existing Well Conditions and Baseline Groundwater Assessment

3.1.1. Existing Well Inspection

The groundwater monitoring wells installed during previous investigations had not been developed or sampled since the last sampling event in 2018. As such, prior to the installation of injection wells, the integrity and overall condition of the ten groundwater monitoring wells were inspected. The groundwater monitoring well locations are depicted on **Figure 4** and a photographic log of the existing well conditions is provided in **Appendix B**.

The inspection methods are outlined below:

- The overall condition of the well surface protection (curb box / casing) was inspected;
- Prior to removing the well cap, the cap was inspected to ensure integrity of the gasket / seal;
- A photoionization detector (PID) was used to monitor for detectable volatile organic compounds (VOCs) within the wellhead airspace;
- The depth to the top of groundwater was measured; and
- The depth to the bottom of the well was measured.

The total well depth was compared to original well construction logs to determine if significant silt / sediment buildup had occurred. Based on the condition assessment, appropriate repairs or replacements were determined.

3.1.2. Existing Well Development and Sampling

Following the inspection, the existing wells were developed using a submersible pump. A water quality measurement device was used during well development to monitor temperature, dissolved oxygen (DO), conductivity, oxidation / reduction potential (ORP), and turbidity. Water levels were measured periodically throughout well development to

establish stabilization criteria for drawdown. Groundwater development logs for the existing wells are provided in **Appendix A-1**.

After a minimum of seven days following development, the wells were evacuated until stabilized conditions were observed, and subsequently sampled. The evacuation and sampling was performed as follows:

- Immediately upon well opening, the well headspace was monitored with a PID. Wellhead PID measurements were recorded on well sampling logs.
- Static water levels were measured using an electronic water level indicator capable of measuring to 0.01-foot accuracy. The water levels were measured relative to an established, repeatable point at the top of the PVC riser.
- Prior to sampling, the monitoring wells were evacuated using low-flow (typically < 0.5 liters per minute [L/min]) purging techniques. An electronic water level indicator was used periodically during purging to monitor drawdown and determine an appropriate evacuation rate. A submersible pump using manufacturer-specified tubing was used for purging and sampling groundwater. Dedicated tubing was used for each well to prevent cross-contamination.
- Groundwater was evacuated until stabilization of water quality was achieved. Using a flow through cell, the evacuated water was monitored for the following parameters and their tolerances:

Field Parameter	*Unit of Measurement*	*Variance*
pH	Standard units (su)	+/- 0.1
Conductivity	MilliSiemens per centimeter (mS/cm)	3%
Turbidity	Nephelometric turbidity units (NTU)	10% or <5
DO	Milligrams per liter (mg/L)	10% or <0.5
Temperature	Degrees Celsius (°C)	3%
ORP	Millivolts (mV)	+/- 10

- Water quality data was recorded every three to five minutes or after one flow-through cell was purged, whichever was greater. Conditions were considered stabilized when water quality measurements recorded from three consecutive readings were within the above variance tolerances.

Groundwater sampling followed well evacuation and was conducted using low-flow sampling techniques, as described above. The flow through cell was removed and samples were collected directly from the tubing. Unfiltered and field-filtered groundwater samples were collected for total and dissolved metals, respectively. Field-filtered samples were collected through a single-use 10-micron filter. Groundwater sampling logs for the existing wells are provided in **Appendix A-2**.

Groundwater samples were analyzed for the following list of target analytes:

- Target Compound List (TCL) VOCs
- TOC
- Total and Dissolved Metals (Ferrous and Ferric Iron, Calcium, Magnesium, Potassium, and Sodium)
- Dissolved Hydrocarbon Gases (methane, ethane, and ethene)
- Alkalinity (including bicarbonate and carbonate)
- Sulfide
- Sulfate
- Nitrate
- Chloride

Wells MW-03, MW-04R, MW-08, and MW-09 were also sampled for the following:

- Quantitative polymerase chain reaction (qPCR) analysis to identify and quantify existing colonies of key microorganisms (Dhc) and functional genes to assess the potential for existing conditions to support reductive dichlorination and aerobic co-metabolism of chlorinated compounds in groundwater.
- Compound Specific Isotope Analysis (CSIA) to establish baseline ratios of carbon and chloride isotopes for comparison to ratios following amendment injection as a gauge of reductive dechlorination success.

3.2. Injection Well Installation and Treatability Study

As detailed in the approved RAWP prepared by OBG / Ramboll, five injection wells were installed approximately 30 to 40 feet up-gradient of the existing CVOC groundwater plume identified on the eastern parcel (up-gradient of monitoring wells MW-08 and MW-09). The injection well locations are depicted on **Figure 4.**

3.2.1. Injection Well Construction and Packer Testing

Based on the data gathered during the RI, the top of the water bearing zone ranged from 34 and 57 feet bgs across the entire site. However, the top of the water bearing zone ranged from 46 to 57 feet bgs within MW-08 and MW-09, the two existing wells closest to the injection well locations. The following methods were employed for the construction of the injection wells:

- Injection boreholes were advanced by CME Associates, Inc. (CME) using an off-road CME 550X drill rig and wet-rotary coring methods. Continuous cores were extracted using NQ-size core barrels (creating a 3-3/8-inch diameter borehole).

- Bedrock cores were visually examined to identify prominent fractures zones and to determine Rock Quality Designation (RQD) values for each cored interval. The bedrock core logs are provided in **Appendix A-3**.
- The injection wells were equally spaced apart (approximately 30 to 40 feet).
- The injection wells were advanced to a terminal elevation of approximately 450 to 455 feet amsl, or a depth of approximately 70 feet below the top of the exposed bedrock formation. This depth positioned the bottom of the injection wells approximately 5 feet above the bottom of the target water bearing zone.
- Packer testing was performed in each borehole to confirm that the water bearing zone was met, as described below.
- The integrity of the borehole was inspected and characterized. Based on the observations, collapse of the bedrock was not likely to occur, and as such the boreholes were left open to allow for flexibility in the depths of injections.

Each injection well was finished with an approximate 2-to-3-foot section of a 5-inch-wide steel casing riser to protect the borehole and allow each injection well riser to be raised or lowered based on the final building foundation elevation. The construction details were recorded on well construction field logs, provided in **Appendix A-4**.

Once the injection wells were advanced to the target terminal depth, packer testing was performed to confirm the water bearing zone. The packer testing was completed as follows:

- The packer system utilized a slotted PVC drop pipe with an affixed upper and lower packer inflatable, spaced 10-feet apart.
- The packer was installed approximately 20 to 25 feet above the bottom of the borehole, to ensure the packer zone crossed the previously identified water bearing zone of 46 to 57 feet bgs.
- One to three well volumes of groundwater were evacuated using a submersible pump.
- Confirmation of the water bearing zone was deemed successful if groundwater returned to the well.

Packer testing results were recorded on well construction field logs, provided in **Appendix A-4**.

3.2.2. Injection Well Development and Sampling

Following the installation of the injection wells, the wells were allowed to equilibrate for at least seven days before development. The injection wells were developed using a submersible pump. A water quality measurement device was used during well

development to monitor temperature, DO, conductivity, ORP, and turbidity. Water levels were measured periodically throughout well development to establish stabilization criteria for drawdown. Groundwater development logs for the existing wells are provided in **Appendix A-5**.

After a minimum of seven days following development, the wells were evacuated until stabilized conditions were observed, and subsequently sampled. The evacuation and sampling was performed as described in **Section 3.1.2**. Groundwater sampling logs for the injection wells are provided in **Appendix A-6**.

Groundwater samples were analyzed for the following list of target analytes:

- TCL VOCs
- TOC
- Total and Dissolved Metals (Ferrous and Ferric Iron, Calcium, Magnesium, Potassium, and Sodium)
- Dissolved Hydrocarbon Gases (methane, ethane, and ethene)
- Alkalinity (including bicarbonate and carbonate)
- Sulfide
- Sulfate
- Nitrate
- Chloride

Wells IJW-01 and IJW-03 were also sampled for the following:

- qPCR – Dhc and functional genes
- CSIA – Carbon and chloride isotopes

3.2.3. Hydraulic Conductivity Testing

Hydraulic conductivity testing was performed at each of the five injection wells using conventional "slug" testing methods. The data collected was used in conjunction with the data collected during the RI hydraulic conductivity testing, to define the amendment volume and injection rates. Since the injection wells were left open and no screen was present, both a rising and falling head test was completed for all five wells. The test methods were conducted in a similar manner to the RI, to ensure similar results. The testing was performed as follows:

- Immediately upon well opening, the well headspace was monitored with a PID. Wellhead PID measurements were recorded on well sampling logs.

- Static water levels were measured using an electronic water level indicator capable of measuring to 0.01-foot accuracy. The water levels were measured relative to an established, repeatable point at the top of the steel riser.
- A water level data logger was submerged into the injection well to a depth sufficient to ensure the well slug did not encounter the data logger. The data logger was capable of recording temperature, pressure, and conductivity.
- A second water level data logger was submerged into an adjacent injection well to evaluate the hydraulic connection between wells, with the exception of IJW-01. During the IJW-01 hydraulic conductivity test, the second data logger was submerged into MW-08 to observe the hydraulic connection in a down-gradient well.
- The test slug length, diameter, and volume were recorded on the field log.

3.3. Deviations from the Groundwater PDI Work Plan

Field conditions encountered during the PDI presented challenges and resulted in deviations from the proposed PDI Work Plan or the OBG / Ramboll RWP. Within the guidance of the PDI Work Plan, NYSDEC was consulted prior to any significant deviations. The following deviations encountered during the completion of the PDI activities:

- QA / QC samples were only collected for VOC analysis and a data usability summary report (DUSR) was prepared for the VOC sampling data. All data will still be submitted to EQuIS for the NYSDEC to review.
- Due to the amount of water and sediment within the existing wells, a more aggressive development method was used and an in-line water quality meter could not be used. In lieu of this, water quality readings were collected by dipping the water quality meter into a cup containing development water. Readings were collected every few minutes or as allowed by the groundwater recharge rate.
- Due to the amount of water used during the injection well installation and the amount of standing water to be evacuated from the injection wells, a more aggressive development method was used and an in-line water quality meter could not be used. In lieu of this, water quality readings were collected by dipping the meter into a cup containing development water. Readings were collected every few minutes or as allowed by well recharge rate.
- Due to poor groundwater recovery in MW-05, qPCR and CSIA samples were collected from MW-03 in lieu of MW-05.
- As of the date of this report, CSIA results from the injection wells have not been received. These results will be further evaluated in future reports.
- Two injection well locations were moved, as described below:

- IJW-01 was moved east due to the intended location being within a column footer for the planned apartment building foundation.
- IJW-05 was moved east due to the topography of the site not allowing the drill rig to safely setup in the intended location. This resulted in less than a 1.5-foot change.

4. PDI Findings

The following presents the findings and results of the PDI activities.

4.1. Existing Well Conditions and Baseline Groundwater Assessment

The following sections summarize the findings of the existing groundwater monitoring well network inspection and the baseline groundwater assessment.

4.1.1. Existing Well Inspection

The conditions observed during the existing well inspection are summarized in the photographic log provided in **Appendix B**. A summary of the well inspection is provided below:

- **MW-01R:** The well was found to be in good condition, however, the soil surrounding and holding the metal flush mount and cement ring was removed during the eastern parcel soil remediation. As such, care was taken to ensure the well was not damaged. The well cap was exposed but the seal was in good condition.
- **MW-03**: The well was found to be covered in soil and other material. The well cap rim was damaged and the bolts were missing. The well did not have a rubber seal and was found to be in poor condition. C&S developed the well and removed the sediment built up in the bottom of the well. Following these actions, the well depth measured was similar to the previous well depth recorded by OBG / Ramboll. C&S had a new flush mounted housing unit installed to meet the grade of parking lot.
- **MW-04R through MW-11**: These wells were found to be in good condition, with no observed deformities or failures.

The groundwater monitoring well locations are depicted in **Figure 4**.

4.1.2. Hydrogeology

During the well development and baseline sampling events, C&S personnel obtained groundwater elevation data from each of the existing groundwater monitoring wells. The existing well development and sampling logs are provided in **Appendix A-1** and **A-2**, respectively. A summary of the static water level data is provided below:

Monitoring Well	Static Water Level (feet BTOR)	
	Development	Sampling
MW-01R	37.50	35.18
MW-03	10.22	9.94
MW-04R	18.84	18.79
MW-05	42.00	43.14
MW-06	30.15	29.80
MW-07	37.93	37.49
MW-08	28.17	25.99
MW-09	48.37	45.08
MW-10	18.81	18.86
MW-11	28.24	28.95

BTOR – Below top of riser

Based on the static water level data above and the OBG / Ramboll RI Report, groundwater is presumed to flow in a northwesterly direction as shown on **Figure 4**.

4.1.3. Groundwater Quality Data Summary

During the well development and baseline sampling events, C&S personnel obtained water quality data from each of the existing groundwater monitoring wells. The existing well development and sampling logs are provided in **Appendix A-1** and **A-2**, respectively. A summary of the water quality parameters is provided below:

Monitoring Well	pH (su)		Conductivity (mS/cm)		Turbidity (NTU)		DO (mg/L)		Temperature (°C)		ORP (mV)	
	Dev	Sam	Dev	Sam	Dev	Sam	Dev	Sam	Dev	Sam	Dev	Sam
MW-01R	7.39	7.55	1.75	1.97	109	46.5	4.10	3.55	17.30	15.76	31	7
MW-03	7.41	7.40	0.742	0.861	255	43.6	8.24	78.0	16.65	14.78	107	124
MW-04R	7.84	7.39	0.658	0.872	64	3.3	6.66	7.41	13.83	13.02	39	65
MW-05	7.36	7.63	1.08	1.03	>1000	596	4.71	1.39	17.20	21.83	109	93
MW-06	7.49	7.70	1.57	1.53	595	3.7	4.23	1.92	14.54	20.35	-92	-118
MW-07	8.39	7.62	1.52	1.35	63	13.3	6.46	6.67	16.28	16.95	-28	127
MW-08	7.71	7.81	1.13	1.22	76.1	4.7	7.01	1.19	17.79	16.36	74	19
MW-09	7.83	7.85	1.21	1.23	42.7	50	6.12	10.47	17.08	14.12	134	110
MW-10	7.50	7.86	0.617	0.738	939	6.1	7.50	3.41	14.91	18.27	167	156
MW-11	7.45	7.85	1.77	2.11	172	68.5	7.57	5.01	15.30	15.89	93	123

Dev – Development
Sam – Sampling

The groundwater quality parameters are further evaluated and compared to the historical measurements in **Section 5.1**.

4.1.4. Existing Well CVOC Summary

Ten groundwater samples were collected and analyzed for VOCs during the baseline groundwater sampling event. The analytical data was compared to the Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1) Ambient Water Quality Standards (AWQS). The analytical results are summarized in **Table 1A** and exceedances are presented on **Figure 5A**. The groundwater laboratory analytical reports for the existing wells are provided in **Appendix C-1**.

A summary of the VOC exceedances is provided below. The exceedances were primarily CVOCs, such as TCE, PCE, VC, DCE, cDCE, and tDCE. A single exceedance of chloroform (a non-CVOC) was detected in the up-gradient well, MW-01R.

Analytes	*Existing Groundwater Monitoring Well IDs*						
	MW-01R	*MW-03*	*MW-04R*	*MW-05*	*MW-08*	*MW-09*	*MW-10*
DCE	ND	ND	ND	2.5	**100**	**12**	ND
Chloroform	**14**	ND	ND	ND	ND	**24**	ND
cDCE	ND	**70**	**13**	**880**	**13000**	**1700**	**12**
PCE	ND	1.5	0.74	**6.8**	**250**	**51**	0.84
tDCE	ND	3.7	ND	**8.1**	ND	**18**	ND
TCE	0.2	**150**	**34**	**170**	**20000**	**2200**	**35**
VC	ND	0.26	0.11	**2.5J**	**330**	**17**	ND

Exceedances of TOGS 1.1.1 AWQS are in **bold**.
All values are reported in µg/L.
ND – Not detected above laboratory detection limits.

The CVOC concentrations are further evaluated and compared to the historical concentrations in **Section 5.2**.

4.1.5. Geochemistry Data Summary

Ten groundwater samples were collected and analyzed for geochemical parameters during the baseline groundwater sampling event. The geochemistry results are summarized in **Table 1B**. The groundwater laboratory analytical reports for the existing wells are provided in **Appendix C-1**. A summary of the data is provided below:

Analyte	*MW-01R*	*MW-03*	*MW-04R*	*MW-05*	*MW-06*	*MW-07*	*MW-08*	*MW-09*	*MW-10*	*MW-11*
Anions										
Nitrogen, Nitrate	1.30	0.68	0.29	0.094	ND	0.97	ND	0.42	0.33	0.28
Chloride	**367**	85.0	90.9	205	56.4	196	195	206	84.6	**379**
Sulfate	32.1	44.4	30.1	53.9	**539**	63.5	35.7	33.7	32.4	125
Sulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Analyte	*MW-01R*	*MW-03*	*MW-04R*	*MW-05*	*MW-06*	*MW-07*	*MW-08*	*MW-09*	*MW-10*	*MW-11*
Cations										
Calcium, Total	93.0	52.2	46.5	91.2	211	93.4	86.8	86.5	42.3	176
Calcium, Dissolved	90.3	45.2	45.1	82.1	206	93.7	74.2	75.0	41.6	147
Dissolved Gases										
Ethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methane	ND	0.0070	0.015	ND	1.4	0.018	0.019	0.011	ND	0.008
Metals										
Iron, Total	**1.82**	**2.26**	**0.537**	**28.2**	**1.14**	0.274	0.134	**22.7**	0.0429	**6.17**
Iron, Dissolved	0.0200	0.0329	0.115	**0.359**	0.153	0.0248	ND	0.271	0.0204	0.0830
Iron, Ferric	1.60	2.00	0.34	13.0	1.00	0.14	0.05	22	ND	5.9
Iron, Ferrous	0.23	0.26	0.20	15.0	0.14	0.13	0.080	0.59	ND	0.25
Magnesium, Total	19.0	9.04	8.06	20.2	**54.0**	16.0	16.5	21.6	7.42	30.8
Magnesium, Dissolved	19.8	7.4	8.07	16.8	**56.6**	17.4	15.3	14.8	7.60	29.6
Potassium, Total	1.76	3.60	3.54	4.31	2.78	4.20	2.90	3.38	3.38	5.12
Potassium, Dissolved	1.74	3.02	3.39	2.76	2.79	4.36	2.76	1.84	3.60	5.98
Sodium, Total	**208**	**71.0**	**72.4**	**108**	**32.1**	**145**	**121**	**107**	**66.7**	**160**
Sodium, Dissolved	**212**	**66.3**	**72.4**	**109**	**33.1**	**137**	**113**	**97.9**	**68.4**	**155**
General Chemistry										
Alkalinity, Carbonate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity, Bicarbonate	244	151	148	191	239	284	202	201	137	230
TOC	1.14	3.55	1.61	2.64	4.97	1.73	1.76	1.22	1.66	2.12

Exceedances of TOGS 1.1.1 AWQS are in **bold**.
All values are reported in mg/L except for alkalinity (mg $CaCO_3$/L).
ND – Not detected above laboratory detection limits.

Groundwater geochemistry was analyzed prior to the implementation of the groundwater remedy to:

- Collect important data for the development of the groundwater remedy; and
- Develop a baseline of groundwater conditions and use changes in groundwater chemistry over time as a secondary line of evidence to assess the effectiveness of the groundwater remedy.

The groundwater geochemistry is further evaluated in **Section 5.3**.

4.1.6. Microbial Data

Four groundwater samples were collected from the source area (MW-08 and MW-09) and near down-gradient wells (MW-03 and MW-04) for analysis by qPCR. The microbial laboratory analytical report for the existing wells is provided in **Appendix C-2**. The qPCR analysis data is summarized in the table below:

Target	MW-03	MW-04R	MW-08	MW-09
	Gene Copies/L			
Dhc	$<1.64 \times 10^3$	6.84×10^4	1.52×10^6	1.05×10^5
tceA	$<1.64 \times 10^3$	7.68×10^3	1.55×10^4	3.51×10^3
vcrA	$<1.64 \times 10^3$	1.85×10^4	3.26×10^4	$<3.28 \times 10^3$
bvcA	$<1.64 \times 10^3$	4.04×10^3	7.39×10^5	4.47×10^4
Total Prokaryotes	2.04×10^9	1.21×10^8	2.63×10^8	1.19×10^8

The microbial data is further evaluated and compared to the historical concentrations in **Section 5.4**.

4.1.7. CSIA Data

Four groundwater samples collected from the source area (MW-08 and MW-09) and near down-gradient wells (MW-03 and MW-04) were analyzed by CSIA. The CSIA laboratory analytical report for the existing wells is provided in **Appendix C-3**. The CSIA data is summarized below:

CVOC Compound	Normal Ration in Virgin Product	MW-03	MW-04R	MW-08	MW-09
	Per Mil (δ‰)				
PCE	-20 to -30	ND	ND	-19.6	-19.9
TCE	-25 to -30	-22.9	-21.9	-21.7	-22.3
cDCE	-30 to -35	-23.7	-21.0	-26.9	-25.8
tDCE	-30 to -35	ND	ND	-39.0	-37.6
VC	-30 to -40	ND	ND	-44.7	-39.6

The CSIA data is further evaluated and compared to the historical concentrations in **Section 5.5**.

4.2. Injection Well Installation and Treatability Study

The following sections summarize the findings of the injection well installation and treatability study.

4.2.1. Injection Well Construction

Five injection wells were constructed during the PDI activities and packer testing was conducted to ensure the injection wells intersected the water bearing zone identified during the OBG / Ramboll RI Report. Injection well construction logs, including the packer testing results, are provided in **Appendix A-4**. Based on the amount of water purged from the five injection wells, the planned bedrock groundwater bearing zone was intersected. A summary of the injection well packer testing data is provided below:

Injection Well ID:	Injection Well Packer Testing Data							
	Grade Elevation	Static Water Level (feet bgs)	Static Water (feet amsl)	Top of Packer (feet amsl)	Bottom of Packer (feet amsl)	Packer Volume (gallons)	Total Purged (gallons)	Purge Duration (hours)
IJW-01	522.80	16.34	508.72	479.61	467.61	7.35	55.5	2.88
IJW-02	522.70	24.41	500.49	479.90	467.90	7.35	30.5	1.78
IJW-03	522.70	14.55	508.15	477.90	465.90	7.35	45.0	1.62
IJW-04	522.00	55.47	466.53	475.60	463.61	7.35	10.5	1.87
IJW-05	523.60	47.12	478.48	478.60	466.60	7.35	32.5	1.33

The bedrock injection well locations are depicted on **Figure 4**.

4.2.2. Hydrogeology

During the injection well development and baseline sampling events, C&S personnel obtained groundwater elevation data from each of the injection wells. The injection well development and sampling logs are provided in **Appendix A-5** and **A-6**, respectively. A summary of the injection well construction details and the static water level data is provided below:

Injection Well ID:	Injection Well Construction						Static Water Level (feet BTOR)	
	Grade Elevation	Well Diameter (inches)	Top of Riser (feet amsl)	Bottom of Riser (feet amsl)	Well Depth (feet bgs)	Well Depth (feet amsl)	Development	Sampling
IJW-01	522.80	3.875	525.11	520.11	70.50	452.30	18.19	16.29
IJW-02	522.70	3.875	524.90	519.90	70.50	452.20	24.75	26.23
IJW-03	522.70	3.875	524.90	519.90	71.00	451.70	14.55	13.57
IJW-04	522.00	3.875	523.61	518.61	71.00	451.00	28.05	31.14
IJW-05	523.60	3.875	525.60	520.60	71.00	452.60	46.00	49.49

Based on the static water level data above and the OBG / Ramboll RI Report, groundwater is presumed to flow in a northwesterly direction as shown on **Figure 4**.

4.2.3. Hydraulic Conductivity Data Summary

Hydraulic conductivity describes the ease with which a fluid can move through the subsurface soil pore space. The five injection wells were tested for hydraulic conductivity and are located in shale bedrock down to 70 feet bgs. Shale is a fine-grained sedimentary rock with low permeability, meaning it has difficulty moving or transmitting fluids. However, the presence of fractures can significantly increase its hydraulic conductivity.

To determine the hydraulic conductivity of the fractured shale bedrock, slug tests were performed by C&S personnel. A water level data logger was used to record the change

in water level overtime. Both falling head and rising head tests were completed for each of the wells. The change in water level over time was recorded after the slug was inserted (falling head test) and after the slug was withdrawn (rising head test). Water levels were allowed to return to 90% of the initial water level between tests. The data logger was also capable of recording temperature, pressure, and conductivity. A second water level data logger was submerged into an adjacent well to evaluate the hydraulic connections between wells. Based on the results of the second water level logger on the adjacent wells, it was determined that the slug tests didn't display hydraulic connection between adjacent wells.

The results were analyzed using software by Waterloo Hydrogeologic software *AquiferTest Pro*, following the Bouwer and Rice methodology (Bouwer, Herman, and Rice, R.C., (1976). The table below summarizes the results of the hydraulic conductivity testing:

Well ID and Test Type	*Centimeters per second (cm/s)*	*Feet per day (ft/day)*
IJW-01 Falling Head Test	6.84×10^{-5}	1.94×10^{-1}
IJW-01 Rising Head Test	4.06×10^{-5}	1.15×10^{-1}
IJW-02 Falling Head Test	1.40×10^{-4}	3.9×10^{-1}
IJW-02 Rising Head Test	3.05×10^{-5}	8.64×10^{-2}
IJW-03 Falling Head Test	3.40×10^{-4}	9.65×10^{-1}
IJW-03 Rising Head Test	1.37×10^{-4}	3.89×10^{-1}
IJW-04 Falling Head Test	3.63×10^{-5}	1.03×10^{-1}
IJW-04 Rising Head Test	9.98×10^{-11}	2.83×10^{-7}
IJW-05 Falling Head Test	2.85×10^{-5}	8.08×10^{-2}
IJW-05 Rising Head Test	6.21×10^{-9}	1.76×10^{-5}
Average	**8.21×10^{-5}**	**2.32×10^{-1}**

During the OBG / Ramboll RI Report, the hydraulic conductivity at the site was evaluated and ranged from 3.48×10^{-6} cm/sec (0.01 ft/day) to 8.25×10^{-5} cm/sec (0.23 ft/day). Vertical migration in the bedrock was limited by less fracturing of the bedrock with increasing depth.

The PDI hydraulic conductivity evaluation indicated that the mean value of the ten hydraulic conductivity tests was 8.21×10^{-5} cm/sec or 0.232 ft/day.

According to numerous academic journals and research papers, the typical ranges for hydraulic conductivity in shale is 10^{-13} to 10^{-10} cm/s in intact unfractured shale and 10^{-10} to 10^{-2} cm/s for fractured shale. The range of hydraulic conductivity values in our evaluation are indicative of fractures being present. The wide range of values from IJW-01 to IJW-05 is not unexpected in shale bedrock.

Some factors that affect how the groundwater flows through the shale are the number of fractures (more fractures result in higher conductivity), orientation and width of

fractures, and the degree to which fractures are connected to each other.

The results of the hydraulic conductivity graphs are provided in **Appendix D**.

4.2.4. Groundwater Quality Data Summary

During the injection well development and baseline groundwater sampling event, C&S personnel obtained water quality data from each of the injection wells. The injection well development and sampling logs are provided in **Appendix A-5** and **A-6**, respectively**.** A summary of the water quality parameters is provided below:

Monitoring Well	pH (su)		Conductivity (mS/cm)		Turbidity (NTU)		DO (mg/L)		Temperature (°C)		ORP (mV)	
	Dev	Sam	Dev	Sam	Dev	Sam	Dev	Sam	Dev	Sam	Dev	Sam
IJW-01	7.57	7.62	0.854	0.814	66.4	12.9	5.70	6.58	13.92	14.16	80	139
IJW-02	7.54	7.76	0.908	0.913	366	27.5	5.68	2.85	14.23	15.09	50	113
IJW-03	7.71	7.72	0.827	0.696	279	16.3	6.89	1.55	14.41	16.74	-34	61
IJW-04	8.09	7.76	0.811	0.863	174	26.7	5.90	7.03	14.35	13.01	80	117
IJW-05	7.51	7.71	1.12	1.07	>1000	215	3.47	5.69	14.21	13.30	30	116

Dev – Development
Sam – Sampling

The groundwater quality parameters are further evaluated and compared to the historical measurements in **Section 5.1**.

4.2.5. Injection Well CVOC Summary

Five groundwater samples were collected and analyzed for VOCs during the injection well baseline groundwater sampling event. The analytical data was compared to TOGS 1.1.1 AWQS. The analytical results are summarized in **Table 2A** and exceedances are presented on **Figure 5B**. The groundwater laboratory analytical reports for the injection wells are provided in **Appendix C-4**.

A summary of the VOC exceedances is provided below. The exceedances were primarily CVOCs, such as TCE, PCE, VC, DCE, cDCE, and tDCE. Exceedances of chloroform (a non-CVOC) were detected in IJW-01 and IJW-03.

Analytes	Existing Groundwater Monitoring Well IDs				
	IJW-01	IJW-02	IJW-03	IJW-04	IJW-05
DCE	0.28	**20**	1.7	4.4	2.8
Chloroform	**54**	ND	**11**	ND	ND
cDCE	**16**	**2100**	**180**	**690**	**420**
PCE	0.3	**98**	2.4	**74**	ND
tDCE	4.3	ND	2	**7.2**	3.6
TCE	**120**	**5200**	**98**	**1200**	**53**
VC	0.14	**68**	**28**	**33**	**66**

Exceedances of TOGS 1.1.1 AWQS are in **bold**.
All values are reported in µg/L.
ND – Not detected above laboratory detection limits.

The CVOC concentrations are further evaluated and compared to the historical concentrations in **Section 5.2**.

4.2.6. Geochemistry Data Summary

Five groundwater samples were collected and analyzed for geochemistry parameters during the injection well baseline groundwater sampling event. The geochemistry results are summarized in **Table 2B**. The groundwater laboratory analytical reports for the injection wells are presented in **Appendix C-4**. A summary of the data is provided below:

Analyte	IJW-01	IJW-02	IJW-03	IJW-04	IJW-05
Anions					
Nitrogen, Nitrate	0.45	0.31	0.11	ND	0.032
Chloride	125	144	104	138	153
Sulfate	19.1	25.0	17.2	35.9	64.0
Sulfide	ND	ND	ND	ND	ND
Cations					
Calcium, Total	69.1	68.0	52.1	49.4	69.0
Calcium, Dissolved	67.8	64.8	50.2	54.7	77.5
Dissolved Gases					
Ethane	ND	ND	ND	0.033	ND
Ethene	ND	ND	ND	ND	ND
Methane	0.033	0.030	ND	0.11	0.043
Metals					
Iron, Total	**0.537**	**1.22**	**0.458**	**1.06**	**3.98**
Iron, Dissolved	0.0091	0.0105	ND	0.0099	0.0133
Iron, Ferric	0.54	1.2	0.46	0.97	3.9
Iron, Ferrous	ND	ND	ND	0.090	0.11
Magnesium, Total	12.0	11.8	8.06	11.2	17.8
Magnesium, Dissolved	12.8	12.6	8.69	10.8	17.5
Potassium, Total	1.83	2.21	2.31	2.80	3.76

Analyte	*IJW-01*	*IJW-02*	*IJW-03*	*IJW-04*	*IJW-05*
Potassium, Dissolved	1.69	2.02	2.17	3.00	3.89
Sodium, Total	**69.0**	**82.0**	**72.4**	**83.7**	**73.5**
Sodium, Dissolved	**65.1**	**74.7**	**67.2**	**91.6**	**82.8**
General Chemistry					
Alkalinity, Carbonate	ND	ND	ND	ND	ND
Alkalinity, Bicarbonate	171	173	161	174	182
TOC	1.79	2.04	2.37	2.34	3.51

Exceedances of TOGS 1.1.1 AWQS are in **bold**.
All values are reported in mg/L except for alkalinity (mg $CaCO_3$/L).
ND – Not detected above laboratory detection limits.

Groundwater geochemistry was analyzed prior to the implementation of the groundwater remedy to:

- Collect important data for the development of the groundwater remedy; and
- Develop a baseline of groundwater conditions and use changes in groundwater chemistry over time as a secondary line of evidence to assess the effectiveness of the groundwater remedy.

The groundwater geochemistry is further evaluated in **Section 5.3**. Groundwater geochemistry from the injection wells will not be analyzed further, however, groundwater geochemistry will be assessed using the existing monitoring wells.

4.2.7. Microbial Data

Two groundwater samples were collected from the injection wells (IJW-01 and IJW-03) for analysis by qPCR. The microbial laboratory analytical report for the injection wells is provided in **Appendix C-5**. The qPCR analysis data is summarized in the table below:

Target	*IJW-01*	*IJW-03*
	Gene Copies/L	
Dhc	1.92×10^3	1.64×10^5
tceA	$<8.19 \times 10^2$	9.22×10^3
vcrA	8.95×10^2	2.58×10^4
bvcA	$<8.19 \times 10^2$	6.72×10^4
Total Prokaryotes	9.37×10^7	4.47×10^8

The microbial data is further evaluated and compared to the historical concentrations in **Section 5.4**.

4.3. QA / QC Protocols

QA / QC samples were collected for VOC analysis, as follows:

- Matrix Spike / Matrix Spike Duplicate (MS / MSD) – 5% (2 total for two separate events)
- Blind Field Duplicate – 5% (2 total for two separate events)

All samples were analyzed by a laboratory maintaining current accreditation for the targeted analyses under the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). All data was reported as Analytical Services Protocol (ASP) Category B deliverables in Electronic Data Deliverable (EDD) format compatible with EQuIS.

A third-party validator reviewed all laboratory data packages containing VOC analyses and prepared a DUSR. The validator evaluated the analytical results for the field samples and QA / QC samples and compared the findings to United States Environmental Protection Agency (USEPA) guidance to verify the accuracy and validity of the results. The DUSR is provided in **Appendix E**.

The EDD for all media will be uploaded to NYSDEC's EQuIS database.

4.4. CAMP Summary

A CAMP was prepared and submitted as part of the Groundwater PDI Work Plan to establish on-site work monitoring practices for real-time monitoring of VOCs and particulates (i.e., dust) at the downwind perimeter of the injection well work area during bedrock intrusive activities. The CAMP was not intended for use in establishing action levels for worker respiratory protection. Rather, its intent was to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses, and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative work activities. Action levels were specified in the CAMP to determine when increased monitoring, corrective actions to abate emissions, and / or work shutdown would be warranted and prudent.

Continuous air monitoring was performed during all active ground-intrusive activities conducted during the PDI, which included the bedrock injection well advancement. No exceedances of CAMP action levels were encountered during the completion of the PDI activities and CAMP reports were provided to the NYSDEC and NYSDOH on a daily basis.

4.5. Green Remediation Summary

Best Management Practices (BMPs) were implemented throughout the PDI to best achieve the green remediation concepts described within the NYSDEC DER-31. The BMPs were provided in the Groundwater PDI Work Plan. The following summarizes the BMPs tracked during the PDI:

- **Storm and Excavation Water Reuse** – C&S drilling contractor used a total of 900 gallons of reclaimed water from the pooled stormwater within the elevator pit.

The investigation derived waste (IDW) generated during the completion of the PDI consisted of the wastes listed below. The IDW will be handled in the following manner:

- Drill cuttings / spoils (bedrock cores) will be sampled in accordance with Section 3.3(e) of DER-10 for Re-Use on the site as backfill.
    - Based on the average depth of 70 feet for the five injection wells, a total of 1.15 cubic yards of bedrock core waste was generated from the injection well installation.
- Monitoring well development and evacuation water will be sampled and characterized to ensure it can be recycled during the injection process.
    - A total of 43 drums (55-gallons) of evacuation water was generated from the injection well coring and monitoring well development / sampling.
        - A total of 31 drums (1,705 gallons) contain a 50 / 50 mixture of water and solids from the injection well coring.
        - A total of 12 drums (660 gallons) contain water from monitoring well development and sampling purging.
    - C&S plans on using approximately 500 gallons of the drummed water during the injection process, as described later in **Section 8**. The remaining water will be characterized and disposed of at an off-site facility. The solids will be dewatered and characterized for either disposal at an off-site facility or placed under the western parcel cover system if the results of characterization allow for it.

All site activities related to the BMPs described within the Groundwater PDI Work Plan were recorded and tracked on a C&S Green Remediation BMP Tracker. The total quantities were recorded on a daily basis and are summarized in NYSDEC Form A, provided in **Appendix F.**

5. Discussion of PDI Findings

The following presents an analysis of the results of the PDI activities and a comparison to historical data collected at the site.

5.1. Groundwater Quality Data Evaluation and Comparison

During the OBG / Ramboll RI groundwater sampling events, water quality parameters were collected from the existing ten groundwater monitoring wells. The groundwater quality data collected from the most recent OBG / Ramboll RI sampling event and the PDI groundwater sampling event were compared to evaluate the effectiveness of the natural dechlorination at the site and the planned groundwater remedy. A comparison table is provided below:

Monitoring Well	pH (su)		Conductivity (mS/cm)		Turbidity (NTU)		DO (mg/L)		Temperature (°C)		ORP (mV)	
	OBG	C&S	OBG	C&S	OBG	C&S	OBG	C&S	OBG	C&S	OBG	C&S
MW-01R	6.98	7.55	2.81	1.97	<100	46.5	1.04	3.55	10.94	15.76	0.20	7
MW-03	7.25	7.40	2.14	0.861	<100	43.6	9.22	7.80	11.90	14.78	18.1	124
MW-04R	7.27	7.39	1.53	0.872	459	3.3		7.41	11.20	13.02		65
MW-05	7.15	7.63	1.78	1.03	>1000	596		1.39	11.20	21.83		93
MW-06	6.75	7.70	0.93	1.53		3.7		1.92	10.20	20.35		-118
MW-07	7.08	7.62	3.35	1.35		13.3	7.37	6.67	10.89	16.95	7.70	127
MW-08	11.61	7.81	2.40	1.22	<100	4.7	2.14	1.19	9.79	16.36	18.8	19
MW-09	7.23	7.85	2.23	1.23	256	50		10.47	11.50	14.12		110
MW-10	7.25	7.86	1.49	0.738	>1000	6.1		3.41	11.00	18.27		156
MW-11	7.34	7.85	1.68	2.11		68.5		5.01	11.90	15.89		123

Blank Space – No groundwater quality data was provided for the corresponding parameter.
OBG – Groundwater quality data from the most recent groundwater sampling logs provided in the OBG / Ramboll RIR.
C&S – Groundwater quality data from the PDI groundwater sampling event conducted in July 2024.

pH: The optimal pH range for Dhc is between 6 and 8. The pH of the existing wells and the newly installed injection wells falls within the ideal range. The pH at MW-08 was greater than 8 during the OBG / Ramboll RI, however, upon reviewing pH values from other sampling events conducted during the RI, this appeared to be an anomaly. pH will be monitored during the active injection period and following the groundwater remedy to ensure the pH stays within the optimal range for effective anaerobic dechlorination. Once the groundwater remedy is implemented, the pH is expected to decrease slightly as chlorine atoms are removed and form hydrochloric acid. However, buffers will be included in the injection amendment to account for the change in pH, as discussed in **Section 7**.

Conductivity: Conductivity is used to measure the radius of influence (ROI) of an active injection treatment. Conductivity was generally lower during the PDI in comparison to

the OBG / Ramboll RI. Conductivity across the site in the existing wells and newly installed injection wells was less than 2 mS/cm during the PDI. Conductivity is expected to increase during the injection process due to the formation of charged species like chloride ions as chlorine atoms are removed for from the COCs. Conductivity will be monitored during the active injection period and following the groundwater remedy.

Turbidity: Turbidity is the measure of the cloudiness or haziness of a fluid caused by large numbers of individual particles. Turbidity varied across the site during the OBG / Ramboll RI and the PDI. Injections may result in short-term increases in turbidity immediately following injection procedures due to injection pressure, injection material, and suspended or undissolved solids. Turbidity will be monitored during the active injection period and following the groundwater remedy.

DO: DO is a measure of the oxidizing potential of available oxygen. Groundwater is usually considered reducing if DO is less than 0.5 mg/L and reasonably oxidizing if DO is greater than 2 mg/L. Groundwater systems with high DO may be good candidates for chemical oxidation or aerobic biostimulation while systems with low DO may be good candidates for anaerobic biostimulation or abiotic reduction. During the OBG / Ramboll RI, DO was only collected from four of the monitoring wells. The DO at MW-01R has increased since the OBG / Ramboll RI whereas the DO at MW-08 has decreased (likely a result of natural dechlorination processes). The DO values observed during the PDI in the existing wells and newly installed injection wells are indicative of an aerobic environment. Since anaerobic conditions are necessary for reductive dechlorination, the groundwater amendment will promote a shift from aerobic to anaerobic conditions by introducing electron donors and an oxygen scavenger, discussed further in **Section 7**. DO is expected to significantly decrease during the injection process and will be monitored during the active injection period and following the groundwater remedy.

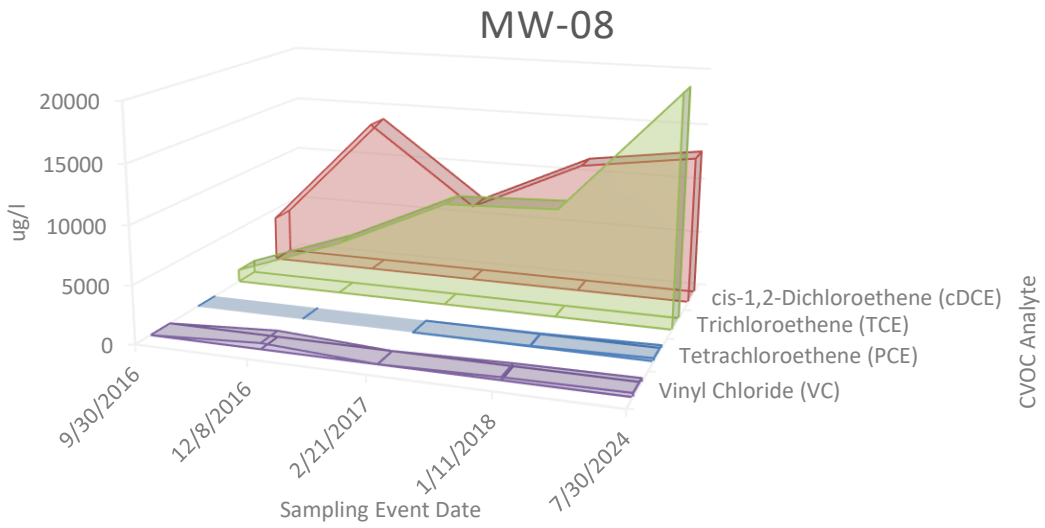
Temperature: The temperature observed during the OBG / Ramboll RI and the PDI varies greatly and is likely due to the season during which the sampling was conducted. The optimal temperature range for Dhc activity is between 25°C and 30°C, however Dhc can still function between 15°C and 35°C. The temperature observed during the PDI in the existing wells and newly installed injection wells were on the low end of the optimal range. Therefore, to ensure product stability, the groundwater remedy should either be implemented when ambient temperatures are above 0°C or the amendment may need to be heated if injected when ambient temperatures are below 0°C. Temperature is not expected to change drastically during the active injection period. Temperature will be monitored during the active injection period and following the groundwater remedy.

ORP: ORP is a measure of the oxidizing potential of a groundwater system. Groundwater systems with high ORP may be good candidates for chemical oxidation or aerobic biostimulation while systems with low ORP may be good candidates for anaerobic biostimulation or abiotic reduction. During the OBG / Ramboll RI, ORP was only collected

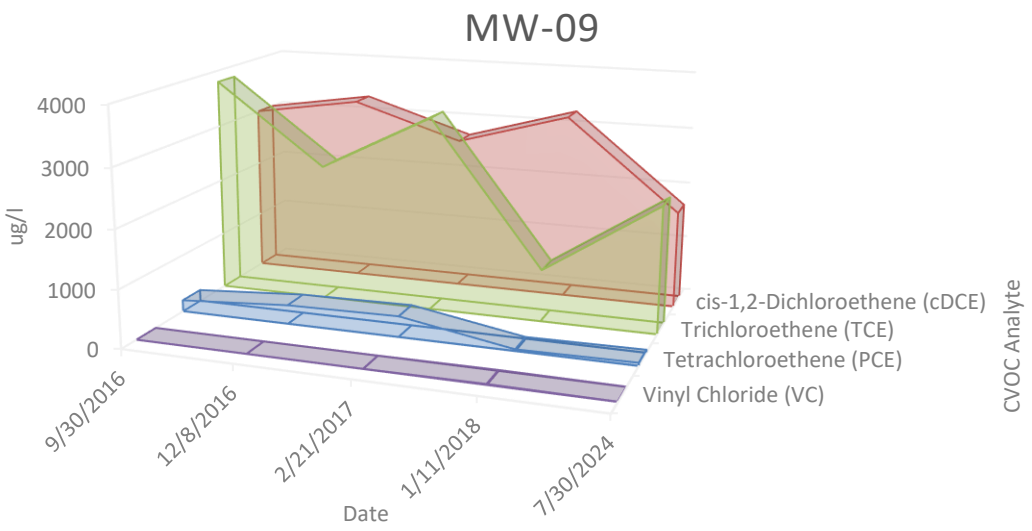
from four of the monitoring wells. The ORP generally increased from the OBG / Ramboll RI to the PDI. The ORP values observed during the PDI in the existing wells and newly installed injection wells are indicative of an oxidizing environment. Since a reducing environment is necessary for reductive dechlorination, the groundwater amendment will promote a shift from oxidizing to reducing conditions by introducing electron donors and an oxygen scavenger, discussed further in **Section 7**. ORP is expected to significantly decrease during the injection process and will be monitored during the active injection period and following the groundwater remedy.

5.2. CVOC Evaluation and Comparison

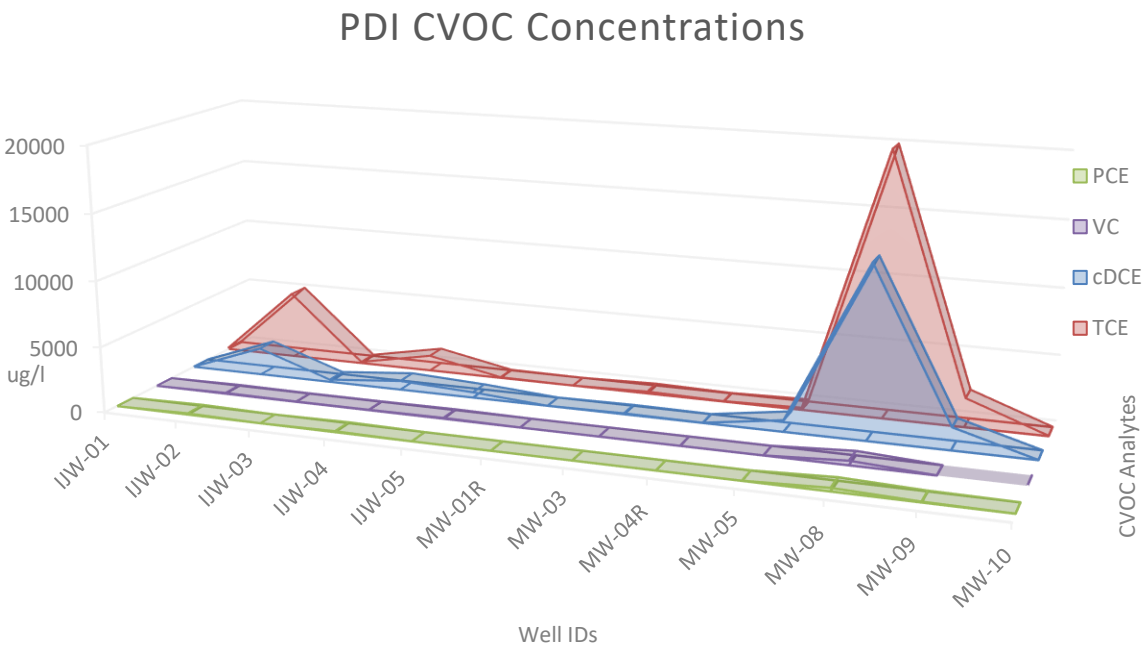
The historical VOC concentrations identified during the OBG / Ramboll RI were reviewed and compared to the concentrations identified during the PDI groundwater sampling event. Historical data was generated over four sampling events conducted between September 2016 and January 2018, while the PDI groundwater sampling event was conducted in July 2024. The graphs below depict historical CVOC concentrations in the two source area wells (MW-08 and MW-09) and the CVOC concentrations observed in July 2024. The most notable COCs are included on the graphs (TCE, PCE, cDCE, and VC).



As depicted in the graph above, cDCE concentrations drastically increased from September 2016 to December 2016, decreased from December 2016 to February 2017, and increased again from February 2017 to January 2018. From January 2018 to July 2024, cDCE only slightly increased over the course of six years. There was a drastic increase in TCE concentrations from January 2018 to July 2024. Prior to this, TCE concentrations steadily increased from September 2016 to February 2017 and were generally stable from February 2017 to January 2018. No detectable concentrations of PCE were identified in September and December 2016 but low PCE concentrations were detected in February 2017 and July 2024. Low concentrations of VC were detected during December 2016, January 2018, and July 2024.



As depicted in the graph above, cDCE concentrations have remained relatively similar with slight decreases and increases from December 2016 to January 2018. There was a drastic decrease in cDCE concentrations from January 2018 to July 2024. The TCE concentrations have decreased and increased over the sampling events with an overall decrease in peak concentrations. The PCE concentrations slightly increased from September 2016 to February 2017, then decreased in January 2018 and remained similar in July 2024. VC was first detected in January 2018 and had a very slight increase in July 2024.



Based on the CVOC concentration comparison above, MW-08 and MW-09 are located in the plume containing the highest concentrations of CVOCs. The newly installed injection wells identified detectable concentrations of CVOCs but at much lower concentrations. This indicates that the injection wells were installed on the up-gradient edge of the plume. This placement should have the greatest influence on contaminant degradation.

5.3. Geochemistry Evaluation and Comparison

For microbial dechlorination to occur, a reducing environment is necessary. During the microbial process, there is a natural order in which electron acceptors are used. The general process is described below, with reductive conditions increasing with each step:

- Aerobic Respiration – DO is depleted, producing carbon dioxide
- Denitrification – Nitrate is depleted, producing nitrite
- Iron (III) Reduction – Ferric iron is depleted, producing ferrous iron
- Sulfate Reduction – Sulfate is depleted, producing hydrogen sulfide
- Methanogenesis – Carbon dioxide is depleted, producing methane

Reductive dechlorination begins to occur when sulfate reduction begins and conditions for reductive dechlorination are optimal when methanogenesis is occurring. To assess the reductive conditions in the groundwater, the following geochemical parameters were analyzed and are discussed below:

- **Nitrate / Nitrite:** Nitrate is found naturally in groundwater as a result of the underlying geological formations and naturally occurring minerals within the bedrock formation. High concentrations of nitrate (>1 mg/L) can hinder the dechlorination process as nitrate competes with other electron acceptors (i.e., CVOCs). Nitrite is a biproduct of nitrate reduction and its presence is an indication of a reducing groundwater environment. Nitrate concentrations at the site are generally below 1 mg/L (with the exception of MW-01R) and are not expected to significantly inhibit the reductive dechlorination process. The concentrations of nitrate are expected to decrease following the injection process and will be analyzed at strategic points following the groundwater remedy.

- **Ferric and Ferrous Iron**: Iron is a naturally occurring mineral and is often found within bedrock formations. High concentrations of ferric iron can inhibit dechlorination, as ferric iron competes with other electron acceptors (i.e., CVOCs). Ferrous iron is a biproduct of ferric iron reduction and its presence is an indication of a reducing groundwater environment. Ferric iron concentrations are generally higher than ferrous iron concentrations at the site, with ferrous iron not detected in majority of the injection wells. The concentrations of ferric iron are expected to decrease while ferrous iron concentrations are expected to increase following the

injection process and will be analyzed at strategic points following the groundwater remedy.

- **Sulfate / Sulfide:** Sulfate is found naturally in groundwater as a result of the underlying geological formations and naturally occurring minerals within the bedrock formation. High concentrations of sulfate (>400 mg/L) can hinder the dechlorination process as sulfate competes with other electron acceptors (i.e., CVOCs). Sulfide is a biproduct of sulfate reduction and its presence is an indication of a reducing groundwater environment. On the other hand, sulfate can react with iron to form iron sulfides, which provide long-term anaerobic chemical reduction. Sulfate concentrations at the site are well below 400 mg/L (with the exception of MW-06) while sulfide was not detected in any wells during the PDI. The sulfate concentrations are not expected to inhibit the reductive dechlorination process but may promote chemical reduction. The concentrations of sulfate are expected to decrease while sulfide concentrations are expected to increase following the injection process and will be analyzed at strategic points following the groundwater remedy.

- **Methane:** An increase in methane concentrations from baseline concentration indicates that methanogenesis is occurring, an extremely reductive state optimal for solvent reduction. Concentrations of methane are expected to increase following the injection process and will be analyzed at strategic points following the groundwater remedy.

The presence of DO in the groundwater and information summarized above is indicative of an oxidizing environment. Since a reducing environment is necessary for reductive dechlorination, the groundwater amendment will promote a shift from an oxidizing to a reducing environment by introducing electron donors and an oxygen scavenger, discussed further in **Section 7**.

Besides assessing reductive conditions in the groundwater, samples collected during the PDI were analyzed for additional target analytes to further evaluate the site's geochemistry for the successful development of the groundwater remedy. Each of the geochemical analytes is discussed below:

- **TOC:** TOC is an indication of the potential for biological activity / degradation to occur. When TOC concentrations are greater than 50 mg/L, it is a good indication that co-metabolism will occur. TOC concentrations are relatively low at the site, indicating that the source area nutrients have been depleted. The amendment will introduce a carbon source to the groundwater to further promote dechlorination, as discussed in **Section 7.** TOC will be analyzed at strategic points following the groundwater remedy.

- **Cations (Calcium / Magnesium / Potassium / Sodium):** Cations can aid in reductive dechlorination processes by enhancing the reactivity of electron donor materials such as zero-valent iron (ZVI). Calcium ions can act as a pH buffer and a co-factor for certain enzymes involved in dechlorination. Magnesium ions generally aid in reductive dechlorination by acting as an electron donor. All cations listed above are present in the groundwater at the site to varying degrees. Concentrations of calcium and sodium are highest, followed by magnesium, and then potassium. Cations will be analyzed at strategic points following the groundwater remedy.

- **Ethane and Ethene:** Dissolved gases can be used to assess what stage the dechlorination process is in. Ethene and ethane are the final products of complete reductive dechlorination. Ethene and ethane were not detected at the site during the PDI, indicating that full reductive dechlorination of CVOCs has not occurred. Concentrations of ethane and ethene are expected to increase following the injection process and will be analyzed at strategic points following the groundwater remedy.

- **Alkalinity (including bicarbonate and carbonate):** Alkalinity is the capability of water to neutralize acid or the resistance to change in acidity, maintaining a stable pH. During reductive dechlorination, the pH is expected to decrease slightly as chlorine atoms are removed and form hydrochloric acid. During the PDI, the alkalinity across the site was observed to be high (>160 mg $CaCO_3$/L). This indicates that the groundwater has a natural buffering capability and will be beneficial during the injections. Alkalinity will be analyzed at strategic points following the groundwater remedy.

- **Chloride:** Chloride concentrations can be used to assess the progression of the reductive dechlorination process. As reductive dechlorination progresses, chloride ions are released and chloride concentrations may increase. However, the change can be difficult to detect when elevated concentrations of chloride are present within the groundwater. Furthermore, high concentrations of chloride (>1000 mg/L) can be toxic to microbes and inhibit degradation. Chloride concentrations at the site were well below 1000 mg/L during the PDI. Concentrations of chloride are expected to increase following the injection process and will be analyzed at strategic points following the groundwater remedy.

5.4. Microbial Data Evaluation and Comparison

The qPCR analysis was intended to identify and quantify target microbial strains and associated functional genes that are known to be effective in degrading chlorinated ethenes through reductive dechlorination processes. Based on the nature of

contaminants at the site, the qPCR analysis targeted Dhc and functional genes that code for enzymes that facilitate the dechlorination of chlorinated ethenes into ethene. The functional genes of interest include:

- tceA – Produces an enzyme that primarily converts TCE to cDCE and VC.
- vcrA – Produces an enzyme that converts cDCE and VC to ethene. This is reported to be the most commonly identified VC reductase gene in the environment.
- bvcA – Produces an enzyme that converts cDCE and VC to ethene. This is less prevalent in the environment than vcrA but may predominate in oxidizing waters or where dichloroethane is the dominant contaminant.

During the PDI, Dhc populations and the associated functional genes were detected in all six wells sampled except for MW-03. A summary is provided below:

- Dhc populations ranged from 1.92 x 10^3 to 1.52 x 10^6 gene copies/L.
- tceA functional genes ranged from 3.51 x 10^3 to 1.55 x 10^4 gene copies/L.
- vcrA functional genes ranged from 8.95 x 10^2 to 3.26 x 10^4 gene copies/L.
- bvcA functional genes ranged from 4.04 x 10^3 to 7.39 x 10^5 gene copies/L.

The Dhc populations encountered in MW-08 are about one order of magnitude greater than the populations recorded by OBG / Ramboll in 2020 during the preparation of the RWP (2.78 x 10^2 cell/mL or 2.78 x 10^5 cell/L). Functional gene tceA is approximately five orders of magnitude higher than in 2020, functional gene vcrA is approximately four orders of magnitude higher than in 2020, and functional gene bvcA is approximately four orders of magnitude higher than in 2020.

Favorable conditions for complete dechlorination typically require Dhc populations to be greater than 10^7 gene copies/L and either vcrA or bvcA functional genes to be greater than 10^7 gene copies/L. Based on the results obtained during the PDI, site conditions may be sub-optimal for high rates of dechlorination and complete dechlorination of cDCE / VC to ethene. To create optimal conditions for reductive dechlorination, Dhc colonies will be included in the amendment, as described in **Section 7**.

5.5. CSIA Evaluation and Comparison

CSIA measures the ratio of stable isotopes present in a contaminant. Common isotopes of interest in chlorinated ethenes include carbon and chlorine. In nature, the most common isotope of carbon is carbon-12 (C12), with the ratio of C12 to carbon-13 (C13) being 99:1. During microbial degradation, the C12 bond in the chlorinated ethene contaminant is slightly easier to break. This results in a measurable increase in the ratio

of C13 to C12 in the contaminant as the contaminant mass degrades through reductive dechlorination. The increase in C13 prominence is conclusive evidence of contaminant degradation.

During the PDI, C13 delta values were as follows:

- PCE: Ranged from -19.6 to -19.9 δ‰.
- TCE: Ranged from -21.7 to -22.9 δ‰.
- cDCE: Ranged from -21.0 to -26.9 δ‰.
- tDCE: Ranged from -37.6 to -39.0 δ‰.
- VC: Ranged from -39.6 to -44.7 δ‰.

The C13 delta value typically ranges from -20 to -30 δ‰ in virgin PCE, from -25 to -30 δ‰ in virgin TCE, from -30 to -35 in virgin cDCE or tDCE, and from -30 to -40 in virgin VC, relative to the Vienna Pee Dee Belemnite (VPDB) standard. The C13 delta value recorded in 2020 by OBG / Ramboll at MW-08 was -19.5δ‰ for TCE and -27.8δ‰ for cDCE. The shift in a positive direction for PCE, TCE, and cDCE is an indication of degradation.

6. Groundwater RWP Objectives and Scope

The purpose of this Groundwater RWP is to outline the scope and methodologies that will be employed to remediate the site's CVOC impacted groundwater through in-situ enhanced bioaugmentation. This Groundwater RWP has been prepared consistent with DER-10. The RWP portion of this report discusses the following:

- Objectives and Scope for the Groundwater RWP
- Selected Groundwater Remedy
- In-Situ Enhanced Bioaugmentation Implementation
- Post-Injection Groundwater Sampling
- QA / QC Protocols
- Green Remediation Evaluation
- Health and Safety
- Reporting
- Schedule

6.1. Groundwater RWP Objectives

The objectives of the Groundwater RWP include the following:

- Develop and implement an injection program to remediate the petroleum impacted groundwater at the Site through in-situ enhanced bioaugmentation;
- Assess the effectiveness of the injection program through quarterly groundwater sampling events, including analysis for the site related COC concentrations, groundwater geochemistry, and microbial populations; and
- Analyze trends in COC concentrations, groundwater geochemistry, and microbial populations and provide recommendations for additional sampling and / or the completion of groundwater remediation.

6.2. Groundwater RWP Scope

The development of this RWP is based on previous subsurface investigations completed at the site (i.e., RI, PDI), the previously submitted / approved RAWP, and the project objectives. The Work Plan will include the following scope:

- **In-Situ Enhanced Bioaugmentation:** A in-situ enhanced bioaugmentation injection program will be implemented across the site. The program will involve

injecting the bioaugmentation amendment described in **Section 7** in the five injection wells in the source area (IJW-01 through IJW-05), installed during the PDI activities.

- **Quarterly Groundwater Sampling**: For one year following injections, groundwater monitoring wells will be sampled at quarterly intervals to evaluate trends in the COC concentrations across the Site. At the end of each sampling event, the groundwater data will be evaluated to determine if continued monitoring or further action will be required. The first year of groundwater monitoring data will be reviewed and evaluated to determine if continued monitoring or additional injections or further remedial action is required.

7. Selected Groundwater Remedy

A RAA was completed for the site by OBG / Ramboll in January 2020. Based on the findings of the RI and the RAA, the Decision Document for the site was issued by NYSDEC in February 2021. The Decision Document presented the selected groundwater remedy for the site as described in **Section 1.5**.

7.1. In-Situ Enhanced Bioaugmentation

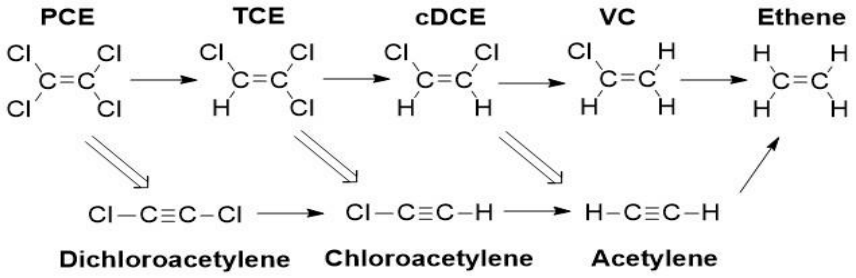
The primary COCs at the site are CVOCs. In general, anaerobic conditions are used to degrade highly halogenated contaminants to methane, carbon dioxide, and hydrogen gas. Anaerobic metabolism can encompass many different processes, however, reductive dechlorination will be the main mechanism employed at the site.

During reductive dechlorination, bacteria gain energy as chloride atoms are sequentially removed from the contaminant and replaced with a hydrogen atom. In this process, the hydrogen is oxidized while the chlorinated contaminant is reduced. Hydrogen is the most important electron donor during reductive dechlorination.

In addition to creating an anaerobic environment conducive to reductive dechlorination, high-performance microbial cultures capable of degrading target contaminants can be added to the subsurface. This is referred to as bioaugmentation and is usually implemented at sites with insufficient populations of microorganisms to perform complete degradation of contaminants.

Abiotic reductive dechlorination is often used in conjunction with anaerobic reductive dechlorination. The abiotic process is a chemical degradation reaction in which CVOCs are reduced by reactive compounds, such as metal sulfides. The process utilizes a beta elimination reaction in which two chlorine atoms are removed from PCE, TCE, or cDCE to form dichloroacetylene, chloroacetylene, or acetylene, respectively.

The degradation of PCE through the microbial reductive dechlorination pathway (single line arrows) and the abiotic reductive dechlorination pathway (double arrows) is shown below:



Source: https://regenesis.com/wp-content/uploads/2019/02/S-MicroZVI_SpecSheet-7-1.pdf

The amendment selected for the in-situ enhanced bioaugmentation of the site groundwater will include the following components:

- **Anaerobic BioChem (ABC®):** The addition of organic substrates such as ABC®, introduces electron donors to the subsurface to ensure highly reducing conditions and provides a hydrogen source needed by dechlorinating organisms. ABC® is a patented mixture produced by Redox Tech, LLC (Redox). It includes a mixture of lactates, fatty acids, alcohols, and a phosphate buffer. The lactates serve as short-term (quickly consumed) components while the fatty acids serve as long-term releasing components. The phosphate buffer serves two purposes; maintaining optimal pH in the subsurface and providing a micronutrient for bioremediation. Traditional EVO amendments are comprised of triglycerides (i.e., three fatty acids attached to a glycerol). Once the EVO is introduced to the environment, the triglycerides are hydrolyzed to glycerol and fatty acids. ABC® is used as a competitor to traditional EVO amendments as it circumvents the need for hydrolysis in the subsurface by directly introducing fatty acids. It provides a more soluble long lasting carbon source that is more easily distributed in the subsurface.

- **ZVI:** ZVI acts as an electron donor in the presence of species with more positive reduction potentials. ZVI has the ability to degrade chlorinated solvents through abiotic reductive dechlorination. The amendment at the site will utilize 45-micron ZVI, manufactured by Redox. The product is produced from virgin ore which typically contains approximately 99% iron. The smaller sized particle also increases reactivity in the subsurface due to more surface area.

- **RTB-1:** The addition of microbial cultures that naturally degrade the COCs will enable and accelerate full degradation at the site. RTB-1 is a dechlorinating culture produced by Redox that is capable of degrading chlorinated solvents to ethene. The dehalococcoides in RTB-1 dechlorinate vinyl chloride to ethene via halorespiration, a more efficient process than cometabolic processes.

- **Guar Gum:** Guar gum is a biodegradable polymer used as a carrier to suspend ZVI during injections. Guar gum is provided by Redox.

- **Sodium Sulfite:** Sodium sulfite is an oxygen scavenger that consumes oxygen through a redox reaction. The addition of sodium sulfite to the injection amendment removes oxygen and promotes anaerobic conditions. Sodium sulfite is provided by Redox.

7.2. Amendment Dosing

Based on the analytical data obtained during the PDI activities, the following amendment dosing was recommended by Redox. Each injection well will receive the following:

- ABC+® (with 45-micron ZVI): 500 pounds
- RTB-1: 2 liters
- Guar Gum: 4 pounds
- Sodium Sulfite: 1 pound
- Water: 100 gallons

The overall injection volume is low to avoid mobilizing the groundwater plume and to avoid daylighting due to low hydraulic conductivity at the site.

The Redox proposal, including the ABC+ and RTB-1 fact sheets, is provided in **Appendix G**.

8. Groundwater RWP Methodologies

8.1. In-situ Enhanced Bioaugmentation

C&S will sub-contract a qualified firm to conduct the injection program. The injection program will proceed in the source area, immediately up-gradient of MW-08 and MW-09. The amendment will be injected in the five injection wells installed during the PDI activities (IJW-01 through IJW-05). To prevent migration of contaminants from areas of high concentration to areas of low concentration, the injection program will generally proceed from the outer injection wells to the inner injection wells.

The injection wells are presented on **Figure 4**. The Redox proposal, including the ABC+ and RTB-1 fact sheets, is provided in **Appendix G**. The sub-tasks below outline the scope and methods that will be used to conduct the injections.

8.1.1. Injection Program Preparation

C&S will retain a qualified firm to provide the scope of services below.

- C&S's contracted firm will complete the injection of the amendment fluid at the five injection well locations (IJW-01 through IJW-05).
- C&S will provide a qualified scientist or engineer to supervise and document the injections and prepare logs documenting injection volumes, pressures, and times, field measurements, visual / olfactory observations, and other pertinent observations.

8.1.2. Amendment Injections

C&S's sub-contracted firm will introduce the amendment to the subsurface in five injection well locations in the source area (IJW-01 through IJW-05), as presented in **Figure 4**. The amendment will be injected using the following methods:

- Amendment components will be measured with graduated vessels or with a digital scale and added to an appropriately sized mix tank.
- The amendment will be injected in the open bedrock injection wells.
- The following amounts of amendment will be injected using pressure:
    - Each injection well will receive approximately 100 gallons of injection fluid. The breakdown of solution per point is provided below:
        - 500 pounds of ABC+ (with 45-micron ZVI)

- 4 pounds of guar gum
- 2 liters of RTB-1
- 1 pound of sodium sulfite
- 100 gallons of water

- Total of 5 injection points will be completed for a total of approximately 500 gallons of injection fluid. The breakdown of solution for the entire injection program is provided below:

  - 2,500 pounds of ABC+ (with 45-micron ZVI)
  - 20 pounds of guar gum
  - 10 liters of RTB-1
  - 5 pound of sodium sulfite
  - 500 gallons of water

- All non-disposable down hole drilling equipment will be decontaminated with an Alconox®/ water mixture followed by a water rinse prior to demobilization.

8.1.3. Amendment Injection Monitoring

During the active injection period, C&S will monitor field measured water quality parameters at nearby monitoring wells to evaluate amendment distribution in the subsurface. The monitoring will be conducted at MW-05 and either MW-08 or MW-09 (depending on where injections are occurring) twice a day during the active injection period. Monitoring will be conducted using the following methods:

- Upon well opening, static water levels will be measured using an electronic water level indicator capable of measuring to an accuracy of 0.01-foot.

- Using a disposable bailer, groundwater will be collected and water quality parameters will be measured using a Horiba Water Quality Meter (or equivalent).

- Water quality parameters including pH, conductivity, turbidity, DO, temperature, and ORP will be recorded on Groundwater Monitoring Logs.

- The areas downgradient of the injection wells will be visually examined for evidence of liquid breakout / seepage throughout the duration of injections. This will include periodic visual inspection of the exposed bedrock façade along the northern edge of the site in the former raceway, along the hillside to the east of the site, and along the bedrock façade along the northern side of the Western Parcel. If evidence of breakout or seepage is observed, injection activities will be suspended and alternative methods will be evaluated.

8.2. Post-Injection Groundwater Sampling

For one year following the injection program, C&S will conduct quarterly groundwater sampling events to monitor the effectiveness of the injection program. Four events will be conducted (+3 months, +6 months, +9 months, +12 months). The groundwater sampling events will be conducted at select wells each quarter as described below.

- Immediately upon well opening, the well headspace will be monitored with a PID. Headspace PID measurements will be recorded on well sampling logs.
- Static water levels will be measured using an electronic water level indicator capable of measuring to an accuracy of 0.01-foot.
- Prior to sampling, the monitoring wells will be purged using low-flow techniques (typically < 0.5 L/min). The goal of low flow sampling is to not exceed a drawdown of 0.1 meters (0.33 feet) and to purge water at a rate that does not cause excessive pressure changes, temperature changes, or physical impact on water quality. An electronic water level indicator will be used periodically during purging to monitor drawdown and determine an appropriate evacuation rate. Submersible pumps using manufacturer-specified tubing will be used for purging and sampling groundwater.
- An electronic water level indicator will be used periodically during purging to monitor drawdown and determine an appropriate evacuation rate.
- Purging will be considered complete once stabilization of groundwater quality is achieved or the well has been purged dry and allowed to recharge. Using a Horiba Water Quality Meter (or equivalent) with an attached flow through cell, the evacuated water will be monitored for the following parameters and their tolerances:

Field Parameter	*Unit of Measurement*	*Variance*
pH	su	+/- 0.1
Conductivity	mS/cm	3%
Turbidity	NTU	10% or <5 NTU
DO	mg/L	10% or <0.5
Temperature	°F	3%
ORP	mV	+/- 10

- Water quality data will be recorded every three to five minutes or after one flow-through cell has been purged, whichever is greater. Conditions will be considered stabilized when water quality measurements recorded from three consecutive readings are within the above variance tolerances.

Following stabilization, groundwater samples will be collected from MW-03, MW-04R, MW-05, MW-08, MW-09, and MW-10. During the +12-month sampling event, groundwater samples will also be collected from MW-06 and MW-07. The samples will be submitted for the following laboratory analyses:

- TCL VOCs
- TOC
- Total and Dissolved Metals (Ferrous and Ferric Iron, Calcium, Magnesium, Potassium, and Sodium)
- Dissolved Hydrocarbon Gases (methane, ethane, ethene, and acetylene)
- Alkalinity (including bicarbonate and carbonate)
- Sulfide
- Sulfate
- Nitrite
- Nitrate
- Chloride

In addition, during the +9-month sampling event, groundwater samples collected from MW-03, MW-04R, MW-08, and MW-09 will be submitted for the following laboratory analysis:

- qPCR – Dhc and functional genes
- CSIA – carbon and chloride isotopes

Samples will be summited for standard 10-day turn-around-time. The water level indicator will be decontaminated with an Alconox®/ water mixture followed by a water rinse between each well to reduce the likelihood of cross contamination. Calibration times, purging volumes, water levels and field measurements will be recorded on well sampling logs.

8.3. QA / QC Protocols

To ensure that suitable and verifiable data results are obtained from the information collected at the site, QA / QC procedures will be implemented as detailed in this section.

8.3.1. Sampling Methods

Sampling procedures will be conducted consistent with the NYSDEC *Sampling Guidelines and Protocols Manual*. The following procedures will be used to ensure the collection of representative samples:

- Ensure the samples taken are representative of the material being sampled;
- Use proper sampling, handling and preservation techniques;
- Properly identify the collected samples and document their collection in field records;
- Maintain a chain-of-custody; and
- Properly preserve samples after collection.

8.3.2. QA / QC Samples

QA / QC samples will be collected for VOC analysis only, as follows:

- MS / MSD – 5% (4 total for four separate events)
- Blind Field Duplicate – 5% (4 total for four separate events)

All samples will be analyzed by a laboratory maintaining current accreditation for the targeted analyses under the NYSDOH ELAP. All data will be reported as ASP Category B deliverables in EDD format compatible with EQuIS.

8.3.3. Sample Custody

As outlined in NYSDEC *Sampling Guidelines and Protocols,* a sample is in custody under the following conditions:

- It is in your actual possession;
- It is in your view after being in your physical possession;
- It was in your possession and then you locked or sealed it up to prevent tampering; or
- It is in a secure area.

The environmental professional will maintain all chain-of-custody documents for all samples leaving the site to be tested in the laboratory.

8.3.4. Analytical Procedures and Documentation

All samples will be analyzed by a third-party laboratory that is accredited under the NYSDOH ELAP. Laboratory analytical methods will include the most current NYSDEC ASP.

Groundwater samples will be analyzed for a combination of the following contaminants and parameters will be analyzed:

- TCL VOCs – USEPA Method 8260

- TOC – USEPA Method 9060
- Total and Dissolved Metals – USEPA Method 6010 and 200.7
- Dissolved Hydrocarbon Gases – Method RSKSOP-175
- Alkalinity – USEPA Method 2320
- Sulfide – USEPA Method 9030
- Sulfate – USEPA Method 300.0
- Nitrate – USEPA Method 300.0
- Nitrite – USEPA Method 300.0
- Chloride – USEPA Method 300.0
- qPCR – Gene-Trac
- CSIA for Carbon, Chloride

Category B deliverables will be requested to be used in a third-party data validation.

8.3.5. Data Usability

A data usability review will be completed for all analytical data generated and a DUSR will be prepared for all data sets, consistent with NYSDEC-DUSR Guidance contained in Appendix 2B of DER-10. The data review and DUSR preparation will be performed by an independent, third-party, qualified, and experienced individual that has been approved by DER. The data review and DUSR preparation will serve to confirm and document that:

- The data packages are complete as defined under the requirements set forth in the most current DEC ASP Category B;
- All sample holding times have been met;
- All QC data (blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls, and sample data) fall within the protocol required limits and specifications;
- All data has been generated using established and agreed upon analytical protocols;
- An evaluation of the raw data confirms the results provided in the data summary sheets and quality control verification forms; and
- The correct data qualifiers have been used and are consistent with the most current NYSDEC ASP.

The EDD for all media will be uploaded to NYSDEC's EQuIS database.

8.4. Management of Investigation-Derived Wastes

IDW that is anticipated to be generated during the completion of the groundwater remedial activities includes:

- Equipment decontamination fluids
- Monitoring well evacuation water
- Personnel Protective Equipment (PPE)
- Disposable materials and supplies

All IDW will be collected and managed in accordance with the Section 3.3(e) of DER-10.

8.5. Green Remediation Evaluation

NYSDEC's Program Policy DER-31 / Green Remediation and DER-31 Green and Sustainable Remediation Initiative Memorandum require that green remediation concepts and techniques be considered during all stages of the remedial program including remediation, with the goal of improving the sustainability of the cleanup and documenting the net environmental benefit of any implemented green technology. Green Remediation is defined as "the practice of considering all environmental effects of remedy implementation and incorporating options to minimize the environmental footprint of cleanup actions." The use of these practices and technologies during remediation should be less disruptive to the environment, generate less waste, increase reuse and recycling, and emit fewer pollutants, including greenhouse gases (GHGs), to the atmosphere.

8.5.1. Green Remediation Components

This RWP identifies the green remediation components of the remedial design program, which will be implemented for the construction, operation, optimization, maintenance, and monitoring of the remedial program. The purpose of this section is to identify concepts and develop a plan to best achieve a "Green Remediation" goal for the selected remedy. The Green Remediation concepts considered during the development of the remedial alternatives include:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term when choosing a site remedy;
- Reducing direct and indirect GHG and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;

- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Designing buildings to meet the 2020 Energy Conservation Construction Code of New York.

Based on the type of remediation required for the site, the principal green remediation goals for the site are focused on the reduction of waste and the reuse / recycling of materials to extent feasible throughout the remediation process. The reduction in wastes indirectly reduces the consumption of fossil fuels and generation of GHGs.

8.5.2. Environmental Footprint Analysis

As a part of the Green Remediation, the use of an environmental footprint analysis was completed to further evaluate the impact of the planned remedy for the site. For the purpose of analyzing the overall impact and sustainability of the planned remediation activities, C&S utilized SEFA (Spreadsheets for Environmental Footprint Analysis) created by the USEPA. The inputs and outputs from SEFA are provided in **Appendix H**.

Based on the anticipated elements of the implementation of the remedy, SEFA was used to develop estimated values for:

- Water consumption
    - Use of reclaimed water in the injection amendment
- GHGs
    - Emissions related to the operation of site work equipment (skid steer, air compressor, etc.)
    - Emissions related to site travel for consultant and contractor personnel
    - Emissions related to transportation of site equipment and groundwater amendment material
    - Emissions related to export of contaminated groundwater
    - Emissions related to the off-site treatment of contaminated groundwater
    - Emissions related to off-site laboratory analysis of groundwater samples

- Renewable and non-renewable energy usage
    - Charging of environmental monitoring equipment
- Waste reduction and material usage
    - Reuse of materials on and off site

Building envelope related construction is not part of the remedy. However, the building construction will meet or exceed the 2020 Energy Conservation Construction Code of New York.

Narratives regarding the various elements of the remedy, their potential impact on the environment, and strategies employed to reduce their footprint are provided in the following subsections.

8.5.3. Green Remediation Techniques

To further reduce the environmental footprint of the remediation, Green Remediation Techniques (GRTs) were identified and will be implemented as appropriate.

NYSDEC DER-31 identifies a list of specific techniques which were considered during the development of this RWP. This section further describes the techniques which were identified as being feasible to be implemented during the site redevelopment and remediation to best achieve a green remediation goal for the site.

Based on the planned redevelopment of the site, the green remediation techniques listed in the section below were identified as being feasible to be implement.

8.5.4. Best Management Practices

The section describes the BMPs which will be implemented throughout the implementation of the remedy to support green remediation goals. The following BMPs were identified for implementation:

- Minimize Mobilizations – C&S will schedule work to ensure injection activities can be completed within one mobilization. C&S' contractors will schedule site activities in an efficient manner to minimize the number of trips to the site for workers and equipment.
- No Idling of Equipment – Equipment will be shut down if left idling longer than 15 minutes.
- Sampling Equipment:
    - Rechargeable Battery-Powered Sampling Equipment – Submersible pump, Horiba water quality meter, data loggers, and any other battery-

operated equipment will be charged at the C&S facility. C&S estimated in 2022 that 26% of the electricity used at their facility is generated on-site through use of solar panels. This practice will reduce the load on the electrical grid and allow for the use of renewable sources of energy.

- Sampling tubing or bailers – C&S will leave either the HDPE sampling tubing or bailers in each of the wells once sampling is completed. This practice will reduce sampling waste.
- Waste Storage Containers – C&S uses cleaned reclaimed 55-gallon drums for the storage of IDW. C&S reuses plastic 5-gallon buckets for the purpose of the collection of groundwater or waste soil generated during sampling activities prior to being containerized for storage and disposal. The use of these containers decreases the generation of waste and provides opportunities for recycling of IDW.

- On-site Waste Recycling – C&S plans on using approximately 500 gallons of the drummed water during the injection process, as described later in Section 8. The remaining water will be characterized and disposed of at an off-site facility. The solids will be dewatered and characterized for either disposal at an off-site facility or placed under the western parcel cover system if the results of characterization allow for it.
- Sustainable Laboratory Practices – C&S will submit samples to a laboratory, which implements the following sustainable practices:
  - Recycles paper products and shipping materials.
  - Uses energy-efficient lighting and other equipment
  - Maintains a paperless reporting and invoicing program.
  - Minimizes waste through use of USEPA-approved microscale methods.
  - When possible, C&S will utilize a lab courier service, rather than making trips directly to the lab.

All site activities related to the BMPs described above will be recorded and tracked on a C&S Green Remediation BMP Tracker, which is equivalent to the NYSDEC Form A, Summary of Green Remediation Metrics. The total quantities will be recorded daily and summarized in the NYSDEC Form A, upon the completion of Groundwater RWP and in the Final Engineering Report (FER). A copy of the BMP Tracking Form and the NYSDEC Form A is provided in **Appendix I**.

8.5.5. Summary

The elements of the remedy with a significant environmental footprint will be tracked to

document metrics and identify reductions of the environmental footprint throughout the remediation planning and implementation. The expectation of the environmental footprint from these significant elements are shown in the tables below. The inputs and outputs from SEFA are provided in **Appendix H.** The actual environmental footprint results will be summarized in the FER.

The following table provides a summary of the significant elements needed for the groundwater injection remedy.

Item / Activity	*Volume / Unit*	*Note*
Diesel Use	1,443 gallons	Use of air compressor and skid steer on-site, transportation of equipment, workers commuting to the site, transportation of groundwater amendment, transportation of well evacuation water for off-site disposal
Gasoline Use	82 gallons	Workers commuting to the site and use of a trash pump for transferring drummed water
Reclaimed Water Use	500 gallons	Reuse of well evacuation water from PDI during injections
Materials to offsite non-hazardous waste landfill	0.1 tons	General refuse including PPE, sampling equipment, etc.
Water to offsite hazardous waste landfill	1,500 gallons	Well evacuation water from PDI and RWP
Off-site laboratory analysis	190 sample analyses	Groundwater sample analysis for quarterly groundwater sampling events

The following table provides a summary of the environmental footprint.

Activity	*Total Energy (MMbtus)*	*lbs CO_2*	*lbs NOx*	*lbs SOx*	*lbs PM*	*lbs HAPs*
On-site Remedy	11	1,707	12	0	1	0
Transportation	200	32,339	235	7	5	1
Off-site Components	39	5,977	35	72	12	8
Remedy Total	**249**	**40,023**	**282**	**79**	**18**	**9**

MMBtu – Metric Million British Thermal Unit
CO_2 – Carbon Dioxide
lbs – Pounds
NOx – Nitrogen Oxides
SOx – Sulfur Oxides
PM – Particulate Matter

HAP – Hazardous Air Pollutants

The spreadsheets provided in **Appendix H** provide a higher level of detail regarding the inputs and resulting footprint, such as energy usage, greenhouse gas emissions, etc.

9. Groundwater RWP Health and Safety

To verify the safety of the workers and the local community during the performance of the work, monitoring practices of the work environment will be in place during all phases of remedial activities. A Health and Safety Plan (HASP) was prepared which details procedures for maintaining safe working conditions and minimizing the potential for exposure to hazardous material. The HASP is provided in **Appendix J**.

10. Groundwater RWP Reporting

Based on the results of the work described above, quarterly groundwater monitoring reports will be prepared following each quarterly sampling event. The quarterly groundwater monitoring reports will:

- Be prepared in conformance with DER-10;
- Be certified as required by DER-10, section 1.5;
- Include pertinent tables and figures;
- Include all field sampling forms / logs, including groundwater sampling logs.;
- Include all laboratory data reports (category B deliverables);
- Include DUSRs; and
- Include documentation regarding IDW management.

The quarterly groundwater monitoring reports will describe:

- High level overview of the bioaugmentation remediation approach;
- Observations and findings from the quarterly groundwater sampling event;
- Comparison of groundwater results to TOGS 1.1.1 AWQS; and
- Analysis of COC and geochemistry concentrations over time.
- Summary and recommendations based on data review and findings.

The reports will be submitted to NYSDEC for review and approval.

Details regarding the implementation of the groundwater RWP will be included in the FER.

11. Groundwater RWP Schedule

Below is an anticipated schedule for the completion of groundwater remedial activities.

Estimated Project Schedule:

Submission of Groundwater Remediation Work Plan..... October 2024

Approval of Groundwater Remediation Work Plan ..... November 2024

Groundwater Remediation Implementation..... November 2024

Quarterly Groundwater Sampling (Q1)..... March 2025

Quarterly Groundwater Sampling (Q2)..... June 2025

Quarterly Groundwater Sampling (Q3)..... September 2025

Quarterly Groundwater Sampling (Q4)..... December 2025

Figures

Figure 1: Site Location

Figure 2: BCP / Parcel Limits

Figure 3: Post-Soil Remediation Conditions Plan

Figure 4: Monitoring and Injection Well Locations

Figure 5A: Existing Well CVOC Groundwater Exceedances

Figure 5B: Injection Well CVOC Groundwater Exceedances

A1 **SITE LOCATION**
SCALE: 1" = 500'-0"

C&S COMPANIES
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Groundwater PDI Report and RWP
Former Ithaca Gun Factory BCP Site
121-125 Lake Street, City of Ithaca
Tompkins County, New York

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO: X55.002.001
DATE: October 2024
DRAWN BY: N. COULOMBE
DESIGNED BY: N. BRADFORD P.E.
CHECKED BY: N. BRADFORD P.E.

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SITE LOCATION

FIGURE 1

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A1 BCP / PARCEL LIMITS
SCALE: 1" = 30'-0"

0 30' 60'

C&S COMPANIES
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

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BCP / PARCEL LIMITS

FIGURE 2

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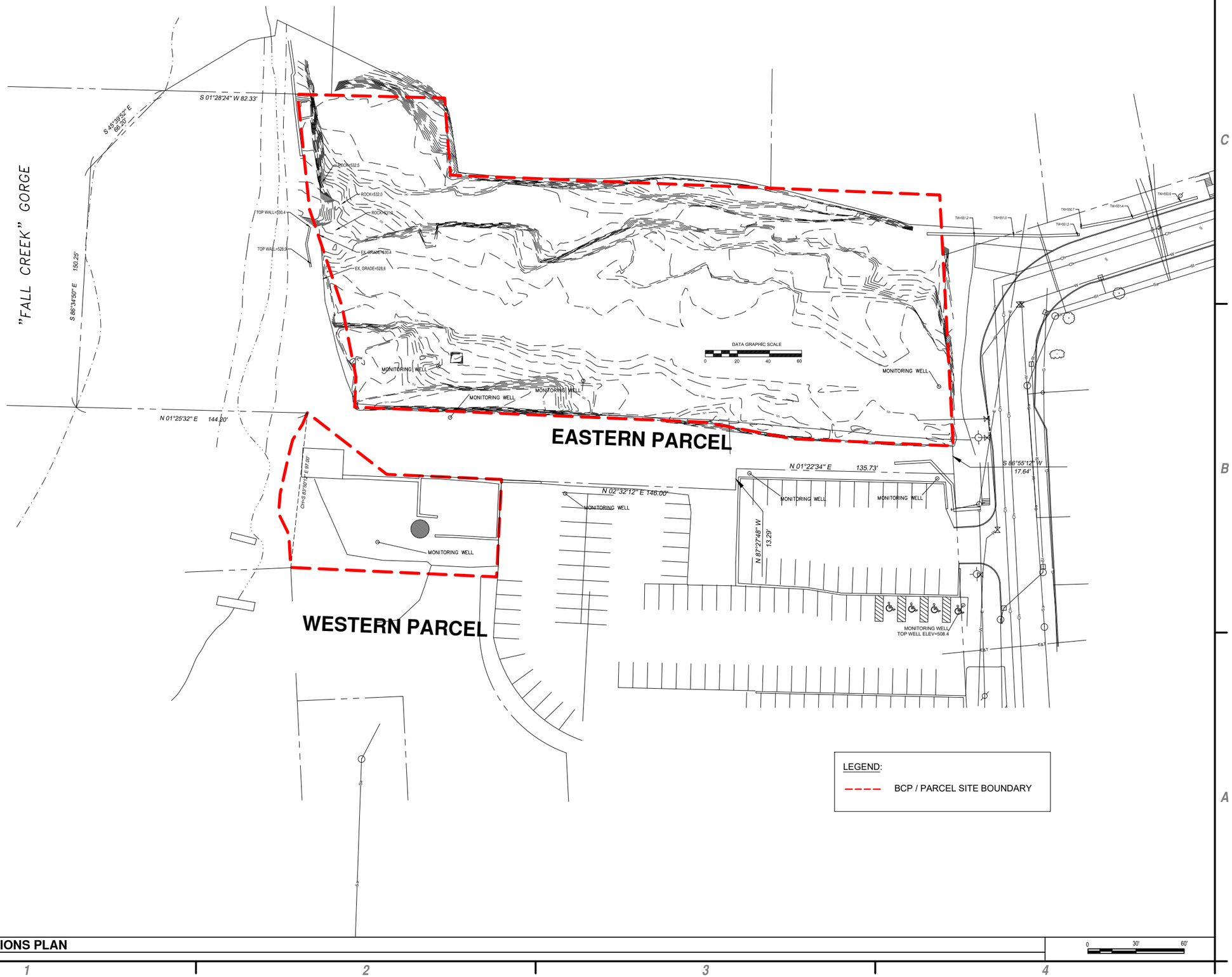

A1 **EXISTING CONDITIONS PLAN**
SCALE: 1" = 30'-0"

0 30' 60'

C&S COMPANIES
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

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POST-SOIL REMEDIATION CONDITIONS PLAN

FIGURE 3

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Groundwater PDI Report and RWP
Former Ithaca Gun Factory
121-125 Lake Street, City of Ithaca, New York

PROJECT NO:	X55.002.001
DATE:	October 2024
SCALE:	AS SHOWN
DRAWN BY:	H. Haas
DESIGNED BY:	N. Bradford
CHECKED BY:	N. Bradford

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MONITORING AND INJECTION WELL LOCATIONS

FIGURE 4

		SAMPLE ID	MW-08				
		SAMPLING DATE	9/30/2016	12/8/2016	2/21/2017	1/11/2018	7/30/2024
Analytes	CasNum	NY-AWQS	Results	Results	Results	Results	Results
Volatile Organics by GC/MS							
1,1,1-Trichloroethane	71-55-6	5	ND	ND	ND	8.6	ND
1,1-Dichloroethane	75-34-3	5	ND	ND	ND	131	ND
1,1-Dichloroethene (1,1-DCE)	75-35-4	5	ND	ND	ND	54.1	100J
cis-1,2-Dichloroethene (c-DCE)	156-59-2	5	4100	14000	7000	11600	13000
Tetrachloroethene (PCE)	127-18-4	5	ND	ND	81 J	47.3	250
trans-1,2-Dichloroethene (t-DCE)	156-60-5	5	ND	ND	ND	64.9	ND
Trichloroethene (TCE)	79-01-6	5	1100	4600	9100	9520	20000
Vinyl chloride (VC)	75-01-4	2	ND	530	ND	241	330

		SAMPLE ID	MW-09				
		SAMPLING DATE	10/5/2016	12/8/2016	2/22/2017	1/11/2018	7/30/2024
Analytes	CasNum	NY-AWQS	Results	Results	Results	Results	Results
Volatile Organics by GC/MS							
1,1-Dichloroethane	75-34-3	5	ND	ND	ND	11.6	ND
1,1-Dichloroethene (1,1-DCE)	75-35-4	5	ND	ND	ND	12.7	12
Benzene	71-43-2	1	ND	ND	ND	1.1	ND
Chloroform	67-66-3	7	ND	ND	ND	ND	24J
cis-1,2-Dichloroethene (c-DCE)	156-59-2	5	3000	3300	2700	3260	1700
Tetrachloroethene (PCE)	127-18-4	5	200	330	360	28.7	51
trans-1,2-Dichloroethene (t-DCE)	156-60-5	5	ND	ND	ND	21	18J
Trichloroethene (TCE)	79-01-6	5	3800	2400	3400	910	2200
Vinyl chloride (VC)	75-01-4	2	ND	ND	ND	11.9	17J

		SAMPLE ID	MW-01R
		SAMPLING DATE	8/1/2024
Analytes	CasNum	NY-AWQS	Results
Volatile Organics by GC/MS			
Chloroform	67-66-3	7	14

		SAMPLE ID	MW-03						
		SAMPLING DATE	2001	2007	11/30/2010	1/1/2011	12/9/2016	2/21/2017	7/30/2024
Analytes	CasNum	NY-AWQS	Results	Results	Results	Results	Results	Results	Results
Volatile Organics by GC/MS									
cis-1,2-Dichloroethene (c-DCE)	156-59-2	5	120	17	20	50.8	44	40	70
Trichloroethene (TCE)	79-01-6	5	320	152	194	443	130	150	150

		SAMPLE ID	MW-04R			
		SAMPLING DATE	11/30/2010	12/9/2016	2/22/2017	7/31/2024
Analytes	CasNum	NY-AWQS	Results	Results	Results	Results
Volatile Organics by GC/MS						
cis-1,2-Dichloroethene (c-DCE)	156-59-2	5	74.2	65	67	13
Trichloroethene (TCE)	79-01-6	5	181	61	92	34
Vinyl chloride (VC)	75-01-4	2	---	2.2	ND	0.11J

		SAMPLE ID	MW-05		
		SAMPLING DATE	12/8/2016	2/21/2017	8/1/2024
Analytes	CasNum	NY-AWQS	Results	Results	Results
Volatile Organics by GC/MS					
1,1-Dichloroethane	75-34-3	5	ND	13 J	ND
1,1-Dichloroethene (1,1-DCE)	75-35-4	5	ND	11 J	2.5J
cis-1,2-Dichloroethene (c-DCE)	156-59-2	5	5700	1500 J	880
Tetrachloroethene (PCE)	127-18-4	5	ND	37	6.8
trans-1,2-Dichloroethene (t-DCE)	156-60-5	5	ND	ND	8.1J
Trichloroethene (TCE)	79-01-6	5	910	1100 J	170
Vinyl chloride (VC)	75-01-4	2	ND	ND	2.5J

		SAMPLE ID	MW-10			
		SAMPLING DATE	10/7/2016	12/9/2016	2/22/2017	8/1/2024
Analytes	CasNum	NY-AWQS	Results	Results	Results	Results
Volatile Organics by GC/MS						
Benzene	71-43-2	1	2.1	ND	ND	ND
Chloroform	67-66-3	7	12	ND	ND	ND
cis-1,2-Dichloroethene (c-DCE)	156-59-2	5	98	56	75 J	12
Toluene	108-88-3	5	12	ND	ND	ND
Trichloroethene (TCE)	79-01-6	5	71	80	90	35

LEGEND

- BCP Site Boundary
- Existing Monitoring Wells

Groundwater Standard Values

NY-AWQS

- Data reported in part per billion (ppb) (ug/l)
- Only exceedances are depicted
- **NY-AWQS** - New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

MW-01R
MW-09
MW-08
MW-11
MW-05
MW-03
MW-04R
MW-10
MW-06
MW-07

NAD 1983 CORS96 StatePlane New York Central FIPS 3102 Ft US
Projection: Transverse Mercator
Datum: NAD 1983 CORS96
False Easting: 820,208.3333
False Northing: 0.0000
Central Meridian: -76.5833
Scale Factor: 0.9999
Latitude Of Origin: 40.0000
Units: Foot US

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EXISTING WELL CVOC GROUNDWATER EXCEEDANCES

FIGURE 5A

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LOCATION		IJW-05 BASELINE	
SAMPLING DATE		8/29/2024	
Analyte	NY-AWQS	Results	RL
Volatile Organics by GC/MS			
cis-1,2-Dichloroethene (cDCE)	5	**420**	12
Trichloroethene (TCE)	5	**53**	2.5
Vinyl chloride (VC)	2	**66**	5

LOCATION		IJW-04 BASELINE	
SAMPLING DATE		8/29/2024	
Analyte	NY-AWQS	Results	RL
Volatile Organics by GC/MS			
cis-1,2-Dichloroethene (cDCE)	5	**690**	25
Tetrachloroethene (PCE)	5	**74**	5
trans-1,2-Dichloroethene (tDCE)	5	**7.2J**	25
Trichloroethene (TCE)	5	**1200**	5
Vinyl chloride (VC)	2	**33**	10

LOCATION		IJW-03 BASELINE	
SAMPLING DATE		8/28/2024	
Analyte	NY-AWQS	Results	RL
Volatile Organics by GC/MS			
Chloroform	7	**11**	5
cis-1,2-Dichloroethene (cDCE)	5	**180**	5
Trichloroethene (TCE)	5	**98**	1
Vinyl chloride (VC)	2	**28**	2

LOCATION		IJW-01 BASELINE	
SAMPLING DATE		8/28/2024	
Analyte	NY-AWQS	Results	RL
Volatile Organics by GC/MS			
Chloroform	7	**54**	2.5
cis-1,2-Dichloroethene (cDCE)	5	**16**	2.5
Trichloroethene (TCE)	5	**120**	0.5

LOCATION		IJW-02 BASELINE	
SAMPLING DATE		8/28/2024	
Analyte	NY-AWQS	Results	RL
Volatile Organics by GC/MS			
1,1-Dichloroethene (DCE)	5	**20J**	25
cis-1,2-Dichloroethene (cDCE)	5	**2100**	120
Tetrachloroethene (PCE)	5	**98**	25
Trichloroethene (TCE)	5	**5200**	25
Vinyl chloride (VC)	2	**68**	50

MW-01R
IJW-05
IJW-04
IJW-03
IJW-02
IJW-01
MW-09
MW-08
MW-11
MW-05
MW-03
MW-04R
MW-10
MW-06
MW-07

LEGEND

- BCP Site Boundary
- Existing Monitoring Wells
- Injection Well Locations

Groundwater Standard Values

NY-AWQS

- Data reported in part per billion (ppb) (ug/l)
- Only exceedances are depicted
- **NY-AWQS** - New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

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INJECTION WELL CVOC GROUNDWATER EXCEEDANCES

FIGURE 5B

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Tables

Table 1A: Existing Well VOC Groundwater Data Summary

Table 1B: Existing Well Geochemistry Groundwater Data Summary

Table 2A: Injection Well VOC Groundwater Data Summary

Table 2B: Injection Well Geochemistry Groundwater Data Summary

Table 1A - Existing Well VOC Groundwater Data Summary
Groundwater PDI Report and RWP
Former Ithaca Gun Factory BCP Site
121-125 Lake Street, Ithaca, New York

				WELL LOCATION	Up-gradient Well		Near Down-gradient Wells						Distant Down-gradient Wells				Source Area Wells				Near Down-gradient Well		Cross-Gradient Well		QA/QC Samples							
				SAMPE ID	MW-01R PRE SAMPLING		MW-03 PRE-SAMPLING		MW-04B PRE-SAMPLING		MW-05 PRE SAMPLING		MW-06 PRE-SAMPLING		MW-07 PRE-SAMPLING		MW-08 PRE-SAMPLING		MW-09 PRE-SAMPLING		MW-10 PRE SAMPLING		MW-11 PRE SAMPLING		DUP (MW-10)		TRIP BLANK		TRIP BLANK		TRIP BLANK	
				SAMPLING DATE	8/1/2024		7/30/2024		7/31/2024		8/1/2024		7/31/2024		7/31/2024		7/30/2024		7/30/2024		8/1/2024		8/1/2024		8/1/2024		7/31/2024		7/30/2024		8/1/2024	
				LAB SAMPLE ID	L2443534-04		L2442917-01		L2443206-01		L2443534-05		L2443206-02		L2443206-03		L2442917-02		L2442917-03		L2443534-01		L2443534-03		L2443534-02		L2443206-04		L2442917-04		L2443534-06	
				SAMPLE TYPE	WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
Analytes	**CasNum**	**NY-AWQS**	**Units**	**Results**	**RL**		**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**
Volatile Organics by GC/MS				Volatile Organics by GC/MS																												
1,1,1-Trichloroethane (TCA)	71-55-6	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,1,2,2-Tetrachloroethane	79-34-5	5	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
1,1,2-Trichloroethane	79-00-5	1	ug/l	ND	1.5		ND	1.5	ND	1.5	ND	15	ND	1.5	ND	1.5	ND	380	ND	30	ND	1.5	ND	1.5	ND	1.5	ND	1.5	ND	1.5	ND	1.5
1,1-Dichloroethane (DCA)	75-34-3	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,1-Dichloroethene (DCE)	75-35-4	5	ug/l	ND	0.5		ND	0.5	ND	0.5	**2.5J**	5	ND	0.5	ND	0.5	**100J**	120	**12**	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
1,2,3-Trichlorobenzene	87-61-6	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,2,4-Trichlorobenzene	120-82-1	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,2-Dibromo-3-chloropropane	96-12-8	0.04	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,2-Dibromoethane	106-93-4	0.0006	ug/l	ND	2		ND	2	ND	2	ND	20	ND	2	ND	2	ND	500	ND	40	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2
1,2-Dichlorobenzene	95-50-1	3	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,2-Dichloroethane	107-06-2	0.6	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
1,2-Dichloropropane	78-87-5	1	ug/l	ND	1		ND	1	ND	1	ND	10	ND	1	ND	1	ND	250	ND	20	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1
1,3-Dichlorobenzene	541-73-1	3	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,4-Dichlorobenzene	106-46-7	3	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
1,4-Dioxane	123-91-1		ug/l	ND	250		ND	250	ND	250	ND	2500	ND	250	ND	250	ND	62000	ND	5000	ND	250	ND	250	ND	250	ND	250	ND	250	ND	250
2-Butanone	78-93-3	50	ug/l	ND	5		ND	5	ND	5	ND	50	ND	5	ND	5	ND	1200	ND	100	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
2-Hexanone	591-78-6	50	ug/l	ND	5		ND	5	ND	5	ND	50	ND	5	ND	5	ND	1200	ND	100	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
4-Methyl-2-pentanone	108-10-1		ug/l	ND	5		ND	5	ND	5	ND	50	ND	5	ND	5	ND	1200	ND	100	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
Acetone	67-64-1	50	ug/l	ND	5		ND	5	ND	5	ND	50	ND	5	ND	5	ND	1200	ND	100	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
Benzene	71-43-2	1	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Bromochloromethane	74-97-5	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Bromodichloromethane	75-27-4	50	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Bromoform	75-25-2	50	ug/l	ND	2		ND	2	ND	2	ND	20	ND	2	ND	2	ND	500	ND	40	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2
Bromomethane	74-83-9	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Carbon disulfide	75-15-0	60	ug/l	ND	5		ND	5	ND	5	ND	50	ND	5	ND	5	ND	1200	ND	100	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
Carbon tetrachloride	56-23-5	5	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Chlorobenzene	108-90-7	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Chloroethane	75-00-3	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Chloroform	67-66-3	7	ug/l	**14**	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	**1.5J**	2.5	ND	620	**24J**	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Chloromethane	74-87-3		ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
cis-1,2-Dichloroethene (cDCE)	156-59-2	5	ug/l	ND	2.5		**70**	2.5	**13**	2.5	**880**	25	ND	2.5	**1.6J**	2.5	**13000**	620	**1700**	50	**12**	2.5	ND	2.5	**11**	2.5	ND	2.5	ND	2.5	ND	2.5
cis-1,3-Dichloropropene	10061-01-5	0.4	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Cyclohexane	110-82-7		ug/l	ND	10		ND	10	ND	10	ND	100	ND	10	ND	10	ND	2500	ND	200	ND	10	ND	10	ND	10	ND	10	ND	10	ND	10
Dibromochloromethane	124-48-1	50	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Dichlorodifluoromethane	75-71-8	5	ug/l	ND	5		ND	5	ND	5	ND	50	ND	5	ND	5	ND	1200	ND	100	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
Ethylbenzene	100-41-4	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Freon-113	76-13-1	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Isopropylbenzene	98-82-8	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Methyl Acetate	79-20-9		ug/l	ND	2		ND	2	ND	2	ND	20	ND	2	ND	2	ND	500	ND	40	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2
Methyl cyclohexane	108-87-2		ug/l	ND	10		ND	10	ND	10	ND	100	ND	10	ND	10	ND	2500	ND	200	ND	10	ND	10	ND	10	ND	10	ND	10	ND	10
Methyl tert butyl ether	1634-04-4	10	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Methylene chloride	75-09-2	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
o-Xylene	95-47-6	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
p/m-Xylene	179601-23-1	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Styrene	100-42-5	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Tetrachloroethene (PCE)	127-18-4	5	ug/l	ND	0.5		**1.5**	0.5	**0.74**	0.5	**6.8**	5	ND	0.5	ND	0.5	**250**	120	**51**	10	**0.84**	0.5	ND	0.5	**0.8**	0.5	ND	0.5	ND	0.5	ND	0.5
Toluene	108-88-3	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
trans-1,2-Dichloroethene (tDCE)	156-60-5	5	ug/l	ND	2.5		**3.7**	2.5	ND	2.5	**8.1J**	25	ND	2.5	ND	2.5	ND	620	**18J**	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
trans-1,3-Dichloropropene	10061-02-6	0.4	ug/l	ND	0.5		ND	0.5	ND	0.5	ND	5	ND	0.5	ND	0.5	ND	120	ND	10	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Trichloroethene (TCE)	79-01-6	5	ug/l	**0.2J**	0.5		**150**	0.5	**34**	0.5	**170**	5	**0.43J**	0.5	**4.2**	0.5	**20000**	120	**2200**	10	**35**	0.5	**0.61**	0.5	**36**	0.5	ND	0.5	ND	0.5	ND	0.5
Trichlorofluoromethane	75-69-4	5	ug/l	ND	2.5		ND	2.5	ND	2.5	ND	25	ND	2.5	ND	2.5	ND	620	ND	50	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
Vinyl Chloride (VC)	75-01-4	2	ug/l	ND	1		**0.26J**	1	**0.11J**	1	**2.5J**	10	ND	1	ND	1	**330**	250	**17J**	20	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1

Notes:
Results and Ambient Water Quality Standards (AWQS) reported in ug/l.
Blue highlighted indicates the respective AWQS exceeded.
Gray highlight indicates the respective analytes RL is higher than the AWQS, the analyte is ND but could exceed the respective AWQS.
BOLD - Indicates the analyte was detected above the RL.
Blank space indicates that a AWQS value(s) does not exist for the respective analyte.
"J" indicates estimated concentration
NY-AWQS - New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

Table 1B - Existing Well Geochemistry Groundwater Data Summary
Groundwater PDI Report and RWP
Former Ithaca Gun Factory BCP Site
121-125 Lake Street, Ithaca, New York

			WELL LOCATION	Up-gradient Well		Near Down-gradient Wells						Distant Down-gradient Wells				Source Area Wells				Near Down-gradient Well		Cross-Gradient Well	
			LOCATION	MW-01R PRE SAMPLING		MW-03 PRE-SAMPLING		MW-04B PRE-SAMPLING		MW-05 PRE SAMPLING		MW-06 PRE-SAMPLING		MW-07 PRE-SAMPLING		MW-08 PRE-SAMPLING		MW-09 PRE-SAMPLING		MW-10 PRE SAMPLING		MW-11 PRE SAMPLING	
			SAMPLING DATE	8/1/2024		7/30/2024		7/31/2024		8/1/2024		7/31/2024		7/31/2024		7/30/2024		7/30/2024		8/1/2024		8/1/2024	
			LAB SAMPLE ID	L2443534-04		L2442917-01		L2443206-01		L2443534-05		L2443206-02		L2443206-03		L2442917-02		L2442917-03		L2443534-01		L2443534-03	
			SAMPLE TYPE	WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
Analytes	**CasNum**	**NY-AWQS**	**Units**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**
Anions by Ion Chromatography																							
Chloride	16887-00-6	250000	ug/l	**367000**	5000	**85000**	2500	**90900**	5000	**205000**	5000	**56400**	5000	**196000**	5000	**195000**	5000	**206000**	5000	**84600**	5000	**379000**	5000
Sulfate	14808-79-8	250000	ug/l	**32100**	1000	**44400**	5000	**30100**	1000	**53900**	1000	**539000**	10000	**63500**	1000	**35700**	1000	**33700**	1000	**32400**	1000	**125000**	10000
Sulfide	18496-25-8	0.002	mg/l	ND	2000	ND	2000	ND	2000	ND	2000	ND	2000	ND	2000	ND	2000	ND	2000	ND	2000	ND	2000
Dissolved Metals																							
Calcium, Dissolved	7440-70-2		ug/l	**90300**	100	**45200**	100	**45100**	100	**82100**	100	**206000**	100	**93700**	100	**74200**	100	**75000**	100	**41600**	100	**147000**	100
Iron, Dissolved	7439-89-6	300	ug/l	**20J**	50	**32.9J**	50	**115**	50	**359**	50	**153**	50	**24.8J**	50	ND	50	**271**	50	**20.4J**	50	**83**	50
Magnesium, Dissolved	7439-95-4	35000	ug/l	**19800**	100	**7400**	100	**8070**	100	**16800**	100	**56600**	100	**17400**	100	**15300**	100	**14800**	100	**7600**	100	**29600**	100
Potassium, Dissolved	7440-09-7		ug/l	**1740J**	2500	**3020**	2500	**3390**	2500	**2760**	2500	**2790**	2500	**4360**	2500	**2760**	2500	**1840J**	2500	**3600**	2500	**5980**	2500
Sodium, Dissolved	7440-23-5	20000	ug/l	**212000**	2000	**66300**	2000	**72400**	2000	**109000**	2000	**33100**	2000	**137000**	2000	**113000**	4000	**97900**	2000	**68400**	2000	**155000**	2000
Dissovled Gas																							
Ethane			ug/l	ND	14	ND	14	ND	14	ND	14	ND	14	ND	14	ND	14	ND	14	ND	14	ND	14
Ethene			ug/l	ND	17	ND	17	ND	17	ND	17	ND	17	ND	17	ND	17	ND	17	ND	17	ND	17
Methane			ug/l	ND	7	**7**	7	**15**	7	ND	7	**1400**	7	**18**	7	**19**	7	**11**	7	ND	7	**8**	7
General Chemistry																							
Alkalinity, Bicarbonate	71-52-3		mg CaCO3/L	**244**	2	**151**	2	**148**	2	**191**	2	**239**	2	**284**	2	**202**	2	**201**	2	**137**	2	**230**	2
Alkalinity, Carbonate	3812-32-6		mg CaCO3/L	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2
Iron, Ferric	7439-89-6		ug/l	**1600J**	500	**2000J**	500	**340J**	500	**13000**	12000	**1000J**	500	**140J**	500	**50UJ**	500	**22000**	500	ND	500	**5900J**	500
Iron, Ferrous	7439-89-6		ug/l	**230J**	500	**260J**	500	**200J**	500	**15000**	12000	**140J**	500	**130J**	500	**80J**	500	**590**	500	ND	500	**250J**	500
Nitrogen, Nitrate	14797-55-8	10000	ug/l	**1300**	100	**680**	100	**290**	100	**94J**	100	ND	100	**970**	100	ND	100	**420**	100	**330**	100	**280**	100
Total Organic Carbon	7440-44-0		ug/l	**1140**	1000	**3550**	500	**1610**	500	**2640**	1000	**4970**	500	**1730**	500	**1760**	500	**1220**	500	**1660**	500	**2120**	1000
Total Metals																							
Calcium, Total	7440-70-2		ug/l	**93000**	100	**52200**	100	**46500**	100	**91200**	100	**211000**	100	**93400**	100	**86800**	100	**86500**	100	**42300**	100	**176000**	100
Iron, Total	7439-89-6	300	ug/l	**1820**	50	**2260**	50	**537**	50	**28200**	50	**1140**	50	**274**	50	**134**	50	**22700**	50	**42.9J**	50	**6170**	50
Magnesium, Total	7439-95-4	35000	ug/l	**19000**	100	**9040**	100	**8060**	100	**20200**	100	**54000**	100	**16000**	100	**16500**	100	**21600**	100	**7420**	100	**30800**	100
Potassium, Total	7440-09-7		ug/l	**1760J**	2500	**3600**	2500	**3540**	2500	**4310**	2500	**2780**	2500	**4200**	2500	**2900**	2500	**3380**	2500	**3380**	2500	**5120**	2500
Sodium, Total	7440-23-5	20000	ug/l	**208000**	2000	**71000**	2000	**72400**	2000	**108000**	2000	**32100**	2000	**145000**	2000	**121000**	2000	**107000**	2000	**66700**	2000	**160000**	2000

Notes:
Results and Ambient Water Quality Standards (AWQS) reported in ug/l.
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Gray highlight indicates the respective analytes RL is higher than the AWQS, the analyte is ND but could exceed the respective AWQS.
BOLD - Indicates the analyte was detected above the RL.
Blank space indicates that a AWQS value(s) does not exist for the respective analyte.
"J" indicates estimated concentration
NY-AWQS - New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

Table 2A - Injection Well VOC Groundwater Data Summary
Groundwater PDI Report and RWP
Former Ithaca Gun Factory BCP Site
121-125 Lake Street, Ithaca, New York

			LOCATION	IJW-01 BASELINE		IJW-02 BASELINE		IJW-03 BASELINE		IJW-04 BASELINE		IJW-05 BASELINE		DUP BASELINE (IJW-04)		TRIP BLANK		TRIP BLANK	
			SAMPLING DATE	8/28/2024		8/28/2024		8/28/2024		8/29/2024		8/29/2024		8/29/2024		8/28/2024		8/29/2024	
			LAB SAMPLE ID	L2449259-01		L2449259-02		L2449259-03		L2449503-01		L2449503-02		L2449503-03		L2449259-04		L2449503-04	
			SAMPLE TYPE	WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
	CasNum	NY-AWQS	Units	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Volatile Organics by GC/MS																			
1,1,1-Trichloroethane (TCA)	71-55-6	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
1,1,2,2-Tetrachloroethane	79-34-5	5	ug/l	ND	0.5	ND	25	ND	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
1,1,2-Trichloroethane	79-00-5	1	ug/l	ND	1.5	ND	75	ND	3	ND	15	ND	7.5	ND	15	ND	1.5	ND	1.5
1,1-Dichloroethane (DCA)	75-34-3	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	4J	12	ND	25	ND	2.5	ND	2.5
1,1-Dichloroethene (DCE)	75-35-4	5	ug/l	**0.28J**	0.5	**20J**	25	**1.7**	1	**4.4J**	5	**2.8**	2.5	**4.1J**	5	ND	0.5	ND	0.5
1,2,3-Trichlorobenzene	87-61-6	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
1,2,4-Trichlorobenzene	120-82-1	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
1,2-Dibromo-3-chloropropane	96-12-8	0.04	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
1,2-Dibromoethane	106-93-4	0.0006	ug/l	ND	2	ND	100	ND	4	ND	20	ND	10	ND	20	ND	2	ND	2
1,2-Dichlorobenzene	95-50-1	3	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
1,2-Dichloroethane	107-06-2	0.6	ug/l	ND	0.5	ND	25	ND	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
1,2-Dichloropropane	78-87-5	1	ug/l	ND	1	ND	50	ND	2	ND	10	ND	5	ND	10	ND	1	ND	1
1,3-Dichlorobenzene	541-73-1	3	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
1,4-Dichlorobenzene	106-46-7	3	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
1,4-Dioxane	123-91-1	0.35	ug/l	ND	250	ND	12000	ND	500	ND	2500	ND	1200	ND	2500	ND	250	ND	250
2-Butanone	78-93-3	50	ug/l	ND	5	ND	250	ND	10	ND	50	ND	25	ND	50	ND	5	ND	5
2-Hexanone	591-78-6	50	ug/l	ND	5	ND	250	ND	10	ND	50	ND	25	ND	50	ND	5	ND	5
4-Methyl-2-pentanone	108-10-1		ug/l	ND	5	ND	250	ND	10	ND	50	ND	25	ND	50	ND	5	ND	5
Acetone	67-64-1	50	ug/l	ND	5	ND	250	ND	10	ND	50	ND	25	ND	50	ND	5	ND	5
Benzene	71-43-2	1	ug/l	ND	0.5	ND	25	ND	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
Bromochloromethane	74-97-5	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Bromodichloromethane	75-27-4	50	ug/l	**1.4**	0.5	ND	25	**0.52J**	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
Bromoform	75-25-2	50	ug/l	ND	2	ND	100	ND	4	ND	20	ND	10	ND	20	ND	2	ND	2
Bromomethane	74-83-9	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Carbon disulfide	75-15-0	60	ug/l	ND	5	ND	250	ND	10	ND	50	ND	25	ND	50	ND	5	ND	5
Carbon tetrachloride	56-23-5	5	ug/l	ND	0.5	ND	25	ND	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
Chlorobenzene	108-90-7	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Chloroethane	75-00-3	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Chloroform	67-66-3	7	ug/l	**54**	2.5	ND	120	**11**	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Chloromethane	74-87-3		ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
cis-1,2-Dichloroethene (cDCE)	156-59-2	5	ug/l	**16**	2.5	**2100**	120	**180**	5	**690**	25	**420**	12	**700**	25	ND	2.5	ND	2.5
cis-1,3-Dichloropropene	10061-01-5	0.4	ug/l	ND	0.5	ND	25	ND	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
Cyclohexane	110-82-7		ug/l	ND	10	ND	500	ND	20	ND	100	ND	50	ND	100	ND	10	ND	10
Dibromochloromethane	124-48-1	50	ug/l	ND	0.5	ND	25	ND	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
Dichlorodifluoromethane	75-71-8	5	ug/l	ND	5	ND	250	ND	10	ND	50	ND	25	ND	50	ND	5	ND	5
Ethylbenzene	100-41-4	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Freon-113	76-13-1	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Isopropylbenzene	98-82-8	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Methyl Acetate	79-20-9		ug/l	ND	2	ND	100	ND	4	ND	20	ND	10	ND	20	ND	2	ND	2
Methyl cyclohexane	108-87-2		ug/l	ND	10	ND	500	ND	20	ND	100	ND	50	ND	100	ND	10	ND	10
Methyl tert butyl ether	1634-04-4	10	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Methylene chloride	75-09-2	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
o-Xylene	95-47-6	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
p/m-Xylene	179601-23-1	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Styrene	100-42-5	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Tetrachloroethene (PCE)	127-18-4	5	ug/l	**0.3J**	0.5	**98**	25	**2.4**	1	**74**	5	ND	2.5	**73**	5	ND	0.5	ND	0.5
Toluene	108-88-3	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
trans-1,2-Dichloroethene (tDCE)	156-60-5	5	ug/l	**4.3**	2.5	ND	120	**2J**	5	**7.2J**	25	**3.6J**	12	ND	25	ND	2.5	ND	2.5
trans-1,3-Dichloropropene	10061-02-6	0.4	ug/l	ND	0.5	ND	25	ND	1	ND	5	ND	2.5	ND	5	ND	0.5	ND	0.5
Trichloroethene (TCE)	79-01-6	5	ug/l	**120**	0.5	**5200**	25	**98**	1	**1200**	5	**53**	2.5	**1200**	5	**0.22J**	0.5	ND	0.5
Trichlorofluoromethane	75-69-4	5	ug/l	ND	2.5	ND	120	ND	5	ND	25	ND	12	ND	25	ND	2.5	ND	2.5
Vinyl chloride (VC)	75-01-4	2	ug/l	**0.14J**	1	**68**	50	**28**	2	**33**	10	**66**	5	**32**	10	ND	1	ND	1

Notes:
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Gray highlight indicates the respective analytes RL is higher than the AWQS, the analyte is ND but could exceed the respective AWQS.
BOLD - Indicates the analyte was detected above the RL.
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"J" indicates estimated concentration
NY-AWQS - New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

Table 2B - Injection Well Geochemistry Groundwater Data Summary

Groundwater PDI Report and RWP

Former Ithaca Gun Factory BCP Site

121-125 Lake Street, Ithaca, New York

			LOCATION	IJW-01 BASELINE		IJW-02 BASELINE		IJW-03 BASELINE		IJW-04 BASELINE		IJW-05 BASELINE	
			SAMPLING DATE	8/28/2024		8/28/2024		8/28/2024		8/29/2024		8/29/2024	
			LAB SAMPLE ID	L2449259-01		L2449259-02		L2449259-03		L2449503-01		L2449503-02	
			SAMPLE TYPE	WATER		WATER		WATER		WATER		WATER	
Analyte	**CasNum**	**NY-AWQS**	**Units**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**	**Results**	**RL**
Anions by Ion Chromatography													
Chloride	16887-00-6	250000	ug/l	**125000**	5000	**144000**	5000	**104000**	5000	**138000**	5000	**153000**	5000
Sulfate	14808-79-8	250000	ug/l	**19100**	1000	**25000**	1000	**17200**	1000	**35900**	1000	**64000**	1000
Sulfide	18496-25-8	0.002	mg/l	ND	2000	ND	2000	ND	2000	ND	2000	ND	2000
Dissolved Metals													
Calcium, Dissolved	7440-70-2		ug/l	**67800**	100	**64800**	100	**50200**	100	**54700**	100	**77500**	100
Iron, Dissolved	7439-89-6	300	ug/l	**9.1J**	50	**10.5J**	50	ND	50	**9.9J**	50	**13.3J**	50
Magnesium, Dissolved	7439-95-4	35000	ug/l	**12800**	100	**12600**	100	**8690**	100	**10800**	100	**17500**	100
Potassium, Dissolved	7440-09-7		ug/l	**1690J**	2500	**2020J**	2500	**2170J**	2500	**3000**	2500	**3890**	2500
Sodium, Dissolved	7440-23-5	20000	ug/l	**65100**	2000	**74700**	2000	**67200**	2000	**91600**	2000	**82800**	2000
Disolved Gas													
Ethane			ug/l	ND	14	ND	14	ND	14	**33**	14	ND	14
Ethene			ug/l	ND	17	ND	17	ND	17	ND	17	ND	17
Methane			ug/l	**33**	7	**30**	7	ND	7	**110**	7	**43**	7
General Chemistry													
Alkalinity, Bicarbonate	71-52-3		mg CaCO3/L	**171**	2	**173**	2	**161**	2	**174**	2	**182**	2
Alkalinity, Carbonate	3812-32-6		mg CaCO3/L	ND	2	ND	2	ND	2	ND	2	ND	2
Alkalinity, Total	471-34-1		mg CaCO3/L	**171**	2	**173**	2	**161**	2	**174**	2	**182**	2
Iron, Ferric	7439-89-6		ug/l	**540**	500	**1200**	500	**460J**	500	**970J**	500	**3900J**	500
Iron, Ferrous	7439-89-6		ug/l	ND	500	ND	500	ND	500	**90J**	500	**110J**	500
Nitrogen, Nitrate	14797-55-8	10000	ug/l	**450**	100	**310**	100	**110**	100	ND	100	**32J**	100
Total Organic Carbon	7440-44-0		ug/l	**1790**	500	**2040**	500	**2370**	500	**2340**	500	**3510**	1000
Total Metals													
Calcium, Total	7440-70-2		ug/l	**69100**	100	**68000**	100	**52100**	100	**49400**	100	**69000**	100
Iron, Total	7439-89-6	300	ug/l	**537**	50	**1220**	50	**458**	50	**1060**	50	**3980**	50
Magnesium, Total	7439-95-4	35000	ug/l	**12000**	100	**11800**	100	**8060**	100	**11200**	100	**17800**	100
Potassium, Total	7440-09-7		ug/l	**1830J**	2500	**2210J**	2500	**2310J**	2500	**2800**	2500	**3760**	2500
Sodium, Total	7440-23-5	20000	ug/l	**69000**	2000	**82000**	2000	**72400**	2000	**83700**	2000	**73500**	2000

Notes:

Results and Ambient Water Quality Standards (AWQS) reported in ug/l.

Blue highlighted indicates the respective AWQS exceeded.

Gray highlight indicates the respective analytes RL is higher than the AWQS, the analyte is ND but could exceed the respective AWQS.

BOLD - Indicates the analyte was detected above the RL.

Blank space indicates that a AWQS value(s) does not exist for the respective analyte.

"J" indicates estimated concentration

NY-AWQS - New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

Appendices

Appendix A: Field Logs

Appendix B: Existing Well Conditions Photographic Log

Appendix C: Laboratory Analytical Reports

Appendix D: Hydraulic Conductivity Results

Appendix E: Data Usability Summary Report

Appendix F: NYSDEC Form A

Appendix G: Redox Proposed Injection Amendment

Appendix H: Spreadsheets For Environmental Footprint Analysis (SEFA)

Appendix I: Green Remediation BMP Tracker and NYSDEC Form A

Appendix J: Health and Safety Plan

Appendix A

Appendix A-1: Existing Well Groundwater Development Logs

Appendix A-2: Existing Well Groundwater Sampling Logs

Appendix A-3: Bedrock Core Logs

Appendix A-4: Injection Well Construction Logs and Packer Testing Logs

Appendix A-5: Injection Well Groundwater Development Logs

Appendix A-6: Injection Well Groundwater Sampling Logs

Appendix A-1

Existing Well Groundwater Development Logs

C&S Engineers, Inc.
499 Col Eileen Collins Blvd
Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/25/2024	
Time	1305	
Water meter utilized and date last calibrated		
Well Number	MW-01R	
PID Reading (ppm)	0.0	
Diameter (inches)	4.0	
Total Sounded Depth (feet)	63.29	
Static Water Level (feet)	37.50	
H_2O Column (feet)	25.79	
Pump Intake (feet)		
Well Volume (gallons)	16.83	50.49
Amount Evacuated (gallons)	30.00	

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/25/2024							
Time		1310	1320	1333	1343	1358	1412	1430	1445
Volume Extracted	gallons	10	15	2.5	0.5	0.5	0.5	0.25	0.25
Static Water Level (feet)	NA	37.5		58.83	61.47	61.04	61.12	61.05	61.02
pH (Std. Units)	+/-0.1	7.92	7.91	7.8	7.56	7.74	7.43	7.38	7.4
Conductivity (mS/cm)	3%	1.48	1.45	1.48	1.49	1.68	1.72	1.72	1.74
Turbidity (NTU)	10%	1.2	4.4	76.8	863	457	430	272	171
D.O. (mg/L)	10%	4.25	2.89	3.24	3.43	5.58	5.02	7.46	4.5
Temperature (ºC) (ºF)	3%	16.73	16.02	16.09	18.68	16.99	16.95	17.11	17.11
ORP[3](mV)	+/-10 mv	97	99	93	88	64	37	26	28
Appearance		Clear	Clear	VT	VT	VT	VT	VT	ST
Free Product (Yes/No)		No	No	No	No	No	No	No	No
Odor		No	No	No	No	No	No	No	No

Date	Stabilization Criteria	7/25/2024							
Time		1500	1515						
Volume Extracted	gallons	0.25	0.25						
Static Water Level (feet)	NA	61.25	61.17						
pH (Std. Units)	+/-0.1	7.35	7.39						
Conductivity (mS/cm)	3%	1.75	1.75						
Turbidity (NTU)	10%	178	109						
D.O. (mg/L)	10%	4.4	4.1						
Temperature (ºC) (ºF)	3%	17.28	17.3						
ORP[3](mV)	+/-10 mv	30	31						
Appearance		ST							
Free Product (Yes/No)		No							
Odor		No							

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/24/2024	
Time	1405	
Water meter utilized and date last calibrated		
Well Number	MW-03	
PID Reading (ppm)	2.7	
Diameter (inches)	4.0	
Total Sounded Depth (feet)	30.61	
Static Water Level (feet)	10.22	
H_2O Column (feet)	20.39	
Pump Intake (feet)		
Well Volume (gallons)	13.31	39.93
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/24/2024							
Time		1410	1419	1440	1455	1502			
Volume Extracted	gallons		14	3	1.5	1.5			
Static Water Level (feet)	NA	10.22		24.02	26.74	26.99			
pH (Std. Units)	+/-0.1	7.36	7.64	7.46	7.38	7.41			
Conductivity (mS/cm)	3%	0.942	0.793	0.742	0.739	0.742			
Turbidity (NTU)	10%	245	715	287	265	255			
D.O. (mg/L)	10%	7.89	6.84	7.93	8.3	8.24			
Temperature (ºC) (ºF)	3%	20.22	17.89	18.5	17.27	16.65			
ORP[3](mV)	+/-10 mv	36	27	91	98	107			
Appearance		ST	VT	ST	ST	ST			
Free Product (Yes/No)		No	No	No	No	No			
Odor		No	No	No	No	No			

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/24/2024	
Time	1530	
Water meter utilized and date last calibrated		
Well Number	MW-04R	
PID Reading (ppm)	1.7	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	57.36	
Static Water Level (feet)	18.84	
H_2O Column (feet)	38.52	
Pump Intake (feet)		
Well Volume (gallons)	6.29	18.87
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/24/2024							
Time		1537	1542	1555	1607	1619	1629	1636	1646
Volume Extracted	gallons	8	2	2.5	2	2.5	2	1	2
Static Water Level (feet)	NA	18.84	48.68	48.02	48.3	44.12	49.17	50.15	48.21
pH (Std. Units)	+/-0.1	7.8	7.65	7.29	7.09	7.78	7.8	7.72	7.84
Conductivity (mS/cm)	3%	1.15	1.02	0.793	0.718	0.653	0.659	0.671	0.654
Turbidity (NTU)	10%	250	>1000	>1000	>1000	120	106	100	29
D.O. (mg/L)	10%	7.02	6.85	7.32	6.57	5.5	7.55	9.06	6.52
Temperature (ºC) (ºF)	3%	16.36	15.61	16.04	16.2	14.55	14.03	14.02	13.98
ORP[3](mV)	+/-10 mv	30	25	19	24	18	27	41	36
Appearance		ST	VT	VT	VT	T	T	T	
Free Product (Yes/No)		No	No	No	No	No	No	No	
Odor		No	No	No	No	No	No	No	

Date	Stabilization Criteria	1656							
Time									
Volume Extracted	gallons	2							
Static Water Level (feet)	NA	48.6							
pH (Std. Units)	+/-0.1	7.84							
Conductivity (mS/cm)	3%	0.658							
Turbidity (NTU)	10%	64							
D.O. (mg/L)	10%	6.66							
Temperature (ºC) (ºF)	3%	13.83							
ORP[3](mV)	+/-10 mv	39							
Appearance		T							
Free Product (Yes/No)		No							
Odor		No							

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/26/2024	
Time	0945	
Water meter utilized and date last calibrated		
Well Number	MW-05	
PID Reading (ppm)	0.0	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	51.24	
Static Water Level (feet)	42.00	
H_2O Column (feet)	9.24	
Pump Intake (feet)		
Well Volume (gallons)	1.51	4.53
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/26/2024							
Time		0950	1003	1013	1031	1046	1107	1127	1147
Volume Extracted		1	0.5	0.25	0.25	0.15	0.25	0.25	0.25
Static Water Level (feet)	NA	41.5	45.67	46.61	46.42	46.75	45.36	46.52	46.57
pH (Std. Units)	+/-0.1	8.07	7.73	7.48	7.58	7.79	7.44	7.33	7.39
Conductivity (mS/cm)	3%	1.05	1.05	1.05	1.06	1.07	1.07	1.07	1.09
Turbidity (NTU)	10%	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000
D.O. (mg/L)	10%	4.97	4.24	4.83	5.28	4.94	4.88	4.85	4.85
Temperature (ºC) (ºF)	3%	15.83	16.93	16.37	16.69	18.42	17.67	17.35	17.43
ORP[3](mV)	+/-10 mv	123	125	135	127	96	122	128	117
Appearance		VT	VT	VT	VT	VT	VT	VT	VT
Free Product (Yes/No)		No	No	No	No	No	No	No	No
Odor		No	No	No	No	No	No	No	No

Date	Stabilization Criteria	7/26/2024							
Time		1201	1216						
Volume Extracted	gallons	0.2	0.2						
Static Water Level (feet)	NA	46.81	46.78						
pH (Std. Units)	+/-0.1	7.43	7.36						
Conductivity (mS/cm)	3%	1.1	1.08						
Turbidity (NTU)	10%	>1000	>1000						
D.O. (mg/L)	10%	3.77	4.71						
Temperature (ºC) (ºF)	3%	18.55	17.2						
ORP[3](mV)	+/-10 mv	85	109						
Appearance		VT	VT						
Free Product (Yes/No)		No	No						
Odor		No	No						

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Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/24/20204	
Time	1035	
Water meter utilized and date last calibrated		
Well Number	MW-06	
PID Reading (ppm)	0.0	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	40.90	
Static Water Level (feet)	30.15	
H_2O Column (feet)	10.75	
Pump Intake (feet)		
Well Volume (gallons)	1.75	5.25
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/24/2024							
Time		1047	1103	1109	1120	1127	1138	1148	
Volume Extracted	gallons	2	1.5	1	1	1	1	1	
Static Water Level (feet)	NA	30.15	32.49	34.84	35.05	35.54	35.28	36.15	
pH (Std. Units)	+/-0.1	9.09	6.81	6.7	8.19	7.79	7.51	7.49	
Conductivity (mS/cm)	3%	1.57	1.62	1.62	1.6	1.61	1.58	1.57	
Turbidity (NTU)	10%	155	333	>1000	935	>1000	>1000	595	
D.O. (mg/L)	10%	2.55	2.35	3.51	7.36	4.06	5.16	4.23	
Temperature (ºC) (ºF)	3%	16.45	15.82	14.57	14.94	14.5	14.27	14.54	
ORP[3](mV)	+/-10 mv	-157	-69	-60	-114	-100	-83	-92	
Appearance		ST	ST	VT	VT	VT	VT	VT	
Free Product (Yes/No)		No	No	No	No	No	No	No	
Odor		Sulfur	Sulfur	Sulfur	Sulfur	Sulfur	Sulfur	Sulfur	

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/24/2024	
Time	0920	
Water meter utilized and date last calibrated		
Well Number	MW-07	
PID Reading (ppm)	0.0	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	49.80	
Static Water Level (feet)	37.93	
H_2O Column (feet)	11.87	
Pump Intake (feet)		
Well Volume (gallons)	1.94	5.82
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/24/2024							
Time		0929	0944	0957	1007	1015			
Volume Extracted	gallons	2	<.5	<.5	<.5				
Static Water Level (feet)	NA	39.93	46.25	45.58	45.27	46.57			
pH (Std. Units)	+/-0.1	7.98	8.1	7.94	8.39				
Conductivity (mS/cm)	3%	2.43	1.46	0.001	1.52				
Turbidity (NTU)	10%	77.3	79.3	181	63				
D.O. (mg/L)	10%	2.82	5.84	10.4	6.46				
Temperature (ºC) (ºF)	3%	16.96	17.8	19.77	16.28				
ORP[3](mV)	+/-10 mv	-114	-3	29	-28				
Appearance		Cloudy	Cloudy		Cloudy				
Free Product (Yes/No)		No	No		No				
Odor		Sulfur	Sulfur		Sulfur				

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

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Comments

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1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR/HH

WELL DATA

Date	7/23/2024	
Time		
Water meter utilized and date last calibrated		
Well Number	MW-08	
PID Reading (ppm)	1.7	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	58.45	
Static Water Level (feet)	28.17	
H_2O Column (feet)	30.28	
Pump Intake (feet)		
Well Volume (gallons)	4.93	14.79
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	23-Jul							
Time		1318	1323	1329	1338	1344	1353	1400	1407
Volume Extracted	gallons	4	2	0.5	0.5	0.5	0.5	0.5	0.5
Static Water Level (feet)	NA		48.35	51.21	52.2	52.25	52.11	51.94	53.15
pH (Std. Units)	+/-0.1	6.87	7.77	7.26	7.44	7.66	6.7	7.47	7.71
Conductivity (mS/cm)	3%	1.11	1.1	1.11	1.1	1.11	1.12	1.1	1.13
Turbidity (NTU)	10%	231	150	123	180	90.4	52.8	49.1	76.1
D.O. (mg/L)	10%	4.14	4.24	4.38	4.98	6.54	6.49	7.05	7.01
Temperature (ºC) (ºF)	3%	19.9	19.73	17.49	17.51	17.51	17.72	17.49	17.79
ORP[3](mV)	+/-10 mv	10	105	119	78	56	100	17.49	74
Appearance		T	T	T	T	T	T	T	T
Free Product (Yes/No)		No	No	No	No	No	No	No	No
Odor		No	No	No	No	No	No	No	No

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR / HH

WELL DATA

Date	7/23/2024	
Time	0855	
Water meter utilized and date last calibrated		
Well Number	MW-09	
PID Reading (ppm)	1.7	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	58.48	
Static Water Level (feet)	48.37	
H_2O Column (feet)	10.11	
Pump Intake (feet)		
Well Volume (gallons)	1.65	4.95
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/23/2024							
Time		0958	1045	1051	1101	1109	1116	1123	1131
Volume Extracted	gallons	"+/- 1	1	1	0.5	0.5	0.5	0.5	0.5
Static Water Level (feet)	NA	50	48.5	51.41	51.58	51.71	51.89	52.05	51.84
pH (Std. Units)	+/-0.1	8.84	8.71	9.46	9.37	9.08	9.1	8	7.83
Conductivity (mS/cm)	3%	1.56	1.24	1.2	1.25	1.21	1.21	1.2	1.21
Turbidity (NTU)	10%	233	81.4	40.3	48.5	42.1	41.2	31.6	42.7
D.O. (mg/L)	10%	4.21	4.98	6.23	5.41	6.64	5.03	0.84	6.12
Temperature (ºC) (ºF)	3%	21.97	20.56	18.63	18.55	17.33	18.42	17.7	17.08
ORP[3](mV)	+/-10 mv	87	95	70	80	85	89	126	134
Appearance		Cloudy	Cloudy				Cloudy		
Free Product (Yes/No)		No	No	No	No	No	No		
Odor		Sulfur	Sulfur	Sulfur	Sulfur	Sulfur	Sulfur		

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/25/2024	
Time	0915	
Water meter utilized and date last calibrated		
Well Number	MW-10	
PID Reading (ppm)	NA	Cap off
Diameter (inches)	2.0	
Total Sounded Depth (feet)	58.48	
Static Water Level (feet)	18.81	
H_2O Column (feet)	39.67	
Pump Intake (feet)		
Well Volume (gallons)	6.47	19.41
Amount Evacuated (gallons)	44.00	

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments: No cap for well		

FIELD READINGS

Date	Stabilization Criteria	7/25/2024							
Time		918	928	940	950	1010	1030		
Volume Extracted	gallons	11	9	6	6	6	6		
Static Water Level (feet)	NA	18.81	22.07	24.25	24.98	21.83	23.19		
pH (Std. Units)	+/-0.1	7.86	7.61	7.55	7.55	7.52	7.5		
Conductivity (mS/cm)	3%	0.592	0.59	0.254	0.614	0.62	0.617		
Turbidity (NTU)	10%	>1000	>1000	>1000	950	953	939		
D.O. (mg/L)	10%	4.71	4.56	5.94	7.4	7.78	7.5		
Temperature (ºC) (ºF)	3%	16.98	15.92	15.92	14.07	15.27	14.91		
ORP[3](mV)	+/-10 mv	145	168	164	167	165	167		
Appearance		VT	VT	VT	VT	VT	VT		
Free Product (Yes/No)		No	No	No	No	No	No		
Odor		Sulfur	Sulfur	Sulfur	Sulfur	Sulfur	Sulfur		

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Syracuse, NY 13212
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Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	7/25/2024	
Time	1125	
Water meter utilized and date last calibrated		
Well Number	MW-11	
PID Reading (ppm)	1.7	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	54.44	
Static Water Level (feet)	28.24	
H_2O Column (feet)	26.20	
Pump Intake (feet)		
Well Volume (gallons)	4.28	12.84
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/25/2024							
Time		1135	1145	1155	1202	1212	1224		
Volume Extracted	gallons	5	1	0.5	0.3	0.5	0.5		
Static Water Level (feet)	NA	28.24	46.45	47.6	48.66	47.15	48.65	48.49	
pH (Std. Units)	+/-0.1	7.51	7.75	7.55	7.5	7.5	7.4	7.45	
Conductivity (mS/cm)	3%	1.65	1.68	1.72	1.79	1.74	1.77	1.77	
Turbidity (NTU)	10%	178	536	330	804	166	591	172	
D.O. (mg/L)	10%	3.82	5.66	7.11	7.74	7.35	7.37	7.57	
Temperature (ºC) (ºF)	3%	18.27	17.01	16.2	15.68	15.66	15.59	15.3	
ORP[3](mV)	+/-10 mv	84	92	106	99	85	92	93	
Appearance		VT	VT	VT	VT	ST	VT	ST	
Free Product (Yes/No)		No	No	No	No	No	No	No	
Odor		No	No	No	No	No	No	No	

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

Appendix A-2

Existing Well Groundwater Sampling Logs

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Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	8/1/2024	
Time	1405	
Water meter utilized and date last calibrated		
Well Number	MW-01R	
PID Reading (ppm)	0.0	
Diameter (inches)	4.0	
Total Sounded Depth (feet)	63.18	
Static Water Level (feet)	35.18	
H_2O Column (feet)	28.00	
Pump Intake (feet)		
Well Volume (gallons)	18.28	54.84
Amount Evacuated (gallons)	5.30	

SAMPLE DATA

Sample Date	8/1/2024	
Sample Time	1500	
Sampler Initials	WR	
Sample I.D.	MW-01R Pre-Sampling	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/1/2024							
Time		1410	1420	1425	1430	1435	1440	1448	1454
Volume Extracted	gallons	1.5	1	0.75	0.75	0.25	0.25	0.25	0.25
Static Water Level (feet)	NA	36.51	38	39.15	39.72	40.4	41.41	42.49	44.15
pH (Std. Units)	+/-0.1	7.76	7.57	7.54	7.48	7.46	7.49	7.4	7.55
Conductivity (mS/cm)	3%	1.94	2	1.98	1.97	1.98	1.97	1.96	1.97
Turbidity (NTU)	10%	>1000	374	189	175	147	102	99	46.5
D.O. (mg/L)	10%	1.38	4.36	4.04	3.51	3.55	3.52	3.54	3.55
Temperature (ºC) (ºF)	3%	17.4	14.41	16.96	17	16.03	16.26	15.75	15.76
ORP[3](mV)	+/-10 mv	-23	-1	13	10	7	13	5	7
Appearance		VT	ST	T	T	T	T	T	T
Free Product (Yes/No)		No	No	No	No	No	No	No	No
Odor		No	No	No	No	No	No	No	No

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: JT,HH

WELL DATA

Date	7/30/2024	
Time	1430	
Water meter utilized and date last calibrated		
Well Number	MW-03	
PID Reading (ppm)		
Diameter (inches)	4.0	
Total Sounded Depth (feet)	30.82	
Static Water Level (feet)	9.94	
H_2O Column (feet)	20.88	
Pump Intake (feet)		
Well Volume (gallons)	13.64	40.92
Amount Evacuated (gallons)	9.00	

SAMPLE DATA

Sample Date	7/30/2024	
Sample Time	1522	
Sampler Initials	JT/HH	
Sample I.D.	MW-03 Pre-Sampling	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/30/2024							
Time		1437	1442	1447	1452	1457	1502	1507	1512
Volume Extracted	gallons	0.5	0.75	1.5	2.25	2.75	3.25	4	5
Static Water Level (feet)	NA		9.9	9.9	10	10	10	10	10.1
pH (Std. Units)	+/-0.1	7.96	7.29	7.73	7.84	7.35	7.5	7.49	7.42
Conductivity (mS/cm)	3%	0.961	0.941	0.938	0.93	0.913	0.928	0.929	0.937
Turbidity (NTU)	10%	613	553	408	313	284	191	149	90
D.O. (mg/L)	10%	86.7	62	59	98.1	91.5	95.5	91	90.5
Temperature (ºC) (ºF)	3%	15.43	16.28	16.35	15.99	18.21	16.14	15.96	14.58
ORP[3](mV)	+/-10 mv	50	73	89	79	105	103	121	119
Appearance		ST	ST	ST	ST	ST	ST	ST	ST
Free Product (Yes/No)		N	N	N	N	N	N	N	N
Odor		N	N	N	N	N	N	N	N

Date	Stabilization Criteria	7/30/2024							
Time		1517	1522						
Volume Extracted	gallons	7	8						
Static Water Level (feet)	NA	10.2	10.5						
pH (Std. Units)	+/-0.1	7.47	7.4						
Conductivity (mS/cm)	3%	0.926	0.861						
Turbidity (NTU)	10%	48.4	43.6						
D.O. (mg/L)	10%	83.6	78						
Temperature (ºC) (ºF)	3%	14.58	14.78						
ORP[3](mV)	+/-10 mv	123	124						
Appearance		ST	ST						
Free Product (Yes/No)		N	N						
Odor		N	N						

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: ST 1522

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Syracuse, NY 13212
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www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	7/31/2024	
Time	13:00	
Water meter utilized and date last calibrated		
Well Number	MW-04R	
PID Reading (ppm)	33.9	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	57.78	
Static Water Level (feet)	18.79	
H_2O Column (feet)	38.99	
Pump Intake (feet)		
Well Volume (gallons)	6.36	19.08
Amount Evacuated (gallons)	8.00	

SAMPLE DATA

Sample Date	7/31/2024	
Sample Time	1420	
Sampler Initials	HPH	
Sample I.D.	MW-04R Pre-Sampling	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/31/2024							
Time		13:15	13:20	13:25	13:30	13:35	13:40	13:45	13:50
Volume Extracted	gallons	1	1.5	2	3	3.5	4	4.5	5
Static Water Level (feet)	NA	21.82	22.22	22.23	22.45	22.44	22.18	21.86	21.97
pH (Std. Units)	+/-0.1	7.53	7.05	7.04	7.66	7.17	7.21	7.24	7.28
Conductivity (mS/cm)	3%	0.98	0.942	0.906	0.894	0.88	0.871	0.837	0.855
Turbidity (NTU)	10%	341	125	76	68.2	20.5	14.7	72.5	42.3
D.O. (mg/L)	10%	2.51	2.78	3.77	3.95	3.96	4.1	3.76	4.02
Temperature (ºC) (ºF)	3%	14.29	14.26	14.06	13.53	13.58	13.63	15.53	14.62
ORP[3](mV)	+/-10 mv	-62	-14	-4	-2	-9	-12	-21	-12
Appearance		T	ST	C	C	C	C	C	C
Free Product (Yes/No)		No	No	No	No	No	No	No	No
Odor		No	No	No	No	No	No	No	No

Date	Stabilization Criteria								
Time		13:55	14:00	14:05	14:10	14:15			
Volume Extracted	gallons	5.5	6	6.5	7	7.5			
Static Water Level (feet)	NA	22.7	22.65	22.84	22.91	22.93			
pH (Std. Units)	+/-0.1	7.4	7.33	7.31	7.4	7.39			
Conductivity (mS/cm)	3%	0.871	0.87	0.868	0.871	0.872			
Turbidity (NTU)	10%	146	38.4	14.2	5.3	3.3			
D.O. (mg/L)	10%	9.26	8.58	7.98	7.72	7.41			
Temperature (ºC) (ºF)	3%	13	13.16	13.28	13.04	13.02			
ORP[3](mV)	+/-10 mv	22	40	56	59	65			
Appearance		ST	C	C	C	C			
Free Product (Yes/No)		No	No	No	No	No			
Odor		No	No	No	No	No			

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff:

WELL DATA

Date	8/1/2024	
Time	1555	
Water meter utilized and date last calibrated		
Well Number	MW-05	
PID Reading (ppm)	0.0 ppm	
Diameter (inches)	2.0	
Total Sounded Depth (feet)	51.39	
Static Water Level (feet)	43.14	
H_2O Column (feet)	8.25	
Pump Intake (feet)		
Well Volume (gallons)	1.35	4.05
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/1/2024							
Time		1603	1610						
Volume Extracted									
Static Water Level (feet)	NA	46.65							
pH (Std. Units)	+/-0.1	7.58	7.63						
Conductivity (mS/cm)	3%	1.03	1.03						
Turbidity (NTU)	10%		596						
D.O. (mg/L)	10%	1.57	1.39						
Temperature (ºC) (ºF)	3%	25.28	21.83						
ORP[3](mV)	+/-10 mv	83	93						
Appearance		ST							
Free Product (Yes/No)		No							
Odor		No							

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments:

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499 Col Eileen Collins Blvd
Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	7/31/2024	
Time	1055	
Water meter utilized and date last calibrated		
Well Number	MW-06	
PID Reading (ppm)	0.0 ppm	
Diameter (inches)	2"	
Total Sounded Depth (feet)	41.35	
Static Water Level (feet)	29.80	
H_2O Column (feet)	11.55	
Pump Intake (feet)		
Well Volume (gallons)	1.88	5.64
Amount Evacuated (gallons)	7.50	

SAMPLE DATA

Sample Date	7/31/2024	
Sample Time	12:20	
Sampler Initials	HPH	
Sample I.D.	MW-06 Pre-sampling	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/31/2024							
Time		11:20	11:25	11:30	11:35	11:40	11:45	11:50	11:55
Volume Extracted	gallons	1	1.5	2	2.25	2.5	2.75	4	4.5
Static Water Level (feet)	NA	33.67	34.14	34.34	34.19	34.02	33.98	37.03	37.76
pH (Std. Units)	+/-0.1	7.94	7.66	7.51	7.48	7.53	7.56	7.65	7.62
Conductivity (mS/cm)	3%	1.5	1.4	1.39	1.42	1.46	1.48	1.49	1.48
Turbidity (NTU)	10%	154	73.9	37.7	19.4	13.5	12.2	3.4	5
D.O. (mg/L)	10%	7.66	4.72	4.25	4.02	3.7	3.48	3.02	2.72
Temperature (ºC) (ºF)	3%	19.29	20.95	20.95	20.86	21.03	21.21	20.48	20.19
ORP[3](mV)	+/-10 mv	-69	-77	-81	-89	-97	-102	-106	-121
Appearance		ST	C	C	C	C	C	C	C
Free Product (Yes/No)		No	No	No	No	No	No	No	No
Odor		No	No	No	No	No	No	No	No

Date	Stabilization Criteria	7/31/2024							
Time		12:00	12:05	12:10	12:15				
Volume Extracted	gallons	5	5.5	6	6.5				
Static Water Level (feet)	NA	38.13	38.55	38.97					
pH (Std. Units)	+/-0.1	7.64	7.67	7.68	7.7				
Conductivity (mS/cm)	3%	1.52	1.52	1.53	1.53				
Turbidity (NTU)	10%	5.3	6.2	5.3	3.7				
D.O. (mg/L)	10%	2.44	2.18	2.04	1.92				
Temperature (ºC) (ºF)	3%	20.12	20.38	20.42	20.35				
ORP[3](mV)	+/-10 mv	-121	-121	-121	-118				
Appearance		C	C	C	C				
Free Product (Yes/No)		No	No	No	No				
Odor		No	No	No	No				

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: Hayden Haas, Maya Couto

WELL DATA

Date	7/31/2024	
Time	9:10	
Water meter utilized and date last calibrated		
Well Number	MW-07	
PID Reading (ppm)	0.0	
Diameter (inches)	2"	
Total Sounded Depth (feet)	50.93	
Static Water Level (feet)	37.49	
H_2O Column (feet)	13.44	
Pump Intake (feet)		
Well Volume (gallons)	2.19	6.57
Amount Evacuated (gallons)	5.50	

SAMPLE DATA

Sample Date	7/31/2024	
Sample Time	10:05	
Sampler Initials	HH, MC	
Sample I.D.	MW-07 Pre-sampling	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/31/2024							
Time		9:25	9:30	9:35	9:40	9:45	9:50	9:55	10:00
Volume Extracted	gallons	0.5	1.5	2	2.5	3	3.5	4	4.5
Static Water Level (feet)	NA	41.34	42.22	42.08	44.58	45.59	46.67	47.09	47.83
pH (Std. Units)	+/-0.1	7.53	7.69	7.41	7.49	7.59	7.6	7.61	7.62
Conductivity (mS/cm)	3%	1.83	1.59	1.44	1.4	1.37	1.35	1.35	1.35
Turbidity (NTU)	10%	51.4	12.5	8.7	9.5	12.8	14.5	14.1	13.3
D.O. (mg/L)	10%	4.39	7.45	6.83	6.44	6.55	6.71	6.72	6.67
Temperature (ºC) (ºF)	3%	13.43	12.75	15.19	16.15	16.51	16.71	16.8	16.95
ORP[3](mV)	+/-10 mv	116	101	126	126	119	126	124	127
Appearance		C	C	C	C	C	C	C	C
Free Product (Yes/No)		No	No	No	No	No	No	No	No
Odor		No	No	No	No	No	No	No	No

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments:

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH / JT / MC

WELL DATA

Date	7/30/2024	
Time		
Water meter utilized and date last calibrated		
Well Number	MW-08	
PID Reading (ppm)	30.1 ppm	
Diameter (inches)	2"	
Total Sounded Depth (feet)	58.68	
Static Water Level (feet)	25.99	
H_2O Column (feet)	32.69	
Pump Intake (ml/min)	260.00	
Well Volume (gallons)	5.33	15.99
Amount Evacuated (gallons)	7.00	

SAMPLE DATA

Sample Date	7/30/2024	
Sample Time	1245	
Sampler Initials	HH / JT / MC	
Sample I.D.	MW-08 Pre-Sampling	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/30/2024							
Time		1150	1155	1200	1205	1210	1215	1220	1225
Volume Extracted	gallons	1	1.5	1.75	2	2.5	3	3.5	4
Static Water Level (feet)	NA	32.53		37.27			43.89		
pH (Std. Units)	+/-0.1	8.22	7.7	8.29	7.8	7.76	7.69	8.25	7.84
Conductivity (mS/cm)	3%	1.23	1.19	1.18	1.18	1.19	1.19	1.2	1.2
Turbidity (NTU)	10%	18.2	11.2	9.2	11.8	11.3	12.2	12.4	12.4
D.O. (mg/L)	10%	2.14	1.55	1.36	1.34	1.18	0.98	1.01	1.04
Temperature (ºC) (ºF)	3%	14.63	16.01	16.37	16.04	15.49	16.21	15.16	15.44
ORP[3](mV)	+/-10 mv	102	92	67	58	46	41	13	34
Appearance		Clear		Clear					
Free Product (Yes/No)		No		No					
Odor		No		No					

Date	Stabilization Criteria	7/30/2024							
Time		1235	1240	1245					
Volume Extracted	gallons	5	5.5	6					
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.8	7.83	7.81					
Conductivity (mS/cm)	3%	1.22	1.21	1.22					
Turbidity (NTU)	10%	4.6	4.8	4.7					
D.O. (mg/L)	10%	1.08	1.13	1.19					
Temperature (ºC) (ºF)	3%	16.23	16.24	16.36					
ORP[3](mV)	+/-10 mv	22	22	19					
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: changing ambient air temp might have been affecting the groundwater temperature.

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff:

WELL DATA

Date	7/30/2024	
Time		
Water meter utilized and date last calibrated		
Well Number	MW-09	
PID Reading (ppm)	0.0 ppm	
Diameter (inches)	2"	
Total Sounded Depth (feet)	59.14	
Static Water Level (feet)	45.08	
H_2O Column (feet)	14.06	
Pump Intake (ml/min)	308.00	
Well Volume (gallons)	2.29	3 / 6.87
Amount to Evacuate (gallons)		
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date	7/30/204	
Sample Time	1107	
Sampler Initials	HH/ JT/ MC	
Sample I.D.	MW-09 Pre-Sampling	
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	7/30/2024							
Time		1008	1013	1025	1030	1035	1040	1045	1050
Volume Extracted	gallons	0.5	1	1.5	2	2.5	3	3.5	
Static Water Level (feet)	NA	48.46	48.81	49.31	50.29	50.47	50.49	50.63	
pH (Std. Units)	+/-0.1	7.85	7.84	8.1	7.84	7.87	7.92	7.94	7.97
Conductivity (mS/cm)	3%	1.37	1.35	1.36	1.32	1.29	1.29	1.25	1.24
Turbidity (NTU)	10%	76.2	1000	731	394	204	174	180	151
D.O. (mg/L)	10%	11.5	10.12	10.74	10.91	10.74	10.43	10.57	10.5
Temperature (ºC) (ºF)	3%	18.08	18.49	15.86	15.04	14.86	15.2	15.13	15.07
ORP[3](mV)	+/-10 mv	101	99	105	114	112	109	104	101
Appearance		Cloudy	ST	ST					
Free Product (Yes/No)		No							
Odor		No							

Date	Stabilization Criteria	7/30/2024							
Time		1055	1100	1105					
Volume Extracted	gallons	51.82							
Static Water Level (feet)	NA	51.82	51.89						
pH (Std. Units)	+/-0.1	7.86	7.89	7.85					
Conductivity (mS/cm)	3%	1.23	1.24	1.23					
Turbidity (NTU)	10%	91.2	94.5	50					
D.O. (mg/L)	10%	10.77	10.44	10.47					
Temperature (ºC) (ºF)	3%	14.26	14.14	14.12					
ORP[3](mV)	+/-10 mv	102	109	110					
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Fax: 315-455-9667
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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR / MC

WELL DATA

Date	8/1/2024	
Time	9:00	
Water meter utilized and date last calibrated	Horiba	
Well Number	MW-10	
PID Reading (ppm)	No cap	
Diameter (inches)	2"	
Total Sounded Depth (feet)	45.05	
Static Water Level (feet)	18.86	
H_2O Column (feet)	26.19	
Pump Intake (feet)		
Well Volume (gallons)	4.45	
Amount to Evacuate (gallons)		
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date	8/1/2024	
Sample Time	1030	
Sampler Initials	WR / MC	
Sample I.D.	MW-10	
Dupe Collected?	☐ Yes ☐ No	ID: yes
MS Collected?	☐ Yes ☐ No	ID: yes
MSD Collected?	☐ Yes ☐ No	ID: yes
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments: put an orange cap on well after sampling		

FIELD READINGS

Date	Stabilization Criteria	8/1/2024							
Time		0901	0907	0917	0927	0940	947	957	1007
Volume Extracted	gallons	0.5	0.5	0.5	0.75	1	1	1	1
Static Water Level (feet)	NA	19.61	19.96	19.76	20.06	19.87	19.45	19.81	19.71
pH (Std. Units)	+/-0.1	7.75	7.69	7.34	7.77	7.77	7.69	7.85	7.68
Conductivity (mS/cm)	3%	0.725	0.766	0.757	0.753	0.746	0.729	0.734	0.732
Turbidity (NTU)	10%	>1000	498	20.6	24.1	7.1	2.7	9.4	12.3
D.O. (mg/L)	10%	5.11	5	4.42	4.29	4.24	3.97	3.89	3.68
Temperature (ºC) (ºF)	3%	18.06	16.64	17.09	16.29	16.68	18.78	17.64	18.24
ORP[3](mV)	+/-10 mv	214	214	208	178	169	169	162	165
Appearance		ST	ST	T	T	ST	C		
Free Product (Yes/No)		No	No	No	No	No	No		
Odor		No	No	N	No	No	No		

Date	Stabilization Criteria	1-Aug							
Time		1017	1027	1032					
Volume Extracted	gallons	1	0.5	0.25					
Static Water Level (feet)	NA	19.65	19.65	19.84					
pH (Std. Units)	+/-0.1	7.81	7.84	7.86					
Conductivity (mS/cm)	3%	0.727	0.726	0.738					
Turbidity (NTU)	10%	3.9	5.5	6.1					
D.O. (mg/L)	10%	3.41	3.3	3.41					
Temperature (ºC) (ºF)	3%	18.92	19.21	18.27					
ORP[3](mV)	+/-10 mv	161	157	156					
Appearance									
Free Product (Yes/No)									
Odor									

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Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	8/1/2024	
Time	11:30	
Water meter utilized and date last calibrated	Horiba	
Well Number	MW-11	
PID Reading (ppm)		
Diameter (inches)	2"	
Total Sounded Depth (feet)	55.34	
Static Water Level (feet)	28.95	
H_2O Column (feet)	26.39	
Pump Intake (feet)		
Well Volume (gallons)	4.31	12.93
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date	8/1/2024	
Sample Time	1200	
Sampler Initials	WR	
Sample I.D.	MW-11 Pr-Sampling	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/1/2024							
Time		11:37	11:43	11:48	11:53	11:58			
Volume Extracted	gallons	1	1	1	1	1			
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.93	7.76	7.71	7.68	7.85			
Conductivity (mS/cm)	3%	1.6	1.85	1.8	1.98	2.11			
Turbidity (NTU)	10%	25.1	11.9	22.2	38.3	68.5			
D.O. (mg/L)	10%	4.16	4.79	4.13	4.52	5.01			
Temperature (ºC) (ºF)	3%	25.03	17.95	19.49	17.01	15.89			
ORP[3](mV)	+/-10 mv	106	119	124	126	123			
Appearance									
Free Product (Yes/No)									
Odor									

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: Could not fit monsoon pump in well. There is an obstruction that won't fit pump due to size of pump. A bailer went down the well due to the narrower size. 5-gallons was bailed out and then sampling was done.

Appendix A-3

Bedrock Core Logs

C&S Engineers, Inc.
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Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Rock Core Log

Core No.	**IJW-01**
Sheet No.:	1 of 3
Project No.:	X55.002.001
Surface Elev.:	522.8
Datum:	
Start Date/Time:	7/24/24 / 0945
Finish Date/Time:	7/25/2024 / 1153
Inspector:	HNB, HH
Undist:	

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATES INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN.	**Diameter:**	3.875"
Sampler:	HQ Core Barrel	**GPS Coordinates:**	
Hammer:	NA (Wet Rotary)		

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
1					STEEL CASING SET BY DRILLING 0-3 FT. DEPTH W/ 6.25 INCH I.D. HOLLOW STEM AUGER. 5 INCH DIAMETER STEEL CASING SET IN CONCRETE TO 3FT. DEPTH. CORING BEGINS AT 3FT. BELOW BEDROCK SURFACE.				
2									
3									
	1015		2M 45S		MEDIUM TO DARK **GRAY SILTSTONE,** FINE				
4		1	1800 RPM		GRAINED, THINLY BEDDED TO LAMINDATED		NONE	500 PSI	
5			3M 35S	60"					
6			2M 28S	100%					
7			2M 27S						
8	1031		3M 37S						
	1047		1800 RPM		**SAME AS ABOVE (SAA)**				
9		2	3M30S				NONE	500 PSI	
10			3M 26S	60"					
11			2M 43S	100%					
12			2M 59S						
13	1104		3M 10S						
	1118		1800 RPM		**SAA**				
14		3	4M 8S				NONE	600 PSI	
15			4M 10S	60"					
16			2M 18S	100%					
17			2M 43S						
18	1135		3M 0S						
	1151		1800 RPM		**SAA**				
19		4	2M 36S				NONE	600 PSI	FRACTURES AT 18.6', 18.9', 19.4', 20.2', 21.0', 21.3', 21.5', 22.3', 22.7'.
20			2M 25S	60"					
21			2M 32S	100%		54.5" / 60"			
22			2M 34S			91%			
23	1208		3M23S						
	1216		1800 RPM		**SAA**				
24		5	2M 26S			29.75 / 60		600 PSI	FRACTURES AT 23.2', 23.4', 23.8', 23.9', 24.0', 24.3', 24.6', 25.3', 25.4', 25.7', 25.9', 26.8',
25			2M 23S			50%			
26			2M 41S	60"					FRACTURES CONT' AT . 27.3', 27.4'.
27			2M 20S	100%					
28	1229		2M 59S						

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Rock Core Log

Core No.	IJW-01
Sheet No.:	2 of 3
Project No.:	X55.002.001
Surface Elev.:	522.8
Datum:	
Start Date/Time:	7/24/24 / 0945
Finish Date/Time:	7/25/2024 / 1153
Inspector:	HNB, HH
Undist:	

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATES INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN.	Diameter:	3.875"
Sampler:	HQ Core Barrel	GPS Coordinates:	
Hammer:	NA (Wet Rotary)		

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
	1250		1800 RPM		SAA				FRACTURES AT 28.6', 29.3',
29		6	1M 35S				NONE	600 PSI	30.8', 31.2', 32.4'.
				60"					
30			2M 13S			60			
						60			
31			2M 16S	100%					
						100%			
32			2M 7S						
33	1305		2M 29S						
	1320		1800 RPM		SAA				FRACTURES AT 34.4', 34.6',
34		7	1M 35S				NONE	600 PSI	34.9', 36.0', 36.1', 36.5', 37.0'.
35			2M 5S	60"		54			
						60			
36			2M 44S						
				100%		90%			
37			2M 16S						
38	1332		2M 47S						
	1457		1800 RPM		SAA				FRACTURES AT 38.5', 40.5'.
39		8	2M 33S				NONE	600 PSI	VERTICAL FRACTURES AT 30
						60			38.5 FT.
40			2M 3S	59"		60			
41			2M 57S	98%		100%			
42			2M18S						
43	1505		2M 42S						
	1512		1800 RPM		SAA				FRACTURES AT 45.8', 46.9',
44		9					NONE	600 PSI	47.,4', 47.7'.
						55			
45			2M 58S	59"		60			
46			2M 25S			90%			
47			1M 54S						
48	1529		3M 22S						
	0929		1800 RPM		SAA				FRACTURES AT 52.4'
49		10	2M 5S						
							NONE	600 PSI	
50			2M 37S			100%			
				100%					
51			2M 29S						
52			2M 24S						
53	0941		SM 26S						
	1009		1800 RPM		SAA				
54		11	2M 11S						
							NONE	600 PSI	
55			2M 27S	100%		100%			
56			2M 18S						
57			2M 3S						
58	1020		2M 15S						

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Rock Core Log

Core No.	**IJW-01**
Sheet No.:	3 of 3
Project No.:	X55.002.001
Surface Elev.:	522.8
Datum:	
Start Date/Time:	7/24/24 / 0945
Finish Date/Time:	7/25/2024 / 1153
Inspector:	HNB, HH

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATES INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN.	**Diameter:**	3.875"
Sampler:	HQ Core Barrel	**GPS Coordinates:**	
Hammer:	NA (Wet Rotary)		

Undist:

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
	1038		1800 RPM		**SAA**				FRACTURES AT 62.6'.
59		12	2M						
60			2M 5S						
61			2M 4S						
62			2M 4S	100%		100	NONE	600 PSI	
63	1049		2M 10S						
	1109		1800 RPM		**SAA**				FRACTRURE AT 64.1', 65.2', VERTIUCAL FRACTURES 65.6'-68.01'
64		13	2M 17S						
						56.5			
65			1M 54S			60			
				94%					
66			2M 9S			94%	NONE	600 PSI	
67			2M 13S						
68	1111		2M 45S						
			1800 RPM		**SAA**				FRACTURES AT 68.5', 68.9'.
69		14	2M 13S	100			NONE	600 PSI	
						100			
70	1131		2M 41S						
	1132		1M 23S	100	**SAA**	100	none	600 PSI	
71	1153								
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									

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Rock Core Log

Core No.	**IJW-02**
Sheet No.:	1 of 3
Project No.:	X55.002.001
Surface Elev.:	
Datum:	
Start Date/Time:	7/25/24 / 1457
Finish Date/Time:	8/6/24 / 1545
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATION INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN	**Diameter:**	3.875"
Sampler:	HQ CORE BARREL	**GPS Coordinates:**	
Hammer:	NA (WET)		

Undist:

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
1					STEEL CASING SET BY DRILLING 0-3 FT. DEPTH W/ 6.25 INCH I.D. HOLLOW STEM AUGER. 5 INCH DIAMETER STEEL CASING SET IN CONCRETE TO 3FT. DEPTH. CORING BEGINS AT 3FT. BELOW BEDROCK SURFACE				
2									
3									
	1457		1800 RPM		MEDIUM TO DARK GRAY **SILTSTONE**, FINE				FRACTURES AT 3.3', 3.5', 3.6', 3.7', 3.9', 4.0', 4.3', 4.6', 4.8', 4.9', 5.0, 5.2', 5.5', 5.7', 6.0', 6.1', 6.4' , 6.6', 6.7', 6.9', 7.1', 7.4'. VERTICAL FRACTURES 7.4' - 7.5' 3.1'
4		1	1M 55S		GRAINED, THINLY BEDDED TO LAMINDATED	0%	NONE	600PSI	
5			1M 36S						
6				100%					
			2M1S						
7			1M54S						
	1505		34S						
8	1522				**Same As Above (SAA)**				FRACTURES AT 8.1', 8.9', 8.5', 8/9', 9.1', 9.2', 9.4', 9.8', 10.0', 10.2', 10.5', 10.9', 11.2', 11.5', 11.9', 12.0', 12.2', 12.4', 12.6', 12.8', 12.9'.
		2	1M 58S				NONE	600 PSI	
9				100%					
			2M 22S			27.5			
10						60			
			1M 58S						
11						46%			
			2M 8S						
12									
	1533		2M 14S						
13	1554				**SAA**				FRACTURES AT 14.0', 14.2', 14.4', 14.8', 15.0', 15.4', 15.6', 15.8', 16.6', 16.8', 17.0', 17.6', 18.0', 18.3'.
		3	2M 12S				NONE	600 PSI	
14				100%					
			2M 14S			34			
15						60			
			1M 45S						
16						56%			
			2M 6S						CONSTRUCTION CONCLUDED 7/25/24
17									
	1600		2M 4S						
18	0914		1800 RPM		**SAA**				FRACTURES AT 17.7', 17.9', 18.3', 18.4', 18.6', 18.8', 19.2', 19.4', 19.6', 20.0', 20.3', 20.6', 20.9', 21.3', 21.7', 22.4'. VERTICALE FRACTURES 20.9' - 21.3', 17.7' - 17.9'.
		4	2M 37S				NONE	600 PSI	
19				100%					
			2M 6S			21.5			
20						60			
			2M 22S						
21						35%			
			2M 22S						
22									
	0926		2M 15S						
23	0938				**SAA**				FRACTURES AT 22.7', 22.9', 23.2', 23.3', 23.4', 23.7', 24.1', 24.3', 24,9', 25.0', 25.3', 25.6', 26.0', 27.1'. VERTICAL FRACTURES 22.7' - 22.9'
		5	1M 57S				NONE	600 PSI	
24				100%		32.5			
			2M 3S			60			
25						54%			
			2M 11S						
26									
			2M 27S						
27									
			2M 22S						

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Rock Core Log

Core No.	IJW-02
Sheet No.:	2 of 3
Project No.:	X55.002.001
Surface Elev.:	
Datum:	
Start Date/Time:	7/25/24 / 1457
Finish Date/Time:	8/6/24 / 1545
Inspector:	HH
Undist:	

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATION INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN	Diameter:	3.875"
Sampler:	HQ CORE BARREL	GPS Coordinates:	
Hammer:	NA (WET)		

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
28	1000				**SAA**				FRACTURES AT 28.2', 30.7', 31.7'. VERTICAL FRACTURES 28.6' - 29.5', 29.9' - 30.2', 32.2'
		6	2M 41S						
29				100%		100%			
			2M 18S						
30									
			2M 18S						
31									
			2M 18S						
32									
			2M 33S						
33			1800 RPM		**SAA FOSSILS**				FRACTURES AT 33.6', 34.1', 35.3', 35.8', 36.1', 36.3'.
		7	2M 41S				NONE	600 PSI	
34				100%		54			
			2M 36S			60			
35									
			2M 39S			90%			
36									
			2M 50S						
37									
			3M 2S						
38			1800 RPM		**SAA FOSSILS**				FRACTURES AT 37.8', 38.9'.
		8	3M 2S				NONE	600 PSI	
39				98%		60			
			2M 41S			60			
40									
			2M 41S			100%			
41									
			2M 40S						
42									
			3M 12S						
43					**SAA FOSSILS**				FRACTURES AT 42.8', 44.8', 46.6', 46.7'.
		9	2M 44S				NONE	600 PSI	
44				100%		57			
			2M 34S			60			
45									
			2M 48S			95%			
46									
			2M 15S						
47									
			2M 47S						
48					**SAA**				FRACTURES AT 51.0'.
		10	2M 38S				NONE	600 PSI	
49				57.5		100%			
			2M 27S	60					
50									
			2M 48S	95%					
51									
			2M 15S						
52									
			2M 47S						
53					**SAA**				
		11	2M 38S				NONE	600 PSI	
54									
			2M 18S	100%		100%			
55									
			2M 22S		**SAA**				
56									
			2M 8S						
57									
			2M 21S						

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Rock Core Log

Core No.	**IJW-02**
Sheet No.:	3 of 3
Project No.:	X55.002.001
Surface Elev.:	
Datum:	
Start Date/Time:	7/25/24 / 1457
Finish Date/Time:	8/6/24 / 1545
Inspector:	HH
Undist:	

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATION INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN	**Diameter:**	3.875"
Sampler:	HQ CORE BARREL	**GPS Coordinates:**	
Hammer:	NA (WET)		

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
58			1800 RPM		**SAA**				FRACTURES AT 61.6'. VERTICAL FRACTURES 59.5' - 60.2'.
		12	2M				NONE	600 PSI	
59				100%		100%			
			2M 2S						
60									
			2M 18S						
61									
			2M 22S						
62									
			2M 38S						
63					**SAA**				FRACTURES AT 65.7'. VERTICAL FRACTURES 64' - 64.5'.
		13	1M 53S				NONE	600 PSI	
64				58		100%			
			2M 17S	60					
65									
			2M 37S	97%					
66									
			2M 16S						
67									
			2M 36S						
68			1800 RPM		**SAA FOSSILS**				FRACTURES 70.1'.
		14	2M 39S				NONE	600 PSI	
69				100%		100%			
			2M 44S						
70									
			2M 16S						
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									

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Rock Core Log

Core No.	**IJW-03**
Sheet No.:	1 of 3
Project No.:	X55.002.001
Surface Elev.:	522.9'
Datum:	
Start Date/Time:	8/7/24
Finish Date/Time:	8/8/24
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site						
Location:	121 - 125 Lake Street, Ithaca New York						
Client:	Visum Development Group						
Drilling Firm:	CME ASSOCIATES INC.						
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**	CME 550X			
While Drilling:			**Core Legnth:**	60 IN.	**Diameter:**	3.875"	**Undist:**
Before Casing Removal:			**Sampler:**	HQ Core Barrel	**GPS Coordinates:**		
After Casing Removal:			**Hammer:**	NA (Wet Rotary			

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
1					STEEL CASING SET BY DRILLING 0-3 FT. DEPTH W/ 6.25 INCH I.D. HOLLOW STEM AUGER. 5 INCH DIAMETER STEEL CASING SET IN CONCRETE TO 3.25FT. DEPTH. CORING BEGINS AT 3FT. BELOW BEDROCK SURFACE.				
2									
3									
4			1800 rpm		MEDIUM TO DARK GRAY **SILTSTONE**, FINE GRAINED, THINLY BEDDED TO LAMINDATED, FOSSIL				FRACTURES AT 3.0', 3.1', 3.3', 3.4', 3.7', 3.9', 4.1', 4.6', 4.8', 5.1', 5.2', 5.5', 6.1', 6.5', 7.0'.
		1	47S						
5			1M 14S	96%		33.5			
						54			
6			1M 32S						
						62%			
7			1M 32S						FREE PRODUCT SHEEN AND STRONG ODOR
			2M 7S						
8					**SAME AS ABOVE (SAA) FOSSIL**				FRACTURES AT 7.7', 7.9', 8.2', 8.4', 8.6', 9.1', 9.3', 10.0', 11.0', 11.2', 11.4', 11.6', 11.7', 11.9', 12.0', 12.3'. VERTICAL FRACTURES 10.2' - 10.6'
		2	1M 38S						
9				100%		12			
			1M 46S			60			
10									
			1M 48S			20%			
11									
			1M 48S						
12									
			2M 16S						
13					**SAA FOSSIL**				FRACTURES AT 12.6', 12.7', 13.2', 13.3', 13.9', 14.3', 14.8', 15.2', 15.5', 16.2', 16.6', 17.1', VERTICAL FRACTURES 15.2 - 15.3
		3	1M 41S						
14				100%		10			
			1M 42S			60			
15									
			1M 42S						
16						16%			
			1M 54S						
17									
			2M 7S						
18					**SAA FOSSIL**				FRACTURES AT 17.9', 18.2', 18.8', 19.1', 19.4', 19.8', 20.1', 20.3', 20.6', 21.0', 21.3', 21.5', 21.6', 22.1
		4	1M 52S						
19				100%		32			
			1M 40S			60			
20									
			1M 51S			53%			
21									
			2M 10S						
22									
			2M 25S						
23					**SAA**				FRACTURES AT 22.6', 23.1', 23.2', 23.6', 23.9', 24.2', 24.8', 25.4', 26.4', 27.0'.
		5	1M 43S			49.5	NONE		
24				100%		60			
			1M 53S						
25						83%			
			1M 44S						
26									
			1M 58S						
27									
			2M 18S						

C&S COMPANIES	**C&S Engineers, Inc.** 499 Col Eileen Collins Blvd Syracuse, New York 13212 Phone: 315-455-2000 Fax: 315-455-9667 www.cscos.com	**Rock Core Log**		***Core No.***	**IJW-03**
				Sheet No.:	2 of 3
				Project No.:	X55.002.001
Project Name:	Former Ithaca Gun Factory BCP Site			***Surface Elev.:***	522.9'
Location:	121 - 125 Lake Street, Ithaca New York			***Datum:***	
Client:	Visum Development Group			***Start Date/Time:***	8/7/24
Drilling Firm:	CME ASSOCIATES INC.			***Finish Date/Time:***	8/8/24
Groundwater	***Depth***	**Date & Time**	***Drill Rig:*** CME 550X	***Inspector:***	HH
While Drilling:			***Core Legnth:*** 60 IN.	***Diameter:*** 3.875"	***Undist:***
Before Casing Removal:			***Sampler:*** HQ Core Barrel	***GPS Coordinates:***	
After Casing Removal:			***Hammer:*** NA (Wet Rotary		

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
28					**SAA**				FRACTURES 28.2', 28.7', 29.0', 29.2', 29.5', 29.6'.
		6	1M 31S				NONE		
29				100%		46			
			1M 43S			60			
30									
			2M 18S			76%			
31									
			1M 49S						
32									
			2M 52S						
33					**SAA**				FRACTURES AT 33.1', 34.1', 34.8', 35.5', 35.6', 36.0', 37.2', 30.5', 30.7', 31.8 VERTICAL FRACTURES 30.9 - 31.6
		7	1M 26S						
34				100%		58.5			
			1M 43S			60			
35									
			1M 50S			9.75%			
36									
			3M 7S						
37									
			2M 29S						
38					**SAA**				NO FRACTURES, ONLY MINOR SOIL BREAKS
		8	1M 47S						
39				100%		100%			
			2M15S						
40									
			1M 58S						
41									
			2M 10S						
42									
			2M 13S						
43					**SAA**				FRACTURES AT 42.6', 44.4', 46.9'.
			1M 57S						
44				100%		100%			
			1M 52S						
45									
			2M 4S						
46									
			1M 51S						
47									
			2M 17S						
48					**SAA**				
49				100%		100%			
50									
			1M 12S						
51									
			2M 6S						
52									
			1M 42S						
53					**SAA**				
			1M 41S						
54									
			1M 18S						
55									
			1M39S						
56									
			1M 33S	100%		100%			
57									
			2M 20S						

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Rock Core Log

Core No.	**IJW-03**
Sheet No.:	3 of 3
Project No.:	X55.002.001
Surface Elev.:	522.9'
Datum:	
Start Date/Time:	8/7/24
Finish Date/Time:	8/8/24
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATES INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN.	**Diameter:**	3.875"
Sampler:	HQ Core Barrel	**GPS Coordinates:**	
Hammer:	NA (Wet Rotary		

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
58					**SAA**				FRACTURES AT 61.9'. VERTICAL FRACTURES 61.7' - 62.1'
			1M 22S						
59				59		60			
			1M 31S	60		60			FREE PRODUCT, ODOR CON:
60									
			1M 50S	98%		100%			
61									
			1M 57S						
62									
			2M 7S						
63					**SAA**				FRACTURES AT 67.5', 70.0'.
			2M 4S						
64				100%		59	NONE		
			1M 57S			60			
65									
			2M 20S			98%			
66									
			2M 30S						
67									
			2M 30S						
68					**SAA**				FRACTURES AT 67.7'. VERTICAL FRACTURES 69.3' - 70.7'
			2M 30S						
69						100%			
			2M 20S						
70									
			2M 37S						
71					**MEASURED TO A DEPTH OF 70.7' bgs**				
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									

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Rock Core Log

Core No.	**IJW-04**
Sheet No.:	1 of 3
Project No.:	X55.002.001
Surface Elev.:	522.0"
Datum:	
Start Date/Time:	8/8/24 / 1400
Finish Date/Time:	8/13/24 / 1216
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site						
Location:	121 - 125 Lake Street, Ithaca New York						
Client:	Visum Development Group						
Drilling Firm:	CME ASSOCIATED, INC.						
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**	CME 550X			
While Drilling:			**Core Legnth:**	60 IN.	**Diameter:**	3.875"	**Undist:**
Before Casing Removal:			**Sampler:**	HQ Core Barrel	**GPS Coordinates:**		
After Casing Removal:			**Hammer:**	NA (Wet Rotary)			

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
1					STEEL CASING SET BY DRILLING 0-3 FT. DEPTH W/ 6.25 INCH I.D. HOLLOW STEM AUGER. 5 INCH DIAMETER STEEL CASING SET IN CONCRETE TO 3FT. DEPTH. CORING BEGINS AT 3FT. BELOW BEDROCK SURFACE.				
2									
3									
4									
			1800 RPM		MEDIUM TO DARK GRAY **SILTSTONE**, FINE		NONE	600 PSI	FRACTURES AT 4.2', 4.5', 4.6', 4.7', 5.0', 5.2', 5.7', 5.9', 6.1', 6.5', 7.1', 7.4', 7.5', 7.6', 7.8', 7.9'.
5	1M 10S	1			GRAINED, THINLY BEDDED TO LAMINDATED	18			
				100%		48			
6	1M 21S								
						37.5%			
7	1M 41S								
8	1M 28S								
			1800 RPM		**SAME AS ABOVE (SAA)**		NONE	600 PSI	FRACTURES AT 8.2', 8.3', 8.5', 8.9', 9.0', 9.1', 9.2', 9.4', 95', 10.7', 11.0', 11.1', 11.2', 11.5', 11.6', 11.8', 11.9', 12.5', 12.7', 12.8', 13.0',
9	1M 45S	2							
				100%		15%			
10	1M 5S								
11	1M 32S								
12	1M 52S								
13	2M								
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 13.1', 13.6', 13.8', 14.2', 14.3', 14.7', 15.0', 15.1', 15.5', 15.7', 16.0', 16.2', 16.5', 16.7', 17.1', 17.5', 17.9'.
14	2M 6S	3							
				100%		43			
15	1M 35S					60			
16	1M 19S					72%			
17	1M 53S								
18	1M 27S								
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 18.1', 18.3', 18.6', 18.7', 19.0', 19.1', 19.4', 19.7', 20.4', 20.9', 21.1', 21.4', 21.7', 22..2', 22.4', 22.7', 22.4'.
19	1M 5S	4							
				100%		30			
20	1, 25S					60			
21	1, 49S					50%			
22	1M 37S								
23	1M 23S								
			1800 RPM		**SAA FOSSILS**				FRACTURES AT 23.3', 23.6', 24.1', 24.8', 25.7', 26.6', 26.9', 27.4'.
24	1m 44s	5				57			
				100%		60			
25	1m 23s					95%			
					SAA				
26	1M 43S								
27	3M 31								
28									

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			Sheet No.:	2 of 3
			Project No.:	X55.002.001

Project Name:	Former Ithaca Gun Factory BCP Site						**Surface Elev.:**	522.0"	
Location:	121 - 125 Lake Street, Ithaca New York						**Datum:**		
Client:	Visum Development Group						**Start Date/Time:**	8/8/24 / 1400	
Drilling Firm:	CME ASSOCIATED, INC.						**Finish Date/Time:**	8/13/24 / 1216	
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**	CME 550X			**Inspector:**	HH	
While Drilling:			**Core Legnth:**	60 IN.	**Diameter:**	3.875"	**Undist:**		
Before Casing Removal:			**Sampler:**	HQ Core Barrel	**GPS Coordinates:**				
After Casing Removal:			**Hammer:**	NA (Wet Rotary)					

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 28.3', 29.3',
29	1M 39S	6							30', 31.2', 3.75'.
				100%		100%			
30	1M 47S								
31	1M 27S								
32	1M 59S								
									8/8/24 END OF
33	1M 33S								CONSTRUCTION ACTIVITY
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 33.5', 34.0',
34	2M 15S	7							34.2', 34.6', 35.1', 35.5', 37.2'.
				100%		51.5			
35	1M 25S					60			
36	2M 21S					86%			
37	1M 41S								
									8/13/24 START OF
38	3M 3S								CONSTRUCTION ACTIVITY
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 41.7', 42.2'.
39	2M 14S	8							VERTICAL FRACTURES 41.7
				100%		100%			- 42.2
40	1M 59S								
41	1M 37S								
42	1M 52S								
43	2M 43S								
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 45.1', 47.6'.
44	2M 14S	9							
				100%		100%			
45	1M 57S								
46	1M 49S								
47	1M 43S								
48	2M 10S								
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 50.2', 51.6',
49	2M 14S	10				59			52.5', 52.9'.
				100%		60			
50	1M 32S								
						98%			
51	1M 52S								
52	1M 50S								
53	2M 33S								
			1800 RPM		**SAA FOSSILS**		NONE	600 PSI	FRACTURES AT 54.9', 57.9
54	2M 3S	11				58.5			
				100%		60			
55	59S					97.5%			
					SAA				
56	1M 41S								
57	1M 38S								
58	1M 28S								

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Rock Core Log

Core No.	**IJW-04**
Sheet No.:	3 of 3
Project No.:	X55.002.001
Surface Elev.:	522.0"
Datum:	
Start Date/Time:	8/8/24 / 1400
Finish Date/Time:	8/13/24 / 1216
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site							
Location:	121 - 125 Lake Street, Ithaca New York							
Client:	Visum Development Group							
Drilling Firm:	CME ASSOCIATED, INC.							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**	CME 550X				
While Drilling:			**Core Legnth:**	60 IN.	**Diameter:**	3.875"	**Undist:**	
Before Casing Removal:			**Sampler:**	HQ Core Barrel	**GPS Coordinates:**			
After Casing Removal:			**Hammer:**	NA (Wet Rotary)				

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 61', 61.2', 61.6'.
59	1M 19S	12				58			
				100%		60			
60	1M 37S								
						96%			
61	1M 47S								
62	1M 12S								
63	2M								
			1800 RPM		**SAA**		NONE	600 PSI	FRACTURES AT 70.2
64	1M 46S	13							
				98%		100%			
65	1M 38S								
66	1M 44S								
67	1M 48S								
68	1M 53S								
					SAA		NONE	600 PSI	MEASURED DEPTH OF 71'
69	2M 7S								
				33		100%			
70	2M 3S			36					
71	2M 15S			91%					
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									

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Rock Core Log

Core No.	**IJW-05**
Sheet No.:	1 of 3
Project No.:	X55.002.001
Surface Elev.:	523.6"
Datum:	
Start Date/Time:	8/13/24 / 1425
Finish Date/Time:	8/14/24 / 1330
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATES INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN.	**Diameter:**	3.875"
Sampler:	HQ Core Barrel	**GPS Coordinates:**	
Hammer:	NA (Wet Rotery)		

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
1					STEEL CASING SET BY DRILLING 0-3 FT. DEPTH W/ 6.25 INCH I.D. HOLLOW STEM AUGER. 5 INCH DIAMETER STEEL CASING SET IN CONCRETE TO 3FT. DEPTH. CORING BEGINS AT 3FT. BELOW BEDROCK SURFACE.				
2									
3									
4			1800 RPM		MEDIUM TO DARK **GRAY SILTSTONE,** FINE GRAINED, THINLY BEDDED TO LAMINDATED				FRACTURES AT 3.2', 3.3', 3.6', 3.7', 3.9', 4.3', 4.7', 4.9', 5.0', 5.1', 5.4', 5.7', 5.9', 6.3', 6.7', 6.8'. VERTICAL FRACTURES 4.1 - 4.3, 4.7 - 4.9
		1	2M 2S				NONE	600 PSI	
				100%		9.5			
5	6M 4S		1M 17S			54			
6			1M 20S			17%			
7			2M 23S						
8			1800 RPM		**SAME AS ABOVE (SAA)**				FRACTURES AT 7.8', 8.1', 8.2', 8.4', 8.7', 9.1', 9.3', 9.5', 9.8', 9.9', 10.2', 10.6', 10.9', 11.3', 11.7', 11.9', 12.3'.
		2	1M 19S				NONE	600 PSI	
9				100%		30			
			1M 11S			60			
10									
			1M 22S			50%			
11									
			1M 13S						
12									
			1M 31S						
13			1800 RPM		**SAA**				FRACTURES AT 12.8', 12.9', 13.2', 13.3', 13.6', 13.8', 13.9', 14.1', 14.2', 14.6', 14.9', 15.5', 16.0', 16.3', 16.8', 17.3'.
		3	1M 41S				NONE	600 PSI	
14	6M 39S			100%		33.3			
			1M 14S			50			
15									
			1M 20S			55%			
16									
			1M 32S						
17									
			1M 37S						
18					**SAA**				FRACTURES AT 18.0', 18.6', 19.2', 19.7', 20.0', 20.3', 21.4', 21.9'.
		4	1M 25S				NONE	600 PSI	
19	7M 26S								
			1M 13S						
20									
			1M 28S						
21									
			1M 25S						
22									
			1M 41S						
23					**SAA**				FRACTURES AT 23.3', 24.0', 24.6', 24.9', 25.9', 26.6'.
	6M 58S	5	1M 39S				NONE	600 PSI	
24				100%					
			1M 9S						
25									
			1M 26S						
26									
			1M 13S						
27									
			1M 28S						

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Rock Core Log

Core No.	**IJW-05**
Sheet No.:	3 of 3
Project No.:	X55.002.001
Surface Elev.:	523.6"
Datum:	
Start Date/Time:	8/13/24 / 1425
Finish Date/Time:	8/14/24 / 1330
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca New York
Client:	Visum Development Group
Drilling Firm:	CME ASSOCIATES INC.

Groundwater	Depth	Date & Time
While Drilling:		
Before Casing Removal:		
After Casing Removal:		

Drill Rig:	CME 550X		
Core Legnth:	60 IN.	**Diameter:**	3.875"
Sampler:	HQ Core Barrel	**GPS Coordinates:**	
Hammer:	NA (Wet Rotery)		

Undist:

Depth (ft)	Core Run Time	Run #	Rate of Advancment / RPM	% Recovery	MATERIAL DESCRIPTION	% RQD	Water Loss	Down Pressure	COMMENTS (e.g., weathering natl vs. mech breaks, Depth of Factures)
58					**SAA**		NONE	600 PSI	FRACTURES AT 59.0', 61.6'.
		12	1M 31S						
59	7M 27S			100%		100%			
			1M 25S						
60									
			1M 28S						
61									
			1M 24S						
62									
			1M 37S						
63					**SAA**		NONE	600 PSI	FRACTURES AT 65.8'. VERTICAL FRACTURE 63.8'-64.1'
			1M 30S						
64	9M 50S			55		100%			
			1M 55S	60					
65									
			1M 42S	91%					
66									
			1M 57S						
67									
			2M 44S						
68					**SAA**		NONE	600 PSI	FRACTURES AT 69.3'.
	7M 44S		2M 11S						
69				100%		100%			
			2M 9S						
70									
			2M 2S						
71			1M 20S		**SAA**				
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									

Appendix A-4

Injection Well Construction Logs and Packer Testing Logs

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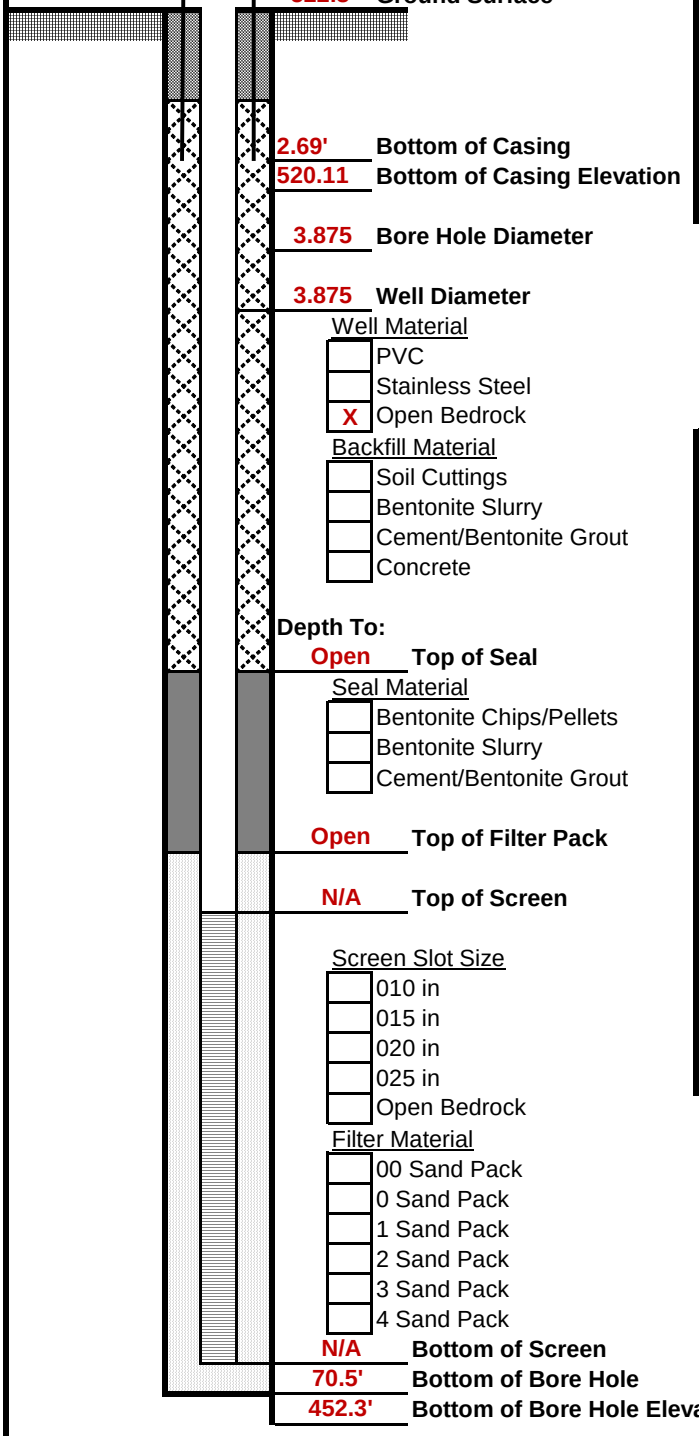
BEDROCK INJECTION WELL CONSTRUCTION LOG

Injection Well No.	IJW-01
Project No.:	X55.002.001
Surface Elev.:	522.8
Datum:	
Start Date:	7/24/24 0945
Finish Date:	7/25/24 1153
Inspector:	HH
Casing:	3.875"

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca, New York
Client:	Visum Development Group
Drilling Firm:	CME Associates, Inc.
Drill Rig:	CME 550X

Notes: (provide description of observation well location, method of construction, development method and any other information)

Used a dual packer with a 12' packer zone. A tornado pump was used for purging.



2.31' Top of Casing
525.11' Top of Casing Elevation
522.8' Ground Surface
2.69' Bottom of Casing
520.11 Bottom of Casing Elevation
3.875 Bore Hole Diameter
3.875 Well Diameter

Well Material
- [ ] PVC
- [ ] Stainless Steel
- [X] Open Bedrock

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
Open Top of Seal

Seal Material
- [ ] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

Open Top of Filter Pack
N/A Top of Screen

Screen Slot Size
- [ ] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in
- [ ] Open Bedrock

Filter Material
- [ ] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

N/A Bottom of Screen
70.5' Bottom of Bore Hole
452.3' Bottom of Bore Hole Elevation

Packer Testing Data

	Depth to (ft)	Elevation (ft amsl)	
Static Water:	16.34	508.72	
Top of Packer:	45.5	479.61	
Bottom of Packer:	33.5	467.61	

Trial #:	Time	Purge Volume	Comments:	
1	1255			
	1325	25 +/-	Dry	
2	1406			
	1409	3 +/-	Dry	
3	1509			
	1514	9.5 +/-		
4	1536			
	1548	18 +/-	Dry	
Totals:				
4	2.883	55.5		
Trials	Hours	Gallons		

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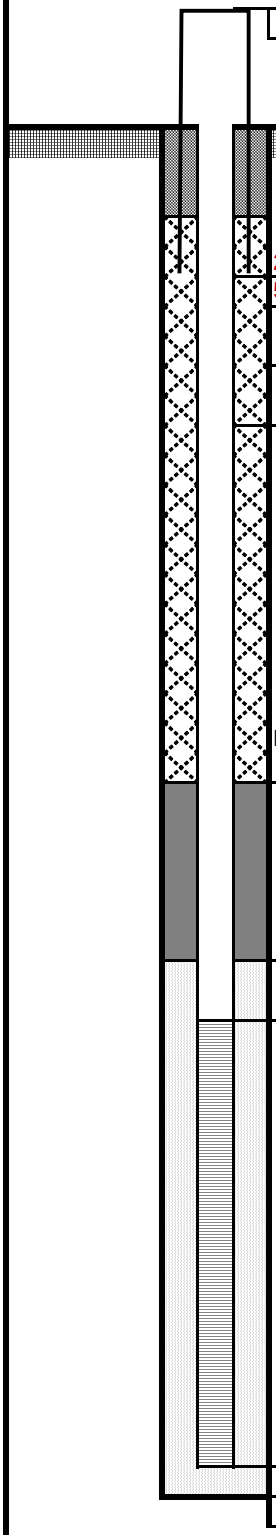
BEDROCK INJECTION WELL CONSTRUCTION LOG

Injection Well No.	IJW-02
Project No.:	X55.002.001
Surface Elev.:	522.7
Datum:	
Start Date:	8/16/24 0901
Finish Date:	8/16/24 1050
Inspector:	HH
Casing:	3.875"

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca, New York
Client:	Visum Development Group
Drilling Firm:	CME Associates, Inc.
Drill Rig:	CME 550X

Notes: (provide description of observation well location, method of construction, development method and any other information)

Used a dual packer with a 12' packer zone. A tornado pump was used for purging.



- 2.20' Top of Casing
- 524.9' Top of Casing Elevation
- 522.7' Ground Surface
- 2.80' Bottom of Casing
- 519.9' Bottom of Casing Elevation
- 3.875" Bore Hole Diameter
- 3.875" Well Diameter

Well Material
- [ ] PVC
- [ ] Stainless Steel
- [X] Open Bedrock

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
- Open — Top of Seal

Seal Material
- [ ] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

- Open — Top of Filter Pack
- N/A — Top of Screen

Screen Slot Size
- [ ] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in
- [ ] Open Bedrock

Filter Material
- [ ] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

- N/A — Bottom of Screen
- 70.5' Bottom of Bore Hole
- 452.2' Bottom of Bore Hole Elevation

Packer Testing Data

	Depth to (ft)	Elevation (ft amsl)
Static Water:	24.41	500.49
Top of Packer:	45	479.9
Bottom of Packer:	57	467.9

Trial #:	Time	Purge Volume	Comments:
1	0904	30 +/-	
	0939		Dry
2	1045	10.5 +/-	
	1048		Dry

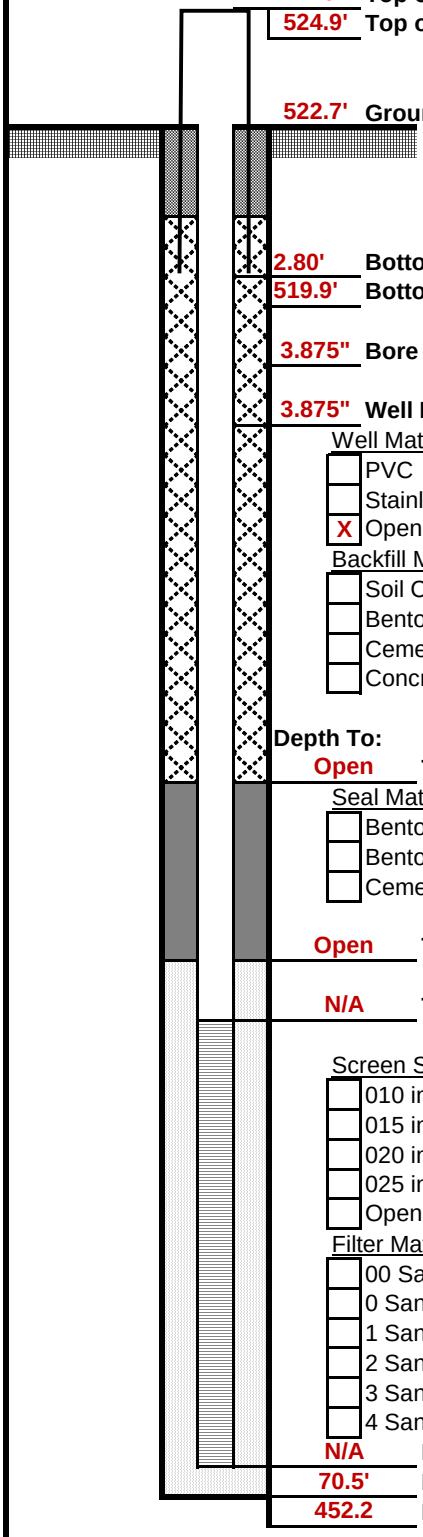
Totals:		
2 Trials	1.78 Hours	30.5 Gallons

C&S Engineers, Inc.	BEDROCK INJECTION WELL CONSTRUCTION LOG	Injection Well No.	IJW-03
499 Col Eileen Collins Blvd Syracuse, NY 13212 Phone: 315-455-2000 Fax: 315-455-9667 www.cscos.com		Project No.:	X55.002.001
		Surface Elev.:	522.7

Project Name:	Former Ithaca Gun Factory BCP Site	**Datum:**	
Location:	121 - 125 Lake Street, Ithaca, New York	**Start Date:**	8/16/2024 1100
Client:	Visum Development Group	**Finish Date:**	8/16/2024 1250
Drilling Firm:	CME Associates, Inc.	**Inspector:**	HH
Drill Rig:	CME 550X	**Casing:**	3.875"

Notes: (provide description of observation well location, method of construction, development method and any other information)

Used a dual packer with a 12' packer zone. A tornado pump was used for purging.



2.20' Top of Casing
524.9' Top of Casing Elevation

522.7' Ground Surface

2.80' Bottom of Casing
519.9' Bottom of Casing Elevation

3.875" Bore Hole Diameter

3.875" Well Diameter

Well Material
- [ ] PVC
- [ ] Stainless Steel
- [X] Open Bedrock

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
Open Top of Seal

Seal Material
- [ ] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

Open Top of Filter Pack

N/A Top of Screen

Screen Slot Size
- [ ] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in
- [ ] Open Bedrock

Filter Material
- [ ] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

N/A Bottom of Screen
70.5' Bottom of Bore Hole
452.2 Bottom of Bore Hole Elevation

Packer Testing Data

	Depth to (ft)	Elevation (ft amsl)	
Static Water:	14.55	508.15	
Top of Packer:	47	477.9	
Bottom of Packer:	59	465.9	

Trial #:	Time	Purge Volume	Comments:	
1	1109	25 +/-		
	1125		Dry	
2	1235	20 +/-		
	1246		Dry	

Totals:

2	1.78	45		
Trials	Hours	Gallons		

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BEDROCK INJECTION WELL CONSTRUCTION LOG

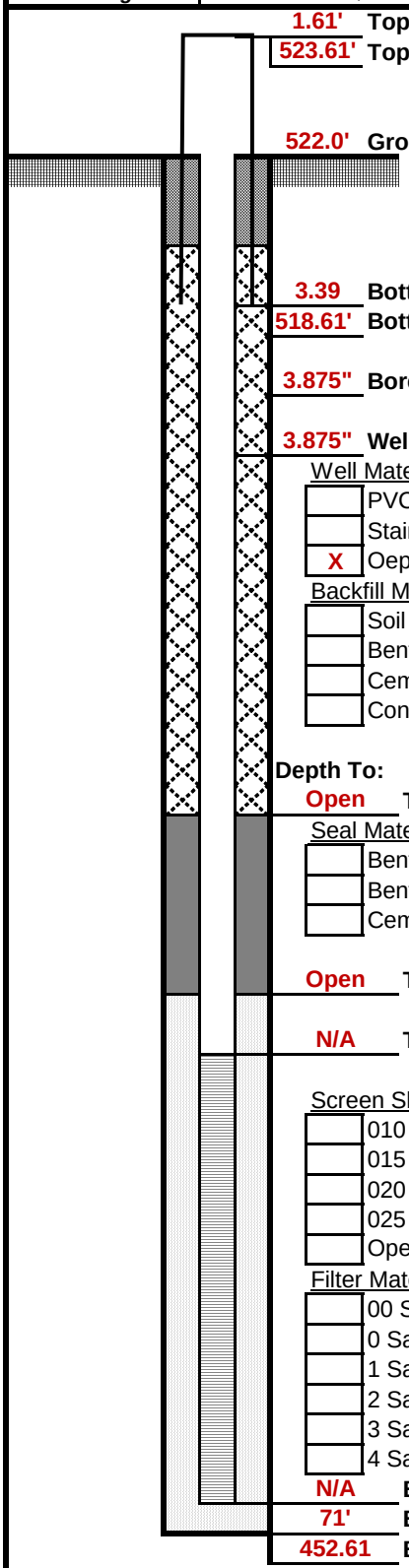
Injection Well No.	IJW-04
Project No.:	X55.002.001
Surface Elev.:	522.0'
Datum:	
Start Date:	8/16/24 / 1258
Finish Date:	
Inspector:	HH

Project Name:	Former Ithaca Gun Factory BCP Site
Location:	121 - 125 Lake Street, Ithaca, New York
Client:	Visum Development Group
Drilling Firm:	CME Associates, Inc.

Drill Rig:	CME 550X	Casing:	3.875

Notes: (provide description of observation well location, method of construction, development method and any other information)

Inject well coring water was purged prior to packer testing on 8/16/24. One well volume was purged.
Used a dual packer with a 12' packer zone. A tornado pump was used for purging.



1.61' Top of Casing
523.61' Top of Casing Elevation
522.0' Ground Surface
3.39 Bottom of Casing
518.61' Bottom of Casing Elevation
3.875" Bore Hole Diameter
3.875" Well Diameter

Well Material
- [ ] PVC
- [ ] Stainless Steel
- [X] Oepn Bedrock

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
Open Top of Seal

Seal Material
- [ ] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

Open Top of Filter Pack
N/A Top of Screen

Screen Slot Size
- [ ] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in
- [ ] Open Bedrock

Filter Material
- [ ] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

N/A Bottom of Screen
71' Bottom of Bore Hole
452.61 Bottom of Bore Hole Elevation

Packer Testing Data

	Depth to (ft)	Elevation (ft amsl)	
Static Water:	55.47'		
Top of Packer:	48'	475.6	
Bottom of Packer:	60'	463.61	

Trial #:	Time	Purge Volume	Comments:	
1	1302	4 +/-		
	1304		Dry	
2	1404	3 +/-		
	1406		Dry	
3	1438	2 +/-		
	1406		Dry	
4	1450	1.5 +/-		
	1451		Dry	

Totals:

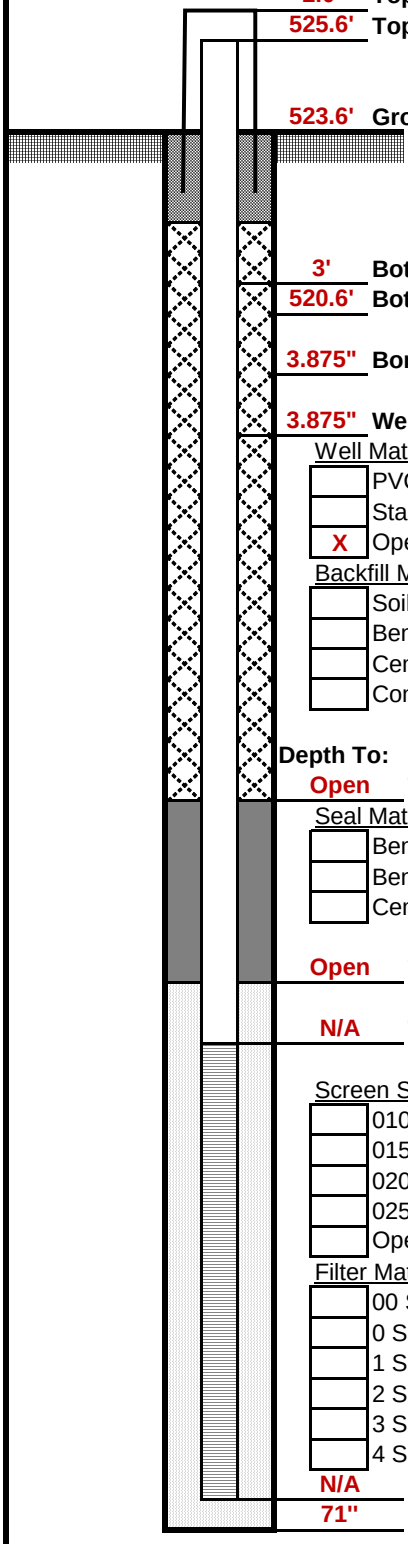
Trials	Hours	Gallons		
4	1.87	10.5		

C&S Engineers, Inc.	BEDROCK INJECTION WELL CONSTRUCTION LOG	Injection Well No.	IJW-05
499 Col Eileen Collins Blvd Syracuse, NY 13212 Phone: 315-455-2000 Fax: 315-455-9667 www.cscos.com		Project No.:	X55.002.001
		Surface Elev.:	523.6

Project Name:	Former Ithaca Gun Factory BCP Site	Datum:	
Location:	121 - 125 Lake Street, Ithaca, New York	Start Date:	8/15/24 / 1056
Client:	Visum Development Group	Finish Date:	8/16/24 1216
Drilling Firm:	CME Associates, Inc.	Inspector:	HH
Drill Rig:	CME 550X	Casing:	3.875"

Notes: (provide description of observation well location, method of construction, development method and any other information)

PUMP SETS 10' BELOW TOP PACKER. 12' ZONE PACKER TO PACKER



2.0' Top Protective Casing
525.6' Top of Riser
523.6' Ground Surface
3' Bottom of Casing
520.6' Bottom of Casing Elevation
3.875" Bore Hole Diameter
3.875" Well Diameter

Well Material
- [ ] PVC
- [ ] Stainless Steel
- [X] Open Bedrock

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
Open Top of Seal

Seal Material
- [ ] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

Open Top of Filter Pack
N/A Top of Screen

Screen Slot Size
- [ ] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in
- [ ] Open Bedrock

Filter Material
- [ ] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

N/A Bottom of Screen
71" Bottom of Bore Hole

Packer Testing Data

	Depth to (ft)	Elevation (ft amsl)	
Static Water:	47.12	478.48'	
Top of Packer:	47.0'	478.6'	
Bottom of Packer:	55.0'	466.6	

Trial #:	Time	Purge Volume	Comments:	
1	1056	30		
	1116			
	1129		Dry	
2	1214	2.5		
	1216		Dry	
Totals:				
2 Trials	1.33 Hours	32.5 Gallons		

Appendix A-5

Injection Well Groundwater Development Logs

C&S Engineers, Inc.
499 Col Eileen Collins Blvd
Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/21/2024	
Time	0845	
Water meter utilized and date last calibrated		
Well Number	IJW-01	
PID Reading (ppm)	0.0 ppm	
Diameter (inches)	3.875	
Total Sounded Depth (feet)	73.65	
Static Water Level (feet)	18.19	
H_2O Column (feet)	55.46	
Pump Intake (feet)		
Well Volume (gallons)	33.97 / 101.91	
Amount to Evacuate (gallons)		
Amount Evacuated (gallons)		

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria								
Time		0851	0854	0858	0904	0907	0912	0916	0923
Volume Extracted	gallons	5	10	14	18	20	24	28	32
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.58	7.55	7.54	7.53	7.55	7.57	7.54	7.57
Conductivity (mS/cm)	3%	0.38	0.83	0.839	0.832	0.811	0.823	0.845	0.854
Turbidity (NTU)	10%	53.5	9.2	5.3	5.3	4.9	7.6	131	66.4
D.O. (mg/L)	10%	4.89	4.85	5.2	5.28	5.31	5.39	5.4	5.7
Temperature (ºC) (ºF)	3%	13.6	13.67	14.1	13.89	13.72	14.21	14.22	13.92
ORP[3](mV)	+/-10 mv	55	67	68	76	77	81	81	80
Appearance		Clear							
Free Product (Yes/No)									
Odor									

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

C&S Engineers, Inc.
499 Col Eileen Collins Blvd
Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/21/2024	
Time	0815	
Water meter utilized and date last calibrated		
Well Number	IJW-02	
PID Reading (ppm)	232.8	
Diameter (inches)		
Total Sounded Depth (feet)	72.83	
Static Water Level (feet)	24.75	
H_2O Column (feet)	48.80	
Pump Intake (feet)		
Well Volume (gallons)	31.73	95.19
Amount to Evacuate (gallons)		
Amount Evacuated (gallons)	40.00	

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

	Stabilization Criteria								
Date		8/21/2024							
Time		0825	0827	0830	0835	0840	0845	0850	0900
Volume Extracted	gallons	3	5	10	13	16	20	25	30
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	8.26	8.01	7.86	7.74	7.83	7.68	7.64	7.59
Conductivity (mS/cm)	3%	0.917	0.921	0.891	0.882	0.876	0.868	0.862	0.87
Turbidity (NTU)	10%	>1000	280	109	>1000	572	294	111	221
D.O. (mg/L)	10%	4.48	4.49	3.92	2.54	4.31	4.18	5.2	11.83
Temperature (ºC) (ºF)	3%	13.43	13.21	13.18	13.44	13.53	13.79	13.98	14.08
ORP[3](mV)	+/-10 mv	105	105	108	50	29	33	34	41
Appearance		VT	ST	ST	ST	ST	ST	ST	ST
Free Product (Yes/No)		Y	N	N	Y	Y	Y	Y	Y
Odor		Y	Y	Y	Y	Y	Y	Y	Y

	Stabilization Criteria								
Date									
Time		0906	0912						
Volume Extracted	gallons	32	35						
Static Water Level (feet)	NA		58.7						
pH (Std. Units)	+/-0.1	7.54	7.54						
Conductivity (mS/cm)	3%	0.877	0.908						
Turbidity (NTU)	10%	396	366						
D.O. (mg/L)	10%	5.3	5.68						
Temperature (ºC) (ºF)	3%	14.33	14.23						
ORP[3](mV)	+/-10 mv	49	50						
Appearance		ST							
Free Product (Yes/No)		Y							
Odor		Y							

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/21/2024	
Time	1055	
Water meter utilized and date last calibrated		
Well Number	IJW-03	
PID Reading (ppm)	4.9	
Diameter (inches)	3.875	
Total Sounded Depth (feet)	73.10	
Static Water Level (feet)	14.55	
H_2O Column (feet)	58.55	
Pump Intake (feet)		
Well Volume (gallons)	35.87	107.61
Amount Evacuated (gallons)	48.00	

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/21/2024							
Time		1100	1110	1115	1120	1125	1129	1135	1140
Volume Extracted	gallons	5	10	15	20	25	30	33	35
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	8.02	7.85	7.78	7.7	7.71	7.75	7.76	7.78
Conductivity (mS/cm)	3%	0.705	0.744	0.76	0.766	0.786	0.823	0.819	0.825
Turbidity (NTU)	10%	54.3	255	491	592	302	153	122	81.9
D.O. (mg/L)	10%	2.94	2.85	3.12	3.05	5.81	7.99	8.5	7.26
Temperature (ºC) (ºF)	3%	14.15	14.76	15.63	15.37	14.71	14.46	14.66	14.74
ORP[3](mV)	+/-10 mv	92	93	72	27	7	-16	-27	-31
Appearance		ST	ST	ST	ST	ST	ST	ST	ST
Free Product (Yes/No)		Y	Y	Y	Y	Y	Y	Y	Y
Odor		N	N	N	N	N	N	N	N

Date	Stabilization Criteria								
Time		1140	1145	1201	1206				
Volume Extracted	gallons	40	43	46	48				
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.77	7.78	7.74	7.71				
Conductivity (mS/cm)	3%	0.825	0.82	0.811	0.827				
Turbidity (NTU)	10%	198	409	415	279				
D.O. (mg/L)	10%	6.92	7.28	6.95	6.89				
Temperature (ºC) (ºF)	3%	14.81	14.57	14.35	14.41				
ORP[3](mV)	+/-10 mv	-38	-42	-39	-34				
Appearance		ST	ST	ST	ST				
Free Product (Yes/No)		Y	Y	Y	Y				
Odor		N	N	N	N				

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: Oil is observed when purging wells

C&S Engineers, Inc.
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www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/21/2024	
Time	1205	
Water meter utilized and date last calibrated		
Well Number	IJW-04	
PID Reading (ppm)	12.4	
Diameter (inches)	8.875	
Total Sounded Depth (feet)	72.64	
Static Water Level (feet)	28.05	
H_2O Column (feet)	44.60	
Pump Intake (feet)		
Well Volume (gallons)	29.11	87.33
Amount Evacuated (gallons)	46.00	

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/21./2024							
Time		1210	1215	1220	1225	1230	1239	1310	1341
Volume Extracted	gallons	5	10	15	20	25	30	32	35
Static Water Level (feet)	NA							Dry	
pH (Std. Units)	+/-0.1	7.75	7.79	7.8	7.83	7.86	8.07	7.89	7.83
Conductivity (mS/cm)	3%	0.877	0.875	0.864	0.8	0.818	0.803	0.838	0.827
Turbidity (NTU)	10%	113	150	307	1000	635	1000	1000	665
D.O. (mg/L)	10%	8.82	5.44	5.51	5.49	5.63	5.57	5.65	5.61
Temperature (ºC) (ºF)	3%	13.37	13.37	13.56	13.25	14.04	13.64	13.56	14.29
ORP[3](mV)	+/-10 mv	-31	-22	-3	9	20	24	22	27
Appearance		Clear							
Free Product (Yes/No)		Yes							
Odor		Slight							

Date	Stabilization Criteria								
Time		1359	1409	1419	1429	1439			
Volume Extracted	gallons	38	40	42	44	46			
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	8.07	8.1	8.13	8.1	8.09			
Conductivity (mS/cm)	3%	0.82	0.817	0.817	0.813	0.811			
Turbidity (NTU)	10%	497	264	177	231	174			
D.O. (mg/L)	10%	5.55	5.47	5.67	5.47	5.9			
Temperature (ºC) (ºF)	3%	14.13	14.67	14.89	14.76	14.35			
ORP[3](mV)	+/-10 mv	62	65	70	75	80			
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: Oil is observed when purging well.

C&S Engineers, Inc.
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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: WR

WELL DATA

Date	8/21/2024	
Time	1230	
Water meter utilized and date last calibrated		
Well Number	IJW-05	
PID Reading (ppm)		
Diameter (inches)	3.875	
Total Sounded Depth (feet)	73.30	
Static Water Level (feet)	46.00	
H_2O Column (feet)	27.30	
Pump Intake (feet)		
Well Volume (gallons)	16.72	50.16
Amount Evacuated (gallons)	35.00	

SAMPLE DATA

Sample Date		
Sample Time		
Sampler Initials		
Sample I.D.		
Dupe Collected?	☐ Yes ☐ No	ID:
MS Collected?	☐ Yes ☐ No	ID:
MSD Collected?	☐ Yes ☐ No	ID:
Trip Blank Collected?	☐ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☐ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/21/2024							
Time		1240	1302	1305	1318	1512	1517	1521	1533
Volume Extracted	gallons	3	5	8	11	15	20	25	28
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.93	7.79	7.75	7.85	7.9	7.63	7.54	7.57
Conductivity (mS/cm)	3%	1	1.06	1.03	1.01	1.05	1.06	1.08	1.13
Turbidity (NTU)	10%	332	403	>1000	1000	>1000	>1000	>1000	>1000
D.O. (mg/L)	10%	4.7	5.48	5.59	5.52	4.31	3.88	4.21	3.47
Temperature (ºC) (ºF)	3%	13.19	13.94	13.41	13.4	14.73	13.83	13.6	14.27
ORP[3](mV)	+/-10 mv	33	49	54	56	77	65	35	30
Appearance		ST	ST	ST	ST	VT	ST	ST	VT
Free Product (Yes/No)		Y	Y	Y	Y	Y	Y	Y	Y
Odor		Y	Y	Y	Y	Y	Y	Y	Y

Date	Stabilization Criteria								
Time		1541	1551	1601	1611				
Volume Extracted	gallons	30	32	34	35				
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.65	7.56	7.56	7.51				
Conductivity (mS/cm)	3%	1.12	1.1	1.11	1.12				
Turbidity (NTU)	10%	628	>1000	>1000	>1000				
D.O. (mg/L)	10%	6.89	2.9	3.4	3.47				
Temperature (ºC) (ºF)	3%	14.98	14.3	14.07	14.21				
ORP[3](mV)	+/-10 mv	35	35	34	30				
Appearance		VT	VT	VT	VT				
Free Product (Yes/No)		Y	Y	Y	Y				
Odor		Y	Y	Y	Y				

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: Oil is observed when purging well.

Appendix A-6

Injection Well Groundwater Sampling Logs

C&S Engineers, Inc.
499 Col Eileen Collins Blvd
Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/28/2024	
Time	0825	
Water meter utilized and date last calibrated		
Well Number	IJW-01	
PID Reading (ppm)	3.4 ppm	
Diameter (inches)		
Total Sounded Depth (feet)	73.65	
Static Water Level (feet)	16.29	
H_2O Column (feet)		
Pump Intake (feet)	310 ml/min	
Well Volume (gallons)	37.44	112.33
Amount Evacuated (gallons)	8.00	

SAMPLE DATA

Sample Date	8/28.2024	
Sample Time	0915	
Sampler Initials	HH	
Sample I.D.	IJW-01 Baseline	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/28/2024							
Time		0834	0839	0844	0849	0854	0859	0904	0909
Volume Extracted	gallons	0.5	1	1.5	2	2.5	3	4	4.5
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.53	7.6	7.69	7.71	7.71	7.73	7.74	7.65
Conductivity (mS/cm)	3%	0.784	0.809	0.804	0.804	0.804	0.803	0.805	0.809
Turbidity (NTU)	10%	197	156	58.1	44.6	26	17.8	13.4	13.1
D.O. (mg/L)	10%	8.35	6.8	6.63	6.52	6.42	6.49	6.55	6.52
Temperature (ºC) (ºF)	3%	14.58	14.95	14.38	14.84	14.71	14.44	14.13	14.1
ORP[3](mV)	+/-10 mv	129	129	129	130	132	131	132	137
Appearance		ST	ST	C					
Free Product (Yes/No)		No	No	No					
Odor		No	No	No					

Date	Stabilization Criteria								
Time		914							
Volume Extracted	gallons	5							
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.62							
Conductivity (mS/cm)	3%	0.814							
Turbidity (NTU)	10%	12.9							
D.O. (mg/L)	10%	6.58							
Temperature (ºC) (ºF)	3%	14.16							
ORP[3](mV)	+/-10 mv	139							
Appearance		C							
Free Product (Yes/No)		No							
Odor		No							

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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499 Col Eileen Collins Blvd
Syracuse, NY 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/28/2024	
Time		
Water meter utilized and date last calibrated		
Well Number	IJW-02	
PID Reading (ppm)	468.6	
Diameter (inches)	4.0	
Total Sounded Depth (feet)	72.83	
Static Water Level (feet)	26.23	
H_2O Column (feet)	46.60	
Pump Intake (feet)	420 ml/min	
Well Volume (gallons)	28.55	85.65
Amount Evacuated (gallons)	4.00	

SAMPLE DATA

Sample Date	8/28/2024	
Sample Time	1036	
Sampler Initials	HH	
Sample I.D.	IJW-02 Baseline	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/28/2024							
Time		1005	1010	1015	1020	1025	1030	1035	1040
Volume Extracted	gallons	0.5	1	1.5	2	2.5	3	3.5	
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.8	7.79	7.8	7.78	7.78	7.77	7.76	
Conductivity (mS/cm)	3%	0.925	0.949	0.96	0.944	0.928	0.921	0.913	
Turbidity (NTU)	10%	30.2	36	27	26.6	25.7	27.6	27.5	
D.O. (mg/L)	10%	4.13	3.22	3	2.96	3.02	2.98	2.85	
Temperature (ºC) (ºF)	3%	15.44	14.51	14.09	14.78	14.76	15.13	15.09	
ORP[3](mV)	+/-10 mv	129	128	126	124	120	117	113	
Appearance		Clear							
Free Product (Yes/No)		Sheen							
Odor		Slight							

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/28/2024	
Time	1118	
Water meter utilized and date last calibrated		
Well Number	IJW-03	
PID Reading (ppm)	396.6	
Diameter (inches)	3.875	
Total Sounded Depth (feet)	73.10	
Static Water Level (feet)	13.57	
H_2O Column (feet)	59.53	
Pump Intake (feet)		
Well Volume (gallons)	36.47	109.41
Amount Evacuated (gallons)	7.50	

SAMPLE DATA

Sample Date	8/28/2024	
Sample Time	1218	
Sampler Initials	HPH	
Sample I.D.	IJW-03 Baseline	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☑ Yes ☐ No	ID:
MSD Collected?	☑ Yes ☐ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/28/2024							
Time		1122	1127	1132	1137	1142	1147	1152	1157
Volume Extracted	gallons	0.5	1	1.5	2	2.5	3	3.75	4.5
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.7	7.73	7.72	7.73	7.71	7.72	7.73	7.73
Conductivity (mS/cm)	3%	0.714	0.712	0.706	0.702	0.687	0.701	0.705	0.704
Turbidity (NTU)	10%	58.3	58.4	59.7	52.9	49.5	48.4	34.8	21.5
D.O. (mg/L)	10%	5.49	2.31	1.91	1.87	1.77	1.85	1.82	1.71
Temperature (ºC) (ºF)	3%	14.01	15.36	16.48	16.72	16.96	16.41	14.74	15.03
ORP[3](mV)	+/-10 mv	97	90	80	75	71	70	68	65
Appearance		ST	Clear						
Free Product (Yes/No)		Slight sheen							
Odor		Slight							

Date	Stabilization Criteria								
Time		1202	1207	1212	1217				
Volume Extracted	gallons	5	5.5	6	6.5				
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.73	7.72	7.72	7.72				
Conductivity (mS/cm)	3%	0.703	0.698	0.696	0.696				
Turbidity (NTU)	10%	18.2	17	16.2	16.3				
D.O. (mg/L)	10%	1.66	1.58	1.55	1.55				
Temperature (ºC) (ºF)	3%	15.39	16.07	16.55	16.74				
ORP[3](mV)	+/-10 mv	64	62	61	61				
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: temp keeps changing due to sun coming in and out of clouds. Oil is observed when purging well.

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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/29/2024	
Time	0830	
Water meter utilized and date last calibrated		
Well Number	IJW-04	
PID Reading (ppm)	105.8	
Diameter (inches)	3.875	
Total Sounded Depth (feet)	72.64	
Static Water Level (feet)	31.14	
H_2O Column (feet)	41.50	
Pump Intake (feet)	25.73	77.16
Well Volume (gallons)		
Amount Evacuated (gallons)	8.00	

SAMPLE DATA

Sample Date	8/28/2024	
Sample Time	0905	
Sampler Initials	HPH	
Sample I.D.	IJW-04 Baseline	
Dupe Collected?	☑ Yes ☐ No	ID: DUP Baseline
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria								
Time		834	839	844	849	854	859	904	
Volume Extracted	gallons	1	2	3	4	5	6	7	
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.65	7.73	7.79	7.78	7.81	7.8	7.76	
Conductivity (mS/cm)	3%	0.855	0.863	0.86	0.863	0.861	0.861	0.863	
Turbidity (NTU)	10%	30.5	30	28.3	27.1	24.9	27	26.7	
D.O. (mg/L)	10%	8.78	8.05	7.76	7.72	7.36	7.13	7.03	
Temperature (ºC) (ºF)	3%	13.67	13.57	13.5	13.04	13.28	13.61	13.01	
ORP[3](mV)	+/-10 mv	114	116	114	116	116	117	117	
Appearance		Clear							
Free Product (Yes/No)		Yes							
Odor		Slight odor							

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: Oil is observed when purging well.

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Syracuse, NY 13212
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Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name: Visum Development Group
Site Name: Former Ithaca Gun Factory BCP Site
Project No.: X55.002.001
Field Staff: HPH

WELL DATA

Date	8/29/2024	
Time	0955	
Water meter utilized and date last calibrated		
Well Number	IJW-05	
PID Reading (ppm)	4.9 ppm	
Diameter (inches)	3.875	
Total Sounded Depth (feet)	73.30	
Static Water Level (feet)	49.49	
H_2O Column (feet)	23.81	
Pump Intake (feet)	380.00	ml/min
Well Volume (gallons)	14.59	43.77
Amount Evacuated (gallons)	7.00	

SAMPLE DATA

Sample Date	8/29/2024	
Sample Time	1115	
Sampler Initials	HPH	
Sample I.D.	IJW-05 Baseline	
Dupe Collected?	☐ Yes ☑ No	ID:
MS Collected?	☐ Yes ☑ No	ID:
MSD Collected?	☐ Yes ☑ No	ID:
Trip Blank Collected?	☑ Yes ☐ No	ID:
EQ Blank Collected?	☐ Yes ☑ No	ID:
Comments		

FIELD READINGS

Date	Stabilization Criteria	8/29/2024							
Time		1003	1008	1013	1018	1023	1028		
Volume Extracted	gallons	1	2	3	4	5	6		
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1	7.81	7.81	7.84	7.8	7.79	7.71		
Conductivity (mS/cm)	3%	1.2	1.13	1.12	1.06	1.04	1.07		
Turbidity (NTU)	10%	NA	NA	662	837	846	215		
D.O. (mg/L)	10%	2.38	1.55	4.07	5.32	5.99	5.69		
Temperature (ºC) (ºF)	3%	13.5	12.82	13.08	13	13.01	13.3		
ORP[3](mV)	+/-10 mv	129	121	117	116	114	116		
Appearance		VT							
Free Product (Yes/No)		Sheen							
Odor		Slight							

Date	Stabilization Criteria								
Time									
Volume Extracted	gallons								
Static Water Level (feet)	NA								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (ºC) (ºF)	3%								
ORP[3](mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Comments: Oil is observed when purging wells. IJW-05 appears to have an approxamtely an inch of oil on the surface of the static water.

Appendix B

Existing Well Conditions Photographic Log

Photo 1	Photo 2
Existing Monitoring Well MW-01R	Existing Monitoring Well MW-03 was found to be in poor condition but was cleaned up and is usable.
Photo 3	**Photo 4**
Existing Monitoring Well MW-04R	Existing Monitoring Well MW-05
Photo 5	**Photo 6**
Existing Monitoring Well MW-06	Existing Monitoring Well MW-07

C&S COMPANIES®	C&S Engineers, Inc. 499 Col. Eileen Collins Blvd. Syracuse, New York 13212	**Photographic Log** Former Ithaca Gun BCP 121-125 Lake Street Ithaca, New York	PR# X55.002.001 Date: July 2024 Existing Wells Assessment

Photo 7	Photo 8
Existing Monitoring Well MW-08	Existing Monitoring Well MW-09
Photo 9	**Photo 10**
Existing Monitoring Well MW-10	Existing Monitoring Well MW-11

C&S COMPANIES	C&S Engineers, Inc. 499 Col. Eileen Collins Blvd. Syracuse, New York 13212	**Photographic Log** Former Ithaca Gun BCP 121-125 Lake Street Ithaca, New York	PR# X55.002.001 Date: July 2024 Existing Wells Assessment

Appendix C

Appendix C-1: Existing Well VOC and Geochemistry Laboratory Analytical Reports

Appendix C-2: Existing Well Microbial Laboratory Analytical Reports

Appendix C-3: Existing Well CSIA Laboratory Analytical Reports

Appendix C-4: Injection Well VOC and Geochemistry Laboratory Analytical Reports

Appendix C-5: Injection Well Microbial Laboratory Analytical Reports

Appendix C-1

Existing Well VOC and Geochemistry Laboratory Analytical Reports

ANALYTICAL REPORT

Lab Number:	L2442917
Client:	C&S Companies 499 Col. Eileen Collins Blvd. Syracuse, NY 13212
ATTN:	Hayden Haas
Phone:	(315) 455-2000
Project Name:	FORMER ITHACA GUN FACTORY BCP
Project Number:	X55.002.001
Report Date:	08/13/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2442917
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2442917-01	MW-03 PRE-SAMPLING	WATER	121-125 LAKE ST, ITHACA,NY	07/30/24 15:22	07/30/24
L2442917-02	MW-08 PRE-SAMPLING	WATER	121-125 LAKE ST, ITHACA,NY	07/30/24 12:45	07/30/24
L2442917-03	MW-09 PRE-SAMPLING	WATER	121-125 LAKE ST, ITHACA,NY	07/30/24 11:07	07/30/24
L2442917-04	TRIP-BLANK-7/30/24	WATER	121-125 LAKE ST, ITHACA,NY	07/30/24 00:00	07/30/24

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2442917
Project Number:	X55.002.001	**Report Date:**	08/13/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2442917
Project Number:	X55.002.001	**Report Date:**	08/13/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Dissolved Gases and Sulfide were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The element lists for the metals analyses were provided by the client.

The analyses performed were specified by the client.

L2442917-01: Headspace was noted in all sample containers submitted for Dissolved Gases - Subcontracted. The analysis was performed at the client's request.

Dissolved Metals

The WG1956910-3 MS recoveries for calcium (135%) and sodium (156%), performed on L2442917-01, do not apply because the sample concentrations are greater than four times the spike amounts added.

Iron, Ferrous

L2442917-01, -02, and -03: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

VOLATILES

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-01
Client ID: MW-03 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/30/24 15:22
Date Received: 07/30/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/04/24 21:30
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	1.5		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.26	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	3.7		ug/l	2.5	0.70	1
Trichloroethene	150		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-01 Date Collected: 07/30/24 15:22

Client ID: MW-03 PRE-SAMPLING Date Received: 07/30/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	70		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-02 D
Client ID: MW-08 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/30/24 12:45
Date Received: 07/30/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/02/24 11:53
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	620	180	250
1,1-Dichloroethane	ND		ug/l	620	180	250
Chloroform	ND		ug/l	620	180	250
Carbon tetrachloride	ND		ug/l	120	34.	250
1,2-Dichloropropane	ND		ug/l	250	34.	250
Dibromochloromethane	ND		ug/l	120	37.	250
1,1,2-Trichloroethane	ND		ug/l	380	120	250
Tetrachloroethene	250		ug/l	120	45.	250
Chlorobenzene	ND		ug/l	620	180	250
Trichlorofluoromethane	ND		ug/l	620	180	250
1,2-Dichloroethane	ND		ug/l	120	33.	250
1,1,1-Trichloroethane	ND		ug/l	620	180	250
Bromodichloromethane	ND		ug/l	120	48.	250
trans-1,3-Dichloropropene	ND		ug/l	120	41.	250
cis-1,3-Dichloropropene	ND		ug/l	120	36.	250
Bromoform	ND		ug/l	500	160	250
1,1,2,2-Tetrachloroethane	ND		ug/l	120	42.	250
Benzene	ND		ug/l	120	40.	250
Toluene	ND		ug/l	620	180	250
Ethylbenzene	ND		ug/l	620	180	250
Chloromethane	ND		ug/l	620	180	250
Bromomethane	ND		ug/l	620	180	250
Vinyl chloride	330		ug/l	250	18.	250
Chloroethane	ND		ug/l	620	180	250
1,1-Dichloroethene	100	J	ug/l	120	42.	250
trans-1,2-Dichloroethene	ND		ug/l	620	180	250
Trichloroethene	20000		ug/l	120	44.	250
1,2-Dichlorobenzene	ND		ug/l	620	180	250

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-02 D
Client ID: MW-08 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/30/24 12:45
Date Received: 07/30/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	620	180	250
1,4-Dichlorobenzene	ND		ug/l	620	180	250
Methyl tert butyl ether	ND		ug/l	620	42.	250
p/m-Xylene	ND		ug/l	620	180	250
o-Xylene	ND		ug/l	620	180	250
cis-1,2-Dichloroethene	13000		ug/l	620	180	250
Styrene	ND		ug/l	620	180	250
Dichlorodifluoromethane	ND		ug/l	1200	250	250
Acetone	ND		ug/l	1200	360	250
Carbon disulfide	ND		ug/l	1200	250	250
2-Butanone	ND		ug/l	1200	480	250
4-Methyl-2-pentanone	ND		ug/l	1200	250	250
2-Hexanone	ND		ug/l	1200	250	250
Bromochloromethane	ND		ug/l	620	180	250
1,2-Dibromoethane	ND		ug/l	500	160	250
1,2-Dibromo-3-chloropropane	ND		ug/l	620	180	250
Isopropylbenzene	ND		ug/l	620	180	250
1,2,3-Trichlorobenzene	ND		ug/l	620	180	250
1,2,4-Trichlorobenzene	ND		ug/l	620	180	250
Methyl Acetate	ND		ug/l	500	58.	250
Cyclohexane	ND		ug/l	2500	68.	250
1,4-Dioxane	ND		ug/l	62000	15000	250
Freon-113	ND		ug/l	620	180	250
Methyl cyclohexane	ND		ug/l	2500	99.	250

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-03 D
Client ID: MW-09 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/30/24 11:07
Date Received: 07/30/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/04/24 21:54
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	50	14.	20
1,1-Dichloroethane	ND		ug/l	50	14.	20
Chloroform	24	J	ug/l	50	14.	20
Carbon tetrachloride	ND		ug/l	10	2.7	20
1,2-Dichloropropane	ND		ug/l	20	2.7	20
Dibromochloromethane	ND		ug/l	10	3.0	20
1,1,2-Trichloroethane	ND		ug/l	30	10.	20
Tetrachloroethene	51		ug/l	10	3.6	20
Chlorobenzene	ND		ug/l	50	14.	20
Trichlorofluoromethane	ND		ug/l	50	14.	20
1,2-Dichloroethane	ND		ug/l	10	2.6	20
1,1,1-Trichloroethane	ND		ug/l	50	14.	20
Bromodichloromethane	ND		ug/l	10	3.8	20
trans-1,3-Dichloropropene	ND		ug/l	10	3.3	20
cis-1,3-Dichloropropene	ND		ug/l	10	2.9	20
Bromoform	ND		ug/l	40	13.	20
1,1,2,2-Tetrachloroethane	ND		ug/l	10	3.3	20
Benzene	ND		ug/l	10	3.2	20
Toluene	ND		ug/l	50	14.	20
Ethylbenzene	ND		ug/l	50	14.	20
Chloromethane	ND		ug/l	50	14.	20
Bromomethane	ND		ug/l	50	14.	20
Vinyl chloride	17	J	ug/l	20	1.4	20
Chloroethane	ND		ug/l	50	14.	20
1,1-Dichloroethene	12		ug/l	10	3.4	20
trans-1,2-Dichloroethene	18	J	ug/l	50	14.	20
Trichloroethene	2200		ug/l	10	3.5	20
1,2-Dichlorobenzene	ND		ug/l	50	14.	20

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-03 D
Client ID: MW-09 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/30/24 11:07
Date Received: 07/30/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	50	14.	20
1,4-Dichlorobenzene	ND		ug/l	50	14.	20
Methyl tert butyl ether	ND		ug/l	50	3.3	20
p/m-Xylene	ND		ug/l	50	14.	20
o-Xylene	ND		ug/l	50	14.	20
cis-1,2-Dichloroethene	1700		ug/l	50	14.	20
Styrene	ND		ug/l	50	14.	20
Dichlorodifluoromethane	ND		ug/l	100	20.	20
Acetone	ND		ug/l	100	29.	20
Carbon disulfide	ND		ug/l	100	20.	20
2-Butanone	ND		ug/l	100	39.	20
4-Methyl-2-pentanone	ND		ug/l	100	20.	20
2-Hexanone	ND		ug/l	100	20.	20
Bromochloromethane	ND		ug/l	50	14.	20
1,2-Dibromoethane	ND		ug/l	40	13.	20
1,2-Dibromo-3-chloropropane	ND		ug/l	50	14.	20
Isopropylbenzene	ND		ug/l	50	14.	20
1,2,3-Trichlorobenzene	ND		ug/l	50	14.	20
1,2,4-Trichlorobenzene	ND		ug/l	50	14.	20
Methyl Acetate	ND		ug/l	40	4.7	20
Cyclohexane	ND		ug/l	200	5.4	20
1,4-Dioxane	ND		ug/l	5000	1200	20
Freon-113	ND		ug/l	50	14.	20
Methyl cyclohexane	ND		ug/l	200	7.9	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-04
Client ID: TRIP-BLANK-7/30/24
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/30/24 00:00
Date Received: 07/30/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/09/24 12:58
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-04 Date Collected: 07/30/24 00:00

Client ID: TRIP-BLANK-7/30/24 Date Received: 07/30/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/02/24 09:23
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1955288-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/02/24 09:23
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1955288-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2442917
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/02/24 09:23
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1955288-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	104		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/04/24 19:02
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1955415-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/04/24 19:02
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1955415-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2442917
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/04/24 19:02
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1955415-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/09/24 08:12
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1957963-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/09/24 08:12
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1957963-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/09/24 08:12
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1957963-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1955288-3 WG1955288-4								
Methylene chloride	110		100		70-130	10		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		100		70-130	10		20
Carbon tetrachloride	110		110		63-132	0		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	99		100		63-130	1		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		110		75-130	0		20
Trichlorofluoromethane	100		100		62-150	0		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	110		110		67-130	0		20
Bromodichloromethane	100		110		67-130	10		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	110		110		70-130	0		20
Bromoform	92		92		54-136	0		20
1,1,2,2-Tetrachloroethane	94		96		67-130	2		20
Benzene	110		110		70-130	0		20
Toluene	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
Chloromethane	120		120		64-130	0		20
Bromomethane	100		110		39-139	10		20
Vinyl chloride	110		110		55-140	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1955288-3 WG1955288-4								
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	100		99		61-145	1		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	110		110		70-130	0		20
1,2-Dichlorobenzene	110		110		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	110		110		70-130	0		20
Methyl tert butyl ether	94		99		63-130	5		20
p/m-Xylene	115		110		70-130	4		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Styrene	110		110		70-130	0		20
Dichlorodifluoromethane	99		98		36-147	1		20
Acetone	80		78		58-148	3		20
Carbon disulfide	110		100		51-130	10		20
2-Butanone	80		81		63-138	1		20
4-Methyl-2-pentanone	81		86		59-130	6		20
2-Hexanone	75		84		57-130	11		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	93		98		70-130	5		20
1,2-Dibromo-3-chloropropane	79		82		41-144	4		20
Isopropylbenzene	110		110		70-130	0		20
1,2,3-Trichlorobenzene	96		96		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1955288-3 WG1955288-4								
1,2,4-Trichlorobenzene	100		100		70-130	0		20
Methyl Acetate	79		84		70-130	6		20
Cyclohexane	100		100		70-130	0		20
1,4-Dioxane	84		90		56-162	7		20
Freon-113	100		98		70-130	2		20
Methyl cyclohexane	100		99		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		101		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	101		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1955415-3 WG1955415-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	110		110		63-132	0		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	98		100		63-130	2		20
1,1,2-Trichloroethane	98		100		70-130	2		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	100		100		75-130	0		20
Trichlorofluoromethane	100		100		62-150	0		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		110		67-130	10		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	110		100		70-130	10		20
Bromoform	96		97		54-136	1		20
1,1,2,2-Tetrachloroethane	95		96		67-130	1		20
Benzene	110		110		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
Chloromethane	120		110		64-130	9		20
Bromomethane	99		98		39-139	1		20
Vinyl chloride	110		110		55-140	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1955415-3 WG1955415-4								
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	100		99		61-145	1		20
trans-1,2-Dichloroethene	110		100		70-130	10		20
Trichloroethene	110		100		70-130	10		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		110		70-130	10		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	95		98		63-130	3		20
p/m-Xylene	110		110		70-130	0		20
o-Xylene	105		110		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Styrene	105		110		70-130	5		20
Dichlorodifluoromethane	100		100		36-147	0		20
Acetone	73		72		58-148	1		20
Carbon disulfide	110		100		51-130	10		20
2-Butanone	80		86		63-138	7		20
4-Methyl-2-pentanone	91		92		59-130	1		20
2-Hexanone	83		84		57-130	1		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	97		98		70-130	1		20
1,2-Dibromo-3-chloropropane	81		82		41-144	1		20
Isopropylbenzene	110		100		70-130	10		20
1,2,3-Trichlorobenzene	97		99		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1955415-3 WG1955415-4								
1,2,4-Trichlorobenzene	100		100		70-130	0		20
Methyl Acetate	85		90		70-130	6		20
Cyclohexane	110		110		70-130	0		20
1,4-Dioxane	90		90		56-162	0		20
Freon-113	110		110		70-130	0		20
Methyl cyclohexane	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		103		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	96		97		70-130
Dibromofluoromethane	100		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1957963-3 WG1957963-4								
Methylene chloride	89		92		70-130	3		20
1,1-Dichloroethane	93		98		70-130	5		20
Chloroform	93		98		70-130	5		20
Carbon tetrachloride	80		94		63-132	16		20
1,2-Dichloropropane	94		97		70-130	3		20
Dibromochloromethane	95		94		63-130	1		20
1,1,2-Trichloroethane	95		98		70-130	3		20
Tetrachloroethene	86		94		70-130	9		20
Chlorobenzene	94		95		75-130	1		20
Trichlorofluoromethane	72		95		62-150	**28**	Q	20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	83		95		67-130	13		20
Bromodichloromethane	95		96		67-130	1		20
trans-1,3-Dichloropropene	89		91		70-130	2		20
cis-1,3-Dichloropropene	90		90		70-130	0		20
Bromoform	88		88		54-136	0		20
1,1,2,2-Tetrachloroethane	95		98		67-130	3		20
Benzene	90		95		70-130	5		20
Toluene	88		92		70-130	4		20
Ethylbenzene	86		90		70-130	5		20
Chloromethane	80		86		64-130	7		20
Bromomethane	63		62		39-139	2		20
Vinyl chloride	81		91		55-140	12		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1957963-3 WG1957963-4								
Chloroethane	100		110		55-138	10		20
1,1-Dichloroethene	75		90		61-145	18		20
trans-1,2-Dichloroethene	88		94		70-130	7		20
Trichloroethene	81		90		70-130	11		20
1,2-Dichlorobenzene	96		95		70-130	1		20
1,3-Dichlorobenzene	96		94		70-130	2		20
1,4-Dichlorobenzene	94		95		70-130	1		20
Methyl tert butyl ether	81		83		63-130	2		20
p/m-Xylene	85		90		70-130	6		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	91		94		70-130	3		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	62		81		36-147	**27**	Q	20
Acetone	76		82		58-148	8		20
Carbon disulfide	84		94		51-130	11		20
2-Butanone	100		93		63-138	7		20
4-Methyl-2-pentanone	82		83		59-130	1		20
2-Hexanone	74		76		57-130	3		20
Bromochloromethane	94		97		70-130	3		20
1,2-Dibromoethane	88		94		70-130	7		20
1,2-Dibromo-3-chloropropane	81		83		41-144	2		20
Isopropylbenzene	81		86		70-130	6		20
1,2,3-Trichlorobenzene	86		86		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1957963-3 WG1957963-4								
1,2,4-Trichlorobenzene	90		91		70-130	1		20
Methyl Acetate	82		80		70-130	2		20
Cyclohexane	**67**	Q	88		70-130	**27**	Q	20
1,4-Dioxane	86		92		56-162	7		20
Freon-113	71		91		70-130	**25**	Q	20
Methyl cyclohexane	**63**	Q	79		70-130	**23**	Q	20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		109		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	92		91		70-130
Dibromofluoromethane	102		104		70-130

METALS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-01 Date Collected: 07/30/24 15:22

Client ID: MW-03 PRE-SAMPLING Date Received: 07/30/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	52.2		mg/l	0.100	0.0350	1	08/02/24 01:30	08/02/24 18:10	EPA 3005A	1,6010D	JMF
Iron, Total	2.26		mg/l	0.0500	0.0090	1	08/02/24 01:30	08/02/24 18:10	EPA 3005A	1,6010D	JMF
Magnesium, Total	9.04		mg/l	0.100	0.0153	1	08/02/24 01:30	08/02/24 18:10	EPA 3005A	1,6010D	JMF
Potassium, Total	3.60		mg/l	2.50	0.237	1	08/02/24 01:30	08/02/24 18:10	EPA 3005A	1,6010D	JMF
Sodium, Total	71.0		mg/l	2.00	0.120	1	08/02/24 01:30	08/02/24 18:10	EPA 3005A	1,6010D	JMF
General Chemistry - Westborough Lab											
Iron, Ferric	2.0	J	mg/l	0.50	0.06	1		08/02/24 18:10	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	45.2		mg/l	0.100	0.0350	1	08/08/24 23:01	08/09/24 15:44	EPA 3005A	1,6010D	JTS
Iron, Dissolved	0.0329	J	mg/l	0.0500	0.0090	1	08/08/24 23:01	08/09/24 15:44	EPA 3005A	1,6010D	JTS
Magnesium, Dissolved	7.40		mg/l	0.100	0.0153	1	08/08/24 23:01	08/09/24 15:44	EPA 3005A	1,6010D	JTS
Potassium, Dissolved	3.02		mg/l	2.50	0.237	1	08/08/24 23:01	08/09/24 15:44	EPA 3005A	1,6010D	JTS
Sodium, Dissolved	66.3		mg/l	2.00	0.120	1	08/08/24 23:01	08/09/24 15:44	EPA 3005A	1,6010D	JTS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-02 Date Collected: 07/30/24 12:45

Client ID: MW-08 PRE-SAMPLING Date Received: 07/30/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	86.8		mg/l	0.100	0.0350	1	08/02/24 01:30	08/02/24 18:14	EPA 3005A	1,6010D	JMF
Iron, Total	0.134		mg/l	0.0500	0.0090	1	08/02/24 01:30	08/02/24 18:14	EPA 3005A	1,6010D	JMF
Magnesium, Total	16.5		mg/l	0.100	0.0153	1	08/02/24 01:30	08/02/24 18:14	EPA 3005A	1,6010D	JMF
Potassium, Total	2.90		mg/l	2.50	0.237	1	08/02/24 01:30	08/02/24 18:14	EPA 3005A	1,6010D	JMF
Sodium, Total	121.		mg/l	2.00	0.120	1	08/02/24 01:30	08/02/24 18:14	EPA 3005A	1,6010D	JMF
General Chemistry - Westborough Lab											
Iron, Ferric	0.05	UJ	mg/l	0.50	0.06	1		08/02/24 18:14	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	74.2		mg/l	0.100	0.0350	1	08/08/24 23:01	08/09/24 16:15	EPA 3005A	1,6010D	JTS
Iron, Dissolved	ND		mg/l	0.0500	0.0090	1	08/08/24 23:01	08/09/24 16:15	EPA 3005A	1,6010D	JTS
Magnesium, Dissolved	15.3		mg/l	0.100	0.0153	1	08/08/24 23:01	08/09/24 16:15	EPA 3005A	1,6010D	JTS
Potassium, Dissolved	2.76		mg/l	2.50	0.237	1	08/08/24 23:01	08/09/24 16:15	EPA 3005A	1,6010D	JTS
Sodium, Dissolved	113.		mg/l	4.00	0.240	2	08/08/24 23:01	08/09/24 17:10	EPA 3005A	1,6010D	JTS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-03 Date Collected: 07/30/24 11:07

Client ID: MW-09 PRE-SAMPLING Date Received: 07/30/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	86.5		mg/l	0.100	0.0350	1	08/02/24 01:30	08/02/24 18:18	EPA 3005A	1,6010D	JMF
Iron, Total	22.7		mg/l	0.0500	0.0090	1	08/02/24 01:30	08/02/24 18:18	EPA 3005A	1,6010D	JMF
Magnesium, Total	21.6		mg/l	0.100	0.0153	1	08/02/24 01:30	08/02/24 18:18	EPA 3005A	1,6010D	JMF
Potassium, Total	3.38		mg/l	2.50	0.237	1	08/02/24 01:30	08/02/24 18:18	EPA 3005A	1,6010D	JMF
Sodium, Total	107.		mg/l	2.00	0.120	1	08/02/24 01:30	08/02/24 18:18	EPA 3005A	1,6010D	JMF
General Chemistry - Westborough Lab											
Iron, Ferric	22		mg/l	0.50	0.06	1		08/02/24 18:18	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	75.0		mg/l	0.100	0.0350	1	08/08/24 23:01	08/09/24 16:21	EPA 3005A	1,6010D	JTS
Iron, Dissolved	0.271		mg/l	0.0500	0.0090	1	08/08/24 23:01	08/09/24 16:21	EPA 3005A	1,6010D	JTS
Magnesium, Dissolved	14.8		mg/l	0.100	0.0153	1	08/08/24 23:01	08/09/24 16:21	EPA 3005A	1,6010D	JTS
Potassium, Dissolved	1.84	J	mg/l	2.50	0.237	1	08/08/24 23:01	08/09/24 16:21	EPA 3005A	1,6010D	JTS
Sodium, Dissolved	97.9		mg/l	2.00	0.120	1	08/08/24 23:01	08/09/24 16:21	EPA 3005A	1,6010D	JTS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2442917

Project Number: X55.002.001 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1954262-1										
Calcium, Total	ND		mg/l	0.100	0.0350	1	08/02/24 01:30	08/02/24 17:17	1,6010D	JMF
Iron, Total	ND		mg/l	0.0500	0.0090	1	08/02/24 01:30	08/02/24 17:17	1,6010D	JMF
Magnesium, Total	ND		mg/l	0.100	0.0153	1	08/02/24 01:30	08/02/24 17:17	1,6010D	JMF
Potassium, Total	ND		mg/l	2.50	0.237	1	08/02/24 01:30	08/02/24 17:17	1,6010D	JMF
Sodium, Total	ND		mg/l	2.00	0.120	1	08/02/24 01:30	08/02/24 17:17	1,6010D	JMF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1956910-1										
Calcium, Dissolved	ND		mg/l	0.100	0.0350	1	08/08/24 23:01	08/09/24 15:31	1,6010D	JTS
Iron, Dissolved	ND		mg/l	0.0500	0.0090	1	08/08/24 23:01	08/09/24 15:31	1,6010D	JTS
Magnesium, Dissolved	ND		mg/l	0.100	0.0153	1	08/08/24 23:01	08/09/24 15:31	1,6010D	JTS
Potassium, Dissolved	ND		mg/l	2.50	0.237	1	08/08/24 23:01	08/09/24 15:31	1,6010D	JTS
Sodium, Dissolved	ND		mg/l	2.00	0.120	1	08/08/24 23:01	08/09/24 15:31	1,6010D	JTS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1954262-2								
Calcium, Total	111		-		80-120	-		
Iron, Total	112		-		80-120	-		
Magnesium, Total	116		-		80-120	-		
Potassium, Total	111		-		80-120	-		
Sodium, Total	115		-		80-120	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1956910-2								
Calcium, Dissolved	96		-		80-120	-		
Iron, Dissolved	101		-		80-120	-		
Magnesium, Dissolved	100		-		80-120	-		
Potassium, Dissolved	103		-		80-120	-		
Sodium, Dissolved	105		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2442917
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1954262-3 QC Sample: L2442777-02 Client ID: MS Sample												
Calcium, Total	27.0	10	38.0	110		-	-		75-125	-		20
Iron, Total	0.0898	1	1.22	113		-	-		75-125	-		20
Magnesium, Total	3.16	10	14.8	116		-	-		75-125	-		20
Potassium, Total	3.02	10	14.4	114		-	-		75-125	-		20
Sodium, Total	9.91	10	21.5	116		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1956910-3 QC Sample: L2442917-01 Client ID: MW-03 PRE-SAMPLING												
Calcium, Dissolved	45.2	10	58.7	**135**	Q	-	-		75-125	-		20
Iron, Dissolved	0.0329J	1	1.10	110		-	-		75-125	-		20
Magnesium, Dissolved	7.40	10	17.3	99		-	-		75-125	-		20
Potassium, Dissolved	3.02	10	14.2	112		-	-		75-125	-		20
Sodium, Dissolved	66.3	10	81.9	**156**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1954262-4 QC Sample: L2442777-02 Client ID: DUP Sample						
Iron, Total	0.0898	0.0910	mg/l	1		20
Sodium, Total	9.91	10.1	mg/l	2		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1956910-4 QC Sample: L2442917-01 Client ID: MW-03 PRE-SAMPLING						
Calcium, Dissolved	45.2	44.9	mg/l	1		20
Iron, Dissolved	0.0329J	0.0324J	mg/l	NC		20
Magnesium, Dissolved	7.40	7.42	mg/l	0		20
Potassium, Dissolved	3.02	3.01	mg/l	0		20
Sodium, Dissolved	66.3	65.9	mg/l	1		20

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2442917
Report Date: 08/13/24

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1956910-6 QC Sample: L2442917-01 Client ID: MW-03 PRE-SAMPLING						
Calcium, Dissolved	45.2	48.4	mg/l	7		20
Magnesium, Dissolved	7.40	7.58	mg/l	2		20
Sodium, Dissolved	66.3	73.1	mg/l	10		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2442917
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-01
Client ID: MW-03 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY
Sample Depth:
Matrix: Water
Date Collected: 07/30/24 15:22
Date Received: 07/30/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/12/24 14:35	121,2320B	MKT
Alkalinity, Bicarbonate	151.		mg CaCO3/L	2.00	NA	1	-	08/12/24 14:35	121,2320B	MKT
Nitrogen, Nitrate	0.68		mg/l	0.10	0.023	1	-	08/01/24 03:23	44,353.2	KAF
Total Organic Carbon	3.55		mg/l	0.500	0.097	1	-	08/01/24 11:22	121,5310C	DEW
Iron, Ferrous	0.26	J	mg/l	0.50	0.056	1	-	08/01/24 19:29	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	85.0		mg/l	2.50	0.420	5	-	07/31/24 14:47	44,300.0	CVN
Sulfate	44.4		mg/l	5.00	2.27	5	-	07/31/24 14:47	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2442917
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-02
Client ID: MW-08 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY
Sample Depth:
Matrix: Water

Date Collected: 07/30/24 12:45
Date Received: 07/30/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/12/24 14:44	121,2320B	MKT
Alkalinity, Bicarbonate	202.		mg CaCO3/L	2.00	NA	1	-	08/12/24 14:44	121,2320B	MKT
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/01/24 03:24	44,353.2	KAF
Total Organic Carbon	1.76		mg/l	0.500	0.097	1	-	08/01/24 11:51	121,5310C	DEW
Iron, Ferrous	0.080	J	mg/l	0.50	0.056	1	-	08/01/24 19:30	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	195.		mg/l	5.00	0.839	10	-	07/31/24 14:59	44,300.0	CVN
Sulfate	35.7		mg/l	1.00	0.454	1	-	07/31/24 12:58	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2442917
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2442917-03
Client ID: MW-09 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY
Date Collected: 07/30/24 11:07
Date Received: 07/30/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/12/24 14:49	121,2320B	MKT
Alkalinity, Bicarbonate	201.		mg CaCO3/L	2.00	NA	1	-	08/12/24 14:49	121,2320B	MKT
Nitrogen, Nitrate	0.42		mg/l	0.10	0.023	1	-	08/01/24 03:25	44,353.2	KAF
Total Organic Carbon	1.22		mg/l	0.500	0.097	1	-	08/01/24 12:21	121,5310C	DEW
Iron, Ferrous	0.59		mg/l	0.50	0.056	1	-	08/01/24 19:31	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	206.		mg/l	5.00	0.839	10	-	07/31/24 15:11	44,300.0	CVN
Sulfate	33.7		mg/l	1.00	0.454	1	-	07/31/24 13:10	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCI
Project Number: X55.002.001
Lab Number: L2442917
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-03 Batch: WG1953693-1										
Chloride	0.132	J	mg/l	0.500	0.083	1	-	07/31/24 09:56	44,300.0	CVN
Sulfate	ND		mg/l	1.00	0.454	1	-	07/31/24 09:56	44,300.0	CVN
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1953977-1										
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/01/24 03:12	44,353.2	KAF
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1953991-1										
Total Organic Carbon	ND		mg/l	0.500	0.097	1	-	08/01/24 03:21	121,5310C	DEW
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1954345-1										
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/01/24 19:27	121,3500FE-B	AAS
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1958188-1										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/12/24 15:04	121,2320B	MKT
Alkalinity, Bicarbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/12/24 15:04	121,2320B	MKT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2442917

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 Batch: WG1953693-2								
Chloride	102		-		90-110	-		
Sulfate	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1953977-2								
Nitrogen, Nitrate	106		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1953991-2								
Total Organic Carbon	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1954345-2								
Iron, Ferrous	107		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2442917
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953693-3 QC Sample: L2442917-01 Client ID: MW-03 PRE-SAMPLING												
Chloride	85.0	20	105	101		-	-		90-110	-		18
Sulfate	44.4	40	85.2	102		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953977-4 QC Sample: L2442980-01 Client ID: MS Sample												
Nitrogen, Nitrate	12.	4	19	**175**	Q	-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953977-6 QC Sample: L2443025-01 Client ID: MS Sample												
Nitrogen, Nitrate	8.3	4	13	**118**	Q	-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953991-4 QC Sample: L2442723-01 Client ID: MS Sample												
Total Organic Carbon	2.94	16	18.1	95		-	-		85-115	-		15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953991-6 QC Sample: L2442723-02 Client ID: MS Sample												
Total Organic Carbon	3.65	16	21.6	112		-	-		85-115	-		15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954345-4 QC Sample: L2443206-03 Client ID: MS Sample												
Iron, Ferrous	0.13J	1	1.1	109		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2442917
Report Date: 08/13/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953693-4 QC Sample: L2442917-01 Client ID: MW-03 PRE-SAMPLING						
Chloride	85.0	86.6	mg/l	2		18
Sulfate	44.4	45.2	mg/l	2		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953977-3 QC Sample: L2442980-01 Client ID: DUP Sample						
Nitrogen, Nitrate	12.	12	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953977-5 QC Sample: L2443025-01 Client ID: DUP Sample						
Nitrogen, Nitrate	8.3	7.8	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953991-3 QC Sample: L2442723-01 Client ID: DUP Sample						
Total Organic Carbon	2.94	2.95	mg/l	0		15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1953991-5 QC Sample: L2442723-02 Client ID: DUP Sample						
Total Organic Carbon	3.65	3.84	mg/l	5		15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954345-3 QC Sample: L2443206-02 Client ID: DUP Sample						
Iron, Ferrous	0.14J	0.15J	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1958188-2 QC Sample: L2442917-01 Client ID: MW-03 PRE-SAMPLING						
Alkalinity, Carbonate	ND	ND	mg CaCO3/L	NC		10
Alkalinity, Bicarbonate	151.	152	mg CaCO3/L	1		9

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2442917
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2442917-01A	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-01B	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-01C	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-01D	20ml Vial HCl preserved	A	N/A	N/A	2.7	Y	Absent		SUB-DISSGAS(14)
L2442917-01E	20ml Vial HCl preserved	A	N/A	N/A	2.7	Y	Absent		SUB-DISSGAS(14)
L2442917-01F	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2442917-01G	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2442917-01H	Plastic 250ml unpreserved/No Headspace	A	NA		2.7	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2442917-01I	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2442917-01J	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		-
L2442917-01K	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		MG-TI(180),FE-TI(180),CA-TI(180),NA-TI(180),K-TI(180)
L2442917-01L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2442917-01M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2442917-01X	Plastic 120ml HNO3 preserved Filtrates	A	N/A	N/A	2.7	Y	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2442917-02A	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-02B	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-02C	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-02D	20ml Vial HCl preserved	A	N/A	N/A	2.7	Y	Absent		SUB-DISSGAS(14)
L2442917-02E	20ml Vial HCl preserved	A	N/A	N/A	2.7	Y	Absent		SUB-DISSGAS(14)
L2442917-02F	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2442917-02G	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2442917-02H	Plastic 250ml unpreserved/No Headspace	A	NA		2.7	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2442917
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2442917-02I	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2442917-02J	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		-
L2442917-02K	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		FE-TI(180),MG-TI(180),K-TI(180),CA-TI(180),NA-TI(180)
L2442917-02L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2442917-02M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2442917-02X	Plastic 120ml HNO3 preserved Filtrates	A	N/A	N/A	2.7	Y	Absent		FE-SI(180),NA-SI(180),MG-SI(180),K-SI(180),CA-SI(180)
L2442917-03A	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-03B	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-03C	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2442917-03D	20ml Vial HCl preserved	A	N/A	N/A	2.7	Y	Absent		SUB-DISSGAS(14)
L2442917-03E	20ml Vial HCl preserved	A	N/A	N/A	2.7	Y	Absent		SUB-DISSGAS(14)
L2442917-03F	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2442917-03G	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2442917-03H	Plastic 250ml unpreserved/No Headspace	A	NA		2.7	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2442917-03I	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2442917-03J	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		-
L2442917-03K	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		FE-TI(180),MG-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2442917-03L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2442917-03M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2442917-03X	Plastic 120ml HNO3 preserved Filtrates	A	N/A	N/A	2.7	Y	Absent		FE-SI(180),NA-SI(180),MG-SI(180),K-SI(180),CA-SI(180)
L2442917-04A	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(7)
L2442917-04B	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(7)

Container Comments

L2442917-01D Has Headspace

*Values in parentheses indicate holding time in days

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2442917
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)

Container Comments

L2442917-01E	Has Headspace
L2442917-02E	Has Headspace
L2442917-03E	Has Headspace

*Values in parentheses indicate holding time in days

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2442917
Project Number:	X55.002.001	**Report Date:**	08/13/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2442917
Project Number:	X55.002.001	**Report Date:**	08/13/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2442917
Project Number:	X55.002.001	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2442917
Project Number:	X55.002.001	**Report Date:**	08/13/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2442917 06AUG24
C&SENG

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 7/31/24

Client Information
Client: C+S Engineers, INC.
Address: 499 Col. Ellen Collins Blvd, Syracuse, NY
Phone: 315-317-2446
Fax:
Email: HHAAS@CSCOS.com

Project Information
Project Name: Former Ithaca Gun Factory BCP Site
Project Location: 121-125 Lake St, Ithaca, NY
Project # 155.002.001
(Use Project name as Project #) ☐
Project Manager: H. Haas
ALPHAQuote #: 476184

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

Deliverables
☐ ASP-A ☑ ASP-B ☑ Same as Client Info
☐ EQuIS (1 File) ☑ EQuIS (4 File) PO #
☐ Other

Regulatory Requirement
☑ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-8260	Total Metals	Dissolved Metals	SO4 CL NO3	SULFIDE-4500	ALKT-2320	DISS GAS	TOC	Total Bottle
42917-01	MW-03 Pre-Sampling	7/30/24	1522	Water	HH/JT/MC	X	X	X	X	X	X	X	X	13
02	MW-08 Pre-Sampling	7/30/24	1245	Water	HH/JT/MC	X	X	X	X	X	X	X	X	13
03	MW-09 Pre-Sampling	7/30/24	1107	Water	HH/JT/MC	X	X	X	X	X	X	X	X	13
04	Trip-Blank-730124	-	-	Water	-	X								2

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	P	P	P	P	V	V	
Preservative	B	A	A	A	A	A	B	D	

Relinquished By:	Date/Time	Received By:	Date/Time
Haya Haas	7/30/24 1730	FedEx	7/30/24 1730
FedEx Syr S.C.	7/30/24 1750		7/31/24 0400
	7/30/24 2200		
	0130		071312 4-0730

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

August 09, 2024

Reports
Alpha Analytical
8 Walkup Drive
Westborough, MA 01581

RE: Project: L2442917
Pace Project No.: 70307236

Dear Reports:

Enclosed are the analytical results for sample(s) received by the laboratory on August 01, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville

REVISION #1: Report re-issued on 8/9/24 to include reporting to the MDL

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brianna D. Rivera
brianna.rivera@pacelabs.com
516-370-6007
Project Manager

Enclosures

cc: Candace Fox, Alpha Analytical

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

CERTIFICATIONS

Project: L2442917
Pace Project No.: 70307236

Pace Analytical Services Long Island
575 Broad Hollow Rd, Melville, NY 11747
Connecticut Certification #: PH-0435
Delaware Certification # NY 10478
Maryland Certification #: 208
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987
New Jersey Certification #: NY158
New York Certification #: 10478 Primary Accrediting Body
Pennsylvania Certification #: 68-00350
Rhode Island Certification #: LAO00340
Virginia Certification # 460302

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575 Broad Hollow Road
Melville, NY 11747
516-370-6000

SAMPLE SUMMARY

Project: L2442917
Pace Project No.: 70307236

Lab ID	Sample ID	Matrix	Date Collected	Date Received
70307236001	**MW-03 PRE-SAMPLING**	Water	07/30/24 15:22	08/01/24 07:00
70307236002	**MW-08 PRE-SAMPLING**	Water	07/30/24 12:45	08/01/24 07:00
70307236003	**MW-09 PRE-SAMPLING**	Water	07/30/24 11:07	08/01/24 07:00

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516-370-6000

SAMPLE ANALYTE COUNT

Project: L2442917
Pace Project No.: 70307236

Lab ID	Sample ID	Method	Analysts	Analytes Reported
70307236001	**MW-03 PRE-SAMPLING**	SM22 4500-S2 F	JWM	1
70307236002	**MW-08 PRE-SAMPLING**	SM22 4500-S2 F	JWM	1
70307236003	**MW-09 PRE-SAMPLING**	SM22 4500-S2 F	JWM	1

PACE-MV = Pace Analytical Services - Melville

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L2442917
Pace Project No.: 70307236

Sample: MW-03 PRE-SAMPLING **Lab ID: 70307236001** Collected: 07/30/24 15:22 Received: 08/01/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<0.20**	mg/L	2.0	0.20	1		08/06/24 16:30		

REPORT OF LABORATORY ANALYSIS

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Melville, NY 11747
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ANALYTICAL RESULTS

Project: L2442917
Pace Project No.: 70307236

Sample: MW-08 PRE-SAMPLING **Lab ID: 70307236002** Collected: 07/30/24 12:45 Received: 08/01/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<0.20**	mg/L	2.0	0.20	1		08/06/24 16:33		

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ANALYTICAL RESULTS

Project: L2442917
Pace Project No.: 70307236

Sample: MW-09 PRE-SAMPLING **Lab ID: 70307236003** Collected: 07/30/24 11:07 Received: 08/01/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<0.20**	mg/L	2.0	0.20	1		08/06/24 16:36		

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QUALITY CONTROL DATA

Project: L2442917
Pace Project No.: 70307236

QC Batch: 357629
QC Batch Method: SM22 4500-S2 F
Analysis Method: SM22 4500-S2 F
Analysis Description: 4500S2F W Sulfide Iodometric
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70307236001, 70307236002, 70307236003

METHOD BLANK: 1856592 Matrix: Water
Associated Lab Samples: 70307236001, 70307236002, 70307236003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	<0.20	2.0	0.20	08/06/24 16:16	

LABORATORY CONTROL SAMPLE & LCSD: 1856593 1858106

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	14	14.0	14.0	100	100	85-115	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: L2442917
Pace Project No.: 70307236

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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516-370-6000

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2442917
Pace Project No.: 70307236

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70307236001	**MW-03 PRE-SAMPLING**	SM22 4500-S2 F	357629		
70307236002	**MW-08 PRE-SAMPLING**	SM22 4500-S2 F	357629		
70307236003	**MW-09 PRE-SAMPLING**	SM22 4500-S2 F	357629		

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Subcontract Chain of Custody

Pace Analytical (Melville)
575 Broad Hollow Road
Melville, NY 11747

Alpha Job Number
L2442917

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 716-427-5223 Email: Candace.Fox@pacelabs.com	Project Location: NY Project Manager: Candace Fox **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria: NY-TOGS-GA

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2442917

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-03 PRE-SAMPLING	07-30-24 15:22	WATER	Sulfide	
	MW-08 PRE-SAMPLING	07-30-24 12:45	WATER	Sulfide	
	MW-09 PRE-SAMPLING	07-30-24 11:07	WATER	Sulfide	

WO# : 70307236

70307236

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	C. Clean	7/31/24		7/31 1800
		7/30/24		7/31/24 22:15
Form No: AL_subcoc	T/Shaw 8/1 Fax		Delivery DHL	8/1/24 7:00

Serial_No:08132419:11

DC_Intk Excel Form Template
Effective Date

WO#: 70307236
PM: BDR **Due Date: 08/12/24**
CLIENT: ALPHA

Client Name: ALPHA Proje

Courier: Fed Ex UPS USPS Client Commercial Pace Ou

Tracking #:

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes

Packing Material: Bubble Wrap Bubble Bags Ziplo None Other Type of Ice: Wet Blue None

Thermometer Used: T4211 Correction Factor: -0.1 Samples on ice, cooling process has begun

Cooler Temperature(°C): 0.6 Cooler Temperature Corrected(°C) 0.5 Date/Time 5035A kits placed in freezer

Temp should be above freezing to 6.0°C

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? Ye No

Did samples orignate from a foreign source including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MELV-0076) and include with SCUR/COC paperwork.

Date and Initials of person examining contents: MDS 8/1/24

				COMMENTS:
Chain of Custody Present:	Yes	No		1.
Chain of Custody Filled Out:	Yes	No		2.
Chain of Custody Relinquished:	Yes	No		3.
Sampler Name & Signature on COC:	Yes	No	N/A	4.
Samples Arrived within Hold Time:	Yes	No		5.
Short Hold Time Analysis (<72hr):	Yes	No		6.
Rush Turn Around Time Requested	Yes	No		7.
Sufficient Volume: (Triple volume provided for MS/MSD)	Yes	No		8.
Correct Containers Used:	Yes	No		9.
-Pace Containers Used:	Yes	No		
Containers Intact:	Yes	No		10.
Filtered volume received for Dissolved tests	Yes	No	N/A	11. Note: if sediment is visible in the dissolved container.
Sample Labels match COC: -Includes date/time/ID/Analysis	Yes	No		12.
Matrix:	SL	WT	OIL OTHER	

Date and Initials of person checking preservation: MDS 8/1/24

All containers needing preservation have been	Yes	No	N/A	13. HNO3 H2SO4 NaOH HCl
pH paper Lot # 200623				Sample #
All containers needing preservation are found to be in compliance with method recommendation? (HNO3, H2SO4, HCl, NaOH>9 Sulfide, NAOH>12 Cyanide)	Yes	No	N/A	
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis				Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Samples checked for dechlorination:	Yes	No	N/A	14.
KI starch test strips Lot #				Positive for Res. Chlorine? Y N
Residual chlorine strips Lot #				
SM 4500 CN samples checked for sul	Yes	No	N/A	15.
Lead Acetate Strips Lot #				Positive for Sulfide? Y N
Headspace in ALK Bottle (>6mm):	Yes	No	N/A	
Headspace in VOA Vials (>6mm):	Yes	No	N/A	16.
Trip Blank Present:	Yes	No	N/A	17.
Trip Blank Custody Seals Present	Yes	No	N/A	

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

* PM (Project Manager) review (which includes the SCUR) is documented electronically in LIMS.

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

August 12, 2024

Candace Fox
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581

Project Location: L2442917
Client Job Number:
Project Number: L2442917
Laboratory Work Order Number: 24G4252

Enclosed are results of analyses for samples as received by the laboratory on July 31, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karriem G. Marius
Project Manager

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B382502 9

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Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581
ATTN: Candace Fox

REPORT DATE: 8/12/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: L2442917

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24G4252

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: L2442917

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-03 PRE- SAMPLING	24G4252-01	Water		RSK175	
MW-08 PRE- SAMPLING	24G4252-02	Water		RSK175	
MW-09 PRE- SAMPLING	24G4252-03	Water		RSK175	

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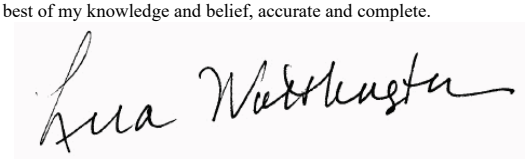
CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: L2442917 Sample Description: Work Order: 24G4252

Date Received: 7/31/2024

Field Sample #: MW-03 PRE- SAMPLING Sampled: 7/30/2024 15:22

Sample ID: 24G4252-01

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 11:00	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 11:00	TPH
Methane	0.0070	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 11:00	TPH

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Project Location: L2442917 Sample Description: Work Order: 24G4252

Date Received: 7/31/2024

Field Sample #: MW-08 PRE- SAMPLING Sampled: 7/30/2024 12:45

Sample ID: 24G4252-02

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 11:10	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 11:10	TPH
Methane	0.019	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 11:10	TPH

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Project Location: L2442917 Sample Description: Work Order: 24G4252

Date Received: 7/31/2024

Field Sample #: MW-09 PRE- SAMPLING Sampled: 7/30/2024 11:07

Sample ID: 24G4252-03

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 11:18	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 11:18	TPH
Methane	0.011	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 11:18	TPH

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Sample Extraction Data

Prep Method:RSK175 **Analytical Method:RSK175**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24G4252-01 [MW-03 PRE- SAMPLING]	B382502	1.00	1.00	08/08/24
24G4252-02 [MW-08 PRE- SAMPLING]	B382502	1.00	1.00	08/08/24
24G4252-03 [MW-09 PRE- SAMPLING]	B382502	1.00	1.00	08/08/24

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QUALITY CONTROL

Miscellaneous Organic Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B382502 - RSK175										
Blank (B382502-BLK1)				Prepared & Analyzed: 08/08/24						
Ethane	ND	0.014	mg/L							
Ethene	ND	0.017	mg/L							
Methane	ND	0.0070	mg/L							
LCS (B382502-BS1)				Prepared & Analyzed: 08/08/24						
Ethane	0.76		mg/L	0.810		94.4	65.9-110			
Ethene	0.72		mg/L	0.757		94.5	62.8-110			
Methane	0.41		mg/L	0.431		95.3	63.8-110			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
RSK175 in Water	
Ethane	VA,NY,ME
Ethene	VA,NY,ME
Methane	VA,NY,ME

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
NY	New York State Department of Health	10899 NELAP	04/1/2025
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024

Subcontract Chain of Custody

Pace New England
39 Spruce St
East Longmeadow, MA 01028

24-64252

Alpha Job Number
L2442917

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 716-427-5223 Email: Candace.Fox@pacelabs.com	Project Location: NY Project Manager: Candace Fox **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria: NY-TOGS-GA

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2442917

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
1	MW-03 PRE-SAMPLING	07-30-24 15:22	WATER	Dissolved Gasses	
2	MW-08 PRE-SAMPLING	07-30-24 12:45	WATER	Dissolved Gasses	
3	MW-09 PRE-SAMPLING	07-30-24 11:07	WATER	Dissolved Gasses	

Relinquished By:	Date/Time:	Received By:	Date/Time:
	7/31/24 0610	PACE	7/31/24 0610
PACE	7/31/24 0756		7/31/24 756

Form No: AL_subcoc

Serial_No:08132419:11

Pace ANALYTICAL SERVICES

DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Log In Back-Sheet

Client ALPHA

Project L2472917

MCP/RCP Required NA

Deliverable Package Requirement NA

Location NA

PWSID# (When Applicable) NA

Arrival Method:

Courier ☑ Fed Ex ☐ Walk In ☐ Other ☐

Received By / Date / Time EA 7/31/24 1332

Back-Sheet By / Date / Time EA 7/31/24 1332

Temperature Method Gun 6

WV samples: Yes (see note*) / No (follow normal procedure)

Temp ☑ < 6° C Actual Temperature 4.1

Rush Samples: Yes / No Notify

Short Hold: Yes / No Notify

Notes regarding Samples/COC outside of SOP:

Login Sample Receipt Checklist – (Rejection Criteria Listing – Using Acceptance Policy) Any False statement will be brought to the attention of the Client – True or False

	True	False
Received on Ice	☑	☐
Received in Cooler	☑	☐
Custody Seal: DATE TIME	☐	☑
COC Relinquished	☑	☐
COC/Samples Labels Agree	☑	☐
All Samples in Good Condition	☑	☐
Samples Received within Holding Time	☑	☐
Is there enough Volume	☑	☐
Proper Media/Container Used	☑	☐
Splitting Samples Required	☐	☑
MS/MSD	☐	☑
Trip Blanks	☐	☑
Lab to Filters	☐	☑
COC Legible	☑	☐

COC Included: (Check all included)

Client	☑	Analysis	☑	Sampler Name	☐
Project	☑	IDs	☑	Collection Date/Time	☑

All Samples Proper pH: N/A ☐ ☐

Additional Container Notes

**Note: West Virginia requires all samples to have their temperature taken. Note any outliers.*

Qualtrax ID: 120836

Pace ANALYTICAL SERVICES

DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Sample			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
16oz Amb/Clear	Soils Jars (Circle Amb/Clear)																					
8oz Amb/Clear																						
4oz Amb/Clear																						
2oz Amb/Clear																						
Unpreserved	Ambers	1 Liter																				
HCL																						
Sulfuric																						
Sulfuric		250mL																				
Phosphoric																						
HCl																						
Unpreserved		100mL																				
Unpreserved	Plastics	1 Liter																				
Sulfuric																						
Unpreserved		500mL																				
Sulfuric																						
Unpreserved		250mL																				
Trizma																						
Sulfuric																						
Nitric																						
NaOH																						
Ammonium Acetate																						
NaOH/Zinc																						
Unpreserved	VOA Vials																					
HCl																						
MeOH																						
D.I. Water																						
BiSulfate																						
Col/Bact	Other / Fill in																					
Other			2																			

ANALYTICAL REPORT

Lab Number:	L2443206
Client:	C&S Companies 499 Col. Eileen Collins Blvd. Syracuse, NY 13212
ATTN:	Hayden Haas
Phone:	(315) 455-2000
Project Name:	FORMER ITHACA GUN FACTORY BCP
Project Number:	X55.002.001
Report Date:	08/14/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2443206
Report Date: 08/14/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2443206-01	MW-04B PRE-SAMPLING	WATER	121-125 LAKE ST, ITHACA,NY	07/31/24 14:20	07/31/24
L2443206-02	MW-06 PRE-SAMPLING	WATER	121-125 LAKE ST, ITHACA,NY	07/31/24 12:20	07/31/24
L2443206-03	MW-07 PRE-SAMPLING	WATER	121-125 LAKE ST, ITHACA,NY	07/31/24 10:05	07/31/24
L2443206-04	TRIP BLANK	WATER	121-125 LAKE ST, ITHACA,NY	07/31/24 00:00	07/31/24

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443206
Project Number:	X55.002.001	**Report Date:**	08/14/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443206
Project Number:	X55.002.001	**Report Date:**	08/14/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Sulfide and Dissolved Gasses were subcontracted. A copy of each laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analyses performed and element list for metals analysis were specified by the client.

Volatile Organics

L2443206-04: Headspace was noted in the sample container utilized for analysis.

Iron, Ferrous

L2443206-01, -02, and -03: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 08/14/24

ORGANICS

VOLATILES

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-01
Client ID: MW-04B PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/31/24 14:20
Date Received: 07/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/05/24 16:34
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.74		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.11	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	34		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-01 Date Collected: 07/31/24 14:20

Client ID: MW-04B PRE-SAMPLING Date Received: 07/31/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	13		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	84		70-130
Dibromofluoromethane	112		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-02
Client ID: MW-06 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/31/24 12:20
Date Received: 07/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/05/24 16:10
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.43	J	ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-02 Date Collected: 07/31/24 12:20

Client ID: MW-06 PRE-SAMPLING Date Received: 07/31/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	115		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-03
Client ID: MW-07 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/31/24 10:05
Date Received: 07/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/05/24 15:46
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	1.5	J	ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	4.2		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-03 Date Collected: 07/31/24 10:05

Client ID: MW-07 PRE-SAMPLING Date Received: 07/31/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	1.6	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	84		70-130
Dibromofluoromethane	114		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-04
Client ID: TRIP BLANK
Sample Location: 121-125 LAKE ST, ITHACA,NY

Date Collected: 07/31/24 00:00
Date Received: 07/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/12/24 14:32
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-04 Date Collected: 07/31/24 00:00

Client ID: TRIP BLANK Date Received: 07/31/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	112		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/05/24 08:35
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1955965-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/05/24 08:35
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1955965-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2443206
Report Date: 08/14/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/05/24 08:35
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1955965-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/12/24 08:19
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1958153-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/12/24 08:19
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1958153-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/12/24 08:19
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1958153-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	110		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1955965-3 WG1955965-4								
Methylene chloride	95		93		70-130	2		20
1,1-Dichloroethane	98		94		70-130	4		20
Chloroform	99		100		70-130	1		20
Carbon tetrachloride	100		99		63-132	1		20
1,2-Dichloropropane	96		96		70-130	0		20
Dibromochloromethane	99		99		63-130	0		20
1,1,2-Trichloroethane	92		96		70-130	4		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	96		97		75-130	1		20
Trichlorofluoromethane	91		95		62-150	4		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	96		96		67-130	0		20
Bromodichloromethane	96		98		67-130	2		20
trans-1,3-Dichloropropene	90		93		70-130	3		20
cis-1,3-Dichloropropene	93		95		70-130	2		20
Bromoform	92		94		54-136	2		20
1,1,2,2-Tetrachloroethane	90		92		67-130	2		20
Benzene	96		97		70-130	1		20
Toluene	93		92		70-130	1		20
Ethylbenzene	89		90		70-130	1		20
Chloromethane	70		72		64-130	3		20
Bromomethane	45		47		39-139	4		20
Vinyl chloride	87		85		55-140	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1955965-3 WG1955965-4								
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	91		93		61-145	2		20
trans-1,2-Dichloroethene	94		95		70-130	1		20
Trichloroethene	95		92		70-130	3		20
1,2-Dichlorobenzene	94		96		70-130	2		20
1,3-Dichlorobenzene	95		96		70-130	1		20
1,4-Dichlorobenzene	96		96		70-130	0		20
Methyl tert butyl ether	84		88		63-130	5		20
p/m-Xylene	90		95		70-130	5		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	90		99		70-130	10		20
Styrene	95		90		70-130	5		20
Dichlorodifluoromethane	60		59		36-147	2		20
Acetone	84		83		58-148	1		20
Carbon disulfide	91		91		51-130	0		20
2-Butanone	84		82		63-138	2		20
4-Methyl-2-pentanone	76		80		59-130	5		20
2-Hexanone	72		74		57-130	3		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	94		96		70-130	2		20
1,2-Dibromo-3-chloropropane	89		90		41-144	1		20
Isopropylbenzene	84		86		70-130	2		20
1,2,3-Trichlorobenzene	99		99		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1955965-3 WG1955965-4								
1,2,4-Trichlorobenzene	96		98		70-130	2		20
Methyl Acetate	84		85		70-130	1		20
Cyclohexane	82		82		70-130	0		20
1,4-Dioxane	82		80		56-162	2		20
Freon-113	91		92		70-130	1		20
Methyl cyclohexane	82		84		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		106		70-130
Toluene-d8	96		97		70-130
4-Bromofluorobenzene	88		87		70-130
Dibromofluoromethane	106		107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1958153-3 WG1958153-4								
Methylene chloride	90		90		70-130	0		20
1,1-Dichloroethane	96		92		70-130	4		20
Chloroform	98		96		70-130	2		20
Carbon tetrachloride	120		110		63-132	9		20
1,2-Dichloropropane	94		93		70-130	1		20
Dibromochloromethane	95		98		63-130	3		20
1,1,2-Trichloroethane	88		91		70-130	3		20
Tetrachloroethene	120		110		70-130	9		20
Chlorobenzene	100		99		75-130	1		20
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	98		98		70-130	0		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	99		99		67-130	0		20
trans-1,3-Dichloropropene	80		81		70-130	1		20
cis-1,3-Dichloropropene	99		100		70-130	1		20
Bromoform	100		100		54-136	0		20
1,1,2,2-Tetrachloroethane	84		90		67-130	7		20
Benzene	98		97		70-130	1		20
Toluene	94		91		70-130	3		20
Ethylbenzene	95		95		70-130	0		20
Chloromethane	98		94		64-130	4		20
Bromomethane	89		87		39-139	2		20
Vinyl chloride	100		98		55-140	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1958153-3 WG1958153-4								
Chloroethane	98		96		55-138	2		20
1,1-Dichloroethene	110		100		61-145	10		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	98		100		70-130	2		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	96		100		63-130	4		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	100		99		70-130	1		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	96		94		36-147	2		20
Acetone	98		100		58-148	2		20
Carbon disulfide	97		96		51-130	1		20
2-Butanone	100		100		63-138	0		20
4-Methyl-2-pentanone	86		95		59-130	10		20
2-Hexanone	87		99		57-130	13		20
Bromochloromethane	120		120		70-130	0		20
1,2-Dibromoethane	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	95		100		41-144	5		20
Isopropylbenzene	95		95		70-130	0		20
1,2,3-Trichlorobenzene	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1958153-3 WG1958153-4								
1,2,4-Trichlorobenzene	110		110		70-130	0		20
Methyl Acetate	95		100		70-130	5		20
Cyclohexane	100		100		70-130	0		20
1,4-Dioxane	112		116		56-162	4		20
Freon-113	110		110		70-130	0		20
Methyl cyclohexane	98		97		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	92		91		70-130
4-Bromofluorobenzene	85		86		70-130
Dibromofluoromethane	104		104		70-130

METALS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-01 Date Collected: 07/31/24 14:20

Client ID: MW-04B PRE-SAMPLING Date Received: 07/31/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	46.5		mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 18:42	EPA 3005A	1,6010D	DHL
Iron, Total	0.537		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 18:42	EPA 3005A	1,6010D	DHL
Magnesium, Total	8.06		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 18:42	EPA 3005A	1,6010D	DHL
Potassium, Total	3.54		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 18:42	EPA 3005A	1,6010D	DHL
Sodium, Total	72.4		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 18:42	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	0.34	J	mg/l	0.50	0.06	1		08/05/24 18:42	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	45.1		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 15:47	EPA 3005A	1,6010D	JMF
Iron, Dissolved	0.115		mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 15:47	EPA 3005A	1,6010D	JMF
Magnesium, Dissolved	8.07		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 15:47	EPA 3005A	1,6010D	JMF
Potassium, Dissolved	3.39		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 15:47	EPA 3005A	1,6010D	JMF
Sodium, Dissolved	72.4		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 15:47	EPA 3005A	1,6010D	JMF

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-02 Date Collected: 07/31/24 12:20

Client ID: MW-06 PRE-SAMPLING Date Received: 07/31/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	211.		mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 18:45	EPA 3005A	1,6010D	DHL
Iron, Total	1.14		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 18:45	EPA 3005A	1,6010D	DHL
Magnesium, Total	54.0		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 18:45	EPA 3005A	1,6010D	DHL
Potassium, Total	2.78		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 18:45	EPA 3005A	1,6010D	DHL
Sodium, Total	32.1		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 18:45	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	1.0	J	mg/l	0.50	0.06	1		08/05/24 18:45	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	206.		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 15:51	EPA 3005A	1,6010D	JMF
Iron, Dissolved	0.153		mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 15:51	EPA 3005A	1,6010D	JMF
Magnesium, Dissolved	56.6		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 15:51	EPA 3005A	1,6010D	JMF
Potassium, Dissolved	2.79		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 15:51	EPA 3005A	1,6010D	JMF
Sodium, Dissolved	33.1		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 15:51	EPA 3005A	1,6010D	JMF

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-03 Date Collected: 07/31/24 10:05

Client ID: MW-07 PRE-SAMPLING Date Received: 07/31/24

Sample Location: 121-125 LAKE ST, ITHACA,NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	93.4		mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 18:49	EPA 3005A	1,6010D	DHL
Iron, Total	0.274		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 18:49	EPA 3005A	1,6010D	DHL
Magnesium, Total	16.0		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 18:49	EPA 3005A	1,6010D	DHL
Potassium, Total	4.20		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 18:49	EPA 3005A	1,6010D	DHL
Sodium, Total	145.		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 18:49	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	0.14	J	mg/l	0.50	0.06	1		08/05/24 18:49	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	93.7		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 15:55	EPA 3005A	1,6010D	JMF
Iron, Dissolved	0.0248	J	mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 15:55	EPA 3005A	1,6010D	JMF
Magnesium, Dissolved	17.4		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 15:55	EPA 3005A	1,6010D	JMF
Potassium, Dissolved	4.36		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 15:55	EPA 3005A	1,6010D	JMF
Sodium, Dissolved	137.		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 15:55	EPA 3005A	1,6010D	JMF

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443206

Project Number: X55.002.001 **Report Date:** 08/14/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1954770-1										
Calcium, Total	0.0744	J	mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Iron, Total	ND		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Magnesium, Total	ND		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Potassium, Total	ND		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Sodium, Total	ND		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1955468-1										
Calcium, Dissolved	ND		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Iron, Dissolved	ND		mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Magnesium, Dissolved	ND		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Potassium, Dissolved	ND		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Sodium, Dissolved	ND		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1954770-2								
Calcium, Total	104		-		80-120	-		
Iron, Total	105		-		80-120	-		
Magnesium, Total	103		-		80-120	-		
Potassium, Total	107		-		80-120	-		
Sodium, Total	107		-		80-120	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1955468-2								
Calcium, Dissolved	103		-		80-120	-		
Iron, Dissolved	104		-		80-120	-		
Magnesium, Dissolved	108		-		80-120	-		
Potassium, Dissolved	109		-		80-120	-		
Sodium, Dissolved	111		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2443206
Report Date: 08/14/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1954770-3 QC Sample: L2442958-01 Client ID: MS Sample												
Calcium, Total	71.3	10	79.8	85		-	-		75-125	-		20
Iron, Total	3.55	1	4.53	98		-	-		75-125	-		20
Magnesium, Total	16.2	10	25.9	97		-	-		75-125	-		20
Potassium, Total	6.29	10	17.2	109		-	-		75-125	-		20
Sodium, Total	15.0	10	25.4	104		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1955468-3 QC Sample: L2443152-01 Client ID: MS Sample												
Calcium, Dissolved	25.2	10	34.4	92		-	-		75-125	-		20
Iron, Dissolved	31.0	1	31.0	**0**	Q	-	-		75-125	-		20
Magnesium, Dissolved	3.23	10	13.7	105		-	-		75-125	-		20
Potassium, Dissolved	4.20	10	15.1	109		-	-		75-125	-		20
Sodium, Dissolved	11.5	10	22.2	107		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1955468-4 QC Sample: L2443152-01 Client ID: DUP Sample						
Iron, Dissolved	31.0	31.4	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2443206
Report Date: 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-01
Client ID: MW-04B PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY
Sample Depth:
Matrix: Water

Date Collected: 07/31/24 14:20
Date Received: 07/31/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/06/24 08:03	121,2320B	MKT
Alkalinity, Bicarbonate	148.		mg CaCO3/L	2.00	NA	1	-	08/06/24 08:03	121,2320B	MKT
Nitrogen, Nitrate	0.29		mg/l	0.10	0.023	1	-	08/02/24 03:21	44,353.2	KAF
Total Organic Carbon	1.61		mg/l	0.500	0.097	1	-	08/02/24 05:13	121,5310C	DEW
Iron, Ferrous	0.20	J	mg/l	0.50	0.056	1	-	08/01/24 19:32	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	90.9		mg/l	5.00	0.839	10	-	08/01/24 22:33	44,300.0	CVN
Sulfate	30.1		mg/l	1.00	0.454	1	-	08/01/24 18:11	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2443206
Report Date: 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-02
Client ID: MW-06 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY
Sample Depth:
Matrix: Water

Date Collected: 07/31/24 12:20
Date Received: 07/31/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/06/24 08:08	121,2320B	MKT
Alkalinity, Bicarbonate	239.		mg CaCO3/L	2.00	NA	1	-	08/06/24 08:08	121,2320B	MKT
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/02/24 03:22	44,353.2	KAF
Total Organic Carbon	4.97		mg/l	0.500	0.097	1	-	08/02/24 05:41	121,5310C	DEW
Iron, Ferrous	0.14	J	mg/l	0.50	0.056	1	-	08/01/24 19:33	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	56.4		mg/l	5.00	0.839	10	-	08/01/24 22:44	44,300.0	CVN
Sulfate	539.		mg/l	10.0	4.54	10	-	08/01/24 22:44	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2443206
Report Date: 08/14/24

SAMPLE RESULTS

Lab ID: L2443206-03
Client ID: MW-07 PRE-SAMPLING
Sample Location: 121-125 LAKE ST, ITHACA,NY
Date Collected: 07/31/24 10:05
Date Received: 07/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/06/24 08:14	121,2320B	MKT
Alkalinity, Bicarbonate	284.		mg CaCO3/L	2.00	NA	1	-	08/06/24 08:14	121,2320B	MKT
Nitrogen, Nitrate	0.97		mg/l	0.10	0.023	1	-	08/02/24 03:23	44,353.2	KAF
Total Organic Carbon	1.73		mg/l	0.500	0.097	1	-	08/02/24 06:09	121,5310C	DEW
Iron, Ferrous	0.13	J	mg/l	0.50	0.056	1	-	08/01/24 19:34	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	196.		mg/l	5.00	0.839	10	-	08/01/24 22:55	44,300.0	CVN
Sulfate	63.5		mg/l	1.00	0.454	1	-	08/01/24 18:32	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCI
Project Number: X55.002.001
Lab Number: L2443206
Report Date: 08/14/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1954345-1										
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/01/24 19:27	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-03 Batch: WG1954436-1										
Sulfate	ND		mg/l	1.00	0.454	1	-	08/01/24 16:21	44,300.0	CVN
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-03 Batch: WG1954436-1										
Chloride	ND		mg/l	0.500	0.083	1	-	08/01/24 16:21	44,300.0	CVN
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1954453-1										
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/02/24 03:08	44,353.2	KAF
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1954461-1										
Total Organic Carbon	ND		mg/l	0.500	0.097	1	-	08/02/24 03:28	121,5310C	DEW
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1955741-1										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/06/24 07:51	121,2320B	MKT
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1955741-1										
Alkalinity, Bicarbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/06/24 07:51	121,2320B	MKT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2443206

Report Date: 08/14/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1954345-2								
Iron, Ferrous	107		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 Batch: WG1954436-2								
Chloride	103		-		90-110	-		
Sulfate	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1954453-2								
Nitrogen, Nitrate	102		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1954461-2								
Total Organic Carbon	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2443206
Report Date: 08/14/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954345-4 QC Sample: L2443206-03 Client ID: MW-07 PRE-SAMPLING												
Iron, Ferrous	0.13J	1	1.1	109		-	-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954436-3 QC Sample: L2443458-01 Client ID: MS Sample												
Chloride	24.8	4	28.0	**80**	Q	-	-		90-110	-		18
Sulfate	5.36	8	13.4	100		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954453-4 QC Sample: L2443246-01 Client ID: MS Sample												
Nitrogen, Nitrate	0.46	4	4.8	108		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954453-6 QC Sample: L2443247-01 Client ID: MS Sample												
Nitrogen, Nitrate	0.49	4	4.9	110		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954461-4 QC Sample: L2443056-01 Client ID: MS Sample												
Total Organic Carbon	2.76	16	16.2	**84**	Q	-	-		85-115	-		15

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2443206
Report Date: 08/14/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954345-3 QC Sample: L2443206-02 Client ID: MW-06 PRE-SAMPLING						
Iron, Ferrous	0.14J	0.15J	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954436-4 QC Sample: L2443458-01 Client ID: DUP Sample						
Chloride	24.8	24.8	mg/l	0		18
Sulfate	5.36	5.39	mg/l	1		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954453-3 QC Sample: L2443246-01 Client ID: DUP Sample						
Nitrogen, Nitrate	0.46	0.46	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954453-5 QC Sample: L2443247-01 Client ID: DUP Sample						
Nitrogen, Nitrate	0.49	0.49	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1954461-3 QC Sample: L2443056-01 Client ID: DUP Sample						
Total Organic Carbon	2.76	2.75	mg/l	0		15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1955741-3 QC Sample: L2443182-01 Client ID: DUP Sample						
Alkalinity, Carbonate	ND	ND	mg CaCO3/L	NC		10
Alkalinity, Bicarbonate	21.7	22.0	mg CaCO3/L	1		9

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2443206
Report Date: 08/14/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2443206-01A	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-01B	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-01C	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-01D	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2443206-01E	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2443206-01F	20ml Vial HCl preserved	A	NA		2.7	Y	Absent		SUB-DISSGAS(14)
L2443206-01G	20ml Vial HCl preserved	A	NA		2.7	Y	Absent		SUB-DISSGAS(14)
L2443206-01H	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		FE-TI(180),MG-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2443206-01I	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		-
L2443206-01J	Plastic 250ml unpreserved/No Headspace	A	NA		2.7	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2443206-01K	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2443206-01L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2443206-01M	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2)
L2443206-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA		2.7	Y	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2443206-02A	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-02B	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-02C	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-02D	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2443206-02E	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2443206-02F	20ml Vial HCl preserved	A	NA		2.7	Y	Absent		SUB-DISSGAS(14)
L2443206-02G	20ml Vial HCl preserved	A	NA		2.7	Y	Absent		SUB-DISSGAS(14)
L2443206-02H	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		MG-TI(180),FE-TI(180),K-TI(180),CA-TI(180),NA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2443206
Report Date: 08/14/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2443206-02I	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		-
L2443206-02J	Plastic 250ml unpreserved/No Headspace	A	NA		2.7	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2443206-02K	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2443206-02L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2443206-02M	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2443206-02X	Plastic 120ml HNO3 preserved Filtrates	A	NA		2.7	Y	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2443206-03A	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-03B	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-03C	Vial HCl preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(14)
L2443206-03D	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2443206-03E	Vial H2SO4 preserved	A	NA		2.7	Y	Absent		TOC-5310(28)
L2443206-03F	20ml Vial HCl preserved	A	NA		2.7	Y	Absent		SUB-DISSGAS(14)
L2443206-03G	20ml Vial HCl preserved	A	NA		2.7	Y	Absent		SUB-DISSGAS(14)
L2443206-03H	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		FE-TI(180),MG-TI(180),NA-TI(180),CA-TI(180),K-TI(180)
L2443206-03I	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		-
L2443206-03J	Plastic 250ml unpreserved/No Headspace	A	NA		2.7	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2443206-03K	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2443206-03L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.7	Y	Absent		SUB-SULFIDE(7)
L2443206-03M	Plastic 250ml unpreserved	A	7	7	2.7	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2443206-03X	Plastic 120ml HNO3 preserved Filtrates	A	NA		2.7	Y	Absent		FE-SI(180),NA-SI(180),MG-SI(180),K-SI(180),CA-SI(180)
L2443206-04A	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(7)
L2443206-04B	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		NYTCL-8260-R2(7)

*Values in parentheses indicate holding time in days

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443206
Project Number:	X55.002.001	**Report Date:**	08/14/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443206
Project Number:	X55.002.001	**Report Date:**	08/14/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443206
Project Number:	X55.002.001	**Report Date:**	08/14/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443206
Project Number:	X55.002.001	**Report Date:**	08/14/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2443206 07AUG24
C&SENG

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-9288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 8/1/24

Client Information

Client: C+S Engineers, INC.
Address: 499 Col. Eileen Collins Blvd., Syracuse, NY
Phone: 315-317-2446
Fax:
Email: hhaas@CSCOS.com

Project Information

Project Name: Forman Ithaca Gun Factory BCP Site
Project Location: 121-125 Lake St, Ithaca, NY
Project #: X55.002.001
(Use Project name as Project #)
Project Manager: HAYDEN HAAS
ALPHAQuote #: 476184

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☑ EQuIS (4 File)
☐ Other

Regulatory Requirement

☑ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-8260	Total Metals	Dissolved metals	SO4 CL NO3	SULFIDE-4500	ALKT-2320	DISS GAS	TOC	Sample Specific Comments	Total Bottle
43206 -01	MW-04B Pre-Sampling	7/31/24	1420	Water	HH/MC	X	X	X	X	X	X	X	X		13
-02	MW-06 Pre-Sampling	7/31/24	1220	Water	HH/MC	X	X	X	X	X	X	X	X		13
-03	MW-07 Pre-Sampling	7/31/24	1005	Water	HH/MC	X	X	X	X	X	X	X	X		13
-04	Trip Blank - 7/31/24	-	-	Water	-	X									2

Sample Filtration
☐ Done
☑ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Preservative Code: A = None, B = HCl, C = HNO_3, D = H_2SO_4, E = NaOH, F = MeOH, G = $NaHSO_4$, H = $Na_2S_2O_3$, K/E = Zn Ac/NaOH, O = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	P	P	P	P	V	V
Preservative	B	B	A	A	K/E	A	B	D

Relinquished By:	Date/Time	Received By:	Date/Time
Hayden Haas	7/31/24 1754	K Seo - PACE	7/31/24 1754
K Seo - S+S.C.	7/31/24 1704		7/31/24 2330
	7/31/24 2330	Chloe	8/1/24 0200

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

August 12, 2024

Reports
Alpha Analytical
8 Walkup Drive
Westborough, MA 01581

RE: Project: L2443206
Pace Project No.: 70307581

Dear Reports:

Enclosed are the analytical results for sample(s) received by the laboratory on August 06, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brianna D. Rivera
brianna.rivera@pacelabs.com
516-370-6007
Project Manager

Enclosures

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

CERTIFICATIONS

Project: L2443206
Pace Project No.: 70307581

Pace Analytical Services Long Island
575 Broad Hollow Rd, Melville, NY 11747
Connecticut Certification #: PH-0435
Delaware Certification # NY 10478
Maryland Certification #: 208
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987
New Jersey Certification #: NY158
New York Certification #: 10478 Primary Accrediting Body
Pennsylvania Certification #: 68-00350
Rhode Island Certification #: LAO00340
Virginia Certification # 460302

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

SAMPLE SUMMARY

Project: L2443206
Pace Project No.: 70307581

Lab ID	Sample ID	Matrix	Date Collected	Date Received
70307581001	**MW-04B PRE-SAMPLING**	Water	07/31/24 14:20	08/06/24 08:00
70307581002	**MW-06 PRE-SAMPLING**	Water	07/31/24 12:20	08/06/24 08:00
70307581003	**MW-07 PRE-SAMPLING**	Water	07/31/24 10:05	08/06/24 08:00

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575 Broad Hollow Road
Melville, NY 11747
516-370-6000

SAMPLE ANALYTE COUNT

Project: L2443206
Pace Project No.: 70307581

Lab ID	Sample ID	Method	Analysts	Analytes Reported
70307581001	**MW-04B PRE-SAMPLING**	SM22 4500-S2 F	GEL	1
70307581002	**MW-06 PRE-SAMPLING**	SM22 4500-S2 F	GEL	1
70307581003	**MW-07 PRE-SAMPLING**	SM22 4500-S2 F	GEL	1

PACE-MV = Pace Analytical Services - Melville

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

ANALYTICAL RESULTS

Project: L2443206
Pace Project No.: 70307581

Sample: MW-04B PRE-SAMPLING **Lab ID: 70307581001** Collected: 07/31/24 14:20 Received: 08/06/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		08/07/24 20:56		

REPORT OF LABORATORY ANALYSIS

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Melville, NY 11747
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ANALYTICAL RESULTS

Project: L2443206
Pace Project No.: 70307581

Sample: MW-06 PRE-SAMPLING **Lab ID: 70307581002** Collected: 07/31/24 12:20 Received: 08/06/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		08/07/24 20:59		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

ANALYTICAL RESULTS

Project: L2443206
Pace Project No.: 70307581

Sample: MW-07 PRE-SAMPLING **Lab ID: 70307581003** Collected: 07/31/24 10:05 Received: 08/06/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		08/07/24 21:04		

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516-370-6000

QUALITY CONTROL DATA

Project: L2443206
Pace Project No.: 70307581

QC Batch: 358149
QC Batch Method: SM22 4500-S2 F
Analysis Method: SM22 4500-S2 F
Analysis Description: 4500S2F W Sulfide Iodometric
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70307581001, 70307581002, 70307581003

METHOD BLANK: 1859671 Matrix: Water
Associated Lab Samples: 70307581001, 70307581002, 70307581003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	2.0	0.20	08/07/24 20:46	

LABORATORY CONTROL SAMPLE & LCSD: 1859672 1859673

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	14	14.0	14.0	100	100	85-115	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: L2443206
Pace Project No.: 70307581

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2443206
Pace Project No.: 70307581

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70307581001	**MW-04B PRE-SAMPLING**	SM22 4500-S2 F	358149		
70307581002	**MW-06 PRE-SAMPLING**	SM22 4500-S2 F	358149		
70307581003	**MW-07 PRE-SAMPLING**	SM22 4500-S2 F	358149		

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Subcontract Chain of Custody

Pace Analytical (Melville)
575 Broad Hollow Road
Melville, NY 11747

Alpha Job Number
L2443206

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 716-427-5223 Email: Candace.Fox@pacelabs.com	Project Location: NY Project Manager: Candace Fox **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2443206

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-04B PRE-SAMPLING	07-31-24 14:20	WATER	Sulfide	
	MW-06 PRE-SAMPLING	07-31-24 12:20	WATER	Sulfide	
	MW-07 PRE-SAMPLING	07-31-24 10:05	WATER	Sulfide	

WO# : 70307581
70307581

	Relinquished By:	Date/Time:	Received By:	Date/Time:
				8/5 1800
		8/5/24		8/5/24 1510
Form No: AL_subcoc		8/6 8:00		8/6/24 8:00

Serial_No:08142416:31

DC#_Title: ENV-FRM-MELV-0024 v07_SCUR
Effective Date: 4/12/2024

WO# : 70307581
PM: BDR **Due Date: 08/13/24**
CLIENT: ALPHA

Client Name: Alpha **Project #**

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals intact:** ☐ Yes ☐ No **Temperature Blank Present:** ☐ Yes ☐ No
Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ Ziplo ☐ None ☐ Other **Type of Ice:** Wet Blue None

Thermometer Used: TH211 **Correction Factor:** -0.1 ☐ Samples on ice, cooling process has begun
Cooler Temperature(°C): 0.3 **Cooler Temperature Corrected(°C):** 0.2 **Date/Time 5035A kits placed in freezer**
Temp should be above freezing to 6.0°C

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? ☐ Yes ☐ No

Did samples orignate from a foreign source including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MELV-0076) and include with SCUR/COC paperwork.

Date and Initials of person examining contents: ASF 8/16/24

				COMMENTS:
Chain of Custody Present:	☑Yes	☐No		1.
Chain of Custody Filled Out:	☑Yes	☐No		2.
Chain of Custody Relinquished:	☑Yes	☐No		3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No		5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No		6.
Rush Turn Around Time Requested	☐Yes	☑No		7.
Sufficient Volume: (Triple volume provided for MS/MSD)	☑Yes	☐No		8.
Correct Containers Used:	☑Yes	☐No		9.
-Pace Containers Used:	☑Yes	☐No		
Containers Intact:	☑Yes	☐No		10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11. Note: if sediment is visible in the dissolved container.
Sample Labels match COC: -Includes date/time/ID/Analysis	☑Yes Matrix:	☐No SL WT	☑ OIL OTHER	12.

Date and Initials of person checking preservation: ASF 8/16/24

All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
pH paper Lot # 206623				Sample #
All containers needing preservation are found to be in compliance with method recommendation? (HNO_3, H_2SO_4, HCl, NaOH>9 Sulfide, NAOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis	☑Yes	☐No	☐N/A	Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Samples checked for dechlorination: KI starch test strips Lot # Residual chlorine strips Lot #	☐Yes	☐No	☑N/A	14. Positive for Res. Chlorine? Y N
SM 4500 CN samples checked for sul Lead Acetate Strips Lot #	☐Yes	☐No	☑N/A	15. Positive for Sulfide? Y N
Headspace in ALK Bottle (>6mm):	☐Yes	☐No	☑N/A	
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	16.
Trip Blank Present:	☐Yes	☐No	☑N/A	17.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	

Client Notification/ Resolution: **Field Data Required?** Y / N
Person Contacted: **Date/Time:**
Comments/ Resolution:

* PM (Project Manager) review (which includes the SCUR) is documented electronically in LIMS.

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August 12, 2024

Candace Fox
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581

Project Location: NY
Client Job Number:
Project Number: L2443206
Laboratory Work Order Number: 24H0335

Enclosed are results of analyses for samples as received by the laboratory on August 2, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karriem G. Marius
Project Manager

Table of Contents

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B382502 9

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Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581
ATTN: Candace Fox

REPORT DATE: 8/12/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: L2443206

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24H0335

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-04B PRE-SAMPLING	24H0335-01	Water		RSK175	
MW-06 PRE-SAMPLING	24H0335-02	Water		RSK175	
MW-07 PRE-SAMPLING	24H0335-03	Water		RSK175	

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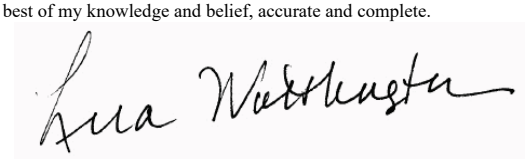
CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NY | Sample Description: | Work Order: 24H0335

Date Received: 8/2/2024

Field Sample #: MW-04B PRE-SAMPLING | Sampled: 7/31/2024 14:20

Sample ID: 24H0335-01

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 11:26	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 11:26	TPH
Methane	0.015	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 11:26	TPH

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Project Location: NY | Sample Description: | Work Order: 24H0335

Date Received: 8/2/2024

Field Sample #: MW-06 PRE-SAMPLING | Sampled: 7/31/2024 12:20

Sample ID: 24H0335-02

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 11:38	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 11:38	TPH
Methane	1.4	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 11:38	TPH

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Project Location: NY | Sample Description: | Work Order: 24H0335

Date Received: 8/2/2024

Field Sample #: MW-07 PRE-SAMPLING | Sampled: 7/31/2024 10:05

Sample ID: 24H0335-03

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 12:00	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 12:00	TPH
Methane	0.018	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 12:00	TPH

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Sample Extraction Data

Prep Method:RSK175 **Analytical Method:RSK175**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24H0335-01 [MW-04B PRE-SAMPLING]	B382502	1.00	1.00	08/08/24
24H0335-02 [MW-06 PRE-SAMPLING]	B382502	1.00	1.00	08/08/24
24H0335-03 [MW-07 PRE-SAMPLING]	B382502	1.00	1.00	08/08/24

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QUALITY CONTROL

Miscellaneous Organic Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B382502 - RSK175										
Blank (B382502-BLK1)				Prepared & Analyzed: 08/08/24						
Ethane	ND	0.014	mg/L							
Ethene	ND	0.017	mg/L							
Methane	ND	0.0070	mg/L							
LCS (B382502-BS1)				Prepared & Analyzed: 08/08/24						
Ethane	0.76		mg/L	0.810		94.4	65.9-110			
Ethene	0.72		mg/L	0.757		94.5	62.8-110			
Methane	0.41		mg/L	0.431		95.3	63.8-110			
Duplicate (B382502-DUP1)	**Source: 24H0335-02**			Prepared & Analyzed: 08/08/24						
Ethane	ND	0.014	mg/L		ND			NC	20	
Ethene	ND	0.017	mg/L		ND			NC	20	
Methane	1.33	0.0070	mg/L		1.42			6.74	20	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
RSK175 in Water	
Ethane	VA,NY,ME
Ethene	VA,NY,ME
Methane	VA,NY,ME

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
NY	New York State Department of Health	10899 NELAP	04/1/2025
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024

24H0335 KGM

Subcontract Chain of Custody

Pace New England
39 Spruce St
East Longmeadow, MA 01028

Alpha Job Number
L2443206

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 716-427-5223
Email: Candace.Fox@pacelabs.com

Project Information

Project Location: NY
Project Manager: Candace Fox

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2443206

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-04B PRE-SAMPLING	07-31-24 14:20	WATER	Dissolved Gasses	
	MW-06 PRE-SAMPLING	07-31-24 12:20	WATER	Dissolved Gasses	
	MW-07 PRE-SAMPLING	07-31-24 10:05	WATER	Dissolved Gasses	

(2-3)

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		8/1/24 6:15	PACE	8/1/24 6:15
	PACE	8/2/24 08:12		8/2/24 0817
			55	
Form No: AL_subcoc				

Serial_No:08142416:31

DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Log In Back-Sheet

Client Alpha

Project L2443206

MCP/RCP Required N/A

Deliverable Package Requirement N/A

Location N/A

PWSID# (When Applicable) N/A

Arrival Method:

Courier ☒ Fed Ex ☐ Walk In ☐ Other ☐

Received By / Date / Time ME MG 12/4 0812

Back-Sheet By / Date / Time STM 6/12/24 1850

Temperature Method Gun # 6

WV samples: Yes (see note*) (No) (follow normal procedure)

Temp ☒ < 6° C Actual Temperature 5.5

Rush Samples: Yes (No) Notify

Short Hold: Yes (No) Notify

Notes regarding Samples/COC outside of SOP:

Login Sample Receipt Checklist – (Rejection Criteria Listing – Using Acceptance Policy) Any False statement will be brought to the attention of the Client – True or False

	True	False
Received on Ice	☒	☐
Received in Cooler	☒	☐
Custody Seal: DATE TIME	☐	☒
COC Relinquished	☒	☐
COC/Samples Labels Agree	☒	☐
All Samples in Good Condition	☒	☐
Samples Received within Holding Time	☒	☐
Is there enough Volume	☒	☐
Proper Media/Container Used	☒	☐
Splitting Samples Required	☐	☒
MS/MSD	☐	☒
Trip Blanks	☐	☒
Lab to Filters	☐	☒
COC Legible	☒	☐

COC Included: (Check all included)

Client ☒ Analysis ☒ Sampler Name ☒

Project ☒ IDs ☒ Collection Date/Time ☒

All Samples Proper pH: (N/A) True ☐ ☐

Additional Container Notes

**Note: West Virginia requires all samples to have their temperature taken. Note any outliers.*

Pace ANALYTICAL SERVICES

DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Sample			
16oz Amb/Clear	Soils Jars (Circle Amb/Clear)		
8oz Amb/Clear			
4oz Amb/Clear			
2oz Amb/Clear			
Unpreserved	Ambers	1 Liter	
HCL			
Sulfuric			
Sulfuric		250ml	
Phosphoric			
HCl			
Unpreserved		100ml	
Unpreserved	Plastics	1 Liter	
Sulfuric			
Unpreserved		500mL	
Sulfuric			
Unpreserved		250mL	
Trizma			
Sulfuric			
Nitric			
NaOH			
Ammonium Acetate			
NaOH/Zinc			
Unpreserved	VOA Vials		
HCl			
MeOH			
D.I. Water			
BiSulfate			
Col/Bact	Other/Fill in		
2 NN Other			

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Serial_No:08142416:31

ANALYTICAL REPORT

Lab Number:	L2443534
Client:	C&S Companies 499 Col. Eileen Collins Blvd. Syracuse, NY 13212
ATTN:	Hayden Haas
Phone:	(315) 455-2000
Project Name:	FORMER ITHACA GUN FACTORY BCP
Project Number:	X55.002.002
Report Date:	08/19/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002

Lab Number: L2443534
Report Date: 08/19/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2443534-01	MW-10 PRE SAMPLING	WATER	121-125 LAKE ST., ITHACA, NY	08/01/24 10:30	08/01/24
L2443534-02	DUP	WATER	121-125 LAKE ST., ITHACA, NY	08/01/24 00:00	08/01/24
L2443534-03	MW-11 PRE SAMPLING	WATER	121-125 LAKE ST., ITHACA, NY	08/01/24 12:00	08/01/24
L2443534-04	MW-01R PRE SAMPLING	WATER	121-125 LAKE ST., ITHACA, NY	08/01/24 14:00	08/01/24
L2443534-05	MW-05 PRE SAMPLING	WATER	121-125 LAKE ST., ITHACA, NY	08/01/24 16:00	08/01/24
L2443534-06	TRIP BLANK	WATER	121-125 LAKE ST., ITHACA, NY	08/01/24 00:00	08/01/24

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443534
Project Number:	X55.002.002	**Report Date:**	08/19/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443534
Project Number:	X55.002.002	**Report Date:**	08/19/24

Case Narrative (continued)

Report Submission

August 19, 2024: This final report includes the results of all requested analyses.

August 08, 2024: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Sulfide and Dissolved Gases were subcontracted. A copy of each laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics

L2443534-06: The pH was greater than two; however, the sample was analyzed within the method required holding time.

Dissolved Metals

The WG1955685 CCV recovery, associated with L2443534-04, was above the acceptance criteria for Potassium. Any associated samples with positive detections were re-analyzed under a passing CCV. The samples that were non-detect for this element are reporting results from the original analyses.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 08/19/24

ORGANICS

VOLATILES

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-01
Client ID: MW-10 PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 10:30
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/06/24 12:02
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.84		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	35		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-01 Date Collected: 08/01/24 10:30

Client ID: MW-10 PRE SAMPLING Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	12		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	109		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-02
Client ID: DUP
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 00:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/06/24 12:26
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.80		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	36		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-02 Date Collected: 08/01/24 00:00

Client ID: DUP Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	11		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	112		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-03
Client ID: MW-11 PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 12:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/06/24 12:50
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.61		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-03 Date Collected: 08/01/24 12:00

Client ID: MW-11 PRE SAMPLING Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	111		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-04
Client ID: MW-01R PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 14:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/06/24 13:14
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	14		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.20	J	ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-04 Date Collected: 08/01/24 14:00

Client ID: MW-01R PRE SAMPLING Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	113		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-05 D
Client ID: MW-05 PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 16:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/06/24 14:01
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	6.8		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	ND		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	2.5	J	ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	2.5	J	ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	8.1	J	ug/l	25	7.0	10
Trichloroethene	170		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-05 D
Client ID: MW-05 PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 16:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	1.7	10
p/m-Xylene	ND		ug/l	25	7.0	10
o-Xylene	ND		ug/l	25	7.0	10
cis-1,2-Dichloroethene	880		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
Bromochloromethane	ND		ug/l	25	7.0	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	ND		ug/l	25	7.0	10
1,2,3-Trichlorobenzene	ND		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	ND		ug/l	100	2.7	10
1,4-Dioxane	ND		ug/l	2500	610	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	ND		ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	111		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-06
Client ID: TRIP BLANK
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 00:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/06/24 13:38
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-06 Date Collected: 08/01/24 00:00

Client ID: TRIP BLANK Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	109		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/06/24 08:25
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1956145-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/06/24 08:25
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1956145-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002
Lab Number: L2443534
Report Date: 08/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 08/06/24 08:25
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1956145-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1956145-3 WG1956145-4								
Methylene chloride	94		93		70-130	1		20
1,1-Dichloroethane	96		95		70-130	1		20
Chloroform	97		95		70-130	2		20
Carbon tetrachloride	100		99		63-132	1		20
1,2-Dichloropropane	96		94		70-130	2		20
Dibromochloromethane	100		100		63-130	0		20
1,1,2-Trichloroethane	97		100		70-130	3		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	100		98		75-130	2		20
Trichlorofluoromethane	100		91		62-150	9		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		95		67-130	5		20
Bromodichloromethane	97		96		67-130	1		20
trans-1,3-Dichloropropene	92		92		70-130	0		20
cis-1,3-Dichloropropene	94		90		70-130	4		20
Bromoform	95		99		54-136	4		20
1,1,2,2-Tetrachloroethane	96		95		67-130	1		20
Benzene	97		95		70-130	2		20
Toluene	97		93		70-130	4		20
Ethylbenzene	95		92		70-130	3		20
Chloromethane	74		72		64-130	3		20
Bromomethane	76		72		39-139	5		20
Vinyl chloride	87		86		55-140	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1956145-3 WG1956145-4								
Chloroethane	130		130		55-138	0		20
1,1-Dichloroethene	96		91		61-145	5		20
trans-1,2-Dichloroethene	100		95		70-130	5		20
Trichloroethene	97		91		70-130	6		20
1,2-Dichlorobenzene	100		97		70-130	3		20
1,3-Dichlorobenzene	100		98		70-130	2		20
1,4-Dichlorobenzene	100		99		70-130	1		20
Methyl tert butyl ether	82		84		63-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	97		92		70-130	5		20
Styrene	95		95		70-130	0		20
Dichlorodifluoromethane	61		59		36-147	3		20
Acetone	76		79		58-148	4		20
Carbon disulfide	91		88		51-130	3		20
2-Butanone	79		84		63-138	6		20
4-Methyl-2-pentanone	80		82		59-130	2		20
2-Hexanone	73		77		57-130	5		20
Bromochloromethane	110		100		70-130	10		20
1,2-Dibromoethane	99		100		70-130	1		20
1,2-Dibromo-3-chloropropane	93		92		41-144	1		20
Isopropylbenzene	90		86		70-130	5		20
1,2,3-Trichlorobenzene	100		100		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1956145-3 WG1956145-4								
1,2,4-Trichlorobenzene	99		100		70-130	1		20
Methyl Acetate	79		83		70-130	5		20
Cyclohexane	84		83		70-130	1		20
1,4-Dioxane	92		94		56-162	2		20
Freon-113	96		94		70-130	2		20
Methyl cyclohexane	82		83		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		107		70-130
Toluene-d8	97		96		70-130
4-Bromofluorobenzene	89		86		70-130
Dibromofluoromethane	102		103		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1956145-6 WG1956145-7 QC Sample: L2443534-01 Client ID: MW-10 PRE SAMPLING												
Methylene chloride	ND	10	9.4	94		9.3	93		70-130	1		20
1,1-Dichloroethane	ND	10	9.9	99		9.7	97		70-130	2		20
Chloroform	ND	10	10	100		10	100		70-130	0		20
Carbon tetrachloride	ND	10	11	110		10	100		63-132	10		20
1,2-Dichloropropane	ND	10	9.4	94		9.3	93		70-130	1		20
Dibromochloromethane	ND	10	9.7	97		9.6	96		63-130	1		20
1,1,2-Trichloroethane	ND	10	9.2	92		9.1	91		70-130	1		20
Tetrachloroethene	0.84	10	11	102		10	92		70-130	10		20
Chlorobenzene	ND	10	9.8	98		9.4	94		75-130	4		20
Trichlorofluoromethane	ND	10	10	100		9.9	99		62-150	1		20
1,2-Dichloroethane	ND	10	10	100		10	100		70-130	0		20
1,1,1-Trichloroethane	ND	10	10	100		10	100		67-130	0		20
Bromodichloromethane	ND	10	9.7	97		9.8	98		67-130	1		20
trans-1,3-Dichloropropene	ND	10	8.2	82		8.2	82		70-130	0		20
cis-1,3-Dichloropropene	ND	10	8.2	82		8.1	81		70-130	1		20
Bromoform	ND	10	8.9	89		9.0	90		54-136	1		20
1,1,2,2-Tetrachloroethane	ND	10	8.7	87		9.0	90		67-130	3		20
Benzene	ND	10	9.8	98		9.5	95		70-130	3		20
Toluene	ND	10	9.3	93		9.0	90		70-130	3		20
Ethylbenzene	ND	10	9.0	90		8.5	85		70-130	6		20
Chloromethane	ND	10	8.0	80		8.0	80		64-130	0		20
Bromomethane	ND	10	5.9	59		6.1	61		39-139	3		20
Vinyl chloride	ND	10	9.0	90		9.0	90		55-140	0		20

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1956145-6 WG1956145-7 QC Sample: L2443534-01 Client ID: MW-10 PRE SAMPLING												
Chloroethane	ND	10	13	130		13	130		55-138	0		20
1,1-Dichloroethene	ND	10	9.6	96		9.8	98		61-145	2		20
trans-1,2-Dichloroethene	ND	10	9.9	99		9.6	96		70-130	3		20
Trichloroethene	35	10	42	70		41	**60**	Q	70-130	2		20
1,2-Dichlorobenzene	ND	10	9.2	92		9.4	94		70-130	2		20
1,3-Dichlorobenzene	ND	10	9.4	94		9.3	93		70-130	1		20
1,4-Dichlorobenzene	ND	10	9.4	94		9.5	95		70-130	1		20
Methyl tert butyl ether	ND	10	7.6	76		7.8	78		63-130	3		20
p/m-Xylene	ND	20	18	90		18	90		70-130	0		20
o-Xylene	ND	20	18	90		18	90		70-130	0		20
cis-1,2-Dichloroethene	12	10	21	90		21	90		70-130	0		20
Styrene	ND	20	18	90		18	90		70-130	0		20
Dichlorodifluoromethane	ND	10	6.1	61		5.9	59		36-147	3		20
Acetone	ND	10	8.2	82		8.5	85		58-148	4		20
Carbon disulfide	ND	10	9.4	94		9.1	91		51-130	3		20
2-Butanone	ND	10	9.1	91		8.0	80		63-138	13		20
4-Methyl-2-pentanone	ND	10	7.8	78		7.6	76		59-130	3		20
2-Hexanone	ND	10	6.3	63		6.8	68		57-130	8		20
Bromochloromethane	ND	10	10	100		10	100		70-130	0		20
1,2-Dibromoethane	ND	10	9.0	90		9.2	92		70-130	2		20
1,2-Dibromo-3-chloropropane	ND	10	8.4	84		8.2	82		41-144	2		20
Isopropylbenzene	ND	10	8.1	81		8.0	80		70-130	1		20
1,2,3-Trichlorobenzene	ND	10	8.7	87		8.8	88		70-130	1		20

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1956145-6 WG1956145-7 QC Sample: L2443534-01 Client ID: MW-10 PRE SAMPLING												
1,2,4-Trichlorobenzene	ND	10	8.6	86		9.2	92		70-130	7		20
Methyl Acetate	ND	10	7.2	72		7.3	73		70-130	1		20
Cyclohexane	ND	10	8.2J	82		8.0J	80		70-130	2		20
1,4-Dioxane	ND	500	400	80		400	80		56-162	0		20
Freon-113	ND	10	9.3	93		8.6	86		70-130	8		20
Methyl cyclohexane	ND	10	8.2J	82		8.0J	80		70-130	2		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		111		70-130
4-Bromofluorobenzene	82		86		70-130
Dibromofluoromethane	108		107		70-130
Toluene-d8	97		94		70-130

METALS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-01 Date Collected: 08/01/24 10:30

Client ID: MW-10 PRE SAMPLING Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	42.3		mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 19:31	EPA 3005A	1,6010D	DHL
Iron, Total	0.0429	J	mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 19:31	EPA 3005A	1,6010D	DHL
Magnesium, Total	7.42		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 19:31	EPA 3005A	1,6010D	DHL
Potassium, Total	3.38		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 19:31	EPA 3005A	1,6010D	DHL
Sodium, Total	66.7		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 19:31	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	ND		mg/l	0.50	0.06	1		08/05/24 19:31	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	41.6		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 17:18	EPA 3005A	1,6010D	JMF
Iron, Dissolved	0.0204	J	mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 17:18	EPA 3005A	1,6010D	JMF
Magnesium, Dissolved	7.60		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 17:18	EPA 3005A	1,6010D	JMF
Potassium, Dissolved	3.60		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 19:51	EPA 3005A	1,6010D	TAA
Sodium, Dissolved	68.4		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 17:18	EPA 3005A	1,6010D	JMF

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-03 Date Collected: 08/01/24 12:00

Client ID: MW-11 PRE SAMPLING Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	176.		mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 19:35	EPA 3005A	1,6010D	DHL
Iron, Total	6.17		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 19:35	EPA 3005A	1,6010D	DHL
Magnesium, Total	30.8		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 19:35	EPA 3005A	1,6010D	DHL
Potassium, Total	5.12		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 19:35	EPA 3005A	1,6010D	DHL
Sodium, Total	160.		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 19:35	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	5.9	J	mg/l	0.50	0.06	1		08/05/24 19:35	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	147.		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 17:22	EPA 3005A	1,6010D	JMF
Iron, Dissolved	0.0830		mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 17:22	EPA 3005A	1,6010D	JMF
Magnesium, Dissolved	29.6		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 17:22	EPA 3005A	1,6010D	JMF
Potassium, Dissolved	5.98		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 19:57	EPA 3005A	1,6010D	TAA
Sodium, Dissolved	155.		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 17:22	EPA 3005A	1,6010D	JMF

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-04 Date Collected: 08/01/24 14:00

Client ID: MW-01R PRE SAMPLING Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	93.0		mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 19:38	EPA 3005A	1,6010D	DHL
Iron, Total	1.82		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 19:38	EPA 3005A	1,6010D	DHL
Magnesium, Total	19.0		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 19:38	EPA 3005A	1,6010D	DHL
Potassium, Total	1.76	J	mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 19:38	EPA 3005A	1,6010D	DHL
Sodium, Total	208.		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 19:38	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	1.6	J	mg/l	0.50	0.06	1		08/05/24 19:38	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	90.3		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 17:26	EPA 3005A	1,6010D	JMF
Iron, Dissolved	0.0200	J	mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 17:26	EPA 3005A	1,6010D	JMF
Magnesium, Dissolved	19.8		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 17:26	EPA 3005A	1,6010D	JMF
Potassium, Dissolved	1.74	J	mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 17:26	EPA 3005A	1,6010D	JMF
Sodium, Dissolved	212.		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 17:26	EPA 3005A	1,6010D	JMF

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-05 Date Collected: 08/01/24 16:00

Client ID: MW-05 PRE SAMPLING Date Received: 08/01/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	91.2		mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 19:42	EPA 3005A	1,6010D	DHL
Iron, Total	28.2		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 19:42	EPA 3005A	1,6010D	DHL
Magnesium, Total	20.2		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 19:42	EPA 3005A	1,6010D	DHL
Potassium, Total	4.31		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 19:42	EPA 3005A	1,6010D	DHL
Sodium, Total	108.		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 19:42	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	13		mg/l	12	1.4	1		08/05/24 19:42	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	82.1		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 17:30	EPA 3005A	1,6010D	JMF
Iron, Dissolved	0.359		mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 17:30	EPA 3005A	1,6010D	JMF
Magnesium, Dissolved	16.8		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 17:30	EPA 3005A	1,6010D	JMF
Potassium, Dissolved	2.76		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 20:04	EPA 3005A	1,6010D	TAA
Sodium, Dissolved	109.		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 17:30	EPA 3005A	1,6010D	JMF

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2443534

Project Number: X55.002.002 **Report Date:** 08/19/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03-05 Batch: WG1954770-1										
Calcium, Total	0.0744	J	mg/l	0.100	0.0350	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Iron, Total	ND		mg/l	0.0500	0.0090	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Magnesium, Total	ND		mg/l	0.100	0.0153	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Potassium, Total	ND		mg/l	2.50	0.237	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL
Sodium, Total	ND		mg/l	2.00	0.120	1	08/04/24 16:52	08/05/24 18:35	1,6010D	DHL

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01,03-05 Batch: WG1955468-1										
Calcium, Dissolved	ND		mg/l	0.100	0.0350	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Iron, Dissolved	ND		mg/l	0.0500	0.0090	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Magnesium, Dissolved	ND		mg/l	0.100	0.0153	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Potassium, Dissolved	ND		mg/l	2.50	0.237	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF
Sodium, Dissolved	ND		mg/l	2.00	0.120	1	08/05/24 21:18	08/06/24 16:17	1,6010D	JMF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-05 Batch: WG1954770-2								
Calcium, Total	104		-		80-120	-		
Iron, Total	105		-		80-120	-		
Magnesium, Total	103		-		80-120	-		
Potassium, Total	107		-		80-120	-		
Sodium, Total	107		-		80-120	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03-05 Batch: WG1955468-2								
Calcium, Dissolved	103		-		80-120	-		
Iron, Dissolved	104		-		80-120	-		
Magnesium, Dissolved	108		-		80-120	-		
Potassium, Dissolved	109		-		80-120	-		
Sodium, Dissolved	111		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002

Lab Number: L2443534
Report Date: 08/19/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG1954770-3 QC Sample: L2442958-01 Client ID: MS Sample												
Calcium, Total	71.3	10	79.8	85		-	-		75-125	-		20
Iron, Total	3.55	1	4.53	98		-	-		75-125	-		20
Magnesium, Total	16.2	10	25.9	97		-	-		75-125	-		20
Potassium, Total	6.29	10	17.2	109		-	-		75-125	-		20
Sodium, Total	15.0	10	25.4	104		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG1955468-3 QC Sample: L2443152-01 Client ID: MS Sample												
Calcium, Dissolved	25.2	10	34.4	92		-	-		75-125	-		20
Iron, Dissolved	31.0	1	31.0	**0**	Q	-	-		75-125	-		20
Magnesium, Dissolved	3.23	10	13.7	105		-	-		75-125	-		20
Potassium, Dissolved	4.20	10	15.1	109		-	-		75-125	-		20
Sodium, Dissolved	11.5	10	22.2	107		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG1955468-4 QC Sample: L2443152-01 Client ID: DUP Sample						
Iron, Dissolved	31.0	31.4	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002
Lab Number: L2443534
Report Date: 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-01
Client ID: MW-10 PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY
Date Collected: 08/01/24 10:30
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/14/24 09:28	121,2320B	MKT
Alkalinity, Bicarbonate	137.		mg CaCO3/L	2.00	NA	1	-	08/14/24 09:28	121,2320B	MKT
Nitrogen, Nitrate	0.33		mg/l	0.10	0.023	1	-	08/03/24 07:56	44,353.2	KAF
Total Organic Carbon	1.66		mg/l	0.500	0.097	1	-	08/08/24 06:42	121,5310C	DEW
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/02/24 07:36	121,3500FE-B	JBB
Anions by Ion Chromatography - Westborough Lab										
Chloride	84.6		mg/l	5.00	0.839	10	-	08/06/24 20:10	44,300.0	AVT
Sulfate	32.4		mg/l	1.00	0.454	1	-	08/06/24 17:37	44,300.0	AVT

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002
Lab Number: L2443534
Report Date: 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-03
Client ID: MW-11 PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY
Sample Depth:
Matrix: Water

Date Collected: 08/01/24 12:00
Date Received: 08/01/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/07/24 11:41	121,2320B	MRW
Alkalinity, Bicarbonate	230.		mg CaCO3/L	2.00	NA	1	-	08/07/24 11:41	121,2320B	MRW
Nitrogen, Nitrate	0.28		mg/l	0.10	0.023	1	-	08/03/24 07:43	44,353.2	KAF
Total Organic Carbon	2.12		mg/l	1.00	0.194	2	-	08/08/24 07:10	121,5310C	DEW
Iron, Ferrous	0.25	J	mg/l	0.50	0.056	1	-	08/02/24 07:37	121,3500FE-B	JBB
Anions by Ion Chromatography - Westborough Lab										
Chloride	379.		mg/l	5.00	0.839	10	-	08/06/24 20:21	44,300.0	AVT
Sulfate	125.		mg/l	10.0	4.54	10	-	08/06/24 20:21	44,300.0	AVT

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002

Lab Number: L2443534
Report Date: 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-04
Client ID: MW-01R PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/01/24 14:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/07/24 12:10	121,2320B	MRW
Alkalinity, Bicarbonate	244.		mg CaCO3/L	2.00	NA	1	-	08/07/24 12:10	121,2320B	MRW
Nitrogen, Nitrate	1.3		mg/l	0.10	0.023	1	-	08/03/24 07:44	44,353.2	KAF
Total Organic Carbon	1.14		mg/l	1.00	0.194	2	-	08/08/24 07:38	121,5310C	DEW
Iron, Ferrous	0.23	J	mg/l	0.50	0.056	1	-	08/02/24 07:37	121,3500FE-B	JBB
Anions by Ion Chromatography - Westborough Lab										
Chloride	367.		mg/l	5.00	0.839	10	-	08/06/24 20:32	44,300.0	AVT
Sulfate	32.1		mg/l	1.00	0.454	1	-	08/06/24 17:59	44,300.0	AVT

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002
Lab Number: L2443534
Report Date: 08/19/24

SAMPLE RESULTS

Lab ID: L2443534-05
Client ID: MW-05 PRE SAMPLING
Sample Location: 121-125 LAKE ST., ITHACA, NY
Date Collected: 08/01/24 16:00
Date Received: 08/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/07/24 12:16	121,2320B	MRW
Alkalinity, Bicarbonate	191.		mg CaCO3/L	2.00	NA	1	-	08/07/24 12:16	121,2320B	MRW
Nitrogen, Nitrate	0.094	J	mg/l	0.10	0.023	1	-	08/03/24 07:45	44,353.2	KAF
Total Organic Carbon	2.64		mg/l	1.00	0.194	2	-	08/08/24 08:05	121,5310C	DEW
Iron, Ferrous	15.		mg/l	12	1.4	25	-	08/02/24 07:38	121,3500FE-B	JBB
Anions by Ion Chromatography - Westborough Lab										
Chloride	205.		mg/l	5.00	0.839	10	-	08/06/24 20:43	44,300.0	AVT
Sulfate	53.9		mg/l	1.00	0.454	1	-	08/06/24 18:10	44,300.0	AVT

Project Name: FORMER ITHACA GUN FACTORY BCI
Project Number: X55.002.002
Lab Number: L2443534
Report Date: 08/19/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03-05 Batch: WG1954544-1										
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/02/24 07:35	121,3500FE-B	JBB
General Chemistry - Westborough Lab for sample(s): 01,03-05 Batch: WG1954858-1										
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/03/24 03:17	44,353.2	KAF
Anions by Ion Chromatography - Westborough Lab for sample(s): 01,03-05 Batch: WG1956143-1										
Sulfate	ND		mg/l	1.00	0.454	1	-	08/06/24 17:16	44,300.0	AVT
Anions by Ion Chromatography - Westborough Lab for sample(s): 01,03-05 Batch: WG1956143-1										
Chloride	ND		mg/l	0.500	0.083	1	-	08/06/24 17:16	44,300.0	AVT
General Chemistry - Westborough Lab for sample(s): 01,03-05 Batch: WG1956199-1										
Total Organic Carbon	ND		mg/l	0.500	0.097	1	-	08/08/24 05:48	121,5310C	DEW
General Chemistry - Westborough Lab for sample(s): 03-05 Batch: WG1956374-1										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/07/24 09:11	121,2320B	MRW
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/07/24 15:45	121,2320B	MRW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1959164-1										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/14/24 09:24	121,2320B	MKT
Alkalinity, Bicarbonate	ND		mg CaCO3/L	2.00	NA	1	-	08/14/24 09:24	121,2320B	MKT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 Batch: WG1954544-2								
Iron, Ferrous	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 Batch: WG1954858-2								
Nitrogen, Nitrate	100		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,03-05 Batch: WG1956143-2								
Chloride	104		-		90-110	-		
Sulfate	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 Batch: WG1956199-2								
Total Organic Carbon	96		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002

Lab Number: L2443534
Report Date: 08/19/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1954544-4 QC Sample: L2443534-04 Client ID: MW-01R PRE SAMPLING												
Iron, Ferrous	0.23J	1	1.1	107		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1954858-4 QC Sample: L2443573-01 Client ID: MS Sample												
Nitrogen, Nitrate	3.6	4	7.3	92		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1954858-6 QC Sample: L2443723-01 Client ID: MS Sample												
Nitrogen, Nitrate	1.4	4	5.4	100		-	-		83-113	-		6
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1956143-3 QC Sample: L2443959-01 Client ID: MS Sample												
Chloride	23.8	4	26.9	**76**	Q	-	-		90-110	-		18
Sulfate	5.17	8	13.2	100		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1956199-4 QC Sample: L2443534-03 Client ID: MW-11 PRE SAMPLING												
Total Organic Carbon	2.12	16	18.4	102		-	-		85-115	-		15

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002

Lab Number: L2443534
Report Date: 08/19/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1954544-3 QC Sample: L2443534-01 Client ID: MW-10 PRE SAMPLING						
Iron, Ferrous	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1954858-3 QC Sample: L2443573-01 Client ID: DUP Sample						
Nitrogen, Nitrate	3.6	3.6	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1954858-5 QC Sample: L2443723-01 Client ID: DUP Sample						
Nitrogen, Nitrate	1.4	1.4	mg/l	0		6
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1956143-4 QC Sample: L2443959-01 Client ID: DUP Sample						
Chloride	23.8	23.8	mg/l	0		18
Sulfate	5.17	5.21	mg/l	1		20
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG1956199-3 QC Sample: L2443573-01 Client ID: DUP Sample						
Total Organic Carbon	8.36	8.49	mg/l	2		15
General Chemistry - Westborough Lab Associated sample(s): 03-05 QC Batch ID: WG1956374-2 QC Sample: L2443534-03 Client ID: MW-11 PRE SAMPLING						
Alkalinity, Carbonate	ND	ND	mg CaCO3/L	NC		10
General Chemistry - Westborough Lab Associated sample(s): 03-05 QC Batch ID: WG1956374-2 QC Sample: L2443534-03 Client ID: MW-11 PRE SAMPLING						
Alkalinity, Carbonate	ND	ND	mg CaCO3/L	NC		10

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.002

Lab Number: L2443534

Report Date: 08/19/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1959164-3 QC Sample: L2428987-84 Client ID: DUP Sample					
Alkalinity, Carbonate	ND	ND	mg CaCO3/L	NC	10
Alkalinity, Bicarbonate	216.	206	mg CaCO3/L	5	9

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002

Lab Number: L2443534
Report Date: 08/19/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2443534-01A	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01A1	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01A2	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01B	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01B1	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01B2	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01C	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01C1	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01C2	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-01D	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-01E	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-01F	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-01G	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-01H	Plastic 250ml unpreserved/No Headspace	A	NA		2.3	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2443534-01J	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		-
L2443534-01K	Plastic 250ml HNO3 preserved	A	<2	<2	2.3	Y	Absent		FE-TI(180),MG-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2443534-01L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)
L2443534-01M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)
L2443534-01N	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2443534-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA	NA	2.3	Y	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2443534-02A	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-02B	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2443534-02C	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-03A	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-03B	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-03C	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-03D	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-03E	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-03F	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-03G	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-03H	Plastic 250ml unpreserved/No Headspace	A	NA		2.3	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2443534-03J	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		-
L2443534-03K	Plastic 250ml HNO3 preserved	A	<2	<2	2.3	Y	Absent		FE-TI(180),MG-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2443534-03L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)
L2443534-03M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)
L2443534-03N	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2443534-03X	Plastic 120ml HNO3 preserved Filtrates	A	NA	NA	2.3	Y	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2443534-04A	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-04B	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-04C	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-04D	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-04E	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-04F	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-04G	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-04H	Plastic 250ml unpreserved/No Headspace	A	NA		2.3	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2443534-04J	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		-
L2443534-04K	Plastic 250ml HNO3 preserved	A	<2	<2	2.3	Y	Absent		MG-TI(180),FE-TI(180),K-TI(180),NA-TI(180),CA-TI(180)
L2443534-04L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)
L2443534-04M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)

*Values in parentheses indicate holding time in days

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.002

Lab Number: L2443534
Report Date: 08/19/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2443534-04N	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2443534-04X	Plastic 120ml HNO3 preserved Filtrates	A	NA	NA	2.3	Y	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2443534-05A	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-05B	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-05C	Vial HCl preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(14)
L2443534-05D	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-05E	Vial H2SO4 preserved	A	NA		2.3	Y	Absent		TOC-5310(28)
L2443534-05F	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-05G	20ml Vial HCl preserved	A	NA	NA	2.3	Y	Absent		SUB-DISSGAS(14)
L2443534-05H	Plastic 250ml unpreserved/No Headspace	A	NA		2.3	Y	Absent		ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2443534-05J	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		-
L2443534-05K	Plastic 250ml HNO3 preserved	A	<2	<2	2.3	Y	Absent		MG-TI(180),FE-TI(180),NA-TI(180),CA-TI(180),K-TI(180)
L2443534-05L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)
L2443534-05M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.3	Y	Absent		SUB-SULFIDE(7)
L2443534-05N	Plastic 250ml unpreserved	A	7	7	2.3	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2443534-05X	Plastic 120ml HNO3 preserved Filtrates	A	NA	NA	2.3	Y	Absent		FE-SI(180),NA-SI(180),MG-SI(180),K-SI(180),CA-SI(180)
L2443534-06A	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(7)
L2443534-06B	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		NYTCL-8260-R2(7)

*Values in parentheses indicate holding time in days

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443534
Project Number:	X55.002.002	**Report Date:**	08/19/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443534
Project Number:	X55.002.002	**Report Date:**	08/19/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443534
Project Number:	X55.002.002	**Report Date:**	08/19/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2443534
Project Number:	X55.002.002	**Report Date:**	08/19/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2443534 08AUG24
C&SENG

NEW YORK CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab 8/2/24

Project Information
Project Name: Former Ithaca Gun Factory BCP Site
Project Location: 121-125 Lake St., Ithaca, NY
Project # X55.002.002
(Use Project name as Project #) ☐
Project Manager: H. Haas
ALPHAQuote #: 476184

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

PO #

Client Information
Client: CRS Syracuse
Address: Syracuse, NY
Phone: 315 455 2000
Fax:
Email: HHAAS@CSCOS.com

Regulatory Requirement
☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☒ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL 8260	Total Mn+S	Dissolved Mn+Fe	SO_4 Cl NO_3	Sulfide 4500	ALK-T 2320	DISS GAS	TOC	Sample Specific Comments	Total # Bottles
43534-01	MW-10 Pre Sampling	8/1/24	1030	GW H2O	WR	X	X	X	X	X	X	X	X	Ferric Iron	13
1	MW-10 MS		1030		WR	X								~~MS/MSD~~	3
1	MW-10 MSD		1030		WR	X									3
-02	DUP				WR	X								Lab filtered	3
-03	MW-11 Pre Sampling		1200		WR	X	X	X	X	X	X	X	X		13
-04	MW-01R Pre Sampling		1400		WR	X	X	X	X	X	X	X	X		13
-05	MW-05 Pre Sampling	↓	1600	↓	WR	X	X	X	X	X	X	X	X		13
-06	Trip Blank	-	-	H2O	-	X									2

Preservative Code: A = None, B = HCl, C = HNO_3, D = H_2SO_4, E = NaOH, F = MeOH, G = $NaHSO_4$, H = $Na_2S_2O_3$, K/E = Zn Ac/NaOH, O = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	B	P	P	P	V	V	
Preservative	B	A	A	A	A	A	B	B	

Relinquished By:	Date/Time	Received By:	Date/Time
Wayne Rundell	8/1/24 1900		8-1-24 1900
	8-1-24 2200		2200
	0130		8/2 01:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

August 08, 2024

Reports
Alpha Analytical
8 Walkup Drive
Westborough, MA 01581

RE: Project: L2443534
Pace Project No.: 70307579

Dear Reports:

Enclosed are the analytical results for sample(s) received by the laboratory on August 06, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brianna D. Rivera
brianna.rivera@pacelabs.com
516-370-6007
Project Manager

Enclosures

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

CERTIFICATIONS

Project: L2443534
Pace Project No.: 70307579

Pace Analytical Services Long Island
575 Broad Hollow Rd, Melville, NY 11747
Connecticut Certification #: PH-0435
Delaware Certification # NY 10478
Maryland Certification #: 208
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987
New Jersey Certification #: NY158
New York Certification #: 10478 Primary Accrediting Body
Pennsylvania Certification #: 68-00350
Rhode Island Certification #: LAO00340
Virginia Certification # 460302

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575 Broad Hollow Road
Melville, NY 11747
516-370-6000

SAMPLE SUMMARY

Project: L2443534
Pace Project No.: 70307579

Lab ID	Sample ID	Matrix	Date Collected	Date Received
70307579001	**MW-10 PRE SAMPLING**	Water	08/01/24 10:30	08/06/24 08:00
70307579002	**MW-11 PRE SAMPLING**	Water	08/01/24 12:00	08/06/24 08:00
70307579003	**MW-01R PRE SAMPLING**	Water	08/01/24 14:00	08/06/24 08:00
70307579004	**MW-05 PRE SAMPLING**	Water	08/01/24 16:00	08/06/24 08:00

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Melville, NY 11747
516-370-6000

SAMPLE ANALYTE COUNT

Project: L2443534
Pace Project No.: 70307579

Lab ID	Sample ID	Method	Analysts	Analytes Reported
70307579001	**MW-10 PRE SAMPLING**	SM22 4500-S2 F	JWM	1
70307579002	**MW-11 PRE SAMPLING**	SM22 4500-S2 F	JWM	1
70307579003	**MW-01R PRE SAMPLING**	SM22 4500-S2 F	JWM	1
70307579004	**MW-05 PRE SAMPLING**	SM22 4500-S2 F	JWM	1

PACE-MV = Pace Analytical Services - Melville

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Melville, NY 11747
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ANALYTICAL RESULTS

Project: L2443534
Pace Project No.: 70307579

Sample: MW-10 PRE SAMPLING **Lab ID: 70307579001** Collected: 08/01/24 10:30 Received: 08/06/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		08/08/24 14:59		

REPORT OF LABORATORY ANALYSIS

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Melville, NY 11747
516-370-6000

ANALYTICAL RESULTS

Project: L2443534
Pace Project No.: 70307579

Sample: MW-11 PRE SAMPLING **Lab ID: 70307579002** Collected: 08/01/24 12:00 Received: 08/06/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		08/08/24 15:02		

REPORT OF LABORATORY ANALYSIS

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Melville, NY 11747
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ANALYTICAL RESULTS

Project: L2443534
Pace Project No.: 70307579

Sample: MW-01R PRE SAMPLING **Lab ID: 70307579003** Collected: 08/01/24 14:00 Received: 08/06/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		08/08/24 15:05		

REPORT OF LABORATORY ANALYSIS

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575 Broad Hollow Road
Melville, NY 11747
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ANALYTICAL RESULTS

Project: L2443534
Pace Project No.: 70307579

Sample: MW-05 PRE SAMPLING **Lab ID: 70307579004** Collected: 08/01/24 16:00 Received: 08/06/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		08/08/24 15:08		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
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Melville, NY 11747
516-370-6000

QUALITY CONTROL DATA

Project: L2443534
Pace Project No.: 70307579

QC Batch: 358182 | Analysis Method: SM22 4500-S2 F
QC Batch Method: SM22 4500-S2 F | Analysis Description: 4500S2F W Sulfide Iodometric
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70307579001, 70307579002, 70307579003, 70307579004

METHOD BLANK: 1859854 Matrix: Water
Associated Lab Samples: 70307579001, 70307579002, 70307579003, 70307579004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	2.0	0.20	08/08/24 14:54	

LABORATORY CONTROL SAMPLE & LCSD: 1859855 1859856

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	14	14.4	14.0	103	100	85-115	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

QUALIFIERS

Project: L2443534
Pace Project No.: 70307579

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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575 Broad Hollow Road
Melville, NY 11747
516-370-6000

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2443534
Pace Project No.: 70307579

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70307579001	**MW-10 PRE SAMPLING**	SM22 4500-S2 F	358182		
70307579002	**MW-11 PRE SAMPLING**	SM22 4500-S2 F	358182		
70307579003	**MW-01R PRE SAMPLING**	SM22 4500-S2 F	358182		
70307579004	**MW-05 PRE SAMPLING**	SM22 4500-S2 F	358182		

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Subcontract Chain of Custody

Pace Analytical (Melville)
575 Broad Hollow Road
Melville, NY 11747

Alpha Job Number
L2443534

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 716-427-5223 Email: Candace.Fox@pacelabs.com	Project Location: NY Project Manager: Candace Fox **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria: NY-TOGS-GA

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2443534

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-10 PRE SAMPLING	08-01-24 10:30	WATER	Sulfide	
	MW-11 PRE SAMPLING	08-01-24 12:00	WATER	Sulfide	
	MW-01R PRE SAMPLING	08-01-24 14:00	WATER	Sulfide	
	MW-05 PRE SAMPLING	08-01-24 16:00	WATER	Sulfide	

WO# : 70307579
70307579

	Relinquished By:	Date/Time:	Received By:	Date/Time:
				8/5 13:00
				8/8/24 20:05
				8/8/24 4:10
Form No: AL_subcoc	8/10	8:00		8/10/24 8:00

Serial_No:08192416:47

DC#_Title: ENV-FRM-MELV-0024 v07_SCUR
Effective Date: 4/12/2024

WO#: 70307579
PM: BDR
CLIENT: ALPHA
Due Date: 08/13/24

Client Name: Alpha Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals intact: ☐ Yes ☐ No Temperature Blank Present: ☐ Yes ☐ No
Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ Ziplo ☑ None ☐ Other Type of Ice: Wet Blue None

Thermometer Used: TH21 Correction Factor: -0.1 ☐ Samples on ice, cooling process has begun
Cooler Temperature(°C): 0.3 Cooler Temperature Corrected(°C): 0.2 Date/Time 5035A kits placed in freezer
Temp should be above freezing to 6.0°C

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? ☐ Yes ☐ No

Did samples orignate from a foreign source including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MELV-0076) and include with SCUR/COC paperwork.

Date and Initials of person examining contents: ASF 8/6/24

				COMMENTS:
Chain of Custody Present:	☑Yes	☐No		1.
Chain of Custody Filled Out:	☑Yes	☐No		2.
Chain of Custody Relinquished:	☑Yes	☐No		3.
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No		5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No		6.
Rush Turn Around Time Requested	☐Yes	☑No		7.
Sufficient Volume: (Triple volume provided for MS/MSD)	☑Yes	☐No		8.
Correct Containers Used:	☑Yes	☐No		9.
-Pace Containers Used:	☑Yes	☐No		
Containers Intact:	☑Yes	☐No		10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11. Note: if sediment is visible in the dissolved container.
Sample Labels match COC: -Includes date/time/ID/Analysis	☑Yes	☐No		12.
Matrix:	SL	WT	OIL OTHER	

Date and Initials of person checking preservation: ASF 8/6/24

All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
pH paper Lot # 200623				Sample #
All containers needing preservation are found to be in compliance with method recommendation? (HNO_3, H_2SO_4, HCl, NaOH>9 Sulfide, NaOH>12 Cyanide)	☑Yes	☐No	☐N/A	
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis				Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
KI starch test strips Lot #				Positive for Res. Chlorine? Y N
Residual chlorine strips Lot #				
SM 4500 CN samples checked for sul	☐Yes	☐No	☑N/A	15.
Lead Acetate Strips Lot #				Positive for Sulfide? Y N
Headspace in ALK Bottle (>6mm):	☐Yes	☐No	☑N/A	
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	16.
Trip Blank Present:	☐Yes	☐No	☑N/A	17.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	

Client Notification/ Resolution: Field Data Required? Y / N
Person Contacted: Date/Time:
Comments/ Resolution:

* PM (Project Manager) review (which includes the SCUR) is documented electronically in LIMS.

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

August 12, 2024

Candace Fox
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581

Project Location: NY
Client Job Number:
Project Number: L2443534
Laboratory Work Order Number: 24H0476

Enclosed are results of analyses for samples as received by the laboratory on August 5, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karriem G. Marius
Project Manager

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Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581
ATTN: Candace Fox

REPORT DATE: 8/12/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: L2443534

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24H0476

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-10 PRE SAMPLING	24H0476-01	Water		RSK175	
MW-11 PRE SAMPLING	24H0476-02	Water		RSK175	
MW-01R PRE SAMPLING	24H0476-03	Water		RSK175	
MW-05 PRE SAMPLING	24H0476-04	Water		RSK175	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NY | Sample Description: | Work Order: 24H0476

Date Received: 8/5/2024

Field Sample #: MW-10 PRE SAMPLING | Sampled: 8/1/2024 10:30

Sample ID: 24H0476-01

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 12:07	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 12:07	TPH
Methane	ND	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 12:07	TPH

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Project Location: NY | Sample Description: | Work Order: 24H0476

Date Received: 8/5/2024

Field Sample #: MW-11 PRE SAMPLING | Sampled: 8/1/2024 12:00

Sample ID: 24H0476-02

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 12:34	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 12:34	TPH
Methane	0.0078	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 12:34	TPH

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Project Location: NY | Sample Description: | Work Order: 24H0476

Date Received: 8/5/2024

Field Sample #: MW-01R PRE SAMPLING | Sampled: 8/1/2024 14:00

Sample ID: 24H0476-03

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 12:47	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 12:47	TPH
Methane	ND	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 12:47	TPH

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Project Location: NY | Sample Description: | Work Order: 24H0476

Date Received: 8/5/2024

Field Sample #: MW-05 PRE SAMPLING | Sampled: 8/1/2024 16:00

Sample ID: 24H0476-04

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	8/8/24	8/8/24 12:54	TPH
Ethene	ND	0.017	mg/L	1		RSK175	8/8/24	8/8/24 12:54	TPH
Methane	ND	0.0070	mg/L	1		RSK175	8/8/24	8/8/24 12:54	TPH

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Sample Extraction Data

Prep Method:RSK175 **Analytical Method:RSK175**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24H0476-01 [MW-10 PRE SAMPLING]	B382502	1.00	1.00	08/08/24
24H0476-02 [MW-11 PRE SAMPLING]	B382502	1.00	1.00	08/08/24
24H0476-03 [MW-01R PRE SAMPLING]	B382502	1.00	1.00	08/08/24
24H0476-04 [MW-05 PRE SAMPLING]	B382502	1.00	1.00	08/08/24

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QUALITY CONTROL

Miscellaneous Organic Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B382502 - RSK175										
Blank (B382502-BLK1)				Prepared & Analyzed: 08/08/24						
Ethane	ND	0.014	mg/L							
Ethene	ND	0.017	mg/L							
Methane	ND	0.0070	mg/L							
LCS (B382502-BS1)				Prepared & Analyzed: 08/08/24						
Ethane	0.76		mg/L	0.810		94.4	65.9-110			
Ethene	0.72		mg/L	0.757		94.5	62.8-110			
Methane	0.41		mg/L	0.431		95.3	63.8-110			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
RSK175 in Water	
Ethane	VA,NY,ME
Ethene	VA,NY,ME
Methane	VA,NY,ME

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
NY	New York State Department of Health	10899 NELAP	04/1/2025
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024

24H0476 KGM

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Pace New England
39 Spruce St
East Longmeadow, MA 01028

Alpha Job Number
L2443534

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 716-427-5223
Email: Candace.Fox@pacelabs.com

Project Information

Project Location: NY
Project Manager: Candace Fox

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria: NY-TOGS-GA

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2443534

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
1	MW-10 PRE SAMPLING	08-01-24 10:30	WATER	Dissolved Gasses	
2	MW-11 PRE SAMPLING	08-01-24 12:00	WATER	Dissolved Gasses	
3	MW-01R PRE SAMPLING	08-01-24 14:00	WATER	Dissolved Gasses	
4	MW-05 PRE SAMPLING	08-01-24 16:00	WATER	Dissolved Gasses	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	JMS	8/5/24 6:52	DAVS	8-5-24 0652
	DAVS 8-5-24	8:30	7.0	830

Form No: AL_subcoc

Serial_No:08192416:47

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Log In Back-Sheet

Client Alpha

Project # L2443534

MCP/RCP Required no

Deliverable Package Requirement none

Location NY

PWSID# (When Applicable) n/a

Arrival Method:

Courier ☑ Fed Ex ☐ Walk In ☐ Other ☐

Received By / Date / Time LA 8/5/24 0830

Back-Sheet By / Date / Time MM 8/5/24 1455

Temperature Method Gun # 4

WV samples: Yes (see note*) / No (follow normal procedure)

Temp < 6° C Actual Temperature 2.0

Rush Samples: Yes / No Notify No

Short Hold: Yes / No Notify No

Notes regarding Samples/COC outside of SOP:

Login Sample Receipt Checklist – (Rejection Criteria Listing – Using Acceptance Policy) Any False statement will be brought to the attention of the Client – True or False

	True	False
Received on Ice	☑	☐
Received in Cooler	☑	☐
Custody Seal: DATE TIME	☐	☑
COC Relinquished	☑	☐
COC/Samples Labels Agree	☑	☐
All Samples in Good Condition	☑	☐
Samples Received within Holding Time	☑	☐
Is there enough Volume	☑	☐
Proper Media/Container Used	☑	☐
Splitting Samples Required	☐	☑
MS/MSD	☐	☑
Trip Blanks	☐	☑
Lab to Filters	☐	☑
COC Legible	☑	☐

COC Included: (Check all included)

Client	☑	Analysis	☑	Sampler Name	☐
Project	☑	IDs	☑	Collection Date/Time	☑

All Samples Proper pH: (N/A) ☐ ☐

Additional Container Notes

Note: West Virginia requires all samples to have their temperature taken. Note any outliers.

Qualtrax ID: 120836

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Sample																				
Soils Jars	(Circle Amb/Clear)	16oz Amb/Clear																		
		8oz Amb/Clear																		
		4oz Amb/Clear																		
		2oz Amb/Clear																		
Ambers	1 Liter	Unpreserved																		
		HCL																		
		Sulfuric																		
	250mL	Sulfuric																		
		Phosphoric																		
		HCl																		
	100mL	Unpreserved																		
Plastics	1 Liter	Unpreserved																		
		Sulfuric																		
	500mL	Unpreserved																		
		Sulfuric																		
	250mL	Unpreserved																		
		Trizma																		
		Sulfuric																		
		Nitric																		
		NaOH																		
		Ammonium Acetate																		
		NaOH/Zinc																		
VOA Vials		Unpreserved																		
		HCl																		
		MeOH																		
		D.I. Water																		
		BiSulfate																		
Other / Fill in		Col/Bact																		
		Other																		

Appendix C-2

Existing Well Microbial Laboratory Analytical Reports

SiREM
Leading Science · Lasting Solutions

180A Market Place Blvd.
Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Gene-Trac® Certificate of Analysis

Customer: Hayden Haas

Email: hhaas@cscos.com

Phone: 315-455-2000

Company: C&S Engineers, Inc.

Project Name: Former Ithaca Gun Factory BCP

Method Reference: SOP-002, SOP-108, SOP-116, SOP-126

Batch Reference: S-10593

Report Date: 15-Aug-24

Certificate Number: CAG-1282

Test Location(s): Knoxville and Guelph

Customer Reference: X55.002.001

The results included herein only apply to the samples described within and are applicable to the items as received. This certificate is not to be reproduced unless in full.

There are changes to our report format; this is due to improvements in our data reporting system. In addition, each report now includes qPCR quantification of total prokaryotes. This value is a useful measure of total microbial biomass and is now used to calculate the percentage of the test target (e.g., % Dhc).

SOP-116 (DNA Extraction) and SOP-108 (*Dehalococcoides* and Total Prokaryotes testing) were performed at SiREM Knoxville, the remainder of testing was performed at SiREM Guelph.

gene trac®

ilac-MRA

PJLA Testing

Accreditation # 89844

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017

SiREM
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Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Gene-Trac® Dehalococcoides FGA Test Results, Test Certificate CAG-1282

Target (Test ID)*	MM-03 Pre-Sampling		MW-08 Pre-Sampling		MW-09 Pre-Sampling		MW-04B Pre-Sampling	
	Gene Copies/L[1]	Percent (%)[2]	Gene Copies/L[1]	Percent (%)[2]	Gene Copies/L[1]	Percent (%)[2]	Gene Copies/L[1]	Percent (%)[2]
Dehalococcoides (DHC)	1.64 E+03 U	NA	1.52 E+06	0.580	1.05 E+05	0.0882	6.84 E+04	0.0565
Run Date	05-Aug-24		05-Aug-24		05-Aug-24		05-Aug-24	
vcrA Reductase (FGA-VCRA)	1.64 E+03 U	NA	3.26 E+04	0.0124	3.28 E+03 U	NA	1.85 E+04	0.0153
Run Date	14-Aug-24		14-Aug-24		14-Aug-24		14-Aug-24	
bvcA Reductase (FGA-BVCA)	1.64 E+03 U	NA	7.39 E+05	0.281	4.47 E+04	0.0376	4.04 E+03	0.00334
Run Date	14-Aug-24		14-Aug-24		14-Aug-24		14-Aug-24	
tceA Reductase (FGA-TCEA)	1.64 E+03 U	NA	1.55 E+04	0.00588	3.51 E+03 J	0.00295	7.68 E+03	0.00634
Run Date	14-Aug-24		14-Aug-24		14-Aug-24		14-Aug-24	
Total Prokaryotes (PROK)[3]	2.04 E+09	- -	2.63 E+08	- -	1.19 E+08	- -	1.21 E+08	- -
Run Date	05-Aug-24		05-Aug-24		05-Aug-24		05-Aug-24	

* See final page for complete notes and target descriptions

Analyst: Melody Vachon-Gregory

Melody Vachon-Gregory
Genetic Testing Analyst

Approved: Jen Wilkinson

Jennifer Wilkinson
Senior Genetic Testing Specialist

SiREM
Leading Science · Lasting Solutions

180A Market Place Blvd.
Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Detailed Test Parameters, Test Certificate CAG-1282

Customer Sample ID	MM-03 Pre-Sampling	MW-08 Pre-Sampling	MW-09 Pre-Sampling	MW-04B Pre-Sampling
Date Sampled [4]	30-Jul-24	30-Jul-24	30-Jul-24	31-Jul-24
Matrix	Groundwater	Groundwater	Groundwater	Groundwater
Date Received [4]	01-Aug-24	01-Aug-24	01-Aug-24	01-Aug-24
Sample Temperature	3.3 °C	3.3 °C	3.3 °C	3.3 °C
Filtration Date [4]	01-Aug-24	01-Aug-24	01-Aug-24	01-Aug-24
Volume Used for DNA Extraction	200 mL	300 mL	100 mL	300 mL
DNA Extraction Date	05-Aug-24	05-Aug-24	05-Aug-24	05-Aug-24
DNA Extraction Control [5]	Passed	Passed	Passed	Passed
PCR Amplifiable DNA	Detected	Detected	Detected	Detected
Detection Limit (Gene Copies/L)	1.64 E+03	1.09 E+03	3.28 E+03	1.09 E+03
Quantitation Limit (Gene Copies/L)	3.28 E+03	2.18 E+03	6.56 E+03	2.18 E+03
qPCR Controls	Passed	Passed	Passed	Passed
Comments	- -	- -	- -	- -

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Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Gene-Trac® Control Results, Test Certificate CAG-1282

Target (Test ID)	Low Control Copies/L		High Control Copies/L		Test Blank Copies/L		DNA Extraction Blank Copies/L		Comments
	Expected	Recovered	Expected	Recovered	Expected	Recovered	Expected	Recovered	
Dehalococcoides (DHC)	1.59 E+06	1.22 E+06	1.76 E+08	1.79 E+08	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	05-Aug-24		05-Aug-24		05-Aug-24		05-Aug-24		
vcrA Reductase (FGA-VCRA)	1.28 E+07	1.36 E+07	1.40 E+09	1.68 E+09	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	14-Aug-24		14-Aug-24		14-Aug-24		14-Aug-24		
bvcA Reductase (FGA-BVCA)	1.51 E+07	1.61 E+07	1.57 E+09	1.72 E+09	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	14-Aug-24		14-Aug-24		14-Aug-24		14-Aug-24		
tceA Reductase (FGA-TCEA)	1.52 E+07	1.50 E+07	1.58 E+09	1.91 E+09	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	14-Aug-24		14-Aug-24		14-Aug-24		14-Aug-24		
Total Prokaryotes (PROK)	1.80 E+06	1.05 E+06	1.64 E+08	1.38 E+08	0	7.76 E+02 J(6)	0	4.78 E+03 (6)	Passed
Run Date	05-Aug-24		05-Aug-24		05-Aug-24		05-Aug-24		

Notes:
bvcA Reductase (FGA-BVCA) = Dehalococcoides BAV1 Vinyl Chloride Reductase A (bvcA)
Dehalococcoides (DHC) = Dehalococcoides 16S rRNA
tceA Reductase (FGA-TCEA) = Dehalococcoides Trichloroethene Reductase A (tceA)
Total Prokaryotes (PROK) = Bacteria and Archaea 16S rRNA using Universal Primers
vcrA Reductase (FGA-VCRA) = Dehalococcoides Vinyl Chloride Reductase A (vcrA)

J The associated value is an estimated quantity between the detection limit and quantitation limit.
U Not detected, associated value is the detection limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
E Extracted genomic DNA was not detected in the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
M Non-specific amplification was observed via melt curve analysis.
g = gram
mL = milliliter
L = liter
NA = not applicable
ND = not detected
DNA = deoxyribonucleic acid
16S rRNA = 16S ribosomal ribonucleic acid
PCR = polymerase chain reaction
qPCR = quantitative PCR
°C = degrees Celsius

1. Target quantitation is subject to the variability of the method. This variability has been demonstrated to be +/- 60%.
2. Percent target in microbial population. This value is calculated by dividing the number of target gene copies by the total prokaryotes as enumerated by qPCR.
3. Total prokaryotes testing includes enumeration of most Bacteria and Archaea and is a measure of overall microbial biomass in the sample.
4. Samples are stabilized by freezing at -80 °C upon sample reception (field filters) or after in-lab filtration (groundwater). Hold time not exceeded if sampling date is within 14 days of days of reception or filtration.
5. DNA is extracted from a standardized bacterial culture sample daily and Universal qPCR is performed using standard methods. A recovery greater than 25% of the expected value is deemed acceptable.
6. Deemed acceptable if relevant sample results are greater than one order of magnitude above the blank result(s). Any affected samples are denoted with a B qualifier.
7. Control was outside recovery limit guidelines (+/- 50%); however, test results are deemed acceptable if one of two positive controls fall within the recovery limit guidelines.

Appendix C-3

Existing Well CSIA Laboratory Analytical Reports

SiREM
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180B Market Place Blvd. | 130 Stone Rd W Guelph
Knoxville, TN 37922 ON N1G 3Z2

Certificate of Analysis
Compound-Specific Isotope Analysis
Of Chlorinated Ethenes in Groundwater Samples

Customer:

C&S Engineers, Inc.

Site Reference:

Former Ithaca Gun Factory BCP

Sample Reception

S-10593, August 1, 2024

SiREM Reference:

Si-07843

Report Issued:

September 27, 2024

Introduction

This report represents the Compound Specific Isotope Analysis (CSIA) results from samples from the Former Ithaca Gun Factory BCP site. The data from 4 samples were analyzed for $\delta^{13}C$ for tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride.

Sample Summary

Sample ID	Compounds	Isotope Analysis	Matrix Internal ID Unit
MW-03 Pre-sampling	PCE, TCE, cis-DCE, trans-DCE, VC	$\delta^{13}C$	δ ‰ VPDB
MW-08 Pre-sampling	PCE, TCE, cis-DCE, trans-DCE, VC	$\delta^{13}C$	δ ‰ VPDB
MW-09 Pre-sampling	PCE, TCE, cis-DCE, trans-DCE, VC	$\delta^{13}C$	δ ‰ VPDB
MW-04B Pre-sampling	PCE, TCE, cis-DCE, trans-DCE, VC	$\delta^{13}C$	δ ‰ VPDB

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Analytical Results

Client: C&S Engineers, Inc.
Client Project Number: X55.002.001
Date Samples Received: August 1, 2024
Date Samples Analyzed: August/September 2024
IsoDetect Internal Project No: 24-075-IF

SiREM File Reference: S-10593

Client Sample ID	SiREM Reference ID	Isodetect Reference ID	Client Sample Date	Tetrachloroethene (PCE)			Trichloroethene (TCE)			1,2-Dichloroethene (cis-DCE)			1,2-Dichloroethene (trans-DCE)			Vinyl chloride (VC)		
				$^{13}C/^{12}C$		Concentration	$^{13}C/^{12}C$		Concentration	$^{13}C/^{12}C$		Concentration	$^{13}C/^{12}C$		Concentration	$^{13}C/^{12}C$		Concentration
				δ‰ VPDB	s.d.	µg/L	δ‰ VPDB	s.d.	µg/L	δ‰ VPDB	s.d.	µg/L	δ‰ VPDB	s.d.	µg/L	δ‰ VPDB	s.d.	µg/L
MW-03 Pre-sampling	24-18736	24-075-01	30-Jul-24	n.d.	--	1.5	-22.9	0.1	150	-23.7	0.3	70	n.d.	--	--	n.d.	–	0.3
MW-08 Pre-sampling	24-18737	24-075-02	30-Jul-24	-19.6	0.3	250	-21.7	0.4	20,000	-26.9	0.4	13,000	-39.0	0.3	--	-44.7	0.3	330
MW-09 Pre-sampling	24-18738	24-075-03	30-Jul-24	-19.9	0.2	51	-22.3	0.2	2,200	-25.8	<0.1	1,700	-37.6	0.2	--	-39.6	0.3	17
MW-04B Pre-sampling	24-18739	24-075-04	31-Jul-24	n.d.	--	0.7	-21.9	0.4	34	-21.0	0.2	13	n.d.	--	--	n.d.	--	0.1
CLS measured	--	--	--	-30.7	0.5	--	-31.0	0.5	--	-21.5	0.4	--	-17.9	0.4	--	-29.9	0.3	--
CLS true	--	--	--	-30.2	--	--	-31.2	--	--	-21.8	--	--	-18.6	--	--	-29.3	–	–

Comments:
Method: Compound Specific Isotope Analysis (CSIA)
Concentration data have been submitted by the customer
-- = not applicable
n.d. = not determinable/not detectable (below LOD)
s.d. = standard deviation
µg/L = micrograms per liter
CLS = Calibrated Lab Standard
δ‰ VPDB = Isotope ratio expressed per mil [‰] relative to international VPDB standard
VPDB = Vienna Pee Dee Belemnite

Analyst:
Brooke Rapien
Laboratory Technician II

Results approved:
Kela Ashworth, B.Sc.
Scientist

Date:
September 27, 2024

SiREM

Canadian Shipping Address:
130 Stone Road West
Guelph, Ontario N1G 3Z2
PH: 1-519-822-2265
Toll Free PH: 1-866-251-1747
www.siremlab.com

U.S. Shipping Address:
180B Market Place Blvd
Knoxville, TN 37922
PH: 1-865-330-0037
Toll Free PH: 1-866-251-1747

Chain of Custody (COC) Record

Lab #: S-10593

Project Name: Former Ithaca Gun Factory BCP	Project # (Optional): 155.002.001		
Project Manager: Hayden Haas	Proposal #:		
Company: C+S Engineers, INC.	Email Address: HHAAS@CSCOS.com		
Address (Street): 499 Col. Eileen Collins BLVD			
City: Syracuse	State/Province: NY	Country: USA	
Phone #: 315-817-2446			
Sampler's Signature: Hayden Haas	Sampler's Printed Name: Hayden Haas		

Analysis: CSIA Chlorinated 13C; Geo-Trac DHC/FAA

1 of 1 COCs

For Lab Use Only
SiREM Database Info
Recorded By: KC
Date: 8·1·24

Client Sample ID	Sampling Date	Sampling Time	Matrix	Number of Containers	Sample Preservative	CSIA Chlorinated 13C	Geo-Trac DHC/FAA	Other Information (Optional)	Sample ID
MW-03 Pre-Sampling	7/30/24	1522	water	3	HCl	X	X	BK-11701	
MW-08 Pre-Sampling	7/30/24	1245	water	3	HCl	X	X	BK-11703	
MW-09 Pre-Sampling	7/30/24	1107	water	3	HCl	X	X	BK-11700	
MW-10 Pre-Sampling	7/31/24	1120	water	3	HCl	X	X	BK-11699	
04B 4H									

Billing Information (Optional)
P.O. #:
Bill To:

For Lab Use Only
Observed Cooler Temperature (°C): 3.3
Corrected Cooler Temperature (°C):
Thermometer ID: KX00238
Cooler Number (if applicable):
Custody Seals Intact: ☐ Yes ☐ No ☒ Not Applicable
Custody Seal Number (if applicable):

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Hayden Haas	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Hayden Haas	Printed Name:	Printed Name:	Printed Name: Rachael Cracchiolo	Printed Name:	Printed Name:
Firm: C+S	Firm: FEDEX NSyr	Firm:	Firm: SiREM	Firm:	Firm:
Date/Time: 7/31/24 @ 1620	Date/Time:	Date/Time:	Date/Time: 8·1·24 1027	Date/Time:	Date/Time:

Please note: The SiREM Knoxville location does not have a loading dock. For large volume shipments a truck with a lift gate is required.

Isodetect
Umweltmonitoring GmbH

20th of September 2024

Analytical report

Compound-specific stable isotope analysis of chlorinated ethenes in groundwater samples

Ordering party: SiREM
130 Stone Rd. West
Guelph, Ontario,
Canada N1G 3Z2

Contact person: Kela Ashworth
Brent Pautler, Ph.D

Contractor: Isodetect GmbH
Deutscher Platz 5b
04103 Leipzig
Germany

Person in charge: Falk Bratfisch
phone: +49 341 35535853
mail: bratfisch@isodetect.de

Kevin Kuntze, Ph.D.
phone: +49 341 35535851
mail: kuntze@isodetect.de

Samples received: 08.08.2024

Field site/Project ID: S-10593 (C&S Fomer Gun Factory)

Internal Project No.: 24-075-IF

Scope on analysis: CSIA of carbon ($^{13}C/^{12}C$) for PCE, TCE, DCE, VC

Falk Bratfisch

Dr. Kevin Kuntze

Isodetect
Umweltmonitoring GmbH

1 Analysis results

Internal Project No.: 24-075-IF

Field site: S-10593
Sampling: 7/30/2024

Compound	Analysis	Well / Matrix / Internal ID / Unit	MW-03 Pre gw 24-075-01	MW-08 Pre gw 24-075-02	MW-09 Pre gw 24-075-03	MW-04B Pre gw 24-075-04
Tetrachlorethene (PCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	n.d.	**-19.6**	**-19.9**	n.d.
	s.d. $^{13}C/^{12}C$			0.3	0.2	
Trichlorethene (TCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	**-22.9**	**-21.7**	**-22.3**	**-21.9**
	s.d. $^{13}C/^{12}C$		0.1	0.4	0.2	0.4
1,2-Dichlorethene (*cis*-DCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	**-23.7**	**-26.9**	**-25.8**	**-21.0**
	s.d. $^{13}C/^{12}C$		0.3	0.4	<0.1	0.2
1,2-Dichlorethene (*trans*-DCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	n.d.	**-39.0**	**-37.6**	n.d.
	s.d. $^{13}C/^{12}C$			0.3	0.2	
Vinyl chloride (VC)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	n.d.	**-44.7**	**-39.6**	n.d.
	s.d. $^{13}C/^{12}C$			0.3	0.3	
PCE	Concentration	µg/l	1.5	250	51	0.7
TCE	Concentration	µg/l	150	20000	2200	34
cis-DCE	Concentration	µg/l	70	13000	1700	13
trans-DCE	Concentration	µg/l				
VC	Concentration	µg/l	0.3	330	17	0.1

Concentration data have been submitted by the customer.
n.d. = not determinable/not detectable (below LOD)
s.d. = standard deviation
gw = groundwater

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Quality control

Compound	Analysis	Unit	CLS measured	CLS true value
Tetrachlorethene (PCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	-30.7	-30.2
	s.d. $^{13}C/^{12}C$		0.5	
Trichlorethene (TCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	-31.0	-31.2
	s.d. $^{13}C/^{12}C$		0.5	
1,2-Dichlorethene (cis-DCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	-21.5	-21.8
	s.d. $^{13}C/^{12}C$		0.4	
1,2-Dichlorethene (*trans*-DCE)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	-17.9	-18.6
	s.d. $^{13}C/^{12}C$		0.4	
Vinyl chloride (VC)	**$^{13}C/^{12}C$**	**δ ‰ VPDB**	-29.9	-29.3
	s.d. $^{13}C/^{12}C$		0.3	

CLS = calibrated lab standard
s.d. = standard deviation

2 Methodology

Gas chromatography-combustion-isotope ratio mass spectrometry (GC-C-IRMS) was applied to determine the carbon isotope ratios ($^{13}C/^{12}C$-CSIA) of PCE, TCE, DCE and VC in groundwater samples. Prior to analyses and if needed, samples were diluted with distilled water according to the concentration of contaminants to ensure the linearity range of $^{13}C/^{12}C$-CSIA (2 µg l^{-1} up to 400 µg l^{-1}). CSIA was peformed via i) accumulation of target compounds by a purge-and-trap unit (sample volume of 25 ml up to 250 ml), ii) transfer of target compounds to a gas chromatograph equipped with a split/splitless injector, iii) compound-specific separation of target compounds on a GC column using an appropriate temperature program, iv) combustion of target compounds to CO_2 and v) transfer of CO_2 to isotope ratio mass spectrometer. Authentic laboratory standards, measured in duplicates before, during and at the end of each sequence, were used for identification of target compounds and for quality control of CSIA in accordance to common guidelines[1,2].

All samples were measured at least twice. Isotope ratios are expressed in the delta notation ($\delta^{13}C$) in per mil [‰] relative to international standards according to:

$$\delta^{13}_{\square}C[‰] = \left(\frac{R_{sample} - R_{standard}}{R_{standard}}\right) \qquad \text{(eq.1)}$$

where R_{sample} and $R_{standard}$ are the $^{13}C/^{12}C$-ratios of the sample and the international standard, respectively. Vienna Pee Dee Belemnite (VPDB) was used as standards for carbon[3]. The reproducibility exhibited standard deviations (2σ) of $\delta^{13}C$-values ≤ 0.5 ‰ which is in accordance with the general uncertainty of ^{13}C-CSIA of organic pollutants in water samples[2].

1Forensic Isotope Ratio Mass Spectrometry (FIRMS) Network (2011): Good practice guide for Isotope Ratio Mass Spectrometry.
2US EPA (2008) A guide for assessing biodegradation and source identification of organic ground water contaminants using compound specific isotope analysis (CSIA). United States Environmental Protection Agency. EPA 600/R-08/148
3 Gonfiantini R., Stichler W., Rozanski K. (1995) Standards and intercomparison materials for stable isotopes of light elements. IAEA-TECDOC-825. Vienna. 13-29

Chain of Custody for CSIA of organic pollutants

Isodetect Umweltmonitoring GmbH

Contact information				Project information			
Company:	SiREM	Email:	kashworth@siremlab.com	Project ID:	Former Ithaca Gun Factory BCP	Field site:	
Contact:	Kela Ashworth	Address:	130 Stone Rd W, Guelph ON N1G 3Z2	Project description:			
Phone:	+1 519-515-0889			Sampled by:	C&S Engineers	Company:	C&S Engineers

	Client Sample ID / Sampling point	Sampling Date	Sampling Time	Matrix	Conditions (e.g. Temp., O_2, R_h, pH)	Sampling type[$]	Sample volume for CSIA	Fixative[#]	CSIA for*	Isotope ratio^	Other Notes (e.g. troubles, weather)
1	MW-03 Pre-Sampling	7/30/24	1522	W		2	2 x 500 mL	3-HCl	13C for TCE, DCE		S-10593
2	MW-08 Pre-Sampling	7/30/24	1245	W		2	2 x 500 mL	3-HCl			S-10593
3	MW-09 Pre-Sampling	7/30/24	1107	W		2	2 x 500 mL	3-HCl			S-10593
4	MW-04B Pre-Sampling	7/31/24	1420	W		2	2 x 500 mL	3-HCl			S-10593

[$] 1 – Submersible pump, 2 – Suction pump, 3 – Bailer, 4 – Tap/outlet, 5 – Trial pit, 6 – Percussion drilling, 7 – Direct push sampling, 8 – Hand excavation, 9 – others (give sampling type)

* 1 – BTEX, 2 – halogenated VOC, 3 – PAH, 4 – Fuel additives (MTBE, ETBE, TAME, TAEE etc.), 5 – Explosives (TNT, RDX, dinitrotoluene, nitrobenzenes etc.), 6 – Petroleum hydrocarbons (e.g. alkylated benzenes, alkanes etc.), 7 – Chlorobenzenes, 8 – Gas hydrocarbons (e.g. methane, ethane, propane, butane, etc.), 9 – Pesticides (HCH, DDT, phenoxy acids, atrazine, bromacil, etc.), 10 – others (give target compounds)

^ 1 – $^{13}C/^{12}C$, 2 – $^{2}H/^{1}H$, 3 – $^{37}Cl/^{35}Cl$, 4 – $^{15}N/^{14}N$, 5 – $^{81}Br/^{79}Br$, 6 – others (give target isotope ratio)

1 – NaOH, 2 – $Na_3PO_4 \cdot 12H_2O$, 3 – HCl, 4 – H_2SO_4, 5 – none, 6 – others (give preservative)

Relinquished by	Received by	Relinquished by	Received by
Signature:	Signature:	Signature:	Signature:
Name: Kaitland Cracchiola	Name: Falk Bradtisch	Name:	Name:
Company: SiREM	Company: Isodetect GmbH	Company:	Company:
Date/Time: 8/8/24 1200	Date/Time: 08.08.24 13:25	Date/Time:	Date/Time:

Isodetect GmbH, Deutscher Platz 5b, 04103 Leipzig, Germany Phone: +49 (0)341-355-35851, Fax: +49 (0)341-355-35852, Email: kuntze@isodetect.de www.isodetect.de

10,7 °C

Isodetect Umweltmonitoring GmbH

Appendix C-4

Injection Well VOC and Geochemistry Laboratory Analytical Reports

ANALYTICAL REPORT

Lab Number:	L2449259
Client:	C&S Companies 499 Col. Eileen Collins Blvd. Syracuse, NY 13212
ATTN:	Hayden Haas
Phone:	(315) 455-2000
Project Name:	FORMER ITHACA GUN FACTORY BCP
Project Number:	X55.002.001
Report Date:	10/08/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449259
Report Date: 10/08/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2449259-01	IJW-01 BASELINE	WATER	121-125 LAKE ST., ITHACA, NY	08/28/24 09:15	08/28/24
L2449259-02	IJW-02 BASELINE	WATER	121-125 LAKE ST., ITHACA, NY	08/28/24 10:36	08/28/24
L2449259-03	IJW-03 BASELINE	WATER	121-125 LAKE ST., ITHACA, NY	08/28/24 12:18	08/28/24
L2449259-04	TRIP BLANK	WATER	121-125 LAKE ST., ITHACA, NY	08/28/24 00:00	08/28/24

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449259
Project Number:	X55.002.001	**Report Date:**	10/08/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449259
Project Number:	X55.002.001	**Report Date:**	10/08/24

Case Narrative (continued)

Report Revision

October 08, 2024: The Total and Dissolved Metals element lists have been amended on L2449259-01, -02, and -03.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Dissolved Gases and Sulfide were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

L2449259-01J, -02J, and -03J: The sample was received above the appropriate pH for the Dissolved Metals analysis. The laboratory added additional HNO3 to a pH <2.

L2449259-03L: The sample was received below the appropriate pH for the Subcontract - Sulfide analysis. The laboratory added additional NaOH to a pH >12.

L2449259-01 through -04: The analyses performed were specified by the client.

Iron, Ferrous

L2449259-01, -02, and -03: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 10/08/24

ORGANICS

VOLATILES

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-01 Date Collected: 08/28/24 09:15
Client ID: IJW-01 BASELINE Date Received: 08/28/24
Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/07/24 14:36
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	54		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.30	J	ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	1.4		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.14	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	0.28	J	ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	4.3		ug/l	2.5	0.70	1
Trichloroethene	120		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-01 Date Collected: 08/28/24 09:15

Client ID: IJW-01 BASELINE Date Received: 08/28/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	16		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	109		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-02 D
Client ID: IJW-02 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/28/24 10:36
Date Received: 08/28/24
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/07/24 15:43
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	120	35.	50
1,1-Dichloroethane	ND		ug/l	120	35.	50
Chloroform	ND		ug/l	120	35.	50
Carbon tetrachloride	ND		ug/l	25	6.7	50
1,2-Dichloropropane	ND		ug/l	50	6.8	50
Dibromochloromethane	ND		ug/l	25	7.4	50
1,1,2-Trichloroethane	ND		ug/l	75	25.	50
Tetrachloroethene	98		ug/l	25	9.0	50
Chlorobenzene	ND		ug/l	120	35.	50
Trichlorofluoromethane	ND		ug/l	120	35.	50
1,2-Dichloroethane	ND		ug/l	25	6.6	50
1,1,1-Trichloroethane	ND		ug/l	120	35.	50
Bromodichloromethane	ND		ug/l	25	9.6	50
trans-1,3-Dichloropropene	ND		ug/l	25	8.2	50
cis-1,3-Dichloropropene	ND		ug/l	25	7.2	50
Bromoform	ND		ug/l	100	32.	50
1,1,2,2-Tetrachloroethane	ND		ug/l	25	8.4	50
Benzene	ND		ug/l	25	8.0	50
Toluene	ND		ug/l	120	35.	50
Ethylbenzene	ND		ug/l	120	35.	50
Chloromethane	ND		ug/l	120	35.	50
Bromomethane	ND		ug/l	120	35.	50
Vinyl chloride	68		ug/l	50	3.6	50
Chloroethane	ND		ug/l	120	35.	50
1,1-Dichloroethene	20	J	ug/l	25	8.4	50
trans-1,2-Dichloroethene	ND		ug/l	120	35.	50
Trichloroethene	5200		ug/l	25	8.8	50
1,2-Dichlorobenzene	ND		ug/l	120	35.	50

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-02 D Date Collected: 08/28/24 10:36

Client ID: IJW-02 BASELINE Date Received: 08/28/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	120	35.	50
1,4-Dichlorobenzene	ND		ug/l	120	35.	50
Methyl tert butyl ether	ND		ug/l	120	8.3	50
p/m-Xylene	ND		ug/l	120	35.	50
o-Xylene	ND		ug/l	120	35.	50
cis-1,2-Dichloroethene	2100		ug/l	120	35.	50
Styrene	ND		ug/l	120	35.	50
Dichlorodifluoromethane	ND		ug/l	250	50.	50
Acetone	ND		ug/l	250	73.	50
Carbon disulfide	ND		ug/l	250	50.	50
2-Butanone	ND		ug/l	250	97.	50
4-Methyl-2-pentanone	ND		ug/l	250	50.	50
2-Hexanone	ND		ug/l	250	50.	50
Bromochloromethane	ND		ug/l	120	35.	50
1,2-Dibromoethane	ND		ug/l	100	32.	50
1,2-Dibromo-3-chloropropane	ND		ug/l	120	35.	50
Isopropylbenzene	ND		ug/l	120	35.	50
1,2,3-Trichlorobenzene	ND		ug/l	120	35.	50
1,2,4-Trichlorobenzene	ND		ug/l	120	35.	50
Methyl Acetate	ND		ug/l	100	12.	50
Cyclohexane	ND		ug/l	500	14.	50
1,4-Dioxane	ND		ug/l	12000	3000	50
Freon-113	ND		ug/l	120	35.	50
Methyl cyclohexane	ND		ug/l	500	20.	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-03 D
Client ID: IJW-03 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/28/24 12:18
Date Received: 08/28/24
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/07/24 15:20
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	5.0	1.4	2
1,1-Dichloroethane	ND		ug/l	5.0	1.4	2
Chloroform	11		ug/l	5.0	1.4	2
Carbon tetrachloride	ND		ug/l	1.0	0.27	2
1,2-Dichloropropane	ND		ug/l	2.0	0.27	2
Dibromochloromethane	ND		ug/l	1.0	0.30	2
1,1,2-Trichloroethane	ND		ug/l	3.0	1.0	2
Tetrachloroethene	2.4		ug/l	1.0	0.36	2
Chlorobenzene	ND		ug/l	5.0	1.4	2
Trichlorofluoromethane	ND		ug/l	5.0	1.4	2
1,2-Dichloroethane	ND		ug/l	1.0	0.26	2
1,1,1-Trichloroethane	ND		ug/l	5.0	1.4	2
Bromodichloromethane	0.52	J	ug/l	1.0	0.38	2
trans-1,3-Dichloropropene	ND		ug/l	1.0	0.33	2
cis-1,3-Dichloropropene	ND		ug/l	1.0	0.29	2
Bromoform	ND		ug/l	4.0	1.3	2
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.33	2
Benzene	ND		ug/l	1.0	0.32	2
Toluene	ND		ug/l	5.0	1.4	2
Ethylbenzene	ND		ug/l	5.0	1.4	2
Chloromethane	ND		ug/l	5.0	1.4	2
Bromomethane	ND		ug/l	5.0	1.4	2
Vinyl chloride	28		ug/l	2.0	0.14	2
Chloroethane	ND		ug/l	5.0	1.4	2
1,1-Dichloroethene	1.7		ug/l	1.0	0.34	2
trans-1,2-Dichloroethene	2.0	J	ug/l	5.0	1.4	2
Trichloroethene	98		ug/l	1.0	0.35	2
1,2-Dichlorobenzene	ND		ug/l	5.0	1.4	2

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-03 D
Client ID: IJW-03 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/28/24 12:18
Date Received: 08/28/24
Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	5.0	1.4	2
1,4-Dichlorobenzene	ND		ug/l	5.0	1.4	2
Methyl tert butyl ether	ND		ug/l	5.0	0.33	2
p/m-Xylene	ND		ug/l	5.0	1.4	2
o-Xylene	ND		ug/l	5.0	1.4	2
cis-1,2-Dichloroethene	180		ug/l	5.0	1.4	2
Styrene	ND		ug/l	5.0	1.4	2
Dichlorodifluoromethane	ND		ug/l	10	2.0	2
Acetone	ND		ug/l	10	2.9	2
Carbon disulfide	ND		ug/l	10	2.0	2
2-Butanone	ND		ug/l	10	3.9	2
4-Methyl-2-pentanone	ND		ug/l	10	2.0	2
2-Hexanone	ND		ug/l	10	2.0	2
Bromochloromethane	ND		ug/l	5.0	1.4	2
1,2-Dibromoethane	ND		ug/l	4.0	1.3	2
1,2-Dibromo-3-chloropropane	ND		ug/l	5.0	1.4	2
Isopropylbenzene	ND		ug/l	5.0	1.4	2
1,2,3-Trichlorobenzene	ND		ug/l	5.0	1.4	2
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1.4	2
Methyl Acetate	ND		ug/l	4.0	0.47	2
Cyclohexane	ND		ug/l	20	0.54	2
1,4-Dioxane	ND		ug/l	500	120	2
Freon-113	ND		ug/l	5.0	1.4	2
Methyl cyclohexane	ND		ug/l	20	0.79	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	106		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-04 Date Collected: 08/28/24 00:00

Client ID: TRIP BLANK Date Received: 08/28/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8260D

Analytical Date: 09/07/24 14:58

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.22	J	ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-04 Date Collected: 08/28/24 00:00

Client ID: TRIP BLANK Date Received: 08/28/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 09/07/24 08:01
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1969019-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 09/07/24 08:01
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1969019-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 09/07/24 08:01
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1969019-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1969019-3 WG1969019-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	100		110		70-130	10		20
Chloroform	100		110		70-130	10		20
Carbon tetrachloride	120		120		63-132	0		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	110		110		63-130	0		20
1,1,2-Trichloroethane	100		110		70-130	10		20
Tetrachloroethene	120		130		70-130	8		20
Chlorobenzene	110		110		75-130	0		20
Trichlorofluoromethane	130		120		62-150	8		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	110		120		67-130	9		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	110		110		70-130	0		20
cis-1,3-Dichloropropene	100		110		70-130	10		20
Bromoform	100		100		54-136	0		20
1,1,2,2-Tetrachloroethane	100		110		67-130	10		20
Benzene	100		110		70-130	10		20
Toluene	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
Chloromethane	120		120		64-130	0		20
Bromomethane	120		120		39-139	0		20
Vinyl chloride	120		120		55-140	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1969019-3 WG1969019-4								
Chloroethane	110		100		55-138	10		20
1,1-Dichloroethene	120		120		61-145	0		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	110		110		70-130	0		20
1,2-Dichlorobenzene	110		110		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	110		110		70-130	0		20
Methyl tert butyl ether	99		100		63-130	1		20
p/m-Xylene	115		115		70-130	0		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	100		110		70-130	10		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	140		140		36-147	0		20
Acetone	98		110		58-148	12		20
Carbon disulfide	110		110		51-130	0		20
2-Butanone	100		110		63-138	10		20
4-Methyl-2-pentanone	90		96		59-130	6		20
2-Hexanone	91		98		57-130	7		20
Bromochloromethane	100		110		70-130	10		20
1,2-Dibromoethane	110		110		70-130	0		20
1,2-Dibromo-3-chloropropane	110		110		41-144	0		20
Isopropylbenzene	120		120		70-130	0		20
1,2,3-Trichlorobenzene	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1969019-3 WG1969019-4								
1,2,4-Trichlorobenzene	110		110		70-130	0		20
Methyl Acetate	96		96		70-130	0		20
Cyclohexane	**170**	Q	**170**	Q	70-130	0		20
1,4-Dioxane	104		96		56-162	8		20
Freon-113	130		130		70-130	0		20
Methyl cyclohexane	**180**	Q	**190**	Q	70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		97		70-130
Toluene-d8	103		102		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	97		97		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1969019-6 WG1969019-7 QC Sample: L2449259-03 Client ID: IJW-03 BASELINE												
Methylene chloride	ND	20	24	120		24	120		70-130	0		20
1,1-Dichloroethane	ND	20	27	**135**	Q	26	130		70-130	4		20
Chloroform	11	20	36	125		35	120		70-130	3		20
Carbon tetrachloride	ND	20	30	**150**	Q	29	**145**	Q	63-132	3		20
1,2-Dichloropropane	ND	20	24	120		24	120		70-130	0		20
Dibromochloromethane	ND	20	24	120		23	115		63-130	4		20
1,1,2-Trichloroethane	ND	20	24	120		23	115		70-130	4		20
Tetrachloroethene	2.4	20	31	**143**	Q	29	**133**	Q	70-130	7		20
Chlorobenzene	ND	20	25	125		24	120		75-130	4		20
Trichlorofluoromethane	ND	20	29	145		29	145		62-150	0		20
1,2-Dichloroethane	ND	20	24	120		24	120		70-130	0		20
1,1,1-Trichloroethane	ND	20	28	**140**	Q	28	**140**	Q	67-130	0		20
Bromodichloromethane	0.52J	20	24	120		24	120		67-130	0		20
trans-1,3-Dichloropropene	ND	20	23	115		23	115		70-130	0		20
cis-1,3-Dichloropropene	ND	20	21	105		21	105		70-130	0		20
Bromoform	ND	20	21	105		21	105		54-136	0		20
1,1,2,2-Tetrachloroethane	ND	20	22	110		22	110		67-130	0		20
Benzene	ND	20	26	130		25	125		70-130	4		20
Toluene	ND	20	26	130		25	125		70-130	4		20
Ethylbenzene	ND	20	26	130		25	125		70-130	4		20
Chloromethane	ND	20	28	**140**	Q	28	**140**	Q	64-130	0		20
Bromomethane	ND	20	30	**150**	Q	28	**140**	Q	39-139	7		20
Vinyl chloride	28	20	55	135		54	130		55-140	2		20

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1969019-6 WG1969019-7 QC Sample: L2449259-03 Client ID: IJW-03 BASELINE												
Chloroethane	ND	20	26	130		25	125		55-138	4		20
1,1-Dichloroethene	1.7	20	28	132		28	132		61-145	0		20
trans-1,2-Dichloroethene	2.0J	20	27	**135**	Q	27	**135**	Q	70-130	0		20
Trichloroethene	98	20	120	110		120	110		70-130	0		20
1,2-Dichlorobenzene	ND	20	23	115		23	115		70-130	0		20
1,3-Dichlorobenzene	ND	20	24	120		24	120		70-130	0		20
1,4-Dichlorobenzene	ND	20	23	115		23	115		70-130	0		20
Methyl tert butyl ether	ND	20	20	100		21	105		63-130	5		20
p/m-Xylene	ND	40	52	130		50	125		70-130	4		20
o-Xylene	ND	40	50	125		49	123		70-130	2		20
cis-1,2-Dichloroethene	180	20	200	100		190	**50**	Q	70-130	5		20
Styrene	ND	40	42	105		40	100		70-130	5		20
Dichlorodifluoromethane	ND	20	35	**175**	Q	34	**170**	Q	36-147	3		20
Acetone	ND	20	22	110		20	100		58-148	10		20
Carbon disulfide	ND	20	27	**135**	Q	26	130		51-130	4		20
2-Butanone	ND	20	21	105		22	110		63-138	5		20
4-Methyl-2-pentanone	ND	20	18	90		18	90		59-130	0		20
2-Hexanone	ND	20	18	90		18	90		57-130	0		20
Bromochloromethane	ND	20	24	120		23	115		70-130	4		20
1,2-Dibromoethane	ND	20	23	115		23	115		70-130	0		20
1,2-Dibromo-3-chloropropane	ND	20	20	100		21	105		41-144	5		20
Isopropylbenzene	ND	20	25	125		25	125		70-130	0		20
1,2,3-Trichlorobenzene	ND	20	22	110		22	110		70-130	0		20

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1969019-6 WG1969019-7 QC Sample: L2449259-03 Client ID: IJW-03 BASELINE												
1,2,4-Trichlorobenzene	ND	20	22	110		22	110		70-130	0		20
Methyl Acetate	ND	20	21	105		21	105		70-130	0		20
Cyclohexane	ND	20	42	**210**	Q	40	**200**	Q	70-130	5		20
1,4-Dioxane	ND	1000	940	94		980	98		56-162	4		20
Freon-113	ND	20	31	**155**	Q	31	**155**	Q	70-130	0		20
Methyl cyclohexane	ND	20	45	**225**	Q	43	**215**	Q	70-130	5		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		101		70-130
4-Bromofluorobenzene	96		99		70-130
Dibromofluoromethane	103		101		70-130
Toluene-d8	103		100		70-130

METALS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-01 Date Collected: 08/28/24 09:15

Client ID: IJW-01 BASELINE Date Received: 08/28/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	69.1		mg/l	0.100	0.0350	1	09/12/24 03:58	09/12/24 14:42	EPA 3005A	1,6010D	DMC
Iron, Total	0.537		mg/l	0.0500	0.0090	1	09/12/24 03:58	09/12/24 14:42	EPA 3005A	1,6010D	DMC
Magnesium, Total	12.0		mg/l	0.100	0.0153	1	09/12/24 03:58	09/12/24 14:42	EPA 3005A	1,6010D	DMC
Potassium, Total	1.83	J	mg/l	2.50	0.237	1	09/12/24 03:58	09/12/24 14:42	EPA 3005A	1,6010D	DMC
Sodium, Total	69.0		mg/l	2.00	0.120	1	09/12/24 03:58	09/12/24 14:42	EPA 3005A	1,6010D	DMC
General Chemistry - Westborough Lab											
Iron, Ferric	0.54		mg/l	0.50	0.06	1		09/12/24 14:42	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	67.8		mg/l	0.100	0.0350	1	09/10/24 23:38	09/12/24 10:06	EPA 3005A	1,6010D	DHL
Iron, Dissolved	0.0091	J	mg/l	0.0500	0.0090	1	09/10/24 23:38	09/12/24 10:06	EPA 3005A	1,6010D	DHL
Magnesium, Dissolved	12.8		mg/l	0.100	0.0153	1	09/10/24 23:38	09/12/24 10:06	EPA 3005A	1,6010D	DHL
Potassium, Dissolved	1.69	J	mg/l	2.50	0.237	1	09/10/24 23:38	09/12/24 10:06	EPA 3005A	1,6010D	DHL
Sodium, Dissolved	65.1		mg/l	2.00	0.120	1	09/10/24 23:38	09/12/24 10:06	EPA 3005A	1,6010D	DHL

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-02 Date Collected: 08/28/24 10:36

Client ID: IJW-02 BASELINE Date Received: 08/28/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	68.0		mg/l	0.100	0.0350	1	09/12/24 03:58	09/12/24 15:51	EPA 3005A	1,6010D	DMC
Iron, Total	1.22		mg/l	0.0500	0.0090	1	09/12/24 03:58	09/12/24 15:51	EPA 3005A	1,6010D	DMC
Magnesium, Total	11.8		mg/l	0.100	0.0153	1	09/12/24 03:58	09/12/24 15:51	EPA 3005A	1,6010D	DMC
Potassium, Total	2.21	J	mg/l	2.50	0.237	1	09/12/24 03:58	09/12/24 15:51	EPA 3005A	1,6010D	DMC
Sodium, Total	82.0		mg/l	2.00	0.120	1	09/12/24 03:58	09/12/24 15:51	EPA 3005A	1,6010D	DMC
General Chemistry - Westborough Lab											
Iron, Ferric	1.2		mg/l	0.50	0.06	1		09/12/24 15:51	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	64.8		mg/l	0.100	0.0350	1	09/10/24 23:38	09/12/24 10:12	EPA 3005A	1,6010D	DHL
Iron, Dissolved	0.0105	J	mg/l	0.0500	0.0090	1	09/10/24 23:38	09/12/24 10:12	EPA 3005A	1,6010D	DHL
Magnesium, Dissolved	12.6		mg/l	0.100	0.0153	1	09/10/24 23:38	09/12/24 10:12	EPA 3005A	1,6010D	DHL
Potassium, Dissolved	2.02	J	mg/l	2.50	0.237	1	09/10/24 23:38	09/12/24 10:12	EPA 3005A	1,6010D	DHL
Sodium, Dissolved	74.7		mg/l	2.00	0.120	1	09/10/24 23:38	09/12/24 10:12	EPA 3005A	1,6010D	DHL

Project Name: FORMER ITHACA GUN FACTORY BCP
Lab Number: L2449259
Project Number: X55.002.001
Report Date: 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-03
Client ID: IJW-03 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY
Date Collected: 08/28/24 12:18
Date Received: 08/28/24
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	52.1		mg/l	0.100	0.0350	1	09/12/24 03:58	09/12/24 14:55	EPA 3005A	1,6010D	DMC
Iron, Total	0.458		mg/l	0.0500	0.0090	1	09/12/24 03:58	09/12/24 14:55	EPA 3005A	1,6010D	DMC
Magnesium, Total	8.06		mg/l	0.100	0.0153	1	09/12/24 03:58	09/12/24 14:55	EPA 3005A	1,6010D	DMC
Potassium, Total	2.31	J	mg/l	2.50	0.237	1	09/12/24 03:58	09/12/24 14:55	EPA 3005A	1,6010D	DMC
Sodium, Total	72.4		mg/l	2.00	0.120	1	09/12/24 03:58	09/12/24 14:55	EPA 3005A	1,6010D	DMC
General Chemistry - Westborough Lab											
Iron, Ferric	0.46	J	mg/l	0.50	0.06	1		09/12/24 14:55	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	50.2		mg/l	0.100	0.0350	1	09/10/24 23:38	09/12/24 10:19	EPA 3005A	1,6010D	DHL
Iron, Dissolved	ND		mg/l	0.0500	0.0090	1	09/10/24 23:38	09/12/24 10:19	EPA 3005A	1,6010D	DHL
Magnesium, Dissolved	8.69		mg/l	0.100	0.0153	1	09/10/24 23:38	09/12/24 10:19	EPA 3005A	1,6010D	DHL
Potassium, Dissolved	2.17	J	mg/l	2.50	0.237	1	09/10/24 23:38	09/12/24 10:19	EPA 3005A	1,6010D	DHL
Sodium, Dissolved	67.2		mg/l	2.00	0.120	1	09/10/24 23:38	09/12/24 10:19	EPA 3005A	1,6010D	DHL

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449259

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1970429-1										
Calcium, Total	ND		mg/l	0.100	0.0350	1	09/12/24 03:58	09/12/24 14:28	1,6010D	DMC
Iron, Total	ND		mg/l	0.0500	0.0090	1	09/12/24 03:58	09/12/24 14:28	1,6010D	DMC
Magnesium, Total	ND		mg/l	0.100	0.0153	1	09/12/24 03:58	09/12/24 14:28	1,6010D	DMC
Potassium, Total	ND		mg/l	2.50	0.237	1	09/12/24 03:58	09/12/24 14:28	1,6010D	DMC
Sodium, Total	ND		mg/l	2.00	0.120	1	09/12/24 03:58	09/12/24 14:28	1,6010D	DMC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1970442-1										
Calcium, Dissolved	ND		mg/l	0.100	0.0350	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Iron, Dissolved	ND		mg/l	0.0500	0.0090	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Magnesium, Dissolved	ND		mg/l	0.100	0.0153	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Potassium, Dissolved	ND		mg/l	2.50	0.237	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Sodium, Dissolved	ND		mg/l	2.00	0.120	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1970429-2								
Calcium, Total	103		-		80-120	-		
Iron, Total	103		-		80-120	-		
Magnesium, Total	95		-		80-120	-		
Potassium, Total	106		-		80-120	-		
Sodium, Total	106		-		80-120	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1970442-2								
Calcium, Dissolved	107		-		80-120	-		
Iron, Dissolved	105		-		80-120	-		
Magnesium, Dissolved	101		-		80-120	-		
Potassium, Dissolved	111		-		80-120	-		
Sodium, Dissolved	107		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449259
Report Date: 10/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1970429-3 WG1970429-4 QC Sample: L2451432-22 Client ID: MS Sample												
Calcium, Total	28.8	10	40.4	116		39.4	106		75-125	3		20
Iron, Total	ND	1	1.11	111		1.07	107		75-125	4		20
Magnesium, Total	3.34	10	12.9	96		13.2	99		75-125	2		20
Potassium, Total	0.510J	10	11.9	119		11.7	117		75-125	2		20
Sodium, Total	4.71	10	16.2	115		15.9	112		75-125	2		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1970442-3 QC Sample: L2409778-142 Client ID: MS Sample												
Calcium, Dissolved	2.06	10	12.4	103		-	-		75-125	-		20
Iron, Dissolved	0.533	1	1.54	101		-	-		75-125	-		20
Magnesium, Dissolved	0.967	10	11.2	102		-	-		75-125	-		20
Potassium, Dissolved	0.678J	10	11.5	115		-	-		75-125	-		20
Sodium, Dissolved	0.580J	10	11.0	110		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1970442-4 QC Sample: L2409778-142 Client ID: DUP Sample						
Iron, Dissolved	0.533	0.520	mg/l	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2449259
Report Date: 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-01
Client ID: IJW-01 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY
Date Collected: 08/28/24 09:15
Date Received: 08/28/24
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	171.		mg CaCO3/L	2.00	NA	1	-	09/09/24 09:43	121,2320B	MKT
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/09/24 09:43	121,2320B	MKT
Alkalinity, Bicarbonate	171.		mg CaCO3/L	2.00	NA	1	-	09/09/24 09:43	121,2320B	MKT
Nitrogen, Nitrate	0.45		mg/l	0.10	0.023	1	-	08/30/24 04:21	44,353.2	KAF
Total Organic Carbon	1.79		mg/l	0.500	0.097	1	-	08/30/24 02:08	121,5310C	DEW
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/30/24 23:15	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	125.		mg/l	5.00	0.839	10	-	08/31/24 03:15	44,300.0	CVN
Sulfate	19.1		mg/l	1.00	0.454	1	-	08/31/24 03:04	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2449259
Report Date: 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-02
Client ID: IJW-02 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY
Sample Depth:
Matrix: Water

Date Collected: 08/28/24 10:36
Date Received: 08/28/24
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	173.		mg CaCO3/L	2.00	NA	1	-	09/09/24 10:32	121,2320B	MKT
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/09/24 10:32	121,2320B	MKT
Alkalinity, Bicarbonate	173.		mg CaCO3/L	2.00	NA	1	-	09/09/24 10:32	121,2320B	MKT
Nitrogen, Nitrate	0.31		mg/l	0.10	0.023	1	-	08/30/24 04:22	44,353.2	KAF
Total Organic Carbon	2.04		mg/l	0.500	0.097	1	-	08/30/24 02:08	121,5310C	DEW
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/30/24 23:15	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	144.		mg/l	5.00	0.839	10	-	08/31/24 03:37	44,300.0	CVN
Sulfate	25.0		mg/l	1.00	0.454	1	-	08/31/24 03:26	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2449259
Report Date: 10/08/24

SAMPLE RESULTS

Lab ID: L2449259-03
Client ID: IJW-03 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY
Sample Depth:
Matrix: Water

Date Collected: 08/28/24 12:18
Date Received: 08/28/24
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	161.		mg CaCO3/L	2.00	NA	1	-	09/09/24 10:37	121,2320B	MKT
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/09/24 10:37	121,2320B	MKT
Alkalinity, Bicarbonate	161.		mg CaCO3/L	2.00	NA	1	-	09/09/24 10:37	121,2320B	MKT
Nitrogen, Nitrate	0.11		mg/l	0.10	0.023	1	-	08/30/24 04:26	44,353.2	KAF
Total Organic Carbon	2.37		mg/l	0.500	0.097	1	-	08/30/24 02:08	121,5310C	DEW
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/30/24 23:16	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	104.		mg/l	5.00	0.839	10	-	08/31/24 03:59	44,300.0	CVN
Sulfate	17.2		mg/l	1.00	0.454	1	-	08/31/24 03:48	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCI
Project Number: X55.002.001
Lab Number: L2449259
Report Date: 10/08/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1965819-1										
Total Organic Carbon	ND		mg/l	0.500	0.097	1	-	08/30/24 02:08	121,5310C	DEW
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1965825-1										
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/30/24 04:02	44,353.2	KAF
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1966270-1										
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/30/24 23:14	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-03 Batch: WG1966283-1										
Chloride	0.093	J	mg/l	0.500	0.083	1	-	08/30/24 20:31	44,300.0	CVN
Sulfate	ND		mg/l	1.00	0.454	1	-	08/30/24 20:31	44,300.0	CVN
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1969155-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	09/09/24 11:18	121,2320B	MKT
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/09/24 11:18	121,2320B	MKT
Alkalinity, Bicarbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/09/24 11:18	121,2320B	MKT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449259

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1965819-2								
Total Organic Carbon	102		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1965825-2								
Nitrogen, Nitrate	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1966270-2								
Iron, Ferrous	101		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 Batch: WG1966283-2								
Chloride	102		-		90-110	-		
Sulfate	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1969155-2								
Alkalinity, Total	105		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449259
Report Date: 10/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965819-4 QC Sample: L2449241-01 Client ID: MS Sample												
Total Organic Carbon	1.09	16	17.0	99		-	-		85-115	-		15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965819-6 QC Sample: L2449241-02 Client ID: MS Sample												
Total Organic Carbon	1.13	16	16.6	96		-	-		85-115	-		15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965825-4 QC Sample: L2449308-02 Client ID: MS Sample												
Nitrogen, Nitrate	2.2	4	5.8	90		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965825-6 QC Sample: L2449309-02 Client ID: MS Sample												
Nitrogen, Nitrate	0.25	4	4.2	99		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1966270-4 QC Sample: L2449503-01 Client ID: MS Sample												
Iron, Ferrous	0.090J	1	1.1	107		-	-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1966283-3 QC Sample: L2449737-01 Client ID: MS Sample												
Chloride	7.67	4	11.4	94		-	-		90-110	-		18
Sulfate	14.9	8	22.6	96		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1969155-4 QC Sample: L2449483-09 Client ID: MS Sample												
Alkalinity, Total	27.6	100	128	100		-	-		86-116	-		10

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449259
Report Date: 10/08/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965819-3 QC Sample: L2449241-01 Client ID: DUP Sample						
Total Organic Carbon	1.09	0.670	mg/l	**48**	Q	15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965819-5 QC Sample: L2449241-02 Client ID: DUP Sample						
Total Organic Carbon	1.13	0.680	mg/l	**50**	Q	15
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965825-3 QC Sample: L2449308-02 Client ID: DUP Sample						
Nitrogen, Nitrate	2.2	2.2	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1965825-5 QC Sample: L2449309-02 Client ID: DUP Sample						
Nitrogen, Nitrate	0.25	0.29	mg/l	**15**	Q	6
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1966270-3 QC Sample: L2449503-01 Client ID: DUP Sample						
Iron, Ferrous	0.090J	0.090J	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1966283-4 QC Sample: L2449737-01 Client ID: DUP Sample						
Chloride	7.67	7.50	mg/l	2		18
Sulfate	14.9	15.1	mg/l	1		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1969155-3 QC Sample: L2449483-09 Client ID: DUP Sample						
Alkalinity, Total	27.6	27.5	mg CaCO3/L	0		10
Alkalinity, Carbonate	ND	ND	mg CaCO3/L	NC		10
Alkalinity, Bicarbonate	27.6	27.5	mg CaCO3/L	0		9

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449259
Report Date: 10/08/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2449259-01A	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-01B	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-01C	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-01D	Vial H2SO4 preserved	A	NA		4.0	Y	Absent		TOC-5310(28)
L2449259-01E	Vial H2SO4 preserved	A	NA		4.0	Y	Absent		TOC-5310(28)
L2449259-01F	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-DISSGAS(14)
L2449259-01G	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-DISSGAS(14)
L2449259-01H	Plastic 250ml unpreserved/No Headspace	A	NA		4.0	Y	Absent		ALK-T-2320(14),ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2449259-01I	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		FE-TI(180),MG-TI(180),CA-TI(180),NA-TI(180),K-TI(180)
L2449259-01J	Plastic 250ml HNO3 preserved	A	7	<2	4.0	N	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2449259-01K	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	4.0	Y	Absent		SUB-SULFIDE(7)
L2449259-01L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	4.0	Y	Absent		SUB-SULFIDE(7)
L2449259-01M	Plastic 250ml unpreserved	A	7	7	4.0	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2449259-02A	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-02B	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-02C	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-02D	Vial H2SO4 preserved	A	NA		4.0	Y	Absent		TOC-5310(28)
L2449259-02E	Vial H2SO4 preserved	A	NA		4.0	Y	Absent		TOC-5310(28)
L2449259-02F	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-DISSGAS(14)
L2449259-02G	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-DISSGAS(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449259
Report Date: 10/08/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2449259-02H	Plastic 250ml unpreserved/No Headspace	A	NA		4.0	Y	Absent		ALK-T-2320(14),ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2449259-02I	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		FE-TI(180),MG-TI(180),NA-TI(180),CA-TI(180),K-TI(180)
L2449259-02J	Plastic 250ml HNO3 preserved	A	7	<2	4.0	N	Absent		FE-SI(180),NA-SI(180),MG-SI(180),K-SI(180),CA-SI(180)
L2449259-02K	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	4.0	Y	Absent		SUB-SULFIDE(7)
L2449259-02L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	4.0	Y	Absent		SUB-SULFIDE(7)
L2449259-02M	Plastic 250ml unpreserved	A	7	7	4.0	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2449259-03A	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03A1	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03A2	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03B	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03B1	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03B2	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03C	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03C1	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03C2	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)
L2449259-03D	Vial H2SO4 preserved	A	NA		4.0	Y	Absent		TOC-5310(28)
L2449259-03E	Vial H2SO4 preserved	A	NA		4.0	Y	Absent		TOC-5310(28)
L2449259-03F	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-DISSGAS(14)
L2449259-03G	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-DISSGAS(14)
L2449259-03H	Plastic 250ml unpreserved/No Headspace	A	NA		4.0	Y	Absent		ALK-T-2320(14),ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2449259-03I	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		FE-TI(180),MG-TI(180),CA-TI(180),NA-TI(180),K-TI(180)
L2449259-03J	Plastic 250ml HNO3 preserved	A	7	<2	4.0	N	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2449259-03K	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	4.0	Y	Absent		SUB-SULFIDE(7)
L2449259-03L	Plastic 250ml Zn Acetate/NaOH preserved	A	7	>12	4.0	N	Absent		SUB-SULFIDE(7)
L2449259-03M	Plastic 250ml unpreserved	A	7	7	4.0	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2449259-04A	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449259
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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2449259-04B	Vial HCl preserved	A	NA		4.0	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449259
Project Number:	X55.002.001	**Report Date:**	10/08/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449259
Project Number:	X55.002.001	**Report Date:**	10/08/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449259
Project Number:	X55.002.001	**Report Date:**	10/08/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449259
Project Number:	X55.002.001	**Report Date:**	10/08/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

L2449259 05SEP24
C&SENG

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 8/29/24

Client Information

Client: CTS Engineers, Inc.
Address: 499 Col. Eileen Collins Blvd, Syracuse, NY
Phone:
Fax:
Email: HHaas@CSCOS.com

Project Information

Project Name: Former Ithaca Gun Factory BCP Site
Project Location: 121-125 Lake St. Ithaca, NY
Project # X55.002.001.
(Use Project name as Project #) ☐
Project Manager: H. Haas
ALPHAQuote #: 476184

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☑ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO #

Regulatory Requirement

☑ NY TOGS ☐ NY Part 375
☑ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL. FER Iron * Total Iron

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL 8260	Total Metals	Dissolved metals	SO4 CL NO3	SULFIDE-4500	DISS GAS	TOC	ALK-T-2320	Sample Specific Comments	Total Bottle
492599-01	IJW-01 Baseline	8/28/24	0915	water	HH	X									13
-02	IJW-02 Baseline	8/28/24	1036	water	HH	X									13
-03	IJW-03 Baseline	8/28/24	1218	water	HH	X								MS/MSD	13
	~~IJW-04 Baseline~~	~~8/28/24~~		~~water~~	~~HH~~	~~X~~									~~13~~
	~~IJW-05 Baseline~~	~~8/28/24~~		~~water~~	~~HH~~	~~X~~									~~13~~ HH
-04	Trip-Blank	-	-	-	-	X									2

Sample Filtration
☑ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	P	P	P	N	V	P
Preservative	B	A	A	A	A	B	B	A

Relinquished By:	Date/Time	Received By:	Date/Time
Haylin Haas	8/28/24 1652	Rebecca Pace	8/28/24 1652
Rebecca Pace Syr S.C.	8/28/24 1652		8-28-24
	8-28-24		
	0300	Sylvia Schultz	8/29/24 02:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 10, 2024

Candace Fox
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581

Project Location: L2449259
Client Job Number:
Project Number: L2449259
Laboratory Work Order Number: 24H4290

Enclosed are results of analyses for samples as received by the laboratory on August 30, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rebecca Faust
Project Manager

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Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581
ATTN: Candace Fox

REPORT DATE: 9/10/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: L2449259

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24H4290

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: L2449259

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
IJW-01 BASELINE	24H4290-01	Water		RSK175	
IJW-02 BASELINE	24H4290-02	Water		RSK175	
IJW-03 BASELINE	24H4290-03	Water		RSK175	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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Project Location: L2449259 Sample Description: Work Order: 24H4290

Date Received: 8/30/2024

Field Sample #: IJW-01 BASELINE Sampled: 8/28/2024 09:15

Sample ID: 24H4290-01

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	9/4/24	9/4/24 10:58	TPH
Ethene	ND	0.017	mg/L	1		RSK175	9/4/24	9/4/24 10:58	TPH
Methane	0.033	0.0070	mg/L	1		RSK175	9/4/24	9/4/24 10:58	TPH

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Project Location: L2449259 Sample Description: Work Order: 24H4290

Date Received: 8/30/2024

Field Sample #: IJW-02 BASELINE Sampled: 8/28/2024 10:36

Sample ID: 24H4290-02

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	9/4/24	9/4/24 11:09	TPH
Ethene	ND	0.017	mg/L	1		RSK175	9/4/24	9/4/24 11:09	TPH
Methane	0.030	0.0070	mg/L	1		RSK175	9/4/24	9/4/24 11:09	TPH

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Project Location: L2449259 Sample Description: Work Order: 24H4290

Date Received: 8/30/2024

Field Sample #: IJW-03 BASELINE Sampled: 8/28/2024 12:18

Sample ID: 24H4290-03

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	9/4/24	9/4/24 11:18	TPH
Ethene	ND	0.017	mg/L	1		RSK175	9/4/24	9/4/24 11:18	TPH
Methane	ND	0.0070	mg/L	1		RSK175	9/4/24	9/4/24 11:18	TPH

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Sample Extraction Data

Prep Method:RSK175 **Analytical Method:RSK175**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24H4290-01 [IJW-01 BASELINE]	B385146	1.00	1.00	09/04/24
24H4290-02 [IJW-02 BASELINE]	B385146	1.00	1.00	09/04/24
24H4290-03 [IJW-03 BASELINE]	B385146	1.00	1.00	09/04/24

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QUALITY CONTROL

Miscellaneous Organic Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B385146 - RSK175										
Blank (B385146-BLK1)				Prepared & Analyzed: 09/04/24						
Ethane	ND	0.014	mg/L							
Ethene	ND	0.017	mg/L							
Methane	ND	0.0070	mg/L							
LCS (B385146-BS1)				Prepared & Analyzed: 09/04/24						
Ethane	0.78		mg/L	0.804		97.0	65.9-110			
Ethene	0.59		mg/L	0.750		78.8	62.8-110			
Methane	0.40		mg/L	0.429		94.2	63.8-110			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
RSK175 in Water	
Ethane	VA,NY,ME
Ethene	VA,NY,ME
Methane	VA,NY,ME

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
NY	New York State Department of Health	10899 NELAP	04/1/2025
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024

Subcontract Chain of Custody

Pace New England
39 Spruce St
East Longmeadow, MA 01028

24H4290

Alpha Job Number
L2449259

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 716-427-5223 Email: Candace.Fox@pacelabs.com	Project Location: NY Project Manager: Candace Fox **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2449259

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
1	UW-01 BASELINE	08-28-24 09:15	WATER	Dissolved Gasses	
2	UW-02 BASELINE	08-28-24 10:36	WATER	Dissolved Gasses	
3	UW-03 BASELINE	08-28-24 12:18	WATER	Dissolved Gasses	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	8/30/24 7:10 PACE		PACE	8/30/24 07:10
	PACE	8/30/24 0900	PACE 1.1	8/30/24 0900
Form No: AL_subcoc				

DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Log In Back-Sheet

Client: AIPhy

Project: L2449259

MCP/RCP Required: NA

Deliverable Package Requirement: NA

Location: NY

PWSID# (When Applicable): NA

Arrival Method:

Courier ☑ Fed Ex ☐ Walk In ☐ Other ☐

Received By / Date / Time: Bric 8/20/24 900

Back-Sheet By / Date / Time: LA 8/20/24 1009

Temperature Method: Gun #6

WV samples: Yes (see note*) / No (follow normal procedure)

Temp ✓ 6° C Actual Temperature: 1.1

Rush Samples: Yes / ~~No~~ Notify: ____

Short Hold: Yes / No Notify: ____

Notes regarding Samples/COC outside of SOP:

Login Sample Receipt Checklist – (Rejection Criteria Listing – Using Acceptance Policy) Any False statement will be brought to the attention of the Client – True or False

	True	False
Received on Ice	☑	☐
Received in Cooler	☑	☐
Custody Seal: DATE TIME	☐	☑
COC Relinquished	☑	☐
COC/Samples Labels Agree	☑	☐
All Samples in Good Condition	☑	☐
Samples Received within Holding Time	☑	☐
Is there enough Volume	☑	☐
Proper Media/Container Used	☑	☐
Splitting Samples Required	☐	☑
MS/MSD	☐	☑
Trip Blanks	☐	☑
Lab to Filters	☐	☑
COC Legible	☑	☐

COC Included: (Check all included)

Client	☑	Analysis	☑	Sampler Name	☐
Project	☑	IDs	☑	Collection Date/Time	☑

All Samples Proper pH: N/A ☐ ☐

Additional Container Notes

**Note: West Virginia requires all samples to have their temperature taken. Note any outliers.*

Qualtrax ID: 120836

DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Sample			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
16oz Amb/Clear	(Circle Amb/Clear)	Soils Jars																				
8oz Amb/Clear																						
4oz Amb/Clear																						
2oz Amb/Clear																						
Unpreserved	1 Liter	Ambers																				
HCL																						
Sulfuric																						
Sulfuric	250mL																					
Phosphoric																						
HCl																						
Unpreserved	100mL																					
Unpreserved	1 Liter	Plastics																				
Sulfuric																						
Unpreserved	500mL																					
Sulfuric																						
Unpreserved	250ml																					
Trizma																						
Sulfuric																						
Nitric																						
NaOH																						
Ammonium Acetate																						
NaOH/Zinc																						
Unpreserved		VOA Vials																				
HCl																						
MeOH																						
D.I. Water																						
BiSulfate																						
Col/Bact		Other / Fill in																				
Ethics			2		A																	

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

September 11, 2024

Reports
Alpha Analytical
8 Walkup Drive
Westborough, MA 01581

RE: Project: L2449259
Pace Project No.: 70312080

Dear Reports:

Enclosed are the analytical results for sample(s) received by the laboratory on September 04, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brianna D. Rivera
brianna.rivera@pacelabs.com
516-370-6007
Project Manager

Enclosures

cc: Candace Fox, Alpha Analytical

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

CERTIFICATIONS

Project: L2449259
Pace Project No.: 70312080

Pace Analytical Services, LLC - Melville, NY

575 Broad Hollow Rd, Melville, NY 11747
Connecticut Certification #: PH-0435
Delaware Certification # NY 10478
Maryland Certification #: 208
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987
New Jersey Certification #: NY158
New York Certification #: 10478 Primary Accrediting Body
Pennsylvania Certification #: 68-00350
Rhode Island Certification #: LAO00340

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

SAMPLE SUMMARY

Project: L2449259
Pace Project No.: 70312080

Lab ID	Sample ID	Matrix	Date Collected	Date Received
70312080001	**UW-01 BASELINE**	Water	08/28/24 09:15	09/04/24 07:00
70312080002	**UW-02 BASELINE**	Water	08/28/24 10:36	09/04/24 07:00
70312080003	**UW-03 BASELINE**	Water	08/28/24 12:18	09/04/24 07:00

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575 Broad Hollow Road
Melville, NY 11747
516-370-6000

SAMPLE ANALYTE COUNT

Project: L2449259
Pace Project No.: 70312080

Lab ID	Sample ID	Method	Analysts	Analytes Reported
70312080001	**UW-01 BASELINE**	SM22 4500-S2 F	JWM	1
70312080002	**UW-02 BASELINE**	SM22 4500-S2 F	JWM	1
70312080003	**UW-03 BASELINE**	SM22 4500-S2 F	JWM	1

PACE-MV = Pace Analytical Services - Melville

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L2449259
Pace Project No.: 70312080

Sample: UW-01 BASELINE **Lab ID: 70312080001** Collected: 08/28/24 09:15 Received: 09/04/24 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/11/24 15:26		H1

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ANALYTICAL RESULTS

Project: L2449259
Pace Project No.: 70312080

Sample: UW-02 BASELINE **Lab ID: 70312080002** Collected: 08/28/24 10:36 Received: 09/04/24 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/11/24 15:29		H1

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ANALYTICAL RESULTS

Project: L2449259
Pace Project No.: 70312080

Sample: UW-03 BASELINE **Lab ID: 70312080003** Collected: 08/28/24 12:18 Received: 09/04/24 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/11/24 15:31		H1

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QUALITY CONTROL DATA

Project: L2449259
Pace Project No.: 70312080

QC Batch: 362180
QC Batch Method: SM22 4500-S2 F
Analysis Method: SM22 4500-S2 F
Analysis Description: 4500S2F W Sulfide Iodometric
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70312080001, 70312080002, 70312080003

METHOD BLANK: 1885070 Matrix: Water
Associated Lab Samples: 70312080001, 70312080002, 70312080003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	2.0	0.20	09/11/24 15:21	

LABORATORY CONTROL SAMPLE & LCSD: 1885071 1885072

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	14	14.0	14.0	100	100	85-115	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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516-370-6000

QUALIFIERS

Project: L2449259
Pace Project No.: 70312080

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1 Analysis conducted outside the EPA method holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2449259
Pace Project No.: 70312080

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70312080001	**UW-01 BASELINE**	SM22 4500-S2 F	362180		
70312080002	**UW-02 BASELINE**	SM22 4500-S2 F	362180		
70312080003	**UW-03 BASELINE**	SM22 4500-S2 F	362180		

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WO# : 70312080

70312080

Subcontract Chain of Custody

Pace Analytical (Melville)
575 Broad Hollow Road
Melville, NY 11747

Alpha Job Number
L2449259

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 716-427-5223
Email: Candace.Fox@pacelabs.com

Project Information

Project Location: NY
Project Manager: Candace Fox

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2449259

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	IJW-01 BASELINE	08-28-24 09:15	WATER	Sulfide	
	IJW-02 BASELINE	08-28-24 10:36	WATER	Sulfide	
	IJW-03 BASELINE	08-28-24 12:18	WATER	Sulfide	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		09/03/24-1800		09/03/24-1800
	TSG 9/4 7		PACE	9/4/24 1215
Form No: AL_subcoc				

Serial_No:10082412:15

Client: AlphA

Work ID: L2449259

Profile #: 10333

COC Page _____ of _____

☐ Use Point Number Spreadsheet ☐ Multiday Project

☐ Add SCLOGFD to first sample for field charge

COC Line Item	Matrix	VG9U	VG9C	VG9H	VG9S	VG9T	DG9Y	DG9P	DG9A	DG6T	DG9S	AG4U	AG3U	AG2U	AG1U	AG34	AG3S	AG4E	AG3T	AG2R	AG1T	AG1H	AG1A	AG5U	AG44	CG1U	WG9O	WG4O	BP4U	BP3U	BP2U	BP1U	BP3S	BP2S	BP4N	BP3N	BP2N	BP3C	BP3T	BP35	BP3R	BP1Z	BP1N	BP1B	SP5T	R	WG2U	WGFU	WGKU	WGDU	ZPLC	GN	WP	TEDL	BGIH	LLHG	BG1N	IOC	SOC	BP3Z			
1																																																																-				
2																																																																	-				
3																																																																-				
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12																																																																				

Container Codes

Glass				Plastic	
VG9U	40mL unpres clear vial	AG4U	125mL unpres amber glass	BP4U	125mL unpreserved plastic
VG9C	40mL Ascorbic-HCl clear vial	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic
VG9H	40mL HCl clear vial	AG2U	500mL unpres amber glass	BP2U	500mL unpreserved plastic
VG9S	40mL Sulfuric clear vial	AG1U	1liter unpres amber glass	BP1U	1L unpreserved plastic
VG9T	40mL Na Thiosulfate vial	AG34	Ammonium Cl 250mL bottle	BP4N	125mL HNO3 plastic
DG9Y	40mL Citrate-Na Thiosulfate	AG3S	250mL H2SO4 amber glass	BP3N	250mL HNO3 plastic
DG9P	40mL amber vial - TSP	AG4E	125mL EDA amber glass	BP2N	500mL HNO3 plastic
DG9A	Ascorbic/Maleic Acid 40mL	AG3T	250mL Na Thio amber glass	BP3S	250mL H2SO4 plastic
DG6T	Na Thio 60mL Vial	AG2R	Na Sulfite 500mL (blue Cap)	BP2S	500mL H2SO4 plastic
DG9S	Ammonium Cl/CuSO4 40mL	AG1T	Na Thiosulfate 1L bottle	BP3C	NaOH 250mL bottle
CG1U	1L Unpres Jar (Con Ed)	AG1H	1L HCl amber glass	BP3T	250mL Trizma
WG9O	8oz clear soil jar	AG1A	1L Ammonium Chloride	BP3S	250mL Ammonium Acelate
WG4O	4oz clear soil jar	AG5U	100mL unpres Amber Glass	BP3R	250mL NH4SO4-NH4OH
		AG44	Ammonium Cl 120mL bottle	BP1Z	1L NaOH, Zn Acelate
				BP1N	1L HNO3 plastic
				BP1B	Na Thiosulfate Amber Bottle

Misc.	
SP5T	120mL Coliform Na Thio
R	Terracore Kit
WG2U	2oz Unpreserved Jar
WGFU	4oz Unpreserved Jar
WGKU	8oz Unpreserved Jar
WGDU	16oz Unpreserved Jar
ZPLC	Ziplock Bag
TEDL	Tedlar Bag
BG1H	1L HCL Clear Glass
GN	General
WP	Wipe
LLHG	Low Level Hg Bottles
BG1N	1L HNO3 Clear Glass

IOC	
BP1U	1L unpreserved plastic
BP3N*	250mL HNO3 plastic
BP3C	250mL Sodium Hydroxide
AG2U	500mL unpres amber glass
BP3U	250mL unpreserved plastic

* Can also be a BP4N

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

SOC	
VG9T	40mL Na Thio amber vial
DG9A	40mL Ascorbic acid/ maleic Acid vials
DG9Y	Citrate/Na Thiosulfate 40mL
DG6T	Na Thiosulfate 60mL vial
DG6M	MonoClAcletic/Na Thio 60mL
AG3U	250mL unpres amber glass
AG3T	Na Thiosulfate 250mL bottle
BP1B	Na Thiosulfate Amber bottle
AG1T	Na Thiosulfate 1L Amber
AG1A	525.3 Chemical Blend

Sender Initials _____

Additional Comments

WO#:70312080

PM: BDR Due Date: 09/13/24

CLIENT: ALPHA

Serial_No:10082412:15

DC#_Title: Excel Form Template
Effective Date

WO#: 70312080
PM: BDR **Due Date: 09/13/24**
CLIENT: ALPHA

Client Name: ALPHA Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals intact: ☐ Yes ☑ No Temperature Blank Present: ☐ Yes ☑ No
Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ Ziploc ☐ None ☐ Other Type of Ice: (Wet) Blue None

Thermometer Used: TH211 Correction Factor: +0.3 ☐ Samples on ice, cooling process has begun
Cooler Temperature(°C): 0.8 Cooler Temperature Corrected(°C): 1.1 Date/Time 5035A kits placed in freezer
Temp should be above freezing to 6.0°C

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? ☐ Yes ☐ No

Did samples orignate from a foreign source including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MELV-0076) and include with SCUR/COC paperwork.

Date and Initials of person examining contents: 9/5/24 AEB

				COMMENTS:
Chain of Custody Present:	☑Yes	☐No		1.
Chain of Custody Filled Out:	☑Yes	☐No		2.
Chain of Custody Relinquished:	☑Yes	☐No		3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No		5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No		6.
Rush Turn Around Time Requested:	☐Yes	☑No		7.
Sufficient Volume: (Triple volume provided for MS/MSD)	☑Yes	☐No		8.
Correct Containers Used:	☑Yes	☐No		9.
-Pace Containers Used:	☑Yes	☐No		
Containers Intact:	☑Yes	☐No		10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11. Note: if sediment is visible in the dissolved container.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	☑Yes	☐No		12.
	SL	WT	OIL OTHER	

Date and Initials of person checking preservation: 9/5/24 AEB

All containers needing preservation have been pH paper Lot #	☐Yes	☐No	☑N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with method recommendation? (HNO_3, H_2SO_4, HCl, NaOH>9 Sulfide, NAOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis	☐Yes	☐No	☑N/A	Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Samples checked for dechlorination: KI starch test strips Lot # Residual chlorine strips Lot #	☐Yes	☐No	☑N/A	14. Positive for Res. Chlorine? Y N
SM 4500 CN samples checked for sulf Lead Acetate Strips Lot #	☐Yes	☐No	☑N/A	15. Positive for Sulfide? Y N
Headspace in ALK Bottle (>6mm):	☐Yes	☐No	☑N/A	
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	16.
Trip Blank Present:	☐Yes	☐No	☑N/A	17.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	

Client Notification/ Resolution: Field Data Required? Y / N
Person Contacted: Date/Time:
Comments/ Resolution:

* PM (Project Manager) review (which includes the SCUR) is documented electronically in LIMS.

ANALYTICAL REPORT

Lab Number:	L2449503
Client:	C&S Companies 499 Col. Eileen Collins Blvd. Syracuse, NY 13212
ATTN:	Hayden Haas
Phone:	(315) 455-2000
Project Name:	FORMER ITHACA GUN FACTORY BCP
Project Number:	X55.002.001
Report Date:	10/08/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449503
Report Date: 10/08/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2449503-01	IJW-04 BASELINE	WATER	121-125 LAKE ST., ITHACA, NY	08/29/24 09:05	08/29/24
L2449503-02	IJW-05 BASELINE	WATER	121-125 LAKE ST., ITHACA, NY	08/29/24 11:15	08/29/24
L2449503-03	DUP BASELINE	WATER	121-125 LAKE ST., ITHACA, NY	08/29/24 00:00	08/29/24
L2449503-04	TRIP BLANK	WATER	121-125 LAKE ST., ITHACA, NY	08/29/24 00:00	08/29/24

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449503
Project Number:	X55.002.001	**Report Date:**	10/08/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449503
Project Number:	X55.002.001	**Report Date:**	10/08/24

Case Narrative (continued)

Report Revision

October 08, 2024: The Total and Dissolved Metals element lists have been amended on L2449503-01 and -02.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Dissolved Gases and Sulfide were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

L2449503-01 and -02: The sample was received above the appropriate pH for the Dissolved Metals analysis. The laboratory added additional HNO3 to a pH <2.

Iron, Ferrous

L2449503-01 and -02: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 10/08/24

ORGANICS

VOLATILES

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-01 D
Client ID: IJW-04 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/29/24 09:05
Date Received: 08/29/24
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/05/24 15:42
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	74		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	ND		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	33		ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	4.4	J	ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	7.2	J	ug/l	25	7.0	10
Trichloroethene	1200		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-01 D Date Collected: 08/29/24 09:05

Client ID: IJW-04 BASELINE Date Received: 08/29/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	1.7	10
p/m-Xylene	ND		ug/l	25	7.0	10
o-Xylene	ND		ug/l	25	7.0	10
cis-1,2-Dichloroethene	690		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
Bromochloromethane	ND		ug/l	25	7.0	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	ND		ug/l	25	7.0	10
1,2,3-Trichlorobenzene	ND		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	ND		ug/l	100	2.7	10
1,4-Dioxane	ND		ug/l	2500	610	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	ND		ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	81		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-02 D
Client ID: IJW-05 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/29/24 11:15
Date Received: 08/29/24
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/05/24 16:07
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	12	3.5	5
1,1-Dichloroethane	4.0	J	ug/l	12	3.5	5
Chloroform	ND		ug/l	12	3.5	5
Carbon tetrachloride	ND		ug/l	2.5	0.67	5
1,2-Dichloropropane	ND		ug/l	5.0	0.68	5
Dibromochloromethane	ND		ug/l	2.5	0.74	5
1,1,2-Trichloroethane	ND		ug/l	7.5	2.5	5
Tetrachloroethene	ND		ug/l	2.5	0.90	5
Chlorobenzene	ND		ug/l	12	3.5	5
Trichlorofluoromethane	ND		ug/l	12	3.5	5
1,2-Dichloroethane	ND		ug/l	2.5	0.66	5
1,1,1-Trichloroethane	ND		ug/l	12	3.5	5
Bromodichloromethane	ND		ug/l	2.5	0.96	5
trans-1,3-Dichloropropene	ND		ug/l	2.5	0.82	5
cis-1,3-Dichloropropene	ND		ug/l	2.5	0.72	5
Bromoform	ND		ug/l	10	3.2	5
1,1,2,2-Tetrachloroethane	ND		ug/l	2.5	0.84	5
Benzene	ND		ug/l	2.5	0.80	5
Toluene	ND		ug/l	12	3.5	5
Ethylbenzene	ND		ug/l	12	3.5	5
Chloromethane	ND		ug/l	12	3.5	5
Bromomethane	ND		ug/l	12	3.5	5
Vinyl chloride	66		ug/l	5.0	0.36	5
Chloroethane	ND		ug/l	12	3.5	5
1,1-Dichloroethene	2.8		ug/l	2.5	0.84	5
trans-1,2-Dichloroethene	3.6	J	ug/l	12	3.5	5
Trichloroethene	53		ug/l	2.5	0.88	5
1,2-Dichlorobenzene	ND		ug/l	12	3.5	5

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-02 D
Client ID: IJW-05 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/29/24 11:15
Date Received: 08/29/24
Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	12	3.5	5
1,4-Dichlorobenzene	ND		ug/l	12	3.5	5
Methyl tert butyl ether	ND		ug/l	12	0.83	5
p/m-Xylene	ND		ug/l	12	3.5	5
o-Xylene	ND		ug/l	12	3.5	5
cis-1,2-Dichloroethene	420		ug/l	12	3.5	5
Styrene	ND		ug/l	12	3.5	5
Dichlorodifluoromethane	ND		ug/l	25	5.0	5
Acetone	ND		ug/l	25	7.3	5
Carbon disulfide	ND		ug/l	25	5.0	5
2-Butanone	ND		ug/l	25	9.7	5
4-Methyl-2-pentanone	ND		ug/l	25	5.0	5
2-Hexanone	ND		ug/l	25	5.0	5
Bromochloromethane	ND		ug/l	12	3.5	5
1,2-Dibromoethane	ND		ug/l	10	3.2	5
1,2-Dibromo-3-chloropropane	ND		ug/l	12	3.5	5
Isopropylbenzene	ND		ug/l	12	3.5	5
1,2,3-Trichlorobenzene	ND		ug/l	12	3.5	5
1,2,4-Trichlorobenzene	ND		ug/l	12	3.5	5
Methyl Acetate	ND		ug/l	10	1.2	5
Cyclohexane	ND		ug/l	50	1.4	5
1,4-Dioxane	ND		ug/l	1200	300	5
Freon-113	ND		ug/l	12	3.5	5
Methyl cyclohexane	ND		ug/l	50	2.0	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	80		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-03 D
Client ID: DUP BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/29/24 00:00
Date Received: 08/29/24
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/05/24 16:32
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	73		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	ND		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	32		ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	4.1	J	ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	ND		ug/l	25	7.0	10
Trichloroethene	1200		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-03 D
Client ID: DUP BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY

Date Collected: 08/29/24 00:00
Date Received: 08/29/24
Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	1.7	10
p/m-Xylene	ND		ug/l	25	7.0	10
o-Xylene	ND		ug/l	25	7.0	10
cis-1,2-Dichloroethene	700		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
Bromochloromethane	ND		ug/l	25	7.0	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	ND		ug/l	25	7.0	10
1,2,3-Trichlorobenzene	ND		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	ND		ug/l	100	2.7	10
1,4-Dioxane	ND		ug/l	2500	610	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	ND		ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	81		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-04 Date Collected: 08/29/24 00:00
Client ID: TRIP BLANK Date Received: 08/29/24
Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/05/24 15:18
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-04 Date Collected: 08/29/24 00:00

Client ID: TRIP BLANK Date Received: 08/29/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	81		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 09/05/24 08:17
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1968351-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 09/05/24 08:17
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1968351-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 09/05/24 08:17
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1968351-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449503

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1968351-3 WG1968351-4								
Methylene chloride	94		90		70-130	4		20
1,1-Dichloroethane	98		94		70-130	4		20
Chloroform	98		92		70-130	6		20
Carbon tetrachloride	110		110		63-132	0		20
1,2-Dichloropropane	95		96		70-130	1		20
Dibromochloromethane	90		92		63-130	2		20
1,1,2-Trichloroethane	89		92		70-130	3		20
Tetrachloroethene	120		120		70-130	0		20
Chlorobenzene	100		100		75-130	0		20
Trichlorofluoromethane	110		100		62-150	10		20
1,2-Dichloroethane	87		89		70-130	2		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	95		95		67-130	0		20
trans-1,3-Dichloropropene	82		85		70-130	4		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
Bromoform	97		100		54-136	3		20
1,1,2,2-Tetrachloroethane	88		92		67-130	4		20
Benzene	100		100		70-130	0		20
Toluene	100		99		70-130	1		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	82		77		64-130	6		20
Bromomethane	78		70		39-139	11		20
Vinyl chloride	110		100		55-140	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449503

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1968351-3 WG1968351-4								
Chloroethane	100		97		55-138	3		20
1,1-Dichloroethene	110		110		61-145	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	97		98		70-130	1		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	110		100		70-130	10		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	92		100		63-130	8		20
p/m-Xylene	110		105		70-130	5		20
o-Xylene	105		105		70-130	0		20
cis-1,2-Dichloroethene	100		98		70-130	2		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	110		100		36-147	10		20
Acetone	76		80		58-148	5		20
Carbon disulfide	110		100		51-130	10		20
2-Butanone	73		79		63-138	8		20
4-Methyl-2-pentanone	83		91		59-130	9		20
2-Hexanone	71		77		57-130	8		20
Bromochloromethane	110		100		70-130	10		20
1,2-Dibromoethane	97		99		70-130	2		20
1,2-Dibromo-3-chloropropane	98		99		41-144	1		20
Isopropylbenzene	110		100		70-130	10		20
1,2,3-Trichlorobenzene	110		120		70-130	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449503

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1968351-3 WG1968351-4								
1,2,4-Trichlorobenzene	110		120		70-130	9		20
Methyl Acetate	71		77		70-130	8		20
Cyclohexane	100		100		70-130	0		20
1,4-Dioxane	112		108		56-162	4		20
Freon-113	120		110		70-130	9		20
Methyl cyclohexane	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	87		88		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	92		91		70-130
Dibromofluoromethane	96		94		70-130

METALS

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-01 Date Collected: 08/29/24 09:05

Client ID: IJW-04 BASELINE Date Received: 08/29/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	49.4		mg/l	0.100	0.0350	1	09/10/24 23:38	09/12/24 12:52	EPA 3005A	1,6010D	DHL
Iron, Total	1.06		mg/l	0.0500	0.0090	1	09/10/24 23:38	09/12/24 12:52	EPA 3005A	1,6010D	DHL
Magnesium, Total	11.2		mg/l	0.100	0.0153	1	09/10/24 23:38	09/12/24 12:52	EPA 3005A	1,6010D	DHL
Potassium, Total	2.80		mg/l	2.50	0.237	1	09/10/24 23:38	09/12/24 12:52	EPA 3005A	1,6010D	DHL
Sodium, Total	83.7		mg/l	2.00	0.120	1	09/10/24 23:38	09/12/24 12:52	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	0.97	J	mg/l	0.50	0.06	1		09/12/24 12:52	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	54.7		mg/l	0.100	0.0350	1	09/13/24 03:20	09/13/24 16:37	EPA 3005A	1,6010D	DMC
Iron, Dissolved	0.0099	J	mg/l	0.0500	0.0090	1	09/13/24 03:20	09/13/24 16:37	EPA 3005A	1,6010D	DMC
Magnesium, Dissolved	10.8		mg/l	0.100	0.0153	1	09/13/24 03:20	09/13/24 16:37	EPA 3005A	1,6010D	DMC
Potassium, Dissolved	3.00		mg/l	2.50	0.237	1	09/13/24 03:20	09/13/24 16:37	EPA 3005A	1,6010D	DMC
Sodium, Dissolved	91.6		mg/l	2.00	0.120	1	09/13/24 03:20	09/13/24 16:37	EPA 3005A	1,6010D	DMC

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-02 Date Collected: 08/29/24 11:15

Client ID: IJW-05 BASELINE Date Received: 08/29/24

Sample Location: 121-125 LAKE ST., ITHACA, NY Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Calcium, Total	69.0		mg/l	0.100	0.0350	1	09/10/24 23:38	09/12/24 12:58	EPA 3005A	1,6010D	DHL
Iron, Total	3.98		mg/l	0.0500	0.0090	1	09/10/24 23:38	09/12/24 12:58	EPA 3005A	1,6010D	DHL
Magnesium, Total	17.8		mg/l	0.100	0.0153	1	09/10/24 23:38	09/12/24 12:58	EPA 3005A	1,6010D	DHL
Potassium, Total	3.76		mg/l	2.50	0.237	1	09/10/24 23:38	09/12/24 12:58	EPA 3005A	1,6010D	DHL
Sodium, Total	73.5		mg/l	2.00	0.120	1	09/10/24 23:38	09/12/24 12:58	EPA 3005A	1,6010D	DHL
General Chemistry - Westborough Lab											
Iron, Ferric	3.9	J	mg/l	0.50	0.06	1		09/12/24 12:58	NA	107,-	
Dissolved Metals - Mansfield Lab											
Calcium, Dissolved	77.5		mg/l	0.100	0.0350	1	09/13/24 03:20	09/13/24 16:25	EPA 3005A	1,6010D	DMC
Iron, Dissolved	0.0133	J	mg/l	0.0500	0.0090	1	09/13/24 03:20	09/13/24 16:25	EPA 3005A	1,6010D	DMC
Magnesium, Dissolved	17.5		mg/l	0.100	0.0153	1	09/13/24 03:20	09/13/24 16:25	EPA 3005A	1,6010D	DMC
Potassium, Dissolved	3.89		mg/l	2.50	0.237	1	09/13/24 03:20	09/13/24 16:25	EPA 3005A	1,6010D	DMC
Sodium, Dissolved	82.8		mg/l	2.00	0.120	1	09/13/24 03:20	09/13/24 16:25	EPA 3005A	1,6010D	DMC

Project Name: FORMER ITHACA GUN FACTORY BCP **Lab Number:** L2449503

Project Number: X55.002.001 **Report Date:** 10/08/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1969952-1										
Calcium, Total	ND		mg/l	0.100	0.0350	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Iron, Total	ND		mg/l	0.0500	0.0090	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Magnesium, Total	ND		mg/l	0.100	0.0153	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Potassium, Total	ND		mg/l	2.50	0.237	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL
Sodium, Total	ND		mg/l	2.00	0.120	1	09/10/24 23:38	09/12/24 08:51	1,6010D	DHL

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1970932-1										
Calcium, Dissolved	ND		mg/l	0.100	0.0350	1	09/13/24 03:20	09/13/24 16:16	1,6010D	DMC
Iron, Dissolved	ND		mg/l	0.0500	0.0090	1	09/13/24 03:20	09/13/24 16:16	1,6010D	DMC
Magnesium, Dissolved	ND		mg/l	0.100	0.0153	1	09/13/24 03:20	09/13/24 16:16	1,6010D	DMC
Potassium, Dissolved	ND		mg/l	2.50	0.237	1	09/13/24 03:20	09/13/24 16:16	1,6010D	DMC
Sodium, Dissolved	ND		mg/l	2.00	0.120	1	09/13/24 03:20	09/13/24 16:16	1,6010D	DMC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449503

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1969952-2								
Calcium, Total	107		-		80-120	-		
Iron, Total	105		-		80-120	-		
Magnesium, Total	101		-		80-120	-		
Potassium, Total	111		-		80-120	-		
Sodium, Total	107		-		80-120	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1970932-2								
Calcium, Dissolved	102		-		80-120	-		
Iron, Dissolved	101		-		80-120	-		
Magnesium, Dissolved	102		-		80-120	-		
Potassium, Dissolved	102		-		80-120	-		
Sodium, Dissolved	104		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449503
Report Date: 10/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1969952-3 QC Sample: L2449354-01 Client ID: MS Sample												
Calcium, Total	2.06	10	12.4	103		-	-		75-125	-		20
Iron, Total	0.533	1	1.54	101		-	-		75-125	-		20
Magnesium, Total	0.967	10	11.2	102		-	-		75-125	-		20
Potassium, Total	0.678J	10	11.5	115		-	-		75-125	-		20
Sodium, Total	0.580J	10	11.0	110		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1970932-3 QC Sample: L2449503-01 Client ID: IJW-04 BASELINE												
Calcium, Dissolved	54.7	10	63.7	90		-	-		75-125	-		20
Iron, Dissolved	0.0099J	1	1.03	103		-	-		75-125	-		20
Magnesium, Dissolved	10.8	10	21.3	105		-	-		75-125	-		20
Potassium, Dissolved	3.00	10	13.5	105		-	-		75-125	-		20
Sodium, Dissolved	91.6	10	99.8	82		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449503

Report Date: 10/08/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1969952-4 QC Sample: L2449354-01 Client ID: DUP Sample						
Calcium, Total	2.06	2.02	mg/l	2		20
Iron, Total	0.533	0.520	mg/l	2		20
Magnesium, Total	0.967	0.954	mg/l	1		20
Potassium, Total	0.678J	0.646J	mg/l	NC		20
Sodium, Total	0.580J	0.557J	mg/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1970932-4 QC Sample: L2449503-01 Client ID: IJW-04 BASELINE						
Calcium, Dissolved	54.7	55.1	mg/l	1		20
Iron, Dissolved	0.0099J	ND	mg/l	NC		20
Magnesium, Dissolved	10.8	10.9	mg/l	1		20
Potassium, Dissolved	3.00	3.02	mg/l	1		20
Sodium, Dissolved	91.6	91.8	mg/l	0		20

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2449503
Report Date: 10/08/24

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1970932-6 QC Sample: L2449503-01 Client ID: IJW-04 BASELINE						
Calcium, Dissolved	54.7	55.6	mg/l	2		20
Magnesium, Dissolved	10.8	11.1	mg/l	3		20
Sodium, Dissolved	91.6	94.0	mg/l	3		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2449503
Report Date: 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-01
Client ID: IJW-04 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY
Sample Depth:
Matrix: Water

Date Collected: 08/29/24 09:05
Date Received: 08/29/24
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	174.		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:24	121,2320B	MKT
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:17	121,2320B	MKT
Alkalinity, Bicarbonate	174.		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:17	121,2320B	MKT
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/31/24 03:59	44,353.2	KAF
Total Organic Carbon	2.34		mg/l	0.500	0.097	1	-	09/04/24 15:05	121,5310C	DEW
Iron, Ferrous	0.090	J	mg/l	0.50	0.056	1	-	08/30/24 23:17	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	138.		mg/l	5.00	0.839	10	-	08/31/24 00:42	44,300.0	CVN
Sulfate	35.9		mg/l	1.00	0.454	1	-	08/31/24 00:32	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001
Lab Number: L2449503
Report Date: 10/08/24

SAMPLE RESULTS

Lab ID: L2449503-02
Client ID: IJW-05 BASELINE
Sample Location: 121-125 LAKE ST., ITHACA, NY
Sample Depth:
Matrix: Water

Date Collected: 08/29/24 11:15
Date Received: 08/29/24
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	182.		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:29	121,2320B	MKT
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:17	121,2320B	MKT
Alkalinity, Bicarbonate	182.		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:17	121,2320B	MKT
Nitrogen, Nitrate	0.032	J	mg/l	0.10	0.023	1	-	08/31/24 04:00	44,353.2	KAF
Total Organic Carbon	3.51		mg/l	1.00	0.194	2	-	09/04/24 15:31	121,5310C	DEW
Iron, Ferrous	0.11	J	mg/l	0.50	0.056	1	-	08/30/24 23:17	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab										
Chloride	153.		mg/l	5.00	0.839	10	-	08/31/24 01:04	44,300.0	CVN
Sulfate	64.0		mg/l	1.00	0.454	1	-	08/31/24 00:53	44,300.0	CVN

Project Name: FORMER ITHACA GUN FACTORY BCI
Project Number: X55.002.001
Lab Number: L2449503
Report Date: 10/08/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1966270-1										
Iron, Ferrous	ND		mg/l	0.50	0.056	1	-	08/30/24 23:14	121,3500FE-B	AAS
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG1966279-1										
Sulfate	ND		mg/l	1.00	0.454	1	-	08/30/24 16:42	44,300.0	CVN
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG1966279-1										
Chloride	0.095	J	mg/l	0.500	0.083	1	-	08/30/24 16:42	44,300.0	CVN
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1966290-1										
Nitrogen, Nitrate	ND		mg/l	0.10	0.023	1	-	08/31/24 03:26	44,353.2	KAF
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1967125-1										
Total Organic Carbon	ND		mg/l	0.500	0.097	1	-	09/04/24 03:00	121,5310C	DEW
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1967816-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:20	121,2320B	MKT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1971430-1										
Alkalinity, Bicarbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:17	121,2320B	MKT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1971432-1										
Alkalinity, Carbonate	ND		mg CaCO3/L	2.00	NA	1	-	09/05/24 08:17	121,2320B	MKT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP

Project Number: X55.002.001

Lab Number: L2449503

Report Date: 10/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1966270-2								
Iron, Ferrous	101		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG1966279-2								
Chloride	102		-		90-110	-		
Sulfate	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1966290-2								
Nitrogen, Nitrate	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1967125-2								
Total Organic Carbon	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1967816-2								
Alkalinity, Total	106		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449503
Report Date: 10/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966270-4 QC Sample: L2449503-01 Client ID: IJW-04 BASELINE												
Iron, Ferrous	0.090J	1	1.1	107		-	-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966279-3 QC Sample: L2449438-02 Client ID: MS Sample												
Chloride	1.87	0.4	5.96	102		-	-		90-110	-		18
Sulfate	20.0	8	27.5	94		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966290-4 QC Sample: L2449621-01 Client ID: MS Sample												
Nitrogen, Nitrate	5.2	4	9.1	98		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966290-6 QC Sample: L2449622-01 Client ID: MS Sample												
Nitrogen, Nitrate	28.	4	31	**75**	Q	-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1967125-4 QC Sample: L2449503-01 Client ID: IJW-04 BASELINE												
Total Organic Carbon	2.34	16	18.5	101		-	-		85-115	-		15
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1967816-4 QC Sample: L2449468-01 Client ID: MS Sample												
Alkalinity, Total	139.	100	246	107		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449503
Report Date: 10/08/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966270-3 QC Sample: L2449503-01 Client ID: IJW-04 BASELINE						
Iron, Ferrous	0.090J	0.090J	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966279-4 QC Sample: L2449438-02 Client ID: DUP Sample						
Chloride	1.87	1.92	mg/l	3		18
Sulfate	20.0	20.0	mg/l	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966290-3 QC Sample: L2449621-01 Client ID: DUP Sample						
Nitrogen, Nitrate	5.2	5.2	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1966290-5 QC Sample: L2449622-01 Client ID: DUP Sample						
Nitrogen, Nitrate	28.	28	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1967125-3 QC Sample: L2449503-01 Client ID: IJW-04 BASELINE						
Total Organic Carbon	2.34	2.57	mg/l	9		15
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1967816-3 QC Sample: L2449468-01 Client ID: DUP Sample						
Alkalinity, Total	139.	140	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1971430-2 QC Sample: L2447023-74 Client ID: DUP Sample						
Alkalinity, Bicarbonate	139.	140	mg CaCO3/L	1		9
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1971432-2 QC Sample: L2447023-75 Client ID: DUP Sample						
Alkalinity, Carbonate	ND	ND	mg CaCO3/L	NC		10

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449503
Report Date: 10/08/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2449503-01A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-01B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-01C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-01D	20ml Vial HCl preserved	A	N/A	N/A	2.6	Y	Absent		SUB-DISSGAS(14)
L2449503-01E	20ml Vial HCl preserved	A	N/A	N/A	2.6	Y	Absent		SUB-DISSGAS(14)
L2449503-01F	Vial H2SO4 preserved	A	NA		2.6	Y	Absent		TOC-5310(28)
L2449503-01G	Vial H2SO4 preserved	A	NA		2.6	Y	Absent		TOC-5310(28)
L2449503-01H	Plastic 250ml unpreserved/No Headspace	A	NA		2.6	Y	Absent		ALK-T-2320(14),ALK-HCO3-2320(14),ALK-CO3-2320(14)
L2449503-01I	Plastic 250ml unpreserved	A	7	7	2.6	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2449503-01J	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		MG-TI(180),FE-TI(180),K-TI(180),NA-TI(180),CA-TI(180)
L2449503-01K	Plastic 250ml HNO3 preserved	A	7	<2	2.6	N	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2449503-01L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.6	Y	Absent		SUB-SULFIDE(7)
L2449503-01M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.6	Y	Absent		SUB-SULFIDE(7)
L2449503-02A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-02B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-02C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-02D	20ml Vial HCl preserved	A	N/A	N/A	2.6	Y	Absent		SUB-DISSGAS(14)
L2449503-02E	20ml Vial HCl preserved	A	N/A	N/A	2.6	Y	Absent		SUB-DISSGAS(14)
L2449503-02F	Vial H2SO4 preserved	A	NA		2.6	Y	Absent		TOC-5310(28)
L2449503-02G	Vial H2SO4 preserved	A	NA		2.6	Y	Absent		TOC-5310(28)
L2449503-02H	Plastic 250ml unpreserved/No Headspace	A	NA		2.6	Y	Absent		ALK-T-2320(14),ALK-HCO3-2320(14),ALK-CO3-2320(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER ITHACA GUN FACTORY BCP
Project Number: X55.002.001

Lab Number: L2449503
Report Date: 10/08/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2449503-02I	Plastic 250ml unpreserved	A	7	7	2.6	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2),FERROUS(1)
L2449503-02J	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		MG-TI(180),FE-TI(180),K-TI(180),NA-TI(180),CA-TI(180)
L2449503-02K	Plastic 250ml HNO3 preserved	A	7	<2	2.6	N	Absent		FE-SI(180),NA-SI(180),K-SI(180),MG-SI(180),CA-SI(180)
L2449503-02L	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.6	Y	Absent		SUB-SULFIDE(7)
L2449503-02M	Plastic 250ml Zn Acetate/NaOH preserved	A	>9	>9	2.6	Y	Absent		SUB-SULFIDE(7)
L2449503-03A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-03B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-03C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-04A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)
L2449503-04B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260(14)

Container Comments

L2449503-01E Vial has headspace

*Values in parentheses indicate holding time in days

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449503
Project Number:	X55.002.001	**Report Date:**	10/08/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449503
Project Number:	X55.002.001	**Report Date:**	10/08/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449503
Project Number:	X55.002.001	**Report Date:**	10/08/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER ITHACA GUN FACTORY BCP	**Lab Number:**	L2449503
Project Number:	X55.002.001	**Report Date:**	10/08/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2449503 06SEP24
C&SENG

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 8/30/24

Client Information

Client: CTS Engineers, INC.
Address: 499 Col. Eileen Collins Blvd., Syracuse NY
Phone:
Fax:
Email: Hhaas@CTSCOS.com

Project Information

Project Name: Former Ithaca Gun Factory BCP Site
Project Location: 121 Lake St, Ithaca, NY
Project # 155.002-001
(Use Project name as Project #)
Project Manager: Hayden Haas
ALPHAQuote #: 476184

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☑ EQuIS (4 File)
☐ Other

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirement

☑ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL. Fe for iron + total iron

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NY TCL 8260	Total metals	Dissolved metals	SO4 cl NO3	SULFIDE-4500	DIS CO2	TOC	ALK-310.2	Total Bottle
49503-01	IJW-08 Baseline	8/29/24	0905	Water		X	X	X	X	X	X	X	X	13
-02	IJW-09 Baseline	8/29/24	1115	Water	HH	X	X	X	X	X	X	X	X	13
-03	DUP Baseline	-	-	Water	HH	X								3
						X								2

Sample Filtration
☑ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Container Type	V	P	P	P	P	V	V	P
Preservative	B	A	A	A	A	B	D	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Hayden Haas	8/29/24 1511		8/29/24 1511
	8/29 1700		8-29-24
	8-29-24 0200		08130124-0200

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 10, 2024

Candace Fox
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581

Project Location: NY
Client Job Number:
Project Number: L2449503
Laboratory Work Order Number: 24I0069

Enclosed are results of analyses for samples as received by the laboratory on September 3, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rebecca Faust
Project Manager

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Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581
ATTN: Candace Fox

REPORT DATE: 9/10/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: L2449503

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24I0069

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
IJW-04 BASELINE	24I0069-01	Water		RSK175	
				SM21-23 4500S-F	
IJW-05 BASELINE	24I0069-02	Water		RSK175	
				SM21-23 4500S-F	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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Project Location: NY | Sample Description: | Work Order: 24I0069

Date Received: 9/3/2024

Field Sample #: IJW-04 BASELINE | Sampled: 8/29/2024 09:05

Sample ID: 24I0069-01

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	0.033	0.014	mg/L	1		RSK175	9/4/24	9/4/24 11:29	TPH
Ethene	ND	0.017	mg/L	1		RSK175	9/4/24	9/4/24 11:29	TPH
Methane	0.11	0.0070	mg/L	1		RSK175	9/4/24	9/4/24 11:29	TPH

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Project Location: NY | Sample Description: | Work Order: 24I0069

Date Received: 9/3/2024

Field Sample #: IJW-04 BASELINE | Sampled: 8/29/2024 09:05

Sample ID: 24I0069-01

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Sulfide	ND	2.0	1.8	mg/L	1		SM21-23 4500S-F	9/4/24	9/4/24 10:00	DET

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Project Location: NY | Sample Description: | Work Order: 24I0069

Date Received: 9/3/2024

Field Sample #: IJW-05 BASELINE | Sampled: 8/29/2024 11:15

Sample ID: 24I0069-02

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethane	ND	0.014	mg/L	1		RSK175	9/4/24	9/4/24 11:53	TPH
Ethene	ND	0.017	mg/L	1		RSK175	9/4/24	9/4/24 11:53	TPH
Methane	0.043	0.0070	mg/L	1		RSK175	9/4/24	9/4/24 11:53	TPH

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Project Location: NY | Sample Description: | Work Order: 24I0069

Date Received: 9/3/2024

Field Sample #: IJW-05 BASELINE | Sampled: 8/29/2024 11:15

Sample ID: 24I0069-02

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Sulfide	ND	2.0	1.8	mg/L	1		SM21-23 4500S-F	9/4/24	9/4/24 10:00	DET

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Sample Extraction Data

Prep Method:RSK175 **Analytical Method:RSK175**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24I0069-01 [IJW-04 BASELINE]	B385146	1.00	1.00	09/04/24
24I0069-02 [IJW-05 BASELINE]	B385146	1.00	1.00	09/04/24

SM21-23 4500S-F

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24I0069-01 [IJW-04 BASELINE]	B384932	200	200	09/04/24
24I0069-02 [IJW-05 BASELINE]	B384932	200	200	09/04/24

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QUALITY CONTROL

Miscellaneous Organic Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B385146 - RSK175										
Blank (B385146-BLK1)				Prepared & Analyzed: 09/04/24						
Ethane	ND	0.014	mg/L							
Ethene	ND	0.017	mg/L							
Methane	ND	0.0070	mg/L							
LCS (B385146-BS1)				Prepared & Analyzed: 09/04/24						
Ethane	0.78		mg/L	0.804		97.0	65.9-110			
Ethene	0.59		mg/L	0.750		78.8	62.8-110			
Methane	0.40		mg/L	0.429		94.2	63.8-110			
Duplicate (B385146-DUP1)		**Source: 24I0069-01**		Prepared & Analyzed: 09/04/24						
Ethane	0.0314	0.014	mg/L		0.0331			5.18	20	
Ethene	ND	0.017	mg/L		ND			NC	20	
Methane	0.105	0.0070	mg/L		0.112			6.75	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B384932 - SM21-23 4500S-F										
Blank (B384932-BLK1)				Prepared & Analyzed: 09/04/24						
Sulfide	ND	2.0	mg/L							
LCS (B384932-BS1)				Prepared & Analyzed: 09/04/24						
Sulfide	8.2	2.0	mg/L	10.0		82.0	79.7-122			
LCS Dup (B384932-BSD1)				Prepared & Analyzed: 09/04/24						
Sulfide	8.2	2.0	mg/L	10.0		82.0	79.7-122	0.00	20	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
RSK175 in Water	
Ethane	VA,NY,ME
Ethene	VA,NY,ME
Methane	VA,NY,ME
SM21-23 4500S-F in Water	
Sulfide	NY,NH,RI,NC,ME,CT

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
CT	Connecticut Department of Public Health	PH-0821	12/31/2024
NY	New York State Department of Health	10899 NELAP	04/1/2025
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2025
RI	Rhode Island Department of Health	LAO00373	12/30/2024
NC	North Carolina Div. of Water Quality	652	12/31/2024
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024

24I0069

Subcontract Chain of Custody

ALPHA ANALYTICAL — World Class Chemistry

Pace New England
39 Spruce St
East Longmeadow, MA 01028

Alpha Job Number
L2449503

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 716-427-5223
Email: Candace.Fox@pacelabs.com

Project Information

Project Location: NY
Project Manager: Candace Fox

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2449503

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
1	UW-04 BASELINE	08-29-24 09:05	WATER	Dissolved Gasses; Sulfide	
2	UW-05 BASELINE	08-29-24 11:15	WATER	Dissolved Gasses; Sulfide	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	PAS 9/3/24 08:36	9-3-24 7:12	PAS 2.0 9/3/24	9/3/24 07:17

Form No: AL_subcoc

Serial_No:10082412:14

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Log In Back-Sheet

Client Alpha

Project L2449503

MCP/RCP Required no

Deliverable Package Requirement NO

Location NY

PWSID# (When Applicable) NA

Arrival Method:

Courier ☑ Fed Ex ☐ Walk In ☐ Other ☐

Received By / Date / Time SL 9/3/24 836

Back-Sheet By / Date / Time SL 9/3/24 1040

Temperature Method GUN # 6

WV samples: Yes (see note*) / No (follow normal procedure)

Temp < 6° C Actual Temperature 20

Rush Samples: Yes / No Notify

Short Hold: Yes / No Notify

Notes regarding Samples/COC outside of SOP:

Login Sample Receipt Checklist – (Rejection Criteria Listing – Using Acceptance Policy) Any False statement will be brought to the attention of the Client – True or False

	True	False
Received on Ice	☑	☐
Received in Cooler	☑	☐
Custody Seal: DATE TIME	☐	☑
COC Relinquished	☑	☐
COC/Samples Labels Agree	☑	☐
All Samples in Good Condition	☑	☐
Samples Received within Holding Time	☑	☐
Is there enough Volume	☑	☐
Proper Media/Container Used	☑	☐
Splitting Samples Required	☐	☑
MS/MSD	☐	☑
Trip Blanks	☐	☑
Lab to Filters	☐	☑
COC Legible	☑	☐

COC Included: (Check all included)

Client ☑ Analysis ☑ Sampler Name ☑

Project ☑ IDs ☑ Collection Date/Time ☑

All Samples Proper pH: N/A ☑ ☐

Additional Container Notes

**Note: West Virginia requires all samples to have their temperature taken. Note any outliers.*

Qualtrax ID: 120836

DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Sample																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Soils Jars (Circle Amb/Clear)	16oz Amb/Clear																				
	8oz Amb/Clear																				
	4oz Amb/Clear																				
	2oz Amb/Clear																				
Ambers	Unpreserved 1 Liter																				
	HCL 1 Liter																				
	Sulfuric 1 Liter																				
	Sulfuric 250mL																				
	Phosphoric 250mL																				
	HCl 250mL																				
	Unpreserved 100mL																				
Plastics	Unpreserved 1 Liter																				
	Sulfuric 1 Liter																				
	Unpreserved 500mL																				
	Sulfuric 500mL																				
	Unpreserved 250mL																				
	Trizma 250mL																				
	Sulfuric 250mL																				
	Nitric 250mL																				
	NaOH 250mL																				
	Ammonium Acetate 250mL																				
	NaOH/Zinc 250mL	2	2																		
VOA Vials	Unpreserved																				
	HCl																				
	MeOH																				
	D.I. Water																				
	BiSulfate																				
Other / Fill in	Col/Bact																				
	Other	2	2																		

Qualtrax ID: 120836

Serial_No:20082412:14

Appendix C-5

Injection Well Microbial Laboratory Analytical Reports

SiREM
Leading Science · Lasting Solutions

180A Market Place Blvd.
Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Gene-Trac® Certificate of Analysis

Customer: Hayden Haas

Email: hhaas@cscos.com

Phone: (315) 455-2000

Company: C&S Engineers, Inc.

Project Name: Ithaca Gun Factory BCP Site

Method Reference: SOP-002, SOP-108, SOP-116, SOP-126

Batch Reference: S-10653

Report Date: 10-Sep-24

Certificate Number: CAG-1321

Test Location(s): Knoxville and Guelph

Customer Reference: Not provided

The results included herein only apply to the samples described within and are applicable to the items as received. This certificate is not to be reproduced unless in full.

There are changes to our report format; this is due to improvements in our data reporting system. In addition, each report now includes qPCR quantification of total prokaryotes. This value is a useful measure of total microbial biomass and is now used to calculate the percentage of the test target (e.g., % Dhc).

SOP-116 (DNA Extraction) and SOP-108 (Dhc and Total Prokaryotes testing) were performed at SiREM Knoxville, the remainder of testing was performed at SiREM Guelph.

gene trac®
ilac-MRA
PJLA Testing
Accreditation # 89844

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017

SiREM
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Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Gene-Trac® Dehalococcoides FGA Test Results, Test Certificate CAG-1321

Target (Test ID)*	IJW-01 Baseline		IJW-03 Baseline	
	Gene Copies/L[1]	Percent (%)[2]	Gene Copies/L[1]	Percent (%)[2]
Dehalococcoides (DHC)	1.92 E+03	0.00205	1.64 E+05	0.0366
Run Date	30-Aug-24		30-Aug-24	
vcrA Reductase (FGA-VCRA)	8.95 E+02 J	0.000955	2.58 E+04	0.00578
Run Date	09-Sep-24		09-Sep-24	
bvcA Reductase (FGA-BVCA)	8.19 E+02 U	NA	6.72 E+04	0.0150
Run Date	09-Sep-24		09-Sep-24	
tceA Reductase (FGA-TCEA)	8.19 E+02 U	NA	9.22 E+03	0.00206
Run Date	09-Sep-24		09-Sep-24	
Total Prokaryotes (PROK)[(3)]	9.37 E+07	100	4.47 E+08	100
Run Date	30-Aug-24		30-Aug-24	

* See final page for complete notes and target descriptions

Analyst: KjElipse

Kristine Elipse-Cruz
Laboratory Technician II

Approved: Jen Wilkinson

Jennifer Wilkinson
Senior Genetic Testing Specialist

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Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Detailed Test Parameters, Test Certificate CAG-1321

Customer Sample ID	IJW-01 Baseline	IJW-03 Baseline
Date Sampled [4]	28-Aug-24	28-Aug-24
Matrix	Groundwater	Groundwater
Date Received [4]	29-Aug-24	29-Aug-24
Sample Temperature	3.2 °C	3.2 °C
Filtration Date [4]	29-Aug-24	29-Aug-24
Volume Used for DNA Extraction	400 mL	400 mL
DNA Extraction Date	29-Aug-24	29-Aug-24
DNA Extraction Control [5]	Passed	Passed
PCR Amplifiable DNA	Detected	Detected
Detection Limit (Gene Copies/L)	8.19 E+02	8.19 E+02
Quantitation Limit (Gene Copies/L)	1.64 E+03	1.64 E+03
qPCR Controls	Passed	Passed
Comments	- -	- -

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Knoxville, TN 37922

130 Stone Rd. W
Guelph, ON N1G 3Z2

Gene-Trac® Control Results, Test Certificate CAG-1321

Target (Test ID)	Low Control Copies/L		High Control Copies/L		Test Blank Copies/L		DNA Extraction Blank Copies/L		Comments
	Expected	Recovered	Expected	Recovered	Expected	Recovered	Expected	Recovered	
Dehalococcoides (DHC)	1.42 E+07	1.66 E+07	1.54 E+09	1.65 E+09	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	30-Aug-24		30-Aug-24		30-Aug-24		30-Aug-24		
vcrA Reductase (FGA-VCRA)	1.28 E+07	1.50 E+07	1.40 E+09	1.51 E+09	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	09-Sep-24		09-Sep-24		09-Sep-24		09-Sep-24		
bvcA Reductase (FGA-BVCA)	1.51 E+07	1.63 E+07	1.57 E+09	1.72 E+09	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	09-Sep-24		09-Sep-24		09-Sep-24		09-Sep-24		
tceA Reductase (FGA-TCEA)	1.52 E+07	1.44 E+07	1.58 E+09	1.32 E+09	0	6.55 E+02 U	0	6.55 E+02 U	Passed
Run Date	09-Sep-24		09-Sep-24		09-Sep-24		09-Sep-24		
Total Prokaryotes (PROK)	1.43 E+07	1.64 E+07	1.69 E+09	1.67 E+09	0	6.55 E+02 U	0	3.32 E+03(6)	Passed
Run Date	30-Aug-24		30-Aug-24		30-Aug-24		30-Aug-24		

Notes:
bvcA Reductase (FGA-BVCA) = Dehalococcoides BAV1 Vinyl Chloride Reductase A (bvcA)
Dehalococcoides (DHC) = Dehalococcoides 16S rRNA
tceA Reductase (FGA-TCEA) = Dehalococcoides Trichloroethene Reductase A (tceA)
Total Prokaryotes (PROK) = Bacteria and Archaea 16S rRNA using Universal Primers
vcrA Reductase (FGA-VCRA) = Dehalococcoides Vinyl Chloride Reductase A (vcrA)

J The associated value is an estimated quantity between the detection limit and quantitation limit.
U Not detected, associated value is the detection limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
E Extracted genomic DNA was not detected in the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
M Non-specific amplification was observed via melt curve analysis.
g = gram
mL = milliliter
L = liter
NA = not applicable
ND = not detected
DNA = deoxyribonucleic acid
16S rRNA = 16S ribosomal ribonucleic acid
PCR = polymerase chain reaction
qPCR = quantitative PCR
°C = degrees Celsius

1. Target quantitation is subject to the variability of the method. This variability has been demonstrated to be +/- 60%.

2. Percent target in microbial population. This value is calculated by dividing the number of target gene copies by the total prokaryotes as enumerated by qPCR.

3. Total prokaryotes testing includes enumeration of most Bacteria and Archaea and is a measure of overall microbial biomass in the sample.

4. Samples are stabilized by freezing at -80 °C upon sample reception (field filters) or after in-lab filtration (groundwater). Hold time not exceeded if sampling date is within 14 days of days of reception or filtration.

5. DNA is extracted from a standardized bacterial culture sample daily and Universal qPCR is performed using standard methods. A recovery greater than 25% of the expected value is deemed acceptable.

6. Deemed acceptable if relevant sample results are greater than one order of magnitude above the blank result(s). Any affected samples are denoted with a B qualifier.

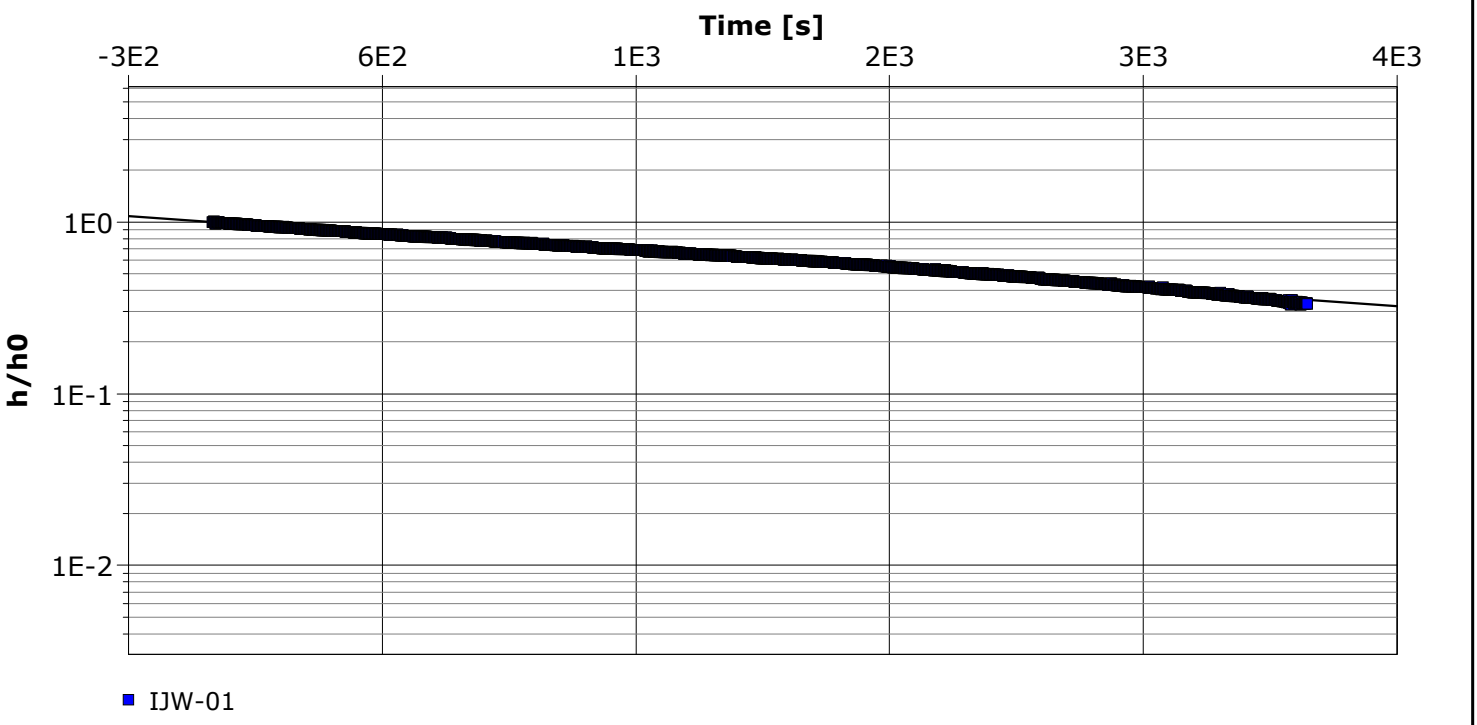
7. Control was outside recovery limit guidelines (+/- 50%); however, test results are deemed acceptable if one of two positive controls fall within the recovery limit guidelines.

Appendix D

Hydraulic Conductivity Results

C&S Engineers, Inc. **499 Col. Eileen Collins Blvd.** **Syracuse, New York 13212**	**Slug Test Analysis Report**
	Project: Former Ithaca Gun Factory
	Number: X55.002.002
	Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-01 - Falling Head	Test Well: IJW-01
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-01 - Falling Head	Analysis Date: 10/14/2024
Aquifer Thickness: 54.00 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-01	1.94×10^{-1}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

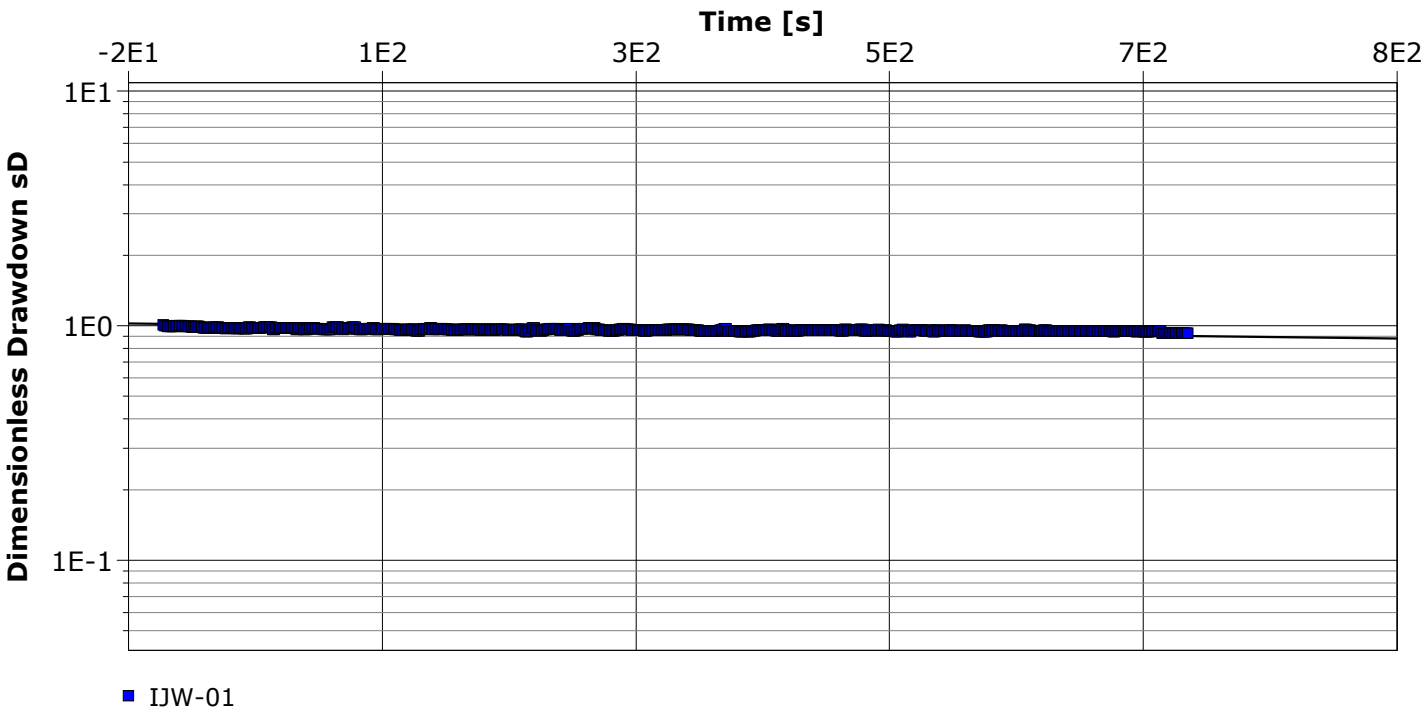
Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-01 - Falling Head	Test Well: IJW-01
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 54.00 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-01 - Falling Head	WR	10/14/2024	Bouwer & Rice	IJW-01		1.94×10^{-1}	

C&S Engineers, Inc. **499 Col. Eileen Collins Blvd.** **Syracuse, New York 13212**	**Slug Test Analysis Report** Project: Former Ithaca Gun Factory Number: X55.002.002 Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-01 - Rising Head	Test Well: IJW-01
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-01 - Rising Head	Analysis Date: 10/14/2024
Aquifer Thickness: 54.00 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-01	1.15×10^{-1}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-01 - Rising Head	Test Well: IJW-01
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 54.00 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-01 - Rising Head	WR	10/14/2024	Bouwer & Rice	IJW-01		1.15×10^{-1}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

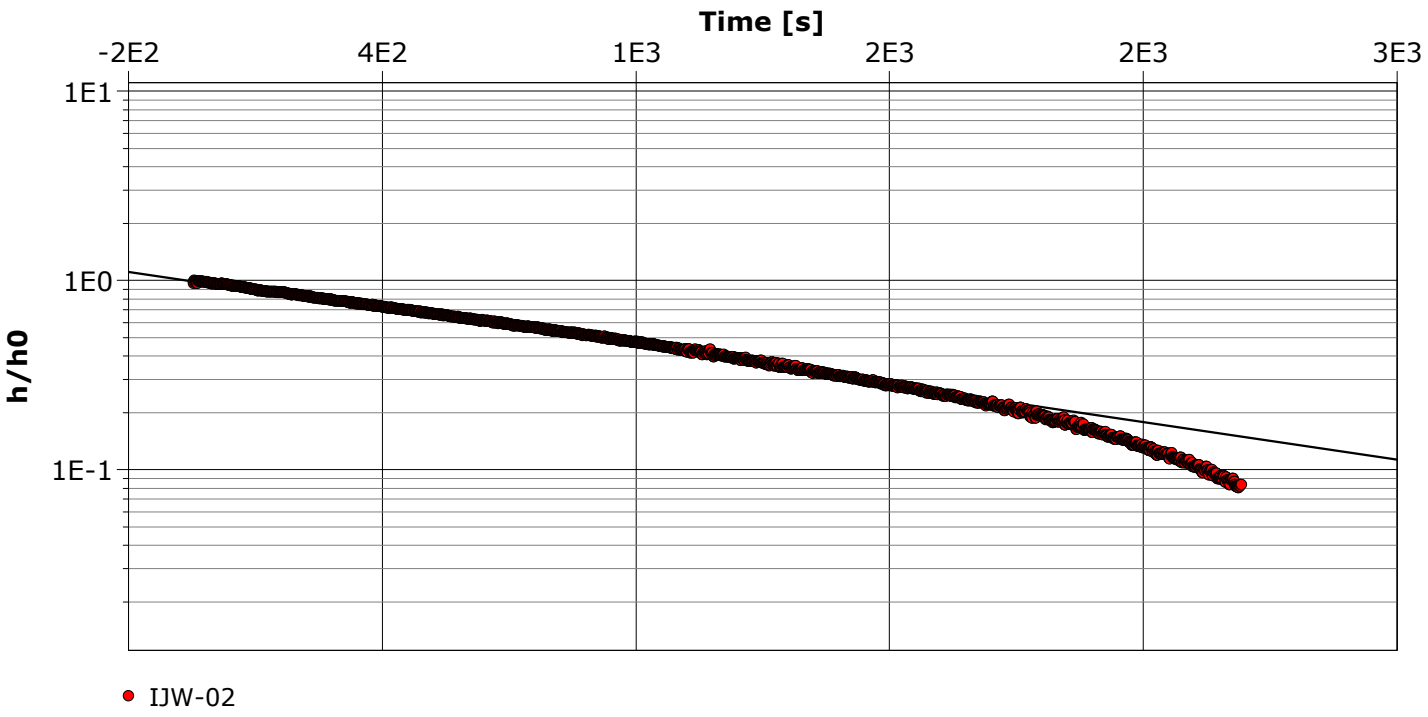
Slug Test Analysis Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-02 - Falling Head	Test Well: IJW-02
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-02 Falling Head	Analysis Date: 10/14/2024
Aquifer Thickness: 47.52 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-02	3.90×10^{-1}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-02 - Falling Head	Test Well: IJW-02
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 47.52 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-02 Falling Head	WR	10/14/2024	Bouwer & Rice	IJW-02		3.90×10^{-1}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

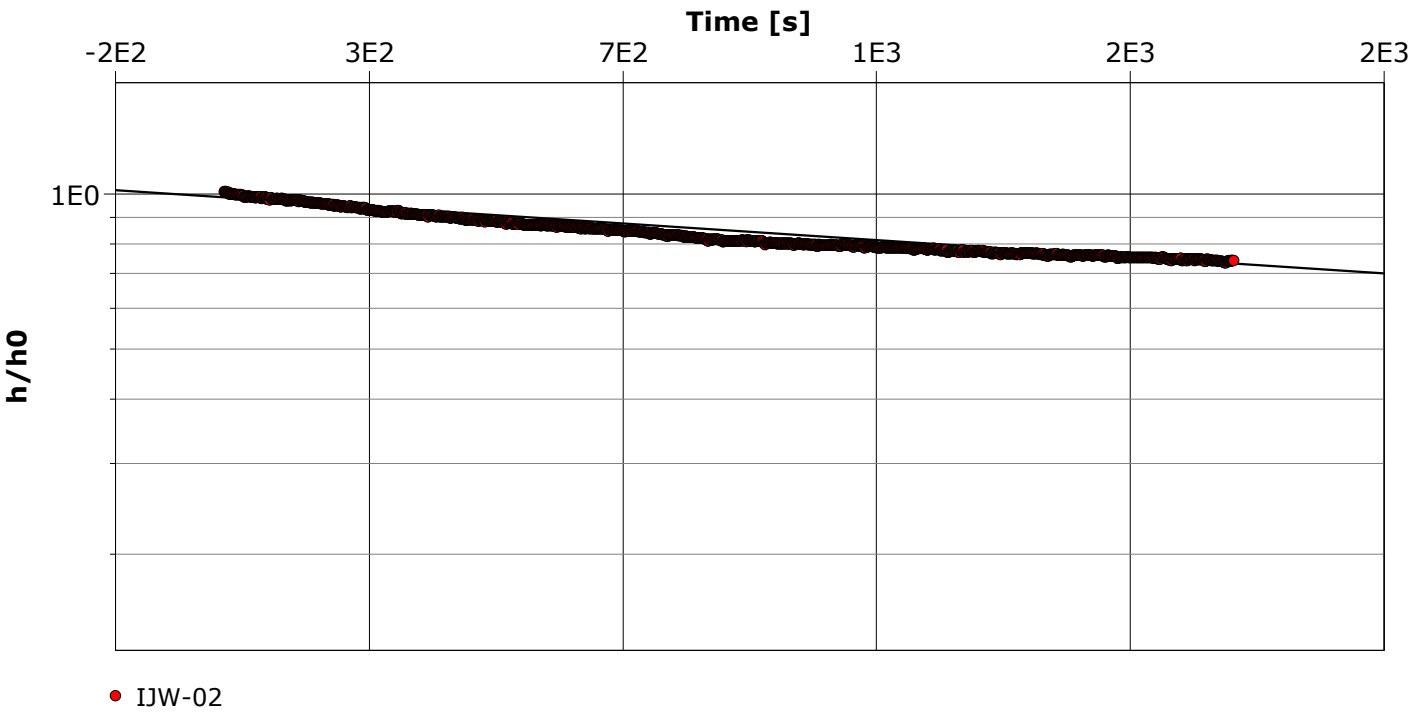
Slug Test Analysis Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-02 - Rising Head	Test Well: IJW-02
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-02 Rising Head	Analysis Date: 10/14/2024
Aquifer Thickness: 47.52 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-02	8.64×10^{-2}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

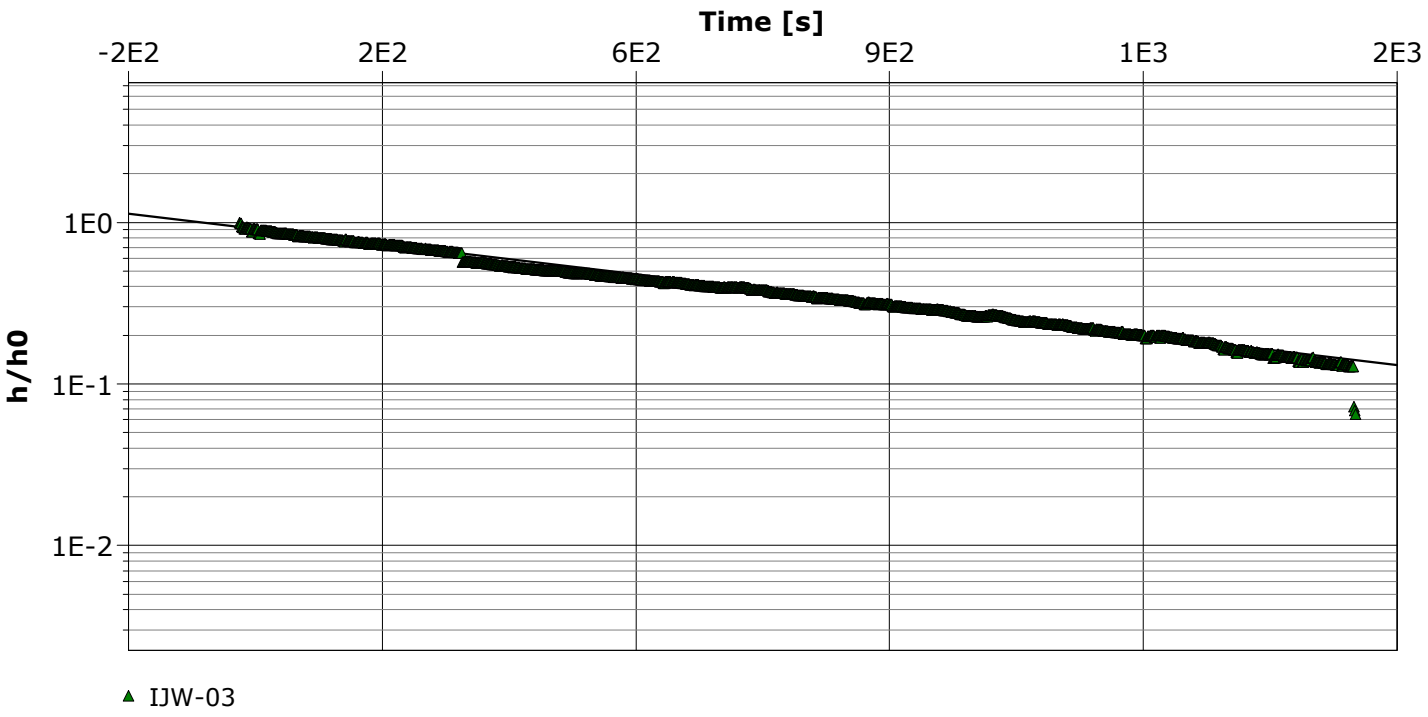
Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-02 - Rising Head	Test Well: IJW-02
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 47.52 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-02 Rising Head	WR	10/14/2024	Bouwer & Rice	IJW-02		8.64×10^{-2}	

C&S Engineers, Inc. **499 Col. Eileen Collins Blvd.** **Syracuse, New York 13212**	**Slug Test Analysis Report**
	Project: Former Ithaca Gun Factory
	Number: X55.002.002
	Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-03 - Falling Head	Test Well: IJW-03
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-03 - Falling Head	Analysis Date: 10/14/2024
Aquifer Thickness: 57.95 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-03	9.65×10^{-1}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

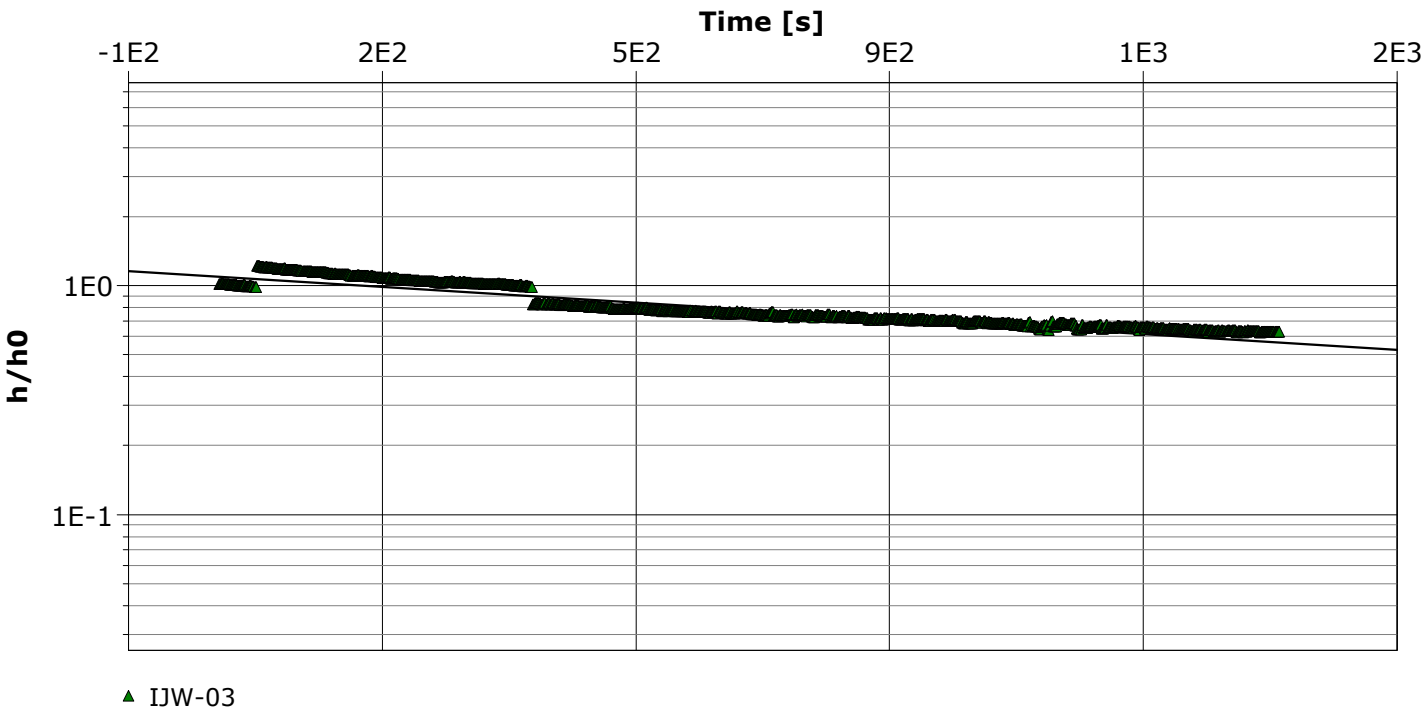
Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-03 - Falling Head	Test Well: IJW-03
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 57.95 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-03 - Falling Head	WR	10/14/2024	Bouwer & Rice	IJW-03		9.65×10^{-1}	

C&S Engineers, Inc. **499 Col. Eileen Collins Blvd.** **Syracuse, New York 13212**	**Slug Test Analysis Report** Project: Former Ithaca Gun Factory Number: X55.002.002 Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-03 - Rising Head	Test Well: IJW-03
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-03 - Rising Head	Analysis Date: 10/14/2024
Aquifer Thickness: 57.95 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-03	3.89×10^{-1}	

C&S Engineers, Inc.
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Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

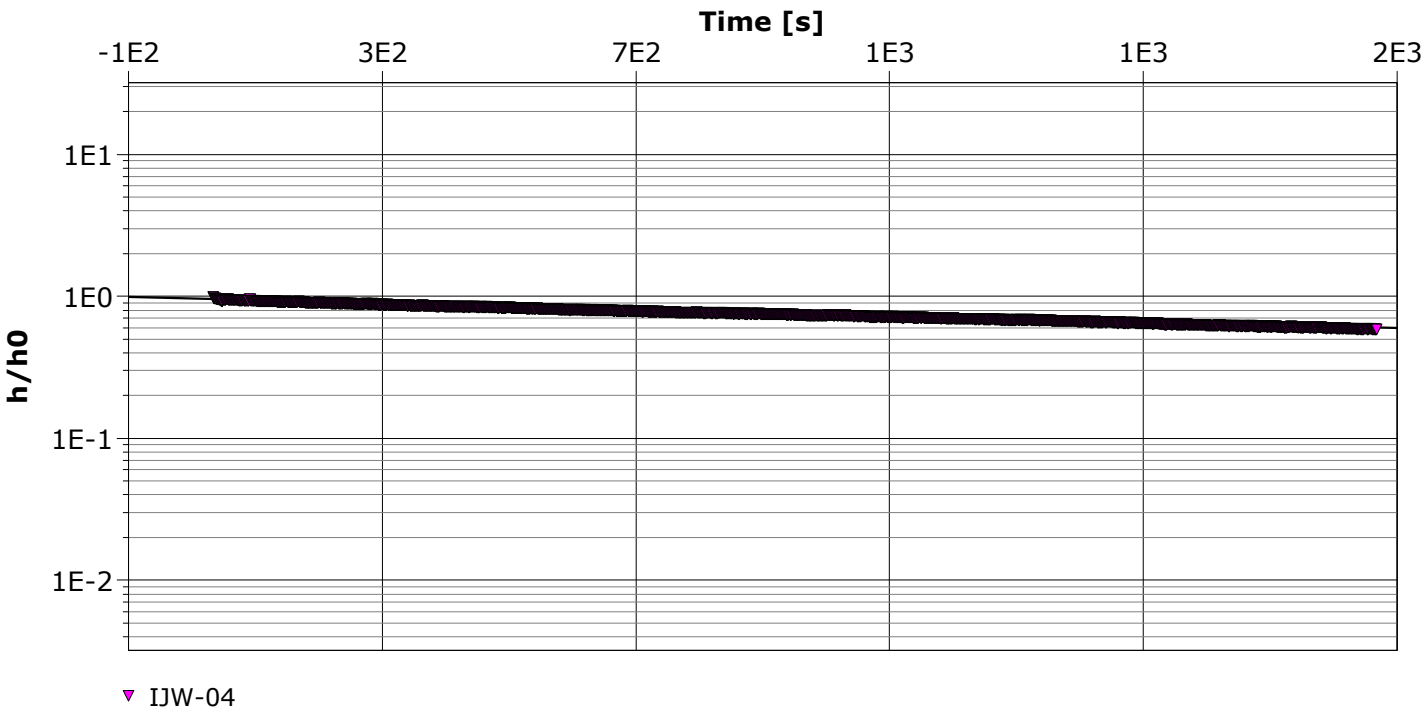
Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-03 - Rising Head	Test Well: IJW-03
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 57.95 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-03 - Rising Head	WR	10/14/2024	Bouwer & Rice	IJW-03		3.89×10^{-1}	

C&S Engineers, Inc. **499 Col. Eileen Collins Blvd.** **Syracuse, New York 13212**	**Slug Test Analysis Report**
	Project: Former Ithaca Gun Factory
	Number: X55.002.002
	Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-04- Falling Head	Test Well: IJW-04
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-04 - Falling Head	Analysis Date: 10/14/2024
Aquifer Thickness: 39.25 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-04	1.03×10^{-1}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

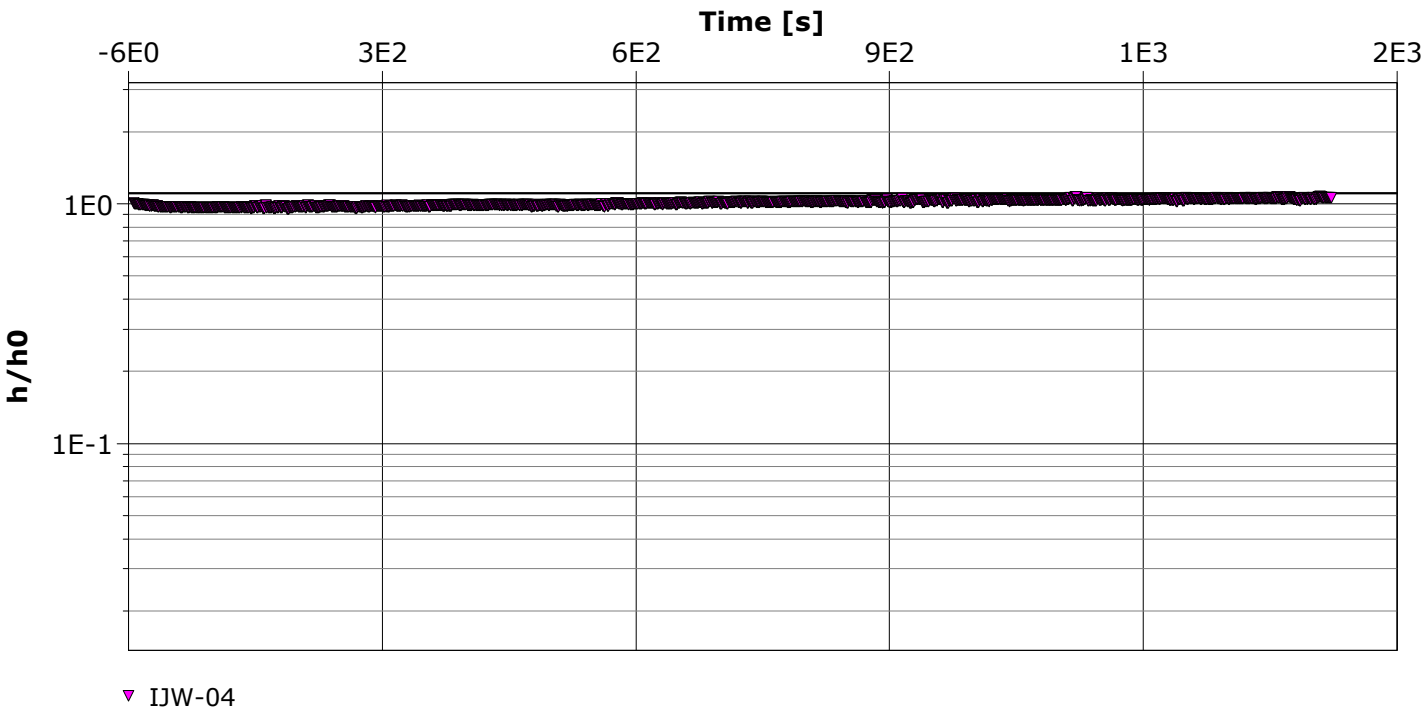
Slug Test Analysis Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-04- Rising Head	Test Well: IJW-04
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-04 - Rising Head	Analysis Date: 10/14/2024
Aquifer Thickness: 39.25 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-04	2.83×10^{-7}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-04- Rising Head	Test Well: IJW-04
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 39.25 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-04 - Rising Head	WR	10/14/2024	Bouwer & Rice	IJW-04		2.83×10^{-7}	

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

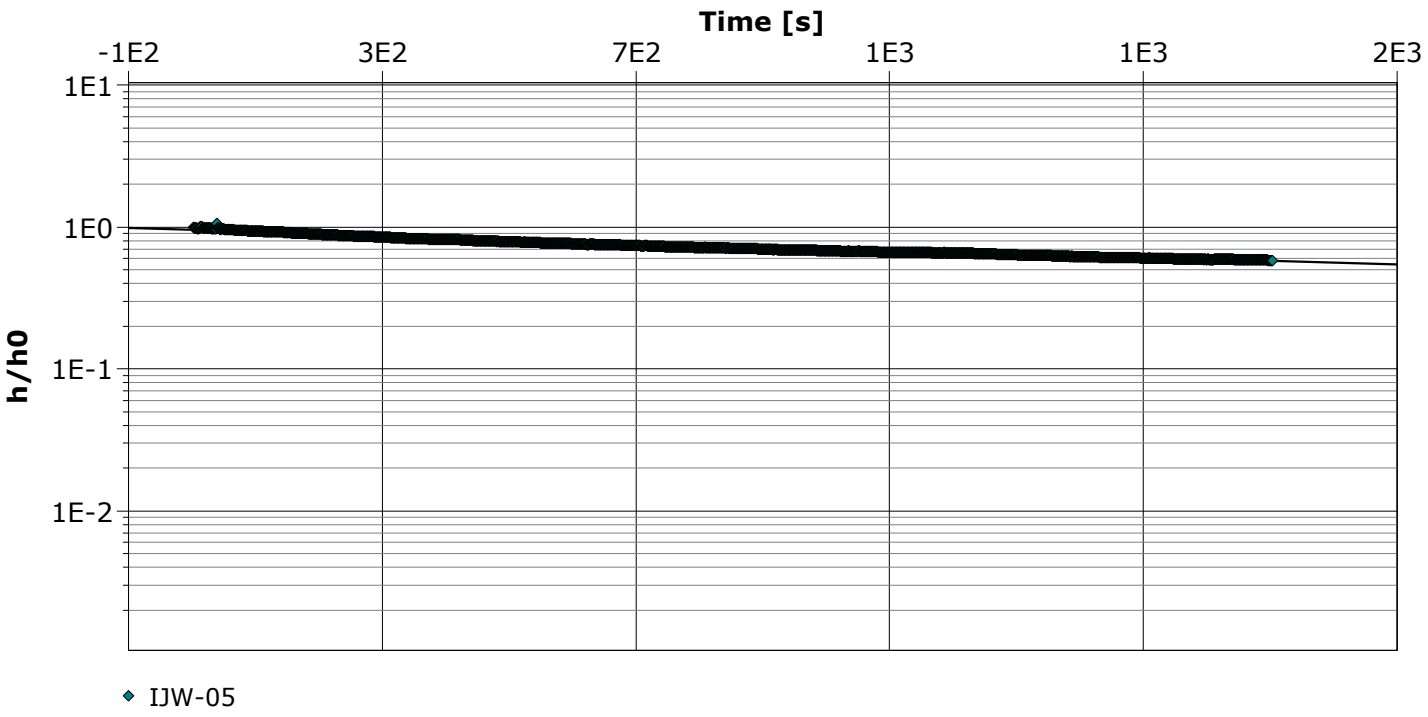
Slug Test Analysis Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-05 - Falling Head	Test Well: IJW-05
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-05 Falling Head	Analysis Date: 10/14/2024
Aquifer Thickness: 19.85 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-05	8.08×10^{-2}	

C&S Engineers, Inc.
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Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

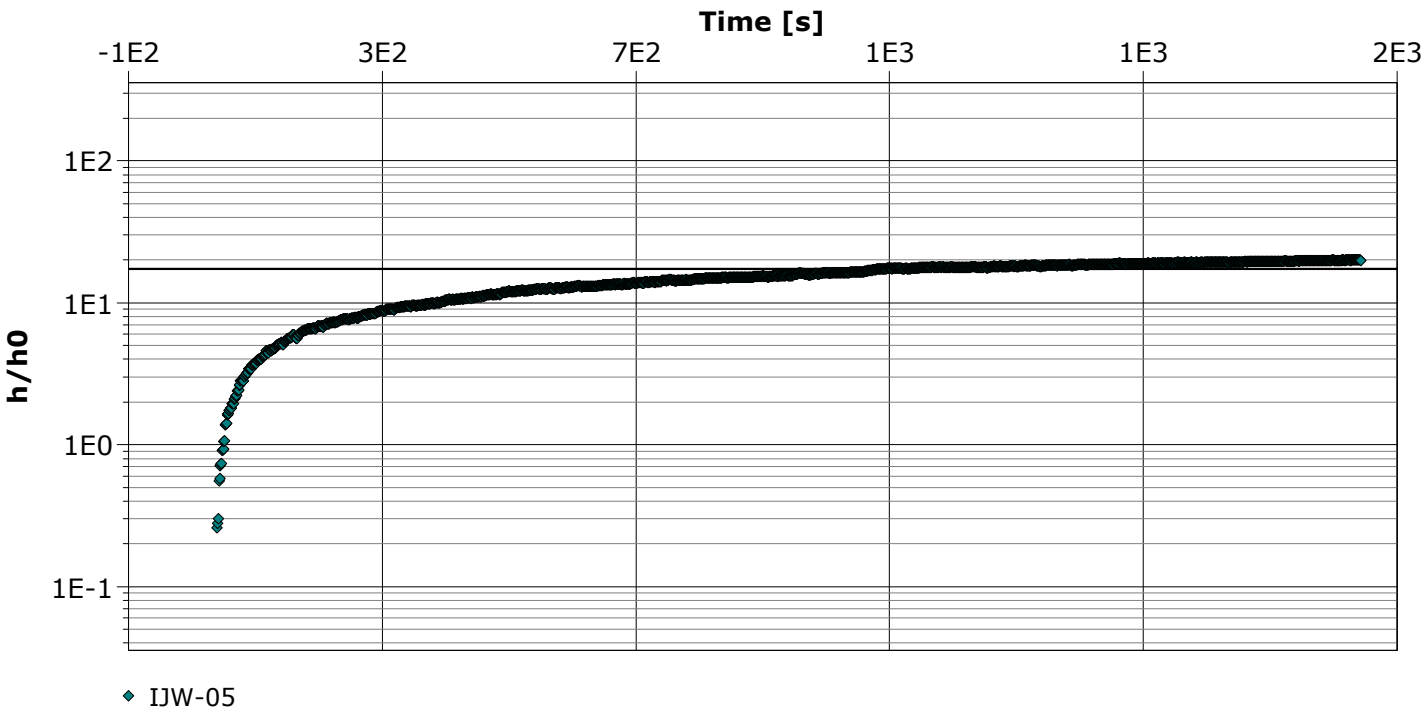
Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-05 - Falling Head	Test Well: IJW-05
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 19.85 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-05 Falling Head	WR	10/14/2024	Bouwer & Rice	IJW-05		8.08×10^{-2}	

C&S Engineers, Inc. **499 Col. Eileen Collins Blvd.** **Syracuse, New York 13212**	**Slug Test Analysis Report**
	Project: Former Ithaca Gun Factory
	Number: X55.002.002
	Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-05 - Rising Head	Test Well: IJW-05
Test Conducted by: WR		Test Date: 9/5/2024
Analysis Performed by: WR	IJW-05 - Rising Head	Analysis Date: 10/14/2024
Aquifer Thickness: 19.85 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
IJW-05	1.76×10^{-5}	

C&S Engineers, Inc.
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Syracuse, New York 13212

Slug Test - Analyses Report

Project: Former Ithaca Gun Factory

Number: X55.002.002

Client: Visum Development

Location: 121-125 Lake St, Ithaca, NY	Slug Test: IJW-05 - Rising Head	Test Well: IJW-05
Test Conducted by: WR		Test Date: 9/5/2024
Aquifer Thickness: 19.85 ft		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [ft²/d]	K [ft/d]	S
1	IJW-05 - Rising Head	WR	10/14/2024	Bouwer & Rice	IJW-05		1.76×10^{-5}	

Appendix E

Data Usability Summary Report

Data Usability Summary Report

Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

Former Ithaca Gun Factory BCP
Alpha Analytical SDG#L2442917
September 26, 2024
Sampling date: 7/30/2024

Prepared by:
Jodi Zimmerman
Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

DELIVERABLES

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data package for C&S Companies, project located at Former Ithaca Gun Factory BCP, Alpha Analytical SDG #L2442917 submitted to Vali-Data of WNY, LLC on September 20, 2024. This DUSR has been prepared in general compliance with USEPA National Functional Guidelines(NFG) and NYSDEC Analytical Services Protocols. The laboratory performed the analysis using the USEPA method Volatile Organics (8260D).

ID	Sample ID	Laboratory ID
1	MW-03 PRE-SAMPLING	L2442917-01
2	MW-08 PRE-SAMPLING	L2442917-02
3	MW-09 PRE-SAMPLING	L2442917-03
4	TRIP-BLANK-7/30/24	L2442917-04

VOLATILE ORGANIC COMPOUNDS

The following items/criteria were reviewed for this analytical suite:

-Data Completeness
-Narrative and Data Reporting Forms
-Chain of Custody and Traffic Reports
-Holding Times
-Internal Standard (IS) Area Performance
-Surrogate Spike Recoveries
-Method Blank
-Field Duplicate Sample Precision
-Laboratory Control Samples
-MS/MSD
-Compound Quantitation
-Initial Calibration
-Continuing Calibration
-GC/MS Performance Check

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES

The data are acceptable for use except where qualified below in Holding Times, Laboratory Control Samples, Initial Calibration and Continuing Calibration.

Samples: DUSR ID#2 and #3 were diluted due to high target analyte concentrations.

DATA COMPLETENESS
All criteria were met.

NARRATIVE AND DATA REPORTING FORMS
All criteria were met.
Data was not reported to 3 significant figures. This does not affect the usability of the data.

CHAIN OF CUSTODY AND TRAFFIC REPORTS
All criteria were met.

HOLDING TIMES
All holding times were met except the pH of DUSR ID#4 was outside QC limits. Since this sample was not analyzed within the 7-day window, all detected target analytes should be qualified as estimated and all target analytes not detected should be qualified as unusable.

INTERNAL STANDARD (IS)
All criteria were met.

SURROGATE SPIKE RECOVERIES
All criteria were met.

METHOD BLANK
All criteria were met.

FIELD DUPLICATE SAMPLE PRECISION
No field duplicate was acquired.

LABORATORY CONTROL SAMPLES
All criteria were met except several target analytes were outside QC limits in the laboratory control samples and should be qualified as estimated.

LCS/LCSD ID	Target Analyte	RPD	Qualifier	Associated Sample
WG1957963	Trichlorofluoromethane	26	UJ	4
WG1957963	Dichlorodifluoromethane	27	UJ	4
WG1957963	Cyclohexane	27	UJ	4
WG1957963	Freon 113	25	UJ	4
WG1957963	Methylene chloride	23	UJ	4

MS/MSD
No MS/MSD was acquired.

COMPOUND QUANTITATION
All criteria were met.

INITIAL CALIBRATION

All criteria were met except several target analytes were outside QC limits in the initial calibrations (ICal) and/or the initial calibration verifications (ICV) and should be qualified as estimated in the associated samples blanks and spikes.

ICal/ICV instrument	Target Analyte	RRF/%D	Qualifier	Associated Sample
ICal/ICV Elaine	Bromodichloromethane	RRF	UJ/J	WG1955288, WG1955415, 1-3
ICal Elaine	Trichloroethene	RRF	UJ/J	WG1955288, WG1955415, 1-3
ICal/ICV Elaine	1,1,2-Trichloroethene	RRF	UJ/J	WG1955288, WG1955415, 1-3
ICal/ICV Elaine	1,4-Dioxane	RRF	UJ/J	WG1955288, WG1955415, 1-3
ICal/ICV Elaine	Bromochloromethane	RRF	UJ/J	WG1955288, WG1955415, 1-3
ICal/ICV Gonzo	1,1,2-Trichloroethene	RRF	UJ/J	WG1954963, 4
ICal/ICV Gonzo	1,4-Dioxane	RRF	UJ/J	WG1954963, 4
ICV Gonzo	Bromodichloromethane	RRF	UJ/J	WG1954963, 4
ICV Gonzo	Bromomethane	-69.9	UJ/J	WG1954963, 4

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

CONTINUING CALIBRATION

All criteria were met except several target analytes were outside QC limits in the continuing calibrations and should be qualified as estimated in the associated samples blanks and spikes.

CCal ID	Target Analyte	RRF/%D	Qualifier	Associated Sample
WG1955288-2	Bromodichloromethane	RRF	UJ/J	WG1955288, 2
WG1955288-2	1,4-Dioxane	RRF	UJ/J	WG1955288, 2
WG1955288-2	1,1,2-Trichloroethene	RRF	UJ/J	WG1955288, 2
WG1955415-2	Bromodichloromethane	RRF	UJ/J	WG1955415, 1, 3
WG1955415-2	1,4-Dioxane	RRF	UJ/J	WG1955415, 1, 3
WG1955415-2	1,1,2-Trichloroethene	RRF	UJ/J	WG1955415, 1, 3
WG1955415-2	Bromodichloromethane	RRF	UJ/J	WG1955415, 1, 3
WG1955415-2	Bromochloromethane	RRF	UJ/J	WG1955415, 1, 3
WG1957963-2	1,1,2-Trichloroethene	RRF	UJ/J	WG1954963, 4
WG1957963-2	1,4-Dioxane	RRF	UJ/J	WG1954963, 4
WG1957963-2	1,2-Dichloropropane	RRF	UJ/J	WG1954963, 4
WG1957963-2	Bromomethane	36.8	UJ/J	WG1954963, 4
WG1957963-2	1,1-Dichloroethene	24.3	UJ/J	WG1954963, 4

CCal ID	Target Analyte	RRF/%D	Qualifier	Associated Sample
WG1957963-2	Freon 113	28.8	UJ/J	WG1954963, 4
WG1957963-2	Cyclohexane	32.9	UJ/J	WG1954963, 4
WG1957963-2	Methylcyclohexane	36.9	UJ/J	WG1954963, 4

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

GC/MS PERFORMANCE CHECK

All criteria were met.

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Dissolved Gases and Sulfide were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The element lists for the metals analyses were provided by the client.
The analyses performed were specified by the client.
L2442917-01: Headspace was noted in all sample containers submitted for Dissolved Gases - Subcontracted. The analysis was performed at the client's request.

Dissolved Metals

The WG1956910-3 MS recoveries for calcium (135%) and sodium (156%), performed on L2442917-01, do not apply because the sample concentrations are greater than four times the spike amounts added.

Iron, Ferrous

L2442917-01, -02, and -03: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom Report Date: 08/13/24

Title: Technical Director/Representative

Laboratory Control Sample Summary
Form 3
Volatiles

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Matrix (Level)	: WATER (LOW)		
LCS Sample ID	: WG1957963-3 **Analysis Date** : 08/09/24 07:01	**File ID**	: VG240809A02
LCSD Sample ID	: WG1957963-4 **Analysis Date** : 08/09/24 07:24	**File ID**	: VG240809A03

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ug/l)	Found (ug/l)	%R	True (ug/l)	Found (ug/l)	%R	RPD	Recovery Limits	RPD Limit
Methylene chloride	10	8.9	89	10	9.2	92	3	70-130	20
1,1-Dichloroethane	10	9.3	93	10	9.8	98	5	70-130	20
Chloroform	10	9.3	93	10	9.8	98	5	70-130	20
Carbon tetrachloride	10	8.0	80	10	9.4	94	16	63-132	20
1,2-Dichloropropane	10	9.4	94	10	9.7	97	3	70-130	20
Dibromochloromethane	10	9.5	95	10	9.4	94	1	63-130	20
1,1,2-Trichloroethane	10	9.5	95	10	9.8	98	3	70-130	20
Tetrachloroethene	10	8.6	86	10	9.4	94	9	70-130	20
Chlorobenzene	10	9.4	94	10	9.5	95	1	75-130	20
Trichlorofluoromethane	10	7.2	72	10	9.5	95	28 Q	62-150	20
1,2-Dichloroethane	10	10	100	10	10	100	0	70-130	20
1,1,1-Trichloroethane	10	8.3	83	10	9.5	95	13	67-130	20
Bromodichloromethane	10	9.5	95	10	9.6	96	1	67-130	20
trans-1,3-Dichloropropene	10	8.9	89	10	9.1	91	2	70-130	20
cis-1,3-Dichloropropene	10	9.0	90	10	9.0	90	0	70-130	20
Bromoform	10	8.8	88	10	8.8	88	0	54-136	20
1,1,2,2-Tetrachloroethane	10	9.5	95	10	9.8	98	3	67-130	20
Benzene	10	9.0	90	10	9.5	95	5	70-130	20
Toluene	10	8.8	88	10	9.2	92	4	70-130	20
Ethylbenzene	10	8.6	86	10	9.0	90	5	70-130	20
Chloromethane	10	8.0	80	10	8.6	86	7	64-130	20
Bromomethane	10	6.3	63	10	6.2	62	2	39-139	20
Vinyl chloride	10	8.1	81	10	9.1	91	12	55-140	20
Chloroethane	10	10	100	10	11	110	10	55-138	20
1,1-Dichloroethene	10	7.5	75	10	9.0	90	18	61-145	20
trans-1,2-Dichloroethene	10	8.8	88	10	9.4	94	7	70-130	20

Laboratory Control Sample Summary
Form 3
Volatiles

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Matrix (Level)	: WATER (LOW)		
LCS Sample ID	: WG1957963-3 **Analysis Date** : 08/09/24 07:01	**File ID**	: VG240809A02
LCSD Sample ID	: WG1957963-4 **Analysis Date** : 08/09/24 07:24	**File ID**	: VG240809A03

	Laboratory Control Sample				Laboratory Control Duplicate					
Parameter	True (ug/l)	Found (ug/l)	%R		True (ug/l)	Found (ug/l)	%R	RPD	Recovery Limits	RPD Limit
Trichloroethene	10	8.1	81		10	9.0	90	11	70-130	20
1,2-Dichlorobenzene	10	9.6	96		10	9.5	95	1	70-130	20
1,3-Dichlorobenzene	10	9.6	96		10	9.4	94	2	70-130	20
1,4-Dichlorobenzene	10	9.4	94		10	9.5	95	1	70-130	20
Methyl tert butyl ether	10	8.1	81		10	8.3	83	2	63-130	20
p/m-Xylene	20	17	85		20	18	90	6	70-130	20
o-Xylene	20	18	90		20	18	90	0	70-130	20
cis-1,2-Dichloroethene	10	9.1	91		10	9.4	94	3	70-130	20
Styrene	20	18	90		20	18	90	0	70-130	20
Dichlorodifluoromethane	10	6.2	62		10	8.1	81	27 Q	36-147	20
Acetone	10	7.6	76		10	8.2	82	8	58-148	20
Carbon disulfide	10	8.4	84		10	9.4	94	11	51-130	20
2-Butanone	10	10	100		10	9.3	93	7	63-138	20
4-Methyl-2-pentanone	10	8.2	82		10	8.3	83	1	59-130	20
2-Hexanone	10	7.4	74		10	7.6	76	3	57-130	20
Bromochloromethane	10	9.4	94		10	9.7	97	3	70-130	20
1,2-Dibromoethane	10	8.8	88		10	9.4	94	7	70-130	20
1,2-Dibromo-3-chloropropane	10	8.1	81		10	8.3	83	2	41-144	20
Isopropylbenzene	10	8.1	81		10	8.6	86	6	70-130	20
1,2,3-Trichlorobenzene	10	8.6	86		10	8.6	86	0	70-130	20
1,2,4-Trichlorobenzene	10	9.0	90		10	9.1	91	1	70-130	20
Methyl Acetate	10	8.2	82		10	8.0	80	2	70-130	20
Cyclohexane	10	6.7	67 Q		10	8.8	88	27 Q	70-130	20
1,4-Dioxane	500	430	86		500	460	92	7	56-162	20
Freon-113	10	7.1	71		10	9.1	91	25 Q	70-130	20
Methyl cyclohexane	10	6.3	63 Q		10	7.9	79	23 Q	70-130	20

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-01	**Date Collected**	: 07/30/24 15:22
Client ID	: MW-03 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/04/24 21:30
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: VE240804A11	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	1.5	0.50	0.18	
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	0.26	1.0	0.07	J
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-01	**Date Collected**	: 07/30/24 15:22
Client ID	: MW-03 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/04/24 21:30
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: VE240804A11	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	3.7	2.5	0.70	
79-01-6	Trichloroethene	150	0.50	0.18	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	70	2.5	0.70	
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-01	**Date Collected**	: 07/30/24 15:22
Client ID	: MW-03 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/04/24 21:30
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: VE240804A11	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-02D	**Date Collected**	: 07/30/24 12:45
Client ID	: MW-08 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/02/24 11:53
Sample Matrix	: WATER	**Dilution Factor**	: 250
Analytical Method	: 1,8260D	**Analyst**	: MKS
Lab File ID	: VE240802A11	**Instrument ID**	: ELAINE
Sample Amount	: 0.04 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	620	180	U
75-34-3	1,1-Dichloroethane	ND	620	180	U
67-66-3	Chloroform	ND	620	180	U
56-23-5	Carbon tetrachloride	ND	120	34.	U
78-87-5	1,2-Dichloropropane	ND	250	34.	U
124-48-1	Dibromochloromethane	ND	120	37.	U
79-00-5	1,1,2-Trichloroethane	ND	380	120	U
127-18-4	Tetrachloroethene	250	120	45.	
108-90-7	Chlorobenzene	ND	620	180	U
75-69-4	Trichlorofluoromethane	ND	620	180	U
107-06-2	1,2-Dichloroethane	ND	120	33.	U
71-55-6	1,1,1-Trichloroethane	ND	620	180	U
75-27-4	Bromodichloromethane	ND	120	48.	U
10061-02-6	trans-1,3-Dichloropropene	ND	120	41.	U
10061-01-5	cis-1,3-Dichloropropene	ND	120	36.	U
75-25-2	Bromoform	ND	500	160	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	120	42.	U
71-43-2	Benzene	ND	120	40.	U
108-88-3	Toluene	ND	620	180	U
100-41-4	Ethylbenzene	ND	620	180	U
74-87-3	Chloromethane	ND	620	180	U
74-83-9	Bromomethane	ND	620	180	U
75-01-4	Vinyl chloride	330	250	18.	
75-00-3	Chloroethane	ND	620	180	U
75-35-4	1,1-Dichloroethene	100	120	42.	J

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-02D	**Date Collected**	: 07/30/24 12:45
Client ID	: MW-08 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/02/24 11:53
Sample Matrix	: WATER	**Dilution Factor**	: 250
Analytical Method	: 1,8260D	**Analyst**	: MKS
Lab File ID	: VE240802A11	**Instrument ID**	: ELAINE
Sample Amount	: 0.04 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	620	180	U
79-01-6	Trichloroethene	20000	120	44.	
95-50-1	1,2-Dichlorobenzene	ND	620	180	U
541-73-1	1,3-Dichlorobenzene	ND	620	180	U
106-46-7	1,4-Dichlorobenzene	ND	620	180	U
1634-04-4	Methyl tert butyl ether	ND	620	42.	U
179601-23-1	p/m-Xylene	ND	620	180	U
95-47-6	o-Xylene	ND	620	180	U
156-59-2	cis-1,2-Dichloroethene	13000	620	180	
100-42-5	Styrene	ND	620	180	U
75-71-8	Dichlorodifluoromethane	ND	1200	250	U
67-64-1	Acetone	ND	1200	360	U
75-15-0	Carbon disulfide	ND	1200	250	U
78-93-3	2-Butanone	ND	1200	480	U
108-10-1	4-Methyl-2-pentanone	ND	1200	250	U
591-78-6	2-Hexanone	ND	1200	250	U
74-97-5	Bromochloromethane	ND	620	180	U
106-93-4	1,2-Dibromoethane	ND	500	160	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	620	180	U
98-82-8	Isopropylbenzene	ND	620	180	U
87-61-6	1,2,3-Trichlorobenzene	ND	620	180	U
120-82-1	1,2,4-Trichlorobenzene	ND	620	180	U
79-20-9	Methyl Acetate	ND	500	58.	U
110-82-7	Cyclohexane	ND	2500	68.	U
123-91-1	1,4-Dioxane	ND	62000	15000	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-02D	**Date Collected**	: 07/30/24 12:45
Client ID	: MW-08 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/02/24 11:53
Sample Matrix	: WATER	**Dilution Factor**	: 250
Analytical Method	: 1,8260D	**Analyst**	: MKS
Lab File ID	: VE240802A11	**Instrument ID**	: ELAINE
Sample Amount	: 0.04 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	620	180	U
108-87-2	Methyl cyclohexane	ND	2500	99.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-03D	**Date Collected**	: 07/30/24 11:07
Client ID	: MW-09 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/04/24 21:54
Sample Matrix	: WATER	**Dilution Factor**	: 20
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: VE240804A12	**Instrument ID**	: ELAINE
Sample Amount	: 0.5 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	50	14.	U
75-34-3	1,1-Dichloroethane	ND	50	14.	U
67-66-3	Chloroform	24	50	14.	J
56-23-5	Carbon tetrachloride	ND	10	2.7	U
78-87-5	1,2-Dichloropropane	ND	20	2.7	U
124-48-1	Dibromochloromethane	ND	10	3.0	U
79-00-5	1,1,2-Trichloroethane	ND	30	10.	U
127-18-4	Tetrachloroethene	51	10	3.6	
108-90-7	Chlorobenzene	ND	50	14.	U
75-69-4	Trichlorofluoromethane	ND	50	14.	U
107-06-2	1,2-Dichloroethane	ND	10	2.6	U
71-55-6	1,1,1-Trichloroethane	ND	50	14.	U
75-27-4	Bromodichloromethane	ND	10	3.8	U
10061-02-6	trans-1,3-Dichloropropene	ND	10	3.3	U
10061-01-5	cis-1,3-Dichloropropene	ND	10	2.9	U
75-25-2	Bromoform	ND	40	13.	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	3.3	U
71-43-2	Benzene	ND	10	3.2	U
108-88-3	Toluene	ND	50	14.	U
100-41-4	Ethylbenzene	ND	50	14.	U
74-87-3	Chloromethane	ND	50	14.	U
74-83-9	Bromomethane	ND	50	14.	U
75-01-4	Vinyl chloride	17	20	1.4	J
75-00-3	Chloroethane	ND	50	14.	U
75-35-4	1,1-Dichloroethene	12	10	3.4	

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-03D	**Date Collected**	: 07/30/24 11:07
Client ID	: MW-09 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/04/24 21:54
Sample Matrix	: WATER	**Dilution Factor**	: 20
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: VE240804A12	**Instrument ID**	: ELAINE
Sample Amount	: 0.5 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	18	50	14.	J
79-01-6	Trichloroethene	2200	10	3.5	
95-50-1	1,2-Dichlorobenzene	ND	50	14.	U
541-73-1	1,3-Dichlorobenzene	ND	50	14.	U
106-46-7	1,4-Dichlorobenzene	ND	50	14.	U
1634-04-4	Methyl tert butyl ether	ND	50	3.3	U
179601-23-1	p/m-Xylene	ND	50	14.	U
95-47-6	o-Xylene	ND	50	14.	U
156-59-2	cis-1,2-Dichloroethene	1700	50	14.	
100-42-5	Styrene	ND	50	14.	U
75-71-8	Dichlorodifluoromethane	ND	100	20.	U
67-64-1	Acetone	ND	100	29.	U
75-15-0	Carbon disulfide	ND	100	20.	U
78-93-3	2-Butanone	ND	100	39.	U
108-10-1	4-Methyl-2-pentanone	ND	100	20.	U
591-78-6	2-Hexanone	ND	100	20.	U
74-97-5	Bromochloromethane	ND	50	14.	U
106-93-4	1,2-Dibromoethane	ND	40	13.	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	14.	U
98-82-8	Isopropylbenzene	ND	50	14.	U
87-61-6	1,2,3-Trichlorobenzene	ND	50	14.	U
120-82-1	1,2,4-Trichlorobenzene	ND	50	14.	U
79-20-9	Methyl Acetate	ND	40	4.7	U
110-82-7	Cyclohexane	ND	200	5.4	U
123-91-1	1,4-Dioxane	ND	5000	1200	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-03D	**Date Collected**	: 07/30/24 11:07
Client ID	: MW-09 PRE-SAMPLING	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/04/24 21:54
Sample Matrix	: WATER	**Dilution Factor**	: 20
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: VE240804A12	**Instrument ID**	: ELAINE
Sample Amount	: 0.5 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	50	14.	U
108-87-2	Methyl cyclohexane	ND	200	7.9	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-04	**Date Collected**	: 07/30/24 00:00
Client ID	: TRIP-BLANK-7/30/24	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/09/24 12:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240809A17	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-04	**Date Collected**	: 07/30/24 00:00
Client ID	: TRIP-BLANK-7/30/24	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/09/24 12:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240809A17	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2442917-04	**Date Collected**	: 07/30/24 00:00
Client ID	: TRIP-BLANK-7/30/24	**Date Received**	: 07/30/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/09/24 12:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240809A17	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955288-5	**Date Collected**	: NA
Client ID	: WG1955288-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/02/24 09:23
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VE240802A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955288-5	**Date Collected**	: NA
Client ID	: WG1955288-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/02/24 09:23
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VE240802A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955288-5	**Date Collected**	: NA
Client ID	: WG1955288-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/02/24 09:23
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VE240802A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955415-5	**Date Collected**	: NA
Client ID	: WG1955415-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/04/24 19:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VE240804A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955415-5	**Date Collected**	: NA
Client ID	: WG1955415-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/04/24 19:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VE240804A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955415-5	**Date Collected**	: NA
Client ID	: WG1955415-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/04/24 19:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VE240804A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: WG1957963-5	Date Collected	: NA
Client ID	: WG1957963-5BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 08/09/24 08:12
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: PID
Lab File ID	: VG240809A05	Instrument ID	: GONZO
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1957963-5	**Date Collected**	: NA
Client ID	: WG1957963-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/09/24 08:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240809A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2442917
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1957963-5	**Date Collected**	: NA
Client ID	: WG1957963-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/09/24 08:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240809A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2442917**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: GONZO**	**Ical Ref**	**: ICAL21287**
Calibration dates	**: 07/12/24 21:20 07/13/24 00:56**		

Calibration Files

L11 =VG240712P03.D L1 =VG240712P06.D L2 =VG240712P07.D L3 =VG240712P08.D L4 =VG240712P09.D

L6 =VG240712P10.D L8 =VG240712P11.D L10 =VG240712P12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
40) TP	1,1-Dichloropr		0.207	0.287	0.297	0.312	0.305	0.256	0.317	0.283	13.83
41) TP	Benzene	0.745	0.717	0.890	0.923	0.917	0.917	0.768	0.976	0.857	11.42
42) TP	Tertiary-Amyl Methyl Ether		0.544	0.559	0.586	0.605	0.621	0.519	0.662	0.585	8.39
43) S	1,2-Dichloroethane-d4	0.288	0.279	0.281	0.289	0.268	0.272	0.264	0.278	0.277	3.23
44) TP	1,2-Dichloroet		0.270	0.289	0.274	0.278	0.279	0.231	0.290	0.273	7.30
47) TP	Methyl cyclohe		0.234	0.330	0.364	0.384	0.364	0.301	0.353	0.333	15.41
48) TP	Trichloroethene	0.246	0.210	0.248	0.249	0.253	0.250	0.207	0.270	0.242	9.05
50) TP	Dibromomethane		0.135	0.140	0.139	0.136	0.137	0.114	0.144	0.135	7.28
51) TP	1,2-Dichloropr		0.171	0.219	0.220	0.219	0.221	0.183	0.231	0.209	10.76
53) TP	2-Chloroethyl		0.109	0.117	0.122	0.135	0.140	0.117	0.146	0.126	10.96
54) TP	Bromodichlorom		0.278	0.312	0.313	0.314	0.321	0.264	0.334	0.305	8.10
57) TP	1,4-Dioxane		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002#	3.92
58) TP	cis-1,3-Dichlo		0.308	0.338	0.350	0.350	0.359	0.301	0.383	0.341	8.39
59) I	Chlorobenzene-d5	----------ISTD----------									
60) S	Toluene-d8	1.258	1.266	1.270	1.267	1.248	1.246	1.258	1.232	1.255	1.03
61) TP	Toluene		0.628	0.724	0.733	0.716	0.720	0.606	0.738	0.695	7.82
62) TP	4-Methyl-2-pen		0.061	0.077	0.079	0.081	0.083	0.070	0.086	0.077	11.14
63) TP	Tetrachloroethene		0.238	0.323	0.326	0.324	0.321	0.274	0.329	0.305	11.51
65) TP	trans-1,3-Dich		0.347	0.369	0.394	0.389	0.403	0.341	0.421	0.380	7.79
67) TP	Ethyl methacry		0.299	0.305	0.320	0.331	0.340	0.287	0.358	0.320	7.77
68) TP	1,1,2-Trichlor		0.191	0.188	0.193	0.193	0.198	0.166	0.207	0.191#	6.61
69) TP	Chlorodibromom		0.263	0.303	0.312	0.311	0.320	0.270	0.331	0.302	8.47
70) TP	1,3-Dichloropr		0.367	0.389	0.397	0.386	0.392	0.327	0.403	0.380	6.83
71) TP	1,2-Dibromoethane		0.241	0.246	0.245	0.242	0.250	0.211	0.257	0.242	6.11
72) TP	2-Hexanone		0.159	0.134	0.135	0.148	0.145	0.123	0.151	0.142	8.54
73) TP	Chlorobenzene		0.704	0.802	0.813	0.790	0.801	0.673	0.839	0.775	7.92
74) TP	Ethylbenzene		1.116	1.365	1.404	1.372	1.389	1.178	1.465	1.327	9.70
75) TP	1,1,1,2-Tetrac		0.230	0.294	0.301	0.303	0.310	0.258	0.321	0.288	11.16
76) TP	p/m Xylene		0.438	0.518	0.557	0.544	0.554	0.468	0.593	0.525	10.39
77) TP	o Xylene		0.426	0.524	0.538	0.525	0.530	0.446	0.567	0.508	10.15
78) TP	Styrene		0.686	0.836	0.902	0.891	0.920	0.779	1.014	0.861	12.32
79) I	1,4-Dichlorobenzene-d4	----------ISTD----------									
80) TP	Bromoform		0.330	0.332	0.345	0.368	0.372	0.325	0.408	0.354	8.43
82) TP	Isopropylbenzene		1.696	2.246	2.377	2.403	2.343	2.056	2.540	2.237	12.60
83) S	4-Bromofluorobenzene	0.840	0.858	0.860	0.809	0.839	0.814	0.843	0.820	0.835	2.31
84) TP	Bromobenzene		0.578	0.641	0.639	0.638	0.629	0.541	0.664	0.619	6.94

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2442917**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: ELAINE**	**Ical Ref**	**: ICAL21358**
Calibration dates	**: 07/31/24 18:35 07/31/24 22:22**		

Calibration Files

L11 =VE240731N03.D L1 =VE240731N05.D L2 =VE240731N07.D L3 =VE240731N08.D L4 =VE240731N09.D

L6 =VE240731N10.D L8 =VE240731N11.D L10 =VE240731N12.D

		Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
1)	I	Fluorobenzene	----------ISTD----------									
2)	TP	Dichlorodifluo		0.138	0.246	0.220	0.243	0.243	0.244	0.235	0.224	17.36
3)	TP	Chloromethane		0.199	0.251	0.263	0.261	0.259	0.260	0.256	0.250	9.09
4)	TP	Vinyl chloride	0.163	0.159	0.248	0.243	0.263	0.260	0.265	0.260	0.233	19.30
5)	TP	Bromomethane		0.043	0.054	0.058	0.067	0.084	0.095	0.102	*Q	0.9983
6)	TP	Chloroethane		0.109	0.166	0.154	0.151	0.153	0.144	0.107	0.140	16.43
7)	TP	Trichlorofluor		0.189	0.262	0.254	0.291	0.294	0.295	0.287	0.267	14.21
8)	TP	Ethyl ether		0.098	0.094	0.106	0.111	0.111	0.108	0.108	0.105	6.41
10)	TP	1,1-Dichloroet		0.128	0.165	0.154	0.168	0.170	0.170	0.165	0.160	9.41
11)	TP	Carbon disulfide		0.423	0.489	0.504	0.523	0.517	0.512	0.493	0.494	6.86
12)	TP	Freon-113		0.120	0.172	0.163	0.178	0.178	0.183	0.175	0.167	13.06
13)	TP	Iodomethane			0.056	0.087	0.130	0.163	0.172	0.180	*Q	0.9978
14)	TP	Acrolein		0.042	0.047	0.044	0.045	0.045	0.046	0.048	0.045	4.40
15)	TP	Methylene chlo		0.219	0.207	0.204	0.201	0.197	0.195	0.191	0.202	4.65
17)	TP	Acetone			0.094	0.071	0.077	0.071	0.065	0.063	0.073	15.12
18)	TP	trans-1,2-Dich		0.134	0.173	0.177	0.180	0.183	0.181	0.176	0.172	9.89
19)	TP	Methyl acetate		0.231	0.183	0.165	0.161	0.156	0.153	0.149	0.171	16.75
21)	TP	Methyl tert butyl ether		0.595	0.630	0.676	0.661	0.657	0.646	0.629	0.642	4.16
22)	TP	tert-Butyl alc		0.021	0.023	0.024	0.024	0.023	0.023	0.023	0.023	4.09
24)	TP	Diisopropyl ether		0.797	0.878	0.965	0.985	0.960	0.936	0.916	0.920	7.03
25)	TP	1,1-Dichloroet		0.339	0.407	0.424	0.424	0.420	0.409	0.405	0.404	7.39
26)	TP	Halothane		0.117	0.137	0.142	0.147	0.145	0.143	0.141	0.139	7.40
27)	TP	Acrylonitrile		0.076	0.081	0.088	0.089	0.087	0.086	0.084	0.084	5.26
28)	TP	Ethyl tert-but		0.694	0.779	0.838	0.837	0.826	0.811	0.800	0.798	6.32
29)	TP	Vinyl acetate		0.679	0.649	0.556	0.550	0.513	0.670	0.667	0.612	11.34
30)	TP	cis-1,2-Dichlo		0.183	0.211	0.211	0.208	0.214	0.211	0.205	0.206	5.19
31)	TP	2,2-Dichloropr		0.240	0.279	0.270	0.284	0.278	0.279	0.263	0.270	5.58
33)	TP	Bromochloromet		0.089	0.091	0.096	0.096	0.091	0.086	0.085	0.091#	4.89
34)	TP	Cyclohexane		0.384	0.496	0.452	0.498	0.498	0.499	0.484	0.473	8.98
35)	TP	Chloroform		0.303	0.352	0.346	0.336	0.339	0.333	0.335	0.335	4.66
36)	TP	Ethyl acetate		0.314	0.226	0.262	0.255	0.249	0.243	0.242	0.256	11.00
37)	TP	Carbon tetrachloride	0.229	0.188	0.270	0.260	0.275	0.275	0.279	0.271	0.256	12.38
38)	TP	Tetrahydrofuran		0.087	0.083	0.081	0.080	0.078	0.074	0.073	0.079	5.85
39)	S	Dibromofluoromethane	0.242	0.242	0.240	0.238	0.232	0.231	0.224	0.223	0.234	3.26
40)	TP	1,1,1-Trichlor		0.265	0.301	0.310	0.316	0.315	0.315	0.308	0.304	5.96
42)	TP	2-Butanone			0.118	0.104	0.105	0.104	0.100	0.099	0.105	6.40

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2442917**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: ELAINE**	**Ical Ref**	**: ICAL21358**
Calibration dates	**: 07/31/24 18:35 07/31/24 22:22**		

Calibration Files

L11 =VE240731N03.D L1 =VE240731N05.D L2 =VE240731N07.D L3 =VE240731N08.D L4 =VE240731N09.D

L6 =VE240731N10.D L8 =VE240731N11.D L10 =VE240731N12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
43) TP	1,1-Dichloropr		0.193	0.259	0.260	0.270	0.271	0.271	0.268	0.256	11.09
45) TP	Benzene	0.719	0.654	0.814	0.838	0.839	0.835	0.825	0.813	0.792	8.59
46) TP	Tertiary-Amyl Methyl Ether		0.549	0.579	0.619	0.622	0.611	0.607	0.598	0.598	4.33
47) S	1,2-Dichloroethane-d4	0.326	0.322	0.322	0.316	0.305	0.309	0.298	0.302	0.312	3.33
48) T	1,2-Dichloroet		0.295	0.300	0.320	0.314	0.310	0.303	0.299	0.306	2.93
51) TP	Methyl cyclohe		0.281	0.360	0.333	0.364	0.386	0.390	0.377	0.356	10.67
52) TP	Trichloroethene	0.193	0.161	0.200	0.210	0.217	0.216	0.201	0.195	0.199#	8.96
54) TP	Dibromomethane		0.096	0.116	0.120	0.119	0.118	0.116	0.117	0.115	7.18
55) TP	1,2-Dichloropr		0.215	0.233	0.249	0.248	0.246	0.242	0.239	0.239	5.05
57) TP	2-Chloroethyl		0.127	0.145	0.157	0.163	0.167	0.160	0.158	0.154	8.95
58) TP	Bromodichlorom		0.250	0.293	0.294	0.289	0.290	0.286	0.282	0.283#	5.40
61) TP	1,4-Dioxane		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002#	1.58
62) TP	cis-1,3-Dichloropropene	0.241	0.293	0.316	0.341	0.345	0.345	0.339	0.334	0.319	11.31
63) I	Chlorobenzene-d5	----------ISTD----------									
64) S	Toluene-d8	1.316	1.311	1.306	1.323	1.314	1.308	1.321	1.339	1.317	0.79
65) TP	Toluene		0.596	0.701	0.712	0.711	0.697	0.702	0.700	0.689	5.96
66) TP	4-Methyl-2-pen		0.096	0.114	0.124	0.124	0.122	0.121	0.120	0.117	8.43
67) TP	Tetrachloroethene		0.219	0.288	0.302	0.312	0.308	0.313	0.307	0.293	11.47
69) TP	trans-1,3-Dichloropropene	0.319	0.359	0.375	0.414	0.420	0.408	0.405	0.402	0.388	8.92
71) TP	Ethyl methacry		0.356	0.363	0.387	0.378	0.367	0.368	0.365	0.369	2.79
72) TP	1,1,2-Trichlor		0.183	0.190	0.204	0.201	0.193	0.192	0.190	0.193#	3.69
73) TP	Chlorodibromom		0.230	0.258	0.281	0.283	0.277	0.281	0.281	0.270	7.23
74) TP	1,3-Dichloropr		0.369	0.398	0.430	0.429	0.412	0.410	0.409	0.408	5.11
75) TP	1,2-Dibromoethane		0.216	0.223	0.237	0.236	0.229	0.228	0.230	0.228	3.24
77) TP	2-Hexanone		0.238	0.227	0.234	0.233	0.225	0.221	0.222	0.229	2.91
78) TP	Chlorobenzene		0.673	0.728	0.767	0.755	0.737	0.742	0.734	0.734	4.10
79) TP	Ethylbenzene		1.142	1.358	1.408	1.393	1.353	1.359	1.329	1.335	6.66
80) TP	1,1,1,2-Tetrac		0.215	0.270	0.287	0.286	0.276	0.276	0.273	0.269	9.12
81) TP	p/m Xylene		0.447	0.521	0.548	0.535	0.510	0.508	0.492	0.509	6.43
82) TP	o Xylene		0.454	0.508	0.533	0.516	0.497	0.495	0.479	0.497	5.16
83) TP	Styrene		0.718	0.838	0.886	0.858	0.817	0.812	0.779	0.816	6.74
84) I	1,4-Dichlorobenzene-d4	----------ISTD----------									
85) TP	Bromoform		0.284	0.320	0.331	0.334	0.334	0.338	0.337	0.325	5.92
87) TP	Isopropylbenzene		1.911	2.394	2.445	2.472	2.475	2.556	2.509	2.395	9.15
88) S	4-Bromofluorobenzene	0.912	0.926	0.900	0.927	0.899	0.923	0.942	0.959	0.924	2.20
89) TP	Bromobenzene		0.539	0.594	0.625	0.612	0.613	0.627	0.622	0.605	5.15

Evaluate Continuing Calibration Report

Data Path : K:\Gonzo\2024\240712PICAL\
Data File : VG240712P17.D
Acq On : 13 Jul 2024 2:55 am
Operator : GONZO:PID
Sample : C8260STD10PPB
Misc : WG1947004,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 15 09:47:19 2024
Quant Method : K:\Gonzo\2024\240712PICAL\G_240712P_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Jul 15 09:43:32 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	100	0.00
2	TP	Dichlorodifluoromethane	0.265	0.246	7.2	84	0.00
3	TP	Chloromethane	0.227	0.260	-14.5	114	0.00
4	TP	Vinyl chloride	0.235	0.243	-3.4	93	0.00
5	TP	Bromomethane	0.125	0.212	-69.6#	172	0.00
6	TP	Chloroethane	0.180	0.196	-8.9	105	0.00
7	TP	Trichlorofluoromethane	0.345	0.344	0.3	101	0.00
8	TP	Ethyl ether	0.115	0.116	-0.9	102	0.00
10	TP	1,1-Dichloroethene	0.189	0.187	1.1	94	0.00
11	TP	Carbon disulfide	0.556	0.499	10.3	87	0.00
12	TP	Freon-113	0.208	0.195	6.2	91	0.00
13	TP	Iodomethane	0.365	0.234	35.9#	67	0.00
14	TP	Acrolein	0.033	0.022	33.3#	63	0.00
15	TP	Methylene chloride	0.224	0.220	1.8	98	0.00
17	TP	Acetone	* 10.000	9.753	2.5	107	0.00
18	TP	trans-1,2-Dichloroethene	0.207	0.205	1.0	94	0.00
19	TP	Methyl acetate	0.115	0.111	3.5	101	0.00
20	TP	Methyl tert-butyl ether	0.636	0.546	14.2	87	0.00
21	TP	tert-Butyl alcohol	0.018	0.018	0.0	102	0.00
22	TP	Diisopropyl ether	0.650	0.658	-1.2	99	0.00
23	TP	1,1-Dichloroethane	0.375	0.385	-2.7	98	0.00
24	TP	Halothane	0.172	0.169	1.7	94	0.00
25	TP	Acrylonitrile	0.058	0.053	8.6	91	0.00
26	TP	Ethyl tert-butyl ether	0.639	0.611	4.4	95	0.00
27	TP	Vinyl acetate	0.347	0.348	-0.3	94	0.00
28	TP	cis-1,2-Dichloroethene	0.238	0.242	-1.7	99	0.00
29	TP	2,2-Dichloropropane	0.313	0.278	11.2	87	0.00
30	TP	Bromochloromethane	0.116	0.113	2.6	94	0.00
31	TP	Cyclohexane	0.356	0.319	10.4	85	0.00
32	TP	Chloroform	0.384	0.402	-4.7	99	0.00
33	TP	Ethyl acetate	0.170	0.168	1.2	104	0.00
34	TP	Carbon tetrachloride	0.311	0.319	-2.6	93	0.00
35	TP	Tetrahydrofuran	0.056	0.054	3.6	93	0.00
36	S	Dibromofluoromethane	0.261	0.258	1.1	99	0.00
37	TP	1,1,1-Trichloroethane	0.354	0.365	-3.1	98	0.00
39	TP	2-Butanone	0.073	0.075	-2.7	104	0.00
40	TP	1,1-Dichloropropene	0.283	0.296	-4.6	100	0.00
41	TP	Benzene	0.857	0.889	-3.7	97	0.00
42	TP	tert-Amyl methyl ether	0.585	0.570	2.6	98	0.00

Data Path : K:\Gonzo\2024\240712PICAL\
Data File : VG240712P17.D
Acq On : 13 Jul 2024 2:55 am
Operator : GONZO:PID
Sample : C8260STD10PPB
Misc : WG1947004,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 15 09:47:19 2024
Quant Method : K:\Gonzo\2024\240712PICAL\G_240712P_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Jul 15 09:43:32 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
43	S	1,2-Dichloroethane-d4	0.277	0.297	-7.2	103	0.00
44	TP	1,2-Dichloroethane	0.273	0.285	-4.4	104	0.00
47	TP	Methyl cyclohexane	0.333	0.308	7.5	85	0.00
48	TP	Trichloroethene	0.242	0.245	-1.2	98	0.00
50	TP	Dibromomethane	0.135	0.137	-1.5	99	0.00
51	TP	1,2-Dichloropropane	0.209	0.217	-3.8	99	0.00
53	TP	2-Chloroethyl vinyl ether	0.126	0.109	13.5	90	0.00
54	TP	Bromodichloromethane	0.305	0.298#	2.3	95	0.00
57	TP	1,4-Dioxane	0.00213	0.00212#	0.5	105	0.00
58	TP	cis-1,3-Dichloropropene	0.341	0.350	-2.6	100	0.00
59	I	Chlorobenzene-d5	1.000	1.000	0.0	100	0.00
60	S	Toluene-d8	1.255	1.277	-1.8	101	0.00
61	TP	Toluene	0.695	0.721	-3.7	98	0.00
62	TP	4-Methyl-2-pentanone	0.077	0.078	-1.3	99	0.00
63	TP	Tetrachloroethene	0.305	0.310	-1.6	95	0.00
65	TP	trans-1,3-Dichloropropene	0.380	0.396	-4.2	100	0.00
67	TP	Ethyl methacrylate	0.320	0.313	2.2	97	0.00
68	TP	1,1,2-Trichloroethane	0.191	0.195#	-2.1	101	0.00
69	TP	Chlorodibromomethane	0.302	0.307	-1.7	98	0.00
70	TP	1,3-Dichloropropane	0.380	0.402	-5.8	101	0.00
71	TP	1,2-Dibromoethane	0.242	0.245	-1.2	100	0.00
72	TP	2-Hexanone	0.142	0.143	-0.7	106	0.00
73	TP	Chlorobenzene	0.775	0.821	-5.9	101	0.00
74	TP	Ethylbenzene	1.327	1.359	-2.4	97	0.00
75	TP	1,1,1,2-Tetrachloroethane	0.288	0.307	-6.6	102	0.00
76	TP	p/m Xylene	0.525	0.552	-5.1	99	0.00
77	TP	o Xylene	0.508	0.530	-4.3	98	0.00
78	TP	Styrene	0.861	0.911	-5.8	101	0.00
79	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00
80	TP	Bromoform	0.354	0.346	2.3	100	0.00
82	TP	Isopropylbenzene	2.237	2.332	-4.2	98	0.00
83	S	4-Bromofluorobenzene	0.835	0.818	2.0	101	0.00
84	TP	Bromobenzene	0.619	0.642	-3.7	101	0.00
85	TP	n-Propylbenzene	2.606	2.616	-0.4	96	0.00
86	TP	1,4-Dichlorobutane	0.718	0.708	1.4	99	0.00
87	TP	1,1,2,2-Tetrachloroethane	0.497	0.510	-2.6	104	0.00
88	TP	4-Ethyltoluene	2.179	2.268	-4.1	99	0.00

Evaluate Continuing Calibration Report

Data Path : K:\Elaine\2024\240731N-ICAL\
Data File : VE240731N17.D
Acq On : 1 Aug 2024 12:28 am
Operator : ELAINE:MKS
Sample : C8260STD10PPB
Misc : WG1954249
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 01 12:14:14 2024
Quant Method : K:\Elaine\2024\240731N-ICAL\Elaine_240731N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Aug 01 12:13:24 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	102	0.00
2	TP	Dichlorodifluoromethane	0.224	0.184	17.9	85	0.00
3	TP	Chloromethane	0.250	0.279	-11.6	108	0.00
4	TP	Vinyl chloride	0.233	0.239	-2.6	100	0.00
5	TP	Bromomethane	* 10.000	9.312	6.9	112	0.00
6	TP	Chloroethane	0.140	0.152	-8.6	101	0.00
7	TP	Trichlorofluoromethane	0.267	0.291	-9.0	117	0.00
8	TP	Ethyl ether	0.105	0.106	-1.0	102	0.00
10	TP	1,1-Dichloroethene	0.160	0.160	0.0	105	0.00
11	TP	Carbon disulfide	0.494	0.453	8.3	92	0.00
12	TP	Freon-113	0.167	0.181	-8.4	113	0.00
13	TP	Iodomethane	* 10.000	5.388	46.1#	62	0.00
14	TP	Acrolein	0.045	0.032	28.9#	75	0.00
15	TP	Methylene chloride	0.202	0.202	0.0	101	0.00
17	TP	Acetone	0.073	0.073	0.0	105	0.00
18	TP	trans-1,2-Dichloroethene	0.172	0.181	-5.2	104	0.00
19	TP	Methyl acetate	0.171	0.151	11.7	93	0.00
21	TP	Methyl tert-butyl ether	0.642	0.561	12.6	85	0.00
22	TP	tert-Butyl alcohol	0.023	0.022	4.3	96	0.00
24	TP	Diisopropyl ether	0.920	0.922	-0.2	97	0.00
25	TP	1,1-Dichloroethane	0.404	0.436	-7.9	105	0.00
26	TP	Halothane	0.139	0.154	-10.8	111	0.00
27	TP	Acrylonitrile	0.084	0.077	8.3	89	0.00
28	TP	Ethyl tert-butyl ether	0.798	0.794	0.5	97	0.00
29	TP	Vinyl acetate	0.612	0.506	17.3	93	0.00
30	TP	cis-1,2-Dichloroethene	0.206	0.210	-1.9	101	0.00
31	TP	2,2-Dichloropropane	0.270	0.248	8.1	93	0.00
33	TP	Bromochloromethane	0.091	0.092#	-1.1	97	0.00
34	TP	Cyclohexane	0.473	0.498	-5.3	112	0.00
35	TP	Chloroform	0.335	0.346	-3.3	102	0.00
36	TP	Ethyl acetate	0.256	0.246	3.9	96	0.00
37	TP	Carbon tetrachloride	0.256	0.287	-12.1	112	0.00
38	TP	Tetrahydrofuran	0.079	0.075	5.1	94	0.00
39	S	Dibromofluoromethane	0.234	0.239	-2.1	102	0.00
40	TP	1,1,1-Trichloroethane	0.304	0.321	-5.6	106	0.00
42	TP	2-Butanone	0.105	0.098	6.7	95	0.00
43	TP	1,1-Dichloropropene	0.256	0.286	-11.7	112	0.00
45	TP	Benzene	0.792	0.833	-5.2	101	0.00
46	TP	tert-Amyl methyl ether	0.598	0.569	4.8	94	0.00

Evaluate Continuing Calibration Report

Data Path : K:\Elaine\2024\240731N-ICAL\
Data File : VE240731N17.D
Acq On : 1 Aug 2024 12:28 am
Operator : ELAINE:MKS
Sample : C8260STD10PPB
Misc : WG1954249
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 01 12:14:14 2024
Quant Method : K:\Elaine\2024\240731N-ICAL\Elaine_240731N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Aug 01 12:13:24 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	S	1,2-Dichloroethane-d4	0.312	0.314	-0.6	101	0.00
48	T	1,2-Dichloroethane	0.306	0.319	-4.2	102	0.00
51	TP	Methyl cyclohexane	0.356	0.371	-4.2	114	0.00
52	TP	Trichloroethene	0.199	0.216	-8.5	105	0.00
54	TP	Dibromomethane	0.115	0.119	-3.5	101	0.00
55	TP	1,2-Dichloropropane	0.239	0.252	-5.4	103	0.00
57	TP	2-Chloroethyl vinyl ether	0.154	0.137	11.0	89	0.00
58	TP	Bromodichloromethane	0.283	0.287#	-1.4	99	0.00
61	TP	1,4-Dioxane	0.00192	0.00183#	4.7	96	0.00
62	TP	cis-1,3-Dichloropropene	0.319	0.344	-7.8	103	0.00
63	I	Chlorobenzene-d5	1.000	1.000	0.0	104	0.00
64	S	Toluene-d8	1.317	1.314	0.2	103	0.00
65	TP	Toluene	0.689	0.694	-0.7	102	0.00
66	TP	4-Methyl-2-pentanone	0.117	0.112	4.3	94	0.00
67	TP	Tetrachloroethene	0.293	0.316	-7.8	109	0.00
69	TP	trans-1,3-Dichloropropene	0.388	0.396	-2.1	100	0.00
71	TP	Ethyl methacrylate	0.369	0.356	3.5	96	0.00
72	TP	1,1,2-Trichloroethane	0.193	0.197#	-2.1	100	0.00
73	TP	Chlorodibromomethane	0.270	0.268	0.7	99	0.00
74	TP	1,3-Dichloropropane	0.408	0.422	-3.4	102	0.00
75	TP	1,2-Dibromoethane	0.228	0.226	0.9	99	0.00
77	TP	2-Hexanone	0.229	0.212	7.4	94	0.00
78	TP	Chlorobenzene	0.734	0.773	-5.3	105	0.00
79	TP	Ethylbenzene	1.335	1.426	-6.8	105	0.00
80	TP	1,1,1,2-Tetrachloroethane	0.269	0.286	-6.3	104	0.00
81	TP	p/m Xylene	0.509	0.545	-7.1	104	0.00
82	TP	o Xylene	0.497	0.524	-5.4	102	0.00
83	TP	Styrene	0.816	0.883	-8.2	104	0.00
84	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	104	0.00
85	TP	Bromoform	0.325	0.321	1.2	101	0.00
87	TP	Isopropylbenzene	2.395	2.542	-6.1	108	0.00
88	S	4-Bromofluorobenzene	0.924	0.917	0.8	103	0.00
89	TP	Bromobenzene	0.605	0.612	-1.2	102	0.00
90	TP	n-Propylbenzene	2.861	3.016	-5.4	106	0.00
91	TP	1,4-Dichlorobutane	1.046	0.991	5.3	96	0.00
92	TP	1,1,2,2-Tetrachloroethane	0.508	0.472	7.1	99	0.00
93	TP	4-Ethyltoluene	2.321	2.520	-8.6	108	0.00

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2442917	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: ELAINE		Calibration Date	: 08/02/24 07:44	
Lab File ID	: VE240802A01		Init. Calib. Date(s)	: 07/31/24	07/31/24
Sample No	: WG1955288-2		Init. Calib. Times	: 18:35	22:22
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.239	0.26	-	-8.8	20	105	0
Bromodichloromethane	0.283	0.299*	-	-5.7	20	102	0
1,4-Dioxane	0.00192	0.0016*	-	16.7	20	83	-.01
cis-1,3-Dichloropropene	0.319	0.353	-	-10.7	20	104	0
Chlorobenzene-d5	1	1	-	0	20	103	0
Toluene-d8	1.317	1.331	-	-1.1	20	103	0
Toluene	0.689	0.76	-	-10.3	20	110	0
4-Methyl-2-pentanone	0.117	0.096	-	17.9	20	79	0
Tetrachloroethene	0.293	0.323	-	-10.2	20	110	0
trans-1,3-Dichloropropene	0.388	0.404	-	-4.1	20	100	0
Ethyl methacrylate	0.369	0.333	-	9.8	20	89	0
1,1,2-Trichloroethane	0.193	0.195*	-	-1	20	98	0
Chlorodibromomethane	0.27	0.269	-	0.4	20	98	0
1,3-Dichloropropane	0.408	0.417	-	-2.2	20	100	0
1,2-Dibromoethane	0.228	0.212	-	7	20	92	0
2-Hexanone	0.229	0.172	-	24.9*	20	76	0
Chlorobenzene	0.734	0.811	-	-10.5	20	109	0
Ethylbenzene	1.335	1.498	-	-12.2	20	109	0
1,1,1,2-Tetrachloroethane	0.269	0.293	-	-8.9	20	105	0
p/m Xylene	0.509	0.575	-	-13	20	108	0
o Xylene	0.497	0.556	-	-11.9	20	107	0
Styrene	0.816	0.915	-	-12.1	20	106	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	101	0
Bromoform	0.325	0.298	-	8.3	20	91	0
Isopropylbenzene	2.395	2.622	-	-9.5	20	108	0
4-Bromofluorobenzene	0.924	0.916	-	0.9	20	100	0
Bromobenzene	0.605	0.654	-	-8.1	20	105	0
n-Propylbenzene	2.861	3.176	-	-11	20	109	0
1,4-Dichlorobutane	1.046	0.992	-	5.2	20	94	0
1,1,2,2-Tetrachloroethane	0.508	0.475	-	6.5	20	97	0
4-Ethyltoluene	2.321	2.598	-	-11.9	20	108	0
2-Chlorotoluene	1.683	1.899	-	-12.8	20	108	0
1,3,5-Trimethylbenzene	2.036	2.297	-	-12.8	20	108	0
1,2,3-Trichloropropane	0.415	0.383	-	7.7	20	89	0
trans-1,4-Dichloro-2-buten	0.204	0.185	-	9.3	20	92	0
4-Chlorotoluene	1.763	1.958	-	-11.1	20	108	0
tert-Butylbenzene	1.712	1.874	-	-9.5	20	107	0
1,2,4-Trimethylbenzene	2.033	2.261	-	-11.2	20	107	0
sec-Butylbenzene	2.538	2.739	-	-7.9	20	107	0
p-Isopropyltoluene	2.139	2.344	-	-9.6	20	108	0
1,3-Dichlorobenzene	1.117	1.242	-	-11.2	20	107	0
1,4-Dichlorobenzene	1.116	1.225	-	-9.8	20	107	0
p-Diethylbenzene	1.261	1.355	-	-7.5	20	105	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2442917	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: ELAINE		Calibration Date	: 08/04/24 17:23	
Lab File ID	: VE240804A01		Init. Calib. Date(s)	: 07/31/24	07/31/24
Sample No	: WG1955415-2		Init. Calib. Times	: 18:35	22:22
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	108	0
Dichlorodifluoromethane	0.224	0.234	-	-4.5	20	115	0
Chloromethane	0.25	0.291	-	-16.4	20	120	0
Vinyl chloride	0.233	0.264	-	-13.3	20	117	0
Bromomethane	10	9.918	-	0.8	20	127	0
Chloroethane	0.14	0.156	-	-11.4	20	110	0
Trichlorofluoromethane	0.267	0.283	-	-6	20	120	0
Ethyl ether	0.105	0.104	-	1	20	106	0
1,1-Dichloroethene	0.16	0.169	-	-5.6	20	118	0
Carbon disulfide	0.494	0.555	-	-12.3	20	119	0
Freon-113	0.167	0.178	-	-6.6	20	118	0
Iodomethane	10	9.838	-	1.6	20	148	0
Acrolein	0.045	0.045	-	0	20	110	0
Methylene chloride	0.202	0.202	-	0	20	107	0
Acetone	0.073	0.054	-	26*	20	82	0
trans-1,2-Dichloroethene	0.172	0.19	-	-10.5	20	116	0
Methyl acetate	0.171	0.146	-	14.6	20	96	-.01
Methyl tert-butyl ether	0.642	0.611	-	4.8	20	98	0
tert-Butyl alcohol	0.023	0.018	-	21.7*	20	83	0
Diisopropyl ether	0.92	0.983	-	-6.8	20	110	0
1,1-Dichloroethane	0.404	0.429	-	-6.2	20	110	0
Halothane	0.139	0.146	-	-5	20	112	0
Acrylonitrile	0.084	0.074	-	11.9	20	92	0
Ethyl tert-butyl ether	0.798	0.834	-	-4.5	20	108	0
Vinyl acetate	0.612	0.682	-	-11.4	20	133	0
cis-1,2-Dichloroethene	0.206	0.218	-	-5.8	20	112	0
2,2-Dichloropropane	0.27	0.314	-	-16.3	20	126	0
Bromochloromethane	0.091	0.099*	-	-8.8	20	112	0
Cyclohexane	0.473	0.52	-	-9.9	20	125	0
Chloroform	0.335	0.346	-	-3.3	20	108	0
Ethyl acetate	0.256	0.221	-	13.7	20	92	0
Carbon tetrachloride	0.256	0.272	-	-6.3	20	113	0
Tetrahydrofuran	0.079	0.07	-	11.4	20	94	0
Dibromofluoromethane	0.234	0.235	-	-0.4	20	107	0
1,1,1-Trichloroethane	0.304	0.318	-	-4.6	20	111	0
2-Butanone	0.105	0.084	-	20	20	87	-.01
1,1-Dichloropropene	0.256	0.277	-	-8.2	20	115	0
Benzene	0.792	0.854	-	-7.8	20	110	0
tert-Amyl methyl ether	0.598	0.594	-	0.7	20	104	-.01
1,2-Dichloroethane-d4	0.312	0.301	-	3.5	20	103	0
1,2-Dichloroethane	0.306	0.31	-	-1.3	20	105	0
Methyl cyclohexane	0.356	0.378	-	-6.2	20	123	0
Trichloroethene	0.199	0.211	-	-6	20	109	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2442917	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: ELAINE		Calibration Date	: 08/04/24 17:23	
Lab File ID	: VE240804A01		Init. Calib. Date(s)	: 07/31/24	07/31/24
Sample No	: WG1955415-2		Init. Calib. Times	: 18:35	22:22
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Dibromomethane	0.115	0.113	-	1.7	20	102	0
1,2-Dichloropropane	0.239	0.247	-	-3.3	20	107	0
2-Chloroethyl vinyl ether	0.154	0.126	-	18.2	20	87	0
Bromodichloromethane	0.283	0.287*	-	-1.4	20	105	0
1,4-Dioxane	0.00192	0.00172*	-	10.4	20	96	-.01
cis-1,3-Dichloropropene	0.319	0.34	-	-6.6	20	108	0
Chlorobenzene-d5	1	1	-	0	20	110	0
Toluene-d8	1.317	1.298	-	1.4	20	108	0
Toluene	0.689	0.718	-	-4.2	20	111	0
4-Methyl-2-pentanone	0.117	0.106	-	9.4	20	95	-.02
Tetrachloroethene	0.293	0.327	-	-11.6	20	119	0
trans-1,3-Dichloropropene	0.388	0.396	-	-2.1	20	106	0
Ethyl methacrylate	0.369	0.353	-	4.3	20	101	0
1,1,2-Trichloroethane	0.193	0.189*	-	2.1	20	102	0
Chlorodibromomethane	0.27	0.264	-	2.2	20	103	0
1,3-Dichloropropane	0.408	0.405	-	0.7	20	104	0
1,2-Dibromoethane	0.228	0.221	-	3.1	20	103	0
2-Hexanone	0.229	0.19	-	17	20	90	0
Chlorobenzene	0.734	0.775	-	-5.6	20	112	0
Ethylbenzene	1.335	1.428	-	-7	20	112	0
1,1,1,2-Tetrachloroethane	0.269	0.287	-	-6.7	20	111	0
p/m Xylene	0.509	0.553	-	-8.6	20	111	0
o Xylene	0.497	0.531	-	-6.8	20	110	0
Styrene	0.816	0.877	-	-7.5	20	109	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	109	0
Bromoform	0.325	0.311	-	4.3	20	102	0
Isopropylbenzene	2.395	2.543	-	-6.2	20	114	0
4-Bromofluorobenzene	0.924	0.885	-	4.2	20	104	0
Bromobenzene	0.605	0.635	-	-5	20	111	0
n-Propylbenzene	2.861	3.009	-	-5.2	20	112	0
1,4-Dichlorobutane	1.046	0.999	-	4.5	20	102	0
1,1,2,2-Tetrachloroethane	0.508	0.482	-	5.1	20	107	0
4-Ethyltoluene	2.321	2.474	-	-6.6	20	111	0
2-Chlorotoluene	1.683	1.782	-	-5.9	20	110	0
1,3,5-Trimethylbenzene	2.036	2.18	-	-7.1	20	111	0
1,2,3-Trichloropropane	0.415	0.39	-	6	20	99	0
trans-1,4-Dichloro-2-buten	0.204	0.193	-	5.4	20	104	0
4-Chlorotoluene	1.763	1.833	-	-4	20	109	0
tert-Butylbenzene	1.712	1.81	-	-5.7	20	112	0
1,2,4-Trimethylbenzene	2.033	2.139	-	-5.2	20	110	0
sec-Butylbenzene	2.538	2.651	-	-4.5	20	112	0
p-Isopropyltoluene	2.139	2.256	-	-5.5	20	112	0
1,3-Dichlorobenzene	1.117	1.181	-	-5.7	20	110	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	Lab Number	: L2442917		
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001		
Instrument ID	: GONZO	Calibration Date	: 08/09/24 07:01		
Lab File ID	: VG240809A02	Init. Calib. Date(s)	: 07/12/24	07/13/24	
Sample No	: WG1957963-2	Init. Calib. Times	: 21:20	00:56	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	91	0
Dichlorodifluoromethane	0.265	0.165	-	37.7*	20	51	0
Chloromethane	0.227	0.181	-	20.3*	20	72	0
Vinyl chloride	0.235	0.191	-	18.7	20	66	0
Bromomethane	0.125	0.079	-	36.8*	20	57	0
Chloroethane	0.18	0.187	-	-3.9	20	91	0
Trichlorofluoromethane	0.345	0.25	-	27.5*	20	67	0
1,1-Dichloroethene	0.189	0.143	-	24.3*	20	65	0
Carbon disulfide	0.556	0.47	-	15.5	20	75	0
Freon-113	0.208	0.148	-	28.8*	20	62	0
Methylene chloride	0.224	0.199	-	11.2	20	81	0
Acetone	10	7.591	-	24.1*	20	77	0
trans-1,2-Dichloroethene	0.207	0.183	-	11.6	20	76	0
Methyl acetate	0.115	0.095	-	17.4	20	77	0
Methyl tert-butyl ether	0.636	0.514	-	19.2	20	74	0
1,1-Dichloroethane	0.375	0.35	-	6.7	20	80	0
cis-1,2-Dichloroethene	0.238	0.218	-	8.4	20	81	0
Bromochloromethane	0.116	0.109	-	6	20	82	0
Cyclohexane	0.356	0.239	-	32.9*	20	58	0
Chloroform	0.384	0.356	-	7.3	20	79	0
Carbon tetrachloride	0.311	0.249	-	19.9	20	66	0
Dibromofluoromethane	0.261	0.265	-	-1.5	20	93	0
1,1,1-Trichloroethane	0.354	0.293	-	17.2	20	71	0
2-Butanone	0.073	0.076	-	-4.1	20	95	0
Benzene	0.857	0.771	-	10	20	76	0
1,2-Dichloroethane-d4	0.277	0.305	-	-10.1	20	96	0
1,2-Dichloroethane	0.273	0.274	-	-0.4	20	91	0
Methyl cyclohexane	0.333	0.21	-	36.9*	20	52	0
Trichloroethene	0.242	0.195*	-	19.4	20	71	0
1,2-Dichloropropane	0.209	0.197*	-	5.7	20	81	0
Bromodichloromethane	0.305	0.29*	-	4.9	20	84	0
1,4-Dioxane	0.00213	0.00181*	-	15	20	81	0
cis-1,3-Dichloropropene	0.341	0.306	-	10.3	20	79	0
Chlorobenzene-d5	1	1	-	0	20	93	0
Toluene-d8	1.255	1.24	-	1.2	20	91	0
Toluene	0.695	0.614	-	11.7	20	78	0
4-Methyl-2-pentanone	0.077	0.063	-	18.2	20	74	0
Tetrachloroethene	0.305	0.262	-	14.1	20	75	0
trans-1,3-Dichloropropene	0.38	0.338	-	11.1	20	80	0
1,1,2-Trichloroethane	0.191	0.181*	-	5.2	20	87	0
Chlorodibromomethane	0.302	0.285	-	5.6	20	85	0
1,2-Dibromoethane	0.242	0.214	-	11.6	20	81	0
2-Hexanone	0.142	0.105	-	26.1*	20	73	0

* Value outside of QC limits.

Inst: Gonzo
Initials: MJV
Date: **08/09/24**
Run: **A**

BFB: V10571
IS/SS: V10584
ICAL: V10561C,V10595

Method
GC 8260_RTX_VMS
Autosampler: 8260water
Concentrator: 8260

QC: ____ Seq:

Vial	DATA FILE	SAMPLE			pH<2
1	VG240809ABF2	BFB TUNE 06:31			
1	VG240809A01	8260 CCAL QC FAILS			
2	VG240809A02	8260 CCAL LCS			
3	VG240809A03	8260 CCAL LCSD			
4	VG240809A04	BLK			
5	VG240809A05	METHOD BLK			
6	VG240809A06	I2444028-01,31,10,10,,a	NY/R2/4COMP		pH<2
7	VG240809A07	I2444028-02,31,10,10,,a	NY/R2/4COMP		pH<2
8	VG240809A08	I2444028-03,31,10,10,,a	NY/R2/4COMP		pH<2
9	VG240809A09	I2444028-04,31,10,10,,a	NY/R2/4COMP		pH<2
10	VG240809A10	I2444028-05,31,10,10,,a	NY/R2/4COMP		pH<2
11	VG240809A11	I2444028-06,31,10,10,,a	NY/R2/4COMP		pH<2
12	VG240809A12	I2444028-07,31,10,10,,c	NY/R2/4COMP		pH<2
13	VG240809A13	I2444028-08,31,10,10,,c	NY/R2/4COMP		pH<2
14	VG240809A14	I2444028-09,31,10,10,,a	NY/R2/4COMP	TB	pH<2
15	VG240809A15	I2444601-05,31,10,10,,a,r3e	NY/R2	TB	pH<2
16	VG240809A16	I2444267-01,31,10,10,,a	NY/BTEX/MTBE		pH<2
17	VG240809A17	I2442917-04,31,10,10,,a	NY/R2	TB	pH>2
18	VG240809A18	I2444355-01,31,10,10,,a	NY/R2/4COMP		pH<2
19	VG240809A19	I2444355-02,31,10,10,,a	NY/R2/4COMP		pH<2
20	VG240809A20	I2444355-03,31,10,10,,a	NY/R2/4COMP		pH<2
21	VG240809A21	I2444355-04,31,10,10,,a	NY/R2/4COMP		pH<2
22	VG240809A22	I2444355-05,31,10,10,,a	NY/R2/4COMP		pH<2
23	VG240809A23	I2444355-06,31,10,10,,a	NY/R2/4COMP		pH<2
24	VG240809A24	I2444355-12,31,10,10,,a	NY/R2/4COMP	TB	pH<2
25	VG240809A25	I2444355-13,31,10,10,,a	NY/R2/4COMP		pH<2
26	VG240809A26	I2444028-03MS,31,10,10,,a1	NY/R2/4COMP		pH<2
27	VG240809A27	I2444028-03MSD,31,10,10,,a2	NY/R2/4COMP		pH<2
28	VG240809A28	HSTD			
29	VG240809A29	BLK			
30	VG240809A30	BLK			

Data Usability Summary Report

Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

121-125 Lake St., Ithaca, NY
Alpha Analytical SDG#L2443206
September 26, 2024
Sampling date: 7/31/2024

Prepared by:
Jodi Zimmerman
Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

DELIVERABLES

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data package for C&S Companies, project located at 121-125 Lake St., Ithaca, NY, Alpha Analytical SDG #L2443206 submitted to Vali-Data of WNY, LLC on September 20, 2024. This DUSR has been prepared in general compliance with USEPA National Functional Guidelines(NFG) and NYSDEC Analytical Services Protocols. The laboratory performed the analysis using the USEPA method Volatile Organics (8260D).

ID	Sample ID	Laboratory ID
1	MW-04R Pre-Sampling	L2443206-01
2	MW-06 Pre-Sampling	L2443206-02
3	MW-07 Pre-Sampling	L2443206-03
4	Trip Blank-7/31/24	L2443206-04

Sample ID#1 was recorded incorrectly as MW-04B PRE-SAMPLING. This does not affect the usability of the data.
Sample ID#4 was recorded incorrectly as TRIP BLANK. This does not affect the usability of the data.

VOLATILE ORGANIC COMPOUNDS

The following items/criteria were reviewed for this analytical suite:

-Data Completeness
-Narrative and Data Reporting Forms
-Chain of Custody and Traffic Reports
-Holding Times
-Internal Standard (IS) Area Performance
-Surrogate Spike Recoveries
-Method Blank
-Field Duplicate Sample Precision
-Laboratory Control Samples
-MS/MSD
-Compound Quantitation
-Initial Calibration
-Continuing Calibration
-GC/MS Performance Check

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES
The data are acceptable for use except where qualified below in Holding Times, Compound Quantitation, Initial Calibration and Continuing Calibration.

DATA COMPLETENESS
All criteria were met.

NARRATIVE AND DATA REPORTING FORMS
All criteria were met.
Data was not reported to 3 significant figures. This does not affect the usability of the data.

CHAIN OF CUSTODY AND TRAFFIC REPORTS
All criteria were met.

HOLDING TIMES
All holding times were met except the pH of DUSR ID#4 was outside QC limits. Since this sample was not analyzed within the 7-day window, all detected target analytes should be qualified as estimated and all target analytes not detected should be qualified as unusable.

INTERNAL STANDARD (IS)
All criteria were met.

SURROGATE SPIKE RECOVERIES
All criteria were met.

METHOD BLANK
All criteria were met.

FIELD DUPLICATE SAMPLE PRECISION
No field duplicate was acquired.

LABORATORY CONTROL SAMPLES
All criteria were met.

MS/MSD
No MS/MSD was acquired.

COMPOUND QUANTITATION
All criteria were met except DUSR ID#4 arrived with headspace. All target analytes in this sample should be qualified as estimated.

INITIAL CALIBRATION
All criteria were met except several target analytes were outside QC limits in the initial calibrations (ICal) and/or the initial calibration verifications (ICV) and should be qualified as

estimated in the associated samples blanks and spikes.

ICal/ICV instrument	Target Analyte	RRF/%D	Qualifier	Associated Sample
ICal/ICV VOA122	Bromodichloromethane	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	Trichloroethene	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	1,1,2-Trichloroethene	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	1,4-Dioxane	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	Bromochloromethane	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	cis-1,2-Dichloroethene	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	Chloroform	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	1,2-Dibromoethane	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	cis-1,3-Dichloropropene	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	1,2-Dichloropropane	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	1,2,3-Trichlorobenzene	RRF	UJ/J	WG1958153, 4
ICal/ICV VOA122	1,2,4-Trichlorobenzene	RRF	UJ/J	WG1958153, 4
ICal/ICV Gonzo	1,1,2-Trichloroethene	RRF	UJ/J	WG1955965, 1-3
ICal/ICV Gonzo	1,4-Dioxane	RRF	UJ/J	WG1955965, 1-3
ICV Gonzo	Bromodichloromethane	RRF	UJ/J	WG1955965, 1-3
ICV Gonzo	Bromomethane	-69.9	UJ/J	WG1955965, 1-3

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

CONTINUING CALIBRATION

All criteria were met except several target analytes were outside QC limits in the continuing calibrations and should be qualified as estimated in the associated samples blanks and spikes.

CCal ID	Target Analyte	RRF/%D	Qualifier	Associated Sample
WG1955965-2	Bromodichloromethane	RRF	UJ/J	WG1955965, 1-3
WG1955965-2	1,4-Dioxane	RRF	UJ/J	WG1955965, 1-3
WG1955965-2	1,1,2-Trichloroethene	RRF	UJ/J	WG1955965, 1-3
WG1955965-2	Chloromethane	30.4	UJ/J	WG1955965, 1-3
WG1955965-2	Bromomethane	55.2	UJ/J	WG1955965, 1-3
WG1958153-2	Bromodichloromethane	RRF	UJ/J	WG1958153, 4
WG1958153-2	Trichloroethene	RRF	UJ/J	WG1958153, 4
WG1958153-2	1,1,2-Trichloroethene	RRF	UJ/J	WG1958153, 4
WG1958153-2	1,4-Dioxane	RRF	UJ/J	WG1958153, 4
WG1958153-2	Bromochloromethane	RRF	UJ/J	WG1958153, 4
WG1958153-2	cis-1,2-Dichloroethene	RRF	UJ/J	WG1958153, 4
WG1958153-2	Chloroform	RRF	UJ/J	WG1958153, 4
WG1958153-2	1,2-Dibromoethane	RRF	UJ/J	WG1958153, 4
WG1958153-2	cis-1,3-Dichloropropene	RRF	UJ/J	WG1958153, 4
WG1958153-2	1,2-Dichloropropane	RRF	UJ/J	WG1958153, 4

CCal ID	Target Analyte	RRF/%D	Qualifier	Associated Sample
WG1958153-2	1,2,3-Trichlorobenzene	RRF	UJ/J	WG1958153, 4
WG1958153-2	1,2,4-Trichlorobenzene	RRF	UJ/J	WG1958153, 4
WG1958153-2	4-Methyl-2-pentanone	RRF	UJ/J	WG1958153, 4

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

GC/MS PERFORMANCE CHECK

All criteria were met.

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Sulfide and Dissolved Gasses were subcontracted. A copy of each laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analyses performed and element list for metals analysis were specified by the client.

Volatile Organics

L2443206-04: Headspace was noted in the sample container utilized for analysis.

Iron, Ferrous

L2443206-01, -02, and -03: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelley Mulf Report Date: 08/14/24

Title: Technical Director/Representative

NEW YORK CHAIN OF CUSTODY

L2443206 07AUG24
C&SENG

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-9288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 8/1/24

Client Information

Client: C+S Engineers, INC.
Address: 499 Col. Eileen Collins Blvd., Syracuse, NY
Phone: 315-317-2446
Fax:
Email: hhaas@CSCOS.com

Project Information

Project Name: Forman Ithaca Gun Factory BCP Site
Project Location: 121-125 Lake St, Ithaca, NY
Project # X55.002.001
(Use Project name as Project #)
Project Manager: HAYDEN HAAS
ALPHAQuote #: 476184

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☑ EQuIS (4 File)
☐ Other

Regulatory Requirement

☑ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☑ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-8260	Total Metals	Dissolved metals	SO4 CL NO3	SULFIDE-4500	ALKT-2320	DISS GAS	TOC	Sample Specific Comments	Total Bottle
43206 -01	MW-04 Pre-Sampling	7/31/24	1420	Water	HH/MC	X	X	X	X	X	X	X	X		13
-02	MW-06 Pre-Sampling	7/31/24	1220	Water	HH/MC	X	X	X	X	X	X	X	X		13
-03	MW-07 Pre-Sampling	7/31/24	1005	Water	HH/MC	X	X	X	X	X	X	X	X		13
-04	Trip Blank - 7/31/24	-	-	Water	-	X									2

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	P	P	P	P	V	V
Preservative	B	B	A	A	K/E	A	B	D

Relinquished By:	Date/Time	Received By:	Date/Time
Hayden Haas	7/31/24 1754	PACE	7/31/24 1754
PACE - S+S.C	7/31/24 1704		7/31/24 2330
	7/31/24 2330	Pace	8/1/24 0200

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONSTANTS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: L2443206-01	Date Collected	: 07/31/24 14:20
Client ID	: MW-04B PRE-SAMPLING	Date Received	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	Date Analyzed	: 08/05/24 16:34
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: PID
Lab File ID	: VG240805A25	Instrument ID	: GONZO
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	0.74	0.50	0.18	
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	0.11	1.0	0.07	J
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: L2443206-01	Date Collected	: 07/31/24 14:20
Client ID	: MW-04B PRE-SAMPLING	Date Received	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	Date Analyzed	: 08/05/24 16:34
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: PID
Lab File ID	: VG240805A25	Instrument ID	: GONZO
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	34	0.50	0.18	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	13	2.5	0.70	
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-01	**Date Collected**	: 07/31/24 14:20
Client ID	: MW-04B PRE-SAMPLING	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/05/24 16:34
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A25	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-02	**Date Collected**	: 07/31/24 12:20
Client ID	: MW-06 PRE-SAMPLING	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/05/24 16:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A24	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-02	**Date Collected**	: 07/31/24 12:20
Client ID	: MW-06 PRE-SAMPLING	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/05/24 16:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A24	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	0.43	0.50	0.18	J
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-02	**Date Collected**	: 07/31/24 12:20
Client ID	: MW-06 PRE-SAMPLING	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/05/24 16:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A24	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-03	**Date Collected**	: 07/31/24 10:05
Client ID	: MW-07 PRE-SAMPLING	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/05/24 15:46
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A23	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	1.5	2.5	0.70	J
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-03	**Date Collected**	: 07/31/24 10:05
Client ID	: MW-07 PRE-SAMPLING	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/05/24 15:46
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A23	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	4.2	0.50	0.18	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	1.6	2.5	0.70	J
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-03	**Date Collected**	: 07/31/24 10:05
Client ID	: MW-07 PRE-SAMPLING	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/05/24 15:46
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A23	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-04	**Date Collected**	: 07/31/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/12/24 14:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: V22240812A20	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-04	**Date Collected**	: 07/31/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/12/24 14:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: V22240812A20	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2443206-04	**Date Collected**	: 07/31/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 07/31/24
Sample Location	: 121-125 LAKE ST, ITHACA,NY	**Date Analyzed**	: 08/12/24 14:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: V22240812A20	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: WG1955965-5	Date Collected	: NA
Client ID	: WG1955965-5BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 08/05/24 08:35
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: PID
Lab File ID	: VG240805A05	Instrument ID	: GONZO
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955965-5	**Date Collected**	: NA
Client ID	: WG1955965-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/05/24 08:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1955965-5	**Date Collected**	: NA
Client ID	: WG1955965-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/05/24 08:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240805A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1958153-5	**Date Collected**	: NA
Client ID	: WG1958153-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/12/24 08:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: V22240812A05	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1958153-5	**Date Collected**	: NA
Client ID	: WG1958153-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/12/24 08:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: V22240812A05	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443206
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1958153-5	**Date Collected**	: NA
Client ID	: WG1958153-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/12/24 08:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: V22240812A05	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2443206**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: GONZO**	**Ical Ref**	**: ICAL21287**
Calibration dates	**: 07/12/24 21:20 07/13/24 00:56**		

Calibration Files

L11 =VG240712P03.D L1 =VG240712P06.D L2 =VG240712P07.D L3 =VG240712P08.D L4 =VG240712P09.D

L6 =VG240712P10.D L8 =VG240712P11.D L10 =VG240712P12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
40) TP	1,1-Dichloropr		0.207	0.287	0.297	0.312	0.305	0.256	0.317	0.283	13.83
41) TP	Benzene	0.745	0.717	0.890	0.923	0.917	0.917	0.768	0.976	0.857	11.42
42) TP	Tertiary-Amyl Methyl Ether		0.544	0.559	0.586	0.605	0.621	0.519	0.662	0.585	8.39
43) S	1,2-Dichloroethane-d4	0.288	0.279	0.281	0.289	0.268	0.272	0.264	0.278	0.277	3.23
44) TP	1,2-Dichloroet		0.270	0.289	0.274	0.278	0.279	0.231	0.290	0.273	7.30
47) TP	Methyl cyclohe		0.234	0.330	0.364	0.384	0.364	0.301	0.353	0.333	15.41
48) TP	Trichloroethene	0.246	0.210	0.248	0.249	0.253	0.250	0.207	0.270	0.242	9.05
50) TP	Dibromomethane		0.135	0.140	0.139	0.136	0.137	0.114	0.144	0.135	7.28
51) TP	1,2-Dichloropr		0.171	0.219	0.220	0.219	0.221	0.183	0.231	0.209	10.76
53) TP	2-Chloroethyl		0.109	0.117	0.122	0.135	0.140	0.117	0.146	0.126	10.96
54) TP	Bromodichlorom		0.278	0.312	0.313	0.314	0.321	0.264	0.334	0.305	8.10
57) TP	1,4-Dioxane		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002#	3.92
58) TP	cis-1,3-Dichlo		0.308	0.338	0.350	0.350	0.359	0.301	0.383	0.341	8.39
59) I	Chlorobenzene-d5	----------ISTD----------									
60) S	Toluene-d8	1.258	1.266	1.270	1.267	1.248	1.246	1.258	1.232	1.255	1.03
61) TP	Toluene		0.628	0.724	0.733	0.716	0.720	0.606	0.738	0.695	7.82
62) TP	4-Methyl-2-pen		0.061	0.077	0.079	0.081	0.083	0.070	0.086	0.077	11.14
63) TP	Tetrachloroethene		0.238	0.323	0.326	0.324	0.321	0.274	0.329	0.305	11.51
65) TP	trans-1,3-Dich		0.347	0.369	0.394	0.389	0.403	0.341	0.421	0.380	7.79
67) TP	Ethyl methacry		0.299	0.305	0.320	0.331	0.340	0.287	0.358	0.320	7.77
68) TP	1,1,2-Trichlor		0.191	0.188	0.193	0.193	0.198	0.166	0.207	0.191#	6.61
69) TP	Chlorodibromom		0.263	0.303	0.312	0.311	0.320	0.270	0.331	0.302	8.47
70) TP	1,3-Dichloropr		0.367	0.389	0.397	0.386	0.392	0.327	0.403	0.380	6.83
71) TP	1,2-Dibromoethane		0.241	0.246	0.245	0.242	0.250	0.211	0.257	0.242	6.11
72) TP	2-Hexanone		0.159	0.134	0.135	0.148	0.145	0.123	0.151	0.142	8.54
73) TP	Chlorobenzene		0.704	0.802	0.813	0.790	0.801	0.673	0.839	0.775	7.92
74) TP	Ethylbenzene		1.116	1.365	1.404	1.372	1.389	1.178	1.465	1.327	9.70
75) TP	1,1,1,2-Tetrac		0.230	0.294	0.301	0.303	0.310	0.258	0.321	0.288	11.16
76) TP	p/m Xylene		0.438	0.518	0.557	0.544	0.554	0.468	0.593	0.525	10.39
77) TP	o Xylene		0.426	0.524	0.538	0.525	0.530	0.446	0.567	0.508	10.15
78) TP	Styrene		0.686	0.836	0.902	0.891	0.920	0.779	1.014	0.861	12.32
79) I	1,4-Dichlorobenzene-d4	----------ISTD----------									
80) TP	Bromoform		0.330	0.332	0.345	0.368	0.372	0.325	0.408	0.354	8.43
82) TP	Isopropylbenzene		1.696	2.246	2.377	2.403	2.343	2.056	2.540	2.237	12.60
83) S	4-Bromofluorobenzene	0.840	0.858	0.860	0.809	0.839	0.814	0.843	0.820	0.835	2.31
84) TP	Bromobenzene		0.578	0.641	0.639	0.638	0.629	0.541	0.664	0.619	6.94

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2443206**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: VOA122**	**Ical Ref**	**: ICAL21346**
Calibration dates	**: 07/29/24 13:23 07/29/24 17:04**		

Calibration Files

L11 =V22240729A03.D L1 =V22240729A04.D L2 =V22240729A06.D L3 =V22240729A08.D L4 =V22240729A09.D

L6 =V22240729A10.D L8 =V22240729A11.D L10 =V22240729A12.D

		Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
1)	I	Fluorobenzene	----------ISTD----------									
2)	TP	Dichlorodifluo			0.147	0.215	0.223	0.209	0.195	0.195	0.197	13.62
3)	TP	Chloromethane		0.252	0.295	0.303	0.277	0.253	0.239	0.225	0.263	10.94
4)	TP	Vinyl chloride	0.202	0.176	0.199	0.232	0.231	0.217	0.206	0.203	0.208	8.84
5)	TP	Bromomethane		0.070	0.076	0.075	0.079	0.088	0.095	0.102	0.084	14.11
6)	TP	Chloroethane		0.118	0.132	0.133	0.126	0.117	0.110	0.108	0.120	8.39
7)	TP	Trichlorofluor		0.144	0.179	0.257	0.263	0.252	0.238	0.239	*L	0.9987
8)	TP	Ethyl ether		0.067	0.069	0.073	0.070	0.071	0.070	0.068	0.070	2.76
10)	TP	1,1-Dichloroet		0.110	0.126	0.152	0.154	0.146	0.139	0.139	0.138	11.23
11)	TP	Carbon disulfide		0.404	0.455	0.510	0.491	0.451	0.438	0.433	0.454	7.85
12)	TP	Freon-113			0.097	0.154	0.159	0.150	0.147	0.151	0.143	16.09
13)	TP	Iodomethane			0.122	0.172	0.190	0.199	0.203	0.204	0.182	17.53
14)	TP	Acrolein		0.018	0.024	0.025	0.025	0.025	0.025	0.024	0.024	11.30
15)	TP	Methylene chlo		0.237	0.204	0.191	0.173	0.164	0.159	0.156	0.183	16.00
17)	TP	Acetone			0.040	0.035	0.033	0.032	0.031	0.030	0.033	10.98
18)	TP	trans-1,2-Dich		0.148	0.169	0.177	0.166	0.160	0.157	0.155	0.162	5.98
19)	TP	Methyl acetate		0.103	0.089	0.085	0.084	0.083	0.081	0.077	0.086	9.89
21)	TP	Methyl tert butyl ether		0.254	0.268	0.317	0.328	0.328	0.339	0.333	0.309	11.02
22)	TP	tert-Butyl alc		0.004	0.006	0.007	0.007	0.007	0.007	0.007	0.006#	15.62
24)	TP	Diisopropyl ether		0.493	0.543	0.594	0.622	0.617	0.616	0.586	0.581	8.17
25)	TP	1,1-Dichloroet		0.311	0.358	0.365	0.340	0.319	0.315	0.306	0.331	7.23
26)	TP	Halothane		0.096	0.110	0.132	0.127	0.127	0.126	0.126	0.121	10.56
27)	TP	Acrylonitrile		0.045	0.044	0.049	0.048	0.046	0.045	0.043	0.046	4.17
28)	TP	Ethyl tert-but		0.324	0.354	0.413	0.457	0.456	0.468	0.453	0.418	13.74
29)	TP	Vinyl acetate		0.273	0.289	0.353	0.379	0.386	0.385	0.367	0.348	13.51
30)	TP	cis-1,2-Dichlo		0.168	0.196	0.197	0.183	0.172	0.172	0.168	0.179#	6.96
31)	TP	2,2-Dichloropr		0.174	0.196	0.224	0.220	0.211	0.211	0.212	0.207	8.20
32)	TP	Bromochloromet		0.084	0.092	0.093	0.084	0.081	0.080	0.078	0.085#	6.73
33)	TP	Cyclohexane			0.183	0.351	0.378	0.354	0.352	0.353	*L	0.9993
34)	TP	Chloroform		0.283	0.310	0.303	0.286	0.274	0.278	0.268	0.286#	5.37
35)	TP	Ethyl acetate			0.096	0.111	0.116	0.118	0.118	0.114	0.112	7.47
36)	TP	Carbon tetrachloride	0.179	0.145	0.171	0.233	0.236	0.228	0.228	0.231	0.206	17.40
37)	TP	Tetrahydrofuran			0.035	0.038	0.038	0.037	0.037	0.036	0.037	3.72
38)	S	Dibromofluoromethane	0.356	0.382	0.381	0.359	0.339	0.326	0.329	0.324	0.349	6.78
39)	TP	1,1,1-Trichlor		0.184	0.221	0.263	0.260	0.255	0.254	0.252	0.241	11.85
41)	TP	2-Butanone			0.042	0.044	0.049	0.050	0.049	0.047	0.047	6.75

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2443206**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: VOA122**	**Ical Ref**	**: ICAL21346**
Calibration dates	**: 07/29/24 13:23 07/29/24 17:04**		

Calibration Files

L11 =V22240729A03.D L1 =V22240729A04.D L2 =V22240729A06.D L3 =V22240729A08.D L4 =V22240729A09.D

L6 =V22240729A10.D L8 =V22240729A11.D L10 =V22240729A12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
42) TP	1,1-Dichloropr		0.128	0.160	0.214	0.222	0.214	0.213	0.213	0.195	18.52
44) TP	Benzene	0.577	0.517	0.672	0.656	0.692	0.662	0.658	0.633	0.633	9.17
45) TP	Tertiary-Amyl Methyl Ether		0.172	0.171	0.190	0.208	0.218	0.230	0.228	0.202	12.43
46) S	1,2-Dichloroethane-d4	0.286	0.306	0.301	0.305	0.293	0.289	0.294	0.289	0.295	2.57
47) T	1,2-Dichloroet		0.154	0.165	0.170	0.162	0.154	0.154	0.149	0.158	4.65
50) TP	Methyl cyclohe			0.094	0.200	0.226	0.224	0.233	0.238	*L	0.9996
51) TP	Trichloroethene	0.133	0.113	0.124	0.143	0.143	0.140	0.141	0.141	0.135#	8.23
53) TP	Dibromomethane		0.065	0.068	0.071	0.070	0.068	0.069	0.067	0.068	2.99
54) TP	1,2-Dichloropr		0.115	0.131	0.154	0.152	0.147	0.147	0.143	0.141#	9.64
56) TP	2-Chloroethyl		0.039	0.041	0.053	0.059	0.063	0.063	0.061	0.054	18.80
57) TP	Bromodichlorom		0.138	0.157	0.175	0.176	0.174	0.176	0.173	0.167#	8.74
60) TP	1,4-Dioxane		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001#	5.34
61) TP	cis-1,3-Dichloropropene	0.121	0.126	0.149	0.186	0.197	0.199	0.201	0.197	0.172#	19.89
62) I	Chlorobenzene-d5	----------ISTD----------									
63) S	Toluene-d8	1.265	1.258	1.267	1.262	1.281	1.288	1.295	1.276	1.274	1.03
64) TP	Toluene		0.347	0.400	0.427	0.437	0.427	0.429	0.416	0.412	7.55
65) TP	4-Methyl-2-pen			0.023	0.028	0.034	0.037	0.038	0.037	0.033	18.50
66) TP	Tetrachloroethene		0.107	0.132	0.169	0.181	0.179	0.181	0.181	0.162	18.41
68) TP	trans-1,3-Dichloropropene		0.112	0.139	0.175	0.208	0.214	0.217	0.212	*L	0.9992
70) TP	Ethyl methacry			0.090	0.124	0.141	0.147	0.149	0.144	0.133	17.01
71) TP	1,1,2-Trichlor		0.072	0.079	0.094	0.102	0.111	0.111	0.108	0.097#	16.46
72) TP	Chlorodibromom		0.089	0.117	0.139	0.157	0.162	0.164	0.161	*L	0.9995
73) TP	1,3-Dichloropr		0.151	0.163	0.188	0.207	0.208	0.208	0.200	0.190	12.35
74) TP	1,2-Dibromoethane		0.077	0.089	0.107	0.119	0.123	0.123	0.120	0.108#	16.86
76) TP	2-Hexanone			0.045	0.055	0.064	0.069	0.069	0.066	0.061	15.23
77) TP	Chlorobenzene		0.417	0.478	0.486	0.486	0.471	0.470	0.458	0.467	5.15
78) TP	Ethylbenzene		0.611	0.710	0.850	0.854	0.821	0.817	0.780	0.778	11.36
79) TP	1,1,1,2-Tetrac		0.107	0.127	0.144	0.161	0.166	0.168	0.166	0.148	15.82
80) TP	p/m Xylene		0.220	0.271	0.332	0.334	0.323	0.322	0.310	0.302	13.84
81) TP	o Xylene		0.200	0.259	0.313	0.315	0.308	0.308	0.296	0.285	14.79
82) TP	Styrene		0.304	0.416	0.503	0.521	0.507	0.499	0.464	0.459	16.79
83) I	1,4-Dichlorobenzene-d4	----------ISTD----------									
84) TP	Bromoform		0.110	0.118	0.137	0.162	0.172	0.176	0.179	0.150	19.06
86) TP	Isopropylbenzene		1.046	1.323	1.726	1.771	1.679	1.676	1.637	1.551	17.18
87) S	4-Bromofluorobenzene	0.911	0.911	0.900	0.932	0.924	0.900	0.900	0.908	0.911	1.31
88) TP	Bromobenzene		0.335	0.355	0.374	0.380	0.370	0.371	0.370	0.365	4.18

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2443206**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: VOA122**	**Ical Ref**	**: ICAL21346**
Calibration dates	**: 07/29/24 13:23 07/29/24 17:04**		

Calibration Files
L11 =V22240729A03.D L1 =V22240729A04.D L2 =V22240729A06.D L3 =V22240729A08.D L4 =V22240729A09.D
L6 =V22240729A10.D L8 =V22240729A11.D L10 =V22240729A12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
89) TP	n-Propylbenzene		1.282	1.530	1.993	2.048	1.948	1.952	1.864	1.802	15.83
90) TP	1,4-Dichlorobu		0.423	0.442	0.474	0.497	0.492	0.489	0.483	0.472	5.94
91) TP	1,1,2,2-Tetrac		0.237	0.231	0.246	0.267	0.266	0.266	0.263	0.254	6.06
92) TP	4-Ethyltoluene		1.049	1.261	1.602	1.644	1.579	1.593	1.555	1.469	15.29
93) TP	2-Chlorotoluene		0.883	1.048	1.156	1.157	1.108	1.131	1.117	1.086	8.88
94) TP	1,3,5-Trimethy		0.876	1.095	1.350	1.365	1.327	1.358	1.343	1.245	15.14
95) TP	1,2,3-Trichlor		0.162	0.186	0.191	0.205	0.202	0.204	0.205	0.194	8.07
96) TP	trans-1,4-Dich		0.063	0.078	0.083	0.094	0.095	0.096	0.095	0.086	14.50
97) TP	4-Chlorotoluene		0.906	1.071	1.192	1.204	1.158	1.166	1.146	1.121	9.26
98) TP	tert-Butylbenzene		0.714	0.853	1.187	1.236	1.189	1.202	1.183	1.081	19.23
101) TP	1,2,4-Trimethy		0.970	1.245	1.527	1.538	1.479	1.505	1.471	1.391	15.13
102) TP	sec-Butylbenzene		0.953	1.168	1.721	1.779	1.693	1.711	1.646	*L	0.9992
103) TP	p-Isopropyltol		0.760	0.980	1.439	1.476	1.423	1.444	1.406	*L	0.9995
104) TP	1,3-Dichlorobe		0.643	0.722	0.760	0.757	0.734	0.732	0.718	0.724	5.42
105) TP	1,4-Dichlorobe		0.681	0.712	0.743	0.738	0.714	0.722	0.712	0.718	2.86
106) TP	p-Diethylbenzene			0.566	0.809	0.846	0.825	0.842	0.840	0.788	13.93
107) TP	n-Butylbenzene		0.629	0.830	1.214	1.226	1.171	1.197	1.177	*L	0.9996
108) TP	1,2-Dichlorobe		0.568	0.628	0.667	0.670	0.653	0.655	0.639	0.640	5.50
109) TP	1,2,4,5-Tetram			0.737	1.085	1.193	1.167	1.175	1.128	1.081	16.00
110) TP	1,2-Dibromo-3-		0.007	0.027	0.033	0.037	0.040	0.040	0.040	*L	0.9993
111) TP	1,3,5-Trichlor		0.347	0.382	0.443	0.449	0.433	0.439	0.427	0.417	9.11
112) TP	Hexachlorobuta		0.091	0.104	0.150	0.152	0.147	0.155	0.160	*L	0.9989
113) TP	1,2,4-Trichlor		0.285	0.311	0.368	0.385	0.380	0.381	0.374	0.355#	11.26
114) TP	Naphthalene		0.486	0.583	0.770	0.883	0.870	0.861	0.815	*L	0.9987
115) TP	1,2,3-Trichlor		0.237	0.280	0.315	0.328	0.320	0.320	0.310	0.301#	10.69

Evaluate Continuing Calibration Report

Data Path : K:\Gonzo\2024\240712PICAL\
Data File : VG240712P17.D
Acq On : 13 Jul 2024 2:55 am
Operator : GONZO:PID
Sample : C8260STD10PPB
Misc : WG1947004,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 15 09:47:19 2024
Quant Method : K:\Gonzo\2024\240712PICAL\G_240712P_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Jul 15 09:43:32 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	100	0.00
2	TP	Dichlorodifluoromethane	0.265	0.246	7.2	84	0.00
3	TP	Chloromethane	0.227	0.260	-14.5	114	0.00
4	TP	Vinyl chloride	0.235	0.243	-3.4	93	0.00
5	TP	Bromomethane	0.125	0.212	-69.6#	172	0.00
6	TP	Chloroethane	0.180	0.196	-8.9	105	0.00
7	TP	Trichlorofluoromethane	0.345	0.344	0.3	101	0.00
8	TP	Ethyl ether	0.115	0.116	-0.9	102	0.00
10	TP	1,1-Dichloroethene	0.189	0.187	1.1	94	0.00
11	TP	Carbon disulfide	0.556	0.499	10.3	87	0.00
12	TP	Freon-113	0.208	0.195	6.2	91	0.00
13	TP	Iodomethane	0.365	0.234	35.9#	67	0.00
14	TP	Acrolein	0.033	0.022	33.3#	63	0.00
15	TP	Methylene chloride	0.224	0.220	1.8	98	0.00
17	TP	Acetone	* 10.000	9.753	2.5	107	0.00
18	TP	trans-1,2-Dichloroethene	0.207	0.205	1.0	94	0.00
19	TP	Methyl acetate	0.115	0.111	3.5	101	0.00
20	TP	Methyl tert-butyl ether	0.636	0.546	14.2	87	0.00
21	TP	tert-Butyl alcohol	0.018	0.018	0.0	102	0.00
22	TP	Diisopropyl ether	0.650	0.658	-1.2	99	0.00
23	TP	1,1-Dichloroethane	0.375	0.385	-2.7	98	0.00
24	TP	Halothane	0.172	0.169	1.7	94	0.00
25	TP	Acrylonitrile	0.058	0.053	8.6	91	0.00
26	TP	Ethyl tert-butyl ether	0.639	0.611	4.4	95	0.00
27	TP	Vinyl acetate	0.347	0.348	-0.3	94	0.00
28	TP	cis-1,2-Dichloroethene	0.238	0.242	-1.7	99	0.00
29	TP	2,2-Dichloropropane	0.313	0.278	11.2	87	0.00
30	TP	Bromochloromethane	0.116	0.113	2.6	94	0.00
31	TP	Cyclohexane	0.356	0.319	10.4	85	0.00
32	TP	Chloroform	0.384	0.402	-4.7	99	0.00
33	TP	Ethyl acetate	0.170	0.168	1.2	104	0.00
34	TP	Carbon tetrachloride	0.311	0.319	-2.6	93	0.00
35	TP	Tetrahydrofuran	0.056	0.054	3.6	93	0.00
36	S	Dibromofluoromethane	0.261	0.258	1.1	99	0.00
37	TP	1,1,1-Trichloroethane	0.354	0.365	-3.1	98	0.00
39	TP	2-Butanone	0.073	0.075	-2.7	104	0.00
40	TP	1,1-Dichloropropene	0.283	0.296	-4.6	100	0.00
41	TP	Benzene	0.857	0.889	-3.7	97	0.00
42	TP	tert-Amyl methyl ether	0.585	0.570	2.6	98	0.00

Data Path : K:\Gonzo\2024\240712PICAL\
Data File : VG240712P17.D
Acq On : 13 Jul 2024 2:55 am
Operator : GONZO:PID
Sample : C8260STD10PPB
Misc : WG1947004,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 15 09:47:19 2024
Quant Method : K:\Gonzo\2024\240712PICAL\G_240712P_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Jul 15 09:43:32 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
43	S	1,2-Dichloroethane-d4	0.277	0.297	-7.2	103	0.00
44	TP	1,2-Dichloroethane	0.273	0.285	-4.4	104	0.00
47	TP	Methyl cyclohexane	0.333	0.308	7.5	85	0.00
48	TP	Trichloroethene	0.242	0.245	-1.2	98	0.00
50	TP	Dibromomethane	0.135	0.137	-1.5	99	0.00
51	TP	1,2-Dichloropropane	0.209	0.217	-3.8	99	0.00
53	TP	2-Chloroethyl vinyl ether	0.126	0.109	13.5	90	0.00
54	TP	Bromodichloromethane	0.305	0.298#	2.3	95	0.00
57	TP	1,4-Dioxane	0.00213	0.00212#	0.5	105	0.00
58	TP	cis-1,3-Dichloropropene	0.341	0.350	-2.6	100	0.00
59	I	Chlorobenzene-d5	1.000	1.000	0.0	100	0.00
60	S	Toluene-d8	1.255	1.277	-1.8	101	0.00
61	TP	Toluene	0.695	0.721	-3.7	98	0.00
62	TP	4-Methyl-2-pentanone	0.077	0.078	-1.3	99	0.00
63	TP	Tetrachloroethene	0.305	0.310	-1.6	95	0.00
65	TP	trans-1,3-Dichloropropene	0.380	0.396	-4.2	100	0.00
67	TP	Ethyl methacrylate	0.320	0.313	2.2	97	0.00
68	TP	1,1,2-Trichloroethane	0.191	0.195#	-2.1	101	0.00
69	TP	Chlorodibromomethane	0.302	0.307	-1.7	98	0.00
70	TP	1,3-Dichloropropane	0.380	0.402	-5.8	101	0.00
71	TP	1,2-Dibromoethane	0.242	0.245	-1.2	100	0.00
72	TP	2-Hexanone	0.142	0.143	-0.7	106	0.00
73	TP	Chlorobenzene	0.775	0.821	-5.9	101	0.00
74	TP	Ethylbenzene	1.327	1.359	-2.4	97	0.00
75	TP	1,1,1,2-Tetrachloroethane	0.288	0.307	-6.6	102	0.00
76	TP	p/m Xylene	0.525	0.552	-5.1	99	0.00
77	TP	o Xylene	0.508	0.530	-4.3	98	0.00
78	TP	Styrene	0.861	0.911	-5.8	101	0.00
79	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00
80	TP	Bromoform	0.354	0.346	2.3	100	0.00
82	TP	Isopropylbenzene	2.237	2.332	-4.2	98	0.00
83	S	4-Bromofluorobenzene	0.835	0.818	2.0	101	0.00
84	TP	Bromobenzene	0.619	0.642	-3.7	101	0.00
85	TP	n-Propylbenzene	2.606	2.616	-0.4	96	0.00
86	TP	1,4-Dichlorobutane	0.718	0.708	1.4	99	0.00
87	TP	1,1,2,2-Tetrachloroethane	0.497	0.510	-2.6	104	0.00
88	TP	4-Ethyltoluene	2.179	2.268	-4.1	99	0.00

Evaluate Continuing Calibration Report

Data Path : K:\VOA122\2024\240729AICAL\
Data File : V22240729A17.D
Acq On : 29 Jul 2024 07:08 pm
Operator : VOA122:PID
Sample : C8260STD10PPB
Misc : WG1953132,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 30 07:09:42 2024
Quant Method : K:\VOA122\2024\240729AICAL\V122_240729A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jul 30 07:07:01 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	115	0.00
2	TP	Dichlorodifluoromethane	0.197	0.162	17.8	87	0.00
3	TP	Chloromethane	0.263	0.280	-6.5	107	0.00
4	TP	Vinyl chloride	0.208	0.209	-0.5	104	0.00
5	TP	Bromomethane	0.084	0.074	11.9	114	0.00
6	TP	Chloroethane	0.120	0.124	-3.3	107	0.00
7	TP	Trichlorofluoromethane	* 10.000	10.782	-7.8	115	0.00
8	TP	Ethyl ether	0.070	0.073	-4.3	116	0.00
10	TP	1,1-Dichloroethene	0.138	0.143	-3.6	108	0.00
11	TP	Carbon disulfide	0.454	0.435	4.2	98	0.00
12	TP	Freon-113	0.143	0.170	-18.9	127	0.00
13	TP	Iodomethane	0.182	0.085	53.3#	57	0.00
14	TP	Acrolein	0.024	0.017	29.2#	78	0.00
15	TP	Methylene chloride	0.183	0.173	5.5	104	0.00
17	TP	Acetone	0.033	0.033	0.0	111	0.00
18	TP	trans-1,2-Dichloroethene	0.162	0.165	-1.9	107	0.00
19	TP	Methyl acetate	0.086	0.082	4.7	112	0.00
21	TP	Methyl tert-butyl ether	0.309	0.278	10.0	101	0.00
22	TP	tert-Butyl alcohol	0.00648	0.00709#	-9.4	122	0.00
24	TP	Diisopropyl ether	0.581	0.562	3.3	109	0.00
25	TP	1,1-Dichloroethane	0.331	0.339	-2.4	107	0.00
26	TP	Halothane	0.121	0.135	-11.6	117	0.00
27	TP	Acrylonitrile	0.046	0.044	4.3	104	0.00
28	TP	Ethyl tert-butyl ether	0.418	0.405	3.1	113	0.00
29	TP	Vinyl acetate	0.348	0.305	12.4	99	0.00
30	TP	cis-1,2-Dichloroethene	0.179	0.183#	-2.2	107	0.00
31	TP	2,2-Dichloropropane	0.207	0.191	7.7	98	0.00
32	TP	Bromochloromethane	0.085	0.081#	4.7	100	0.00
33	TP	Cyclohexane	* 10.000	10.905	-9.0	119	0.00
34	TP	Chloroform	0.286	0.286#	0.0	109	0.00
35	TP	Ethyl acetate	0.112	0.110	1.8	114	0.00
36	TP	Carbon tetrachloride	0.206	0.220	-6.8	109	0.00
37	TP	Tetrahydrofuran	0.037	0.036	2.7	110	0.00
38	S	Dibromofluoromethane	0.349	0.346	0.9	111	0.00
39	TP	1,1,1-Trichloroethane	0.241	0.249	-3.3	109	0.00
41	TP	2-Butanone	0.047	0.045	4.3	116	0.00
42	TP	1,1-Dichloropropene	0.195	0.208	-6.7	112	0.00
44	TP	Benzene	0.633	0.643	-1.6	113	0.00
45	TP	tert-Amyl methyl ether	0.202	0.185	8.4	112	0.00

Data Path : K:\VOA122\2024\240729AICAL\
Data File : V22240729A17.D
Acq On : 29 Jul 2024 07:08 pm
Operator : VOA122:PID
Sample : C8260STD10PPB
Misc : WG1953132,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 30 07:09:42 2024
Quant Method : K:\VOA122\2024\240729AICAL\V122_240729A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jul 30 07:07:01 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
46	S	1,2-Dichloroethane-d4	0.295	0.300	-1.7	113	0.00
47	T	1,2-Dichloroethane	0.158	0.160	-1.3	108	0.00
50	TP	Methyl cyclohexane	* 10.000	10.681	-6.8	128	0.00
51	TP	Trichloroethene	0.135	0.133#	1.5	107	0.00
53	TP	Dibromomethane	0.068	0.068	0.0	111	0.00
54	TP	1,2-Dichloropropane	0.141	0.143#	-1.4	107	0.00
56	TP	2-Chloroethyl vinyl ether	0.054	0.046	14.8	101	0.00
57	TP	Bromodichloromethane	0.167	0.161#	3.6	106	0.00
60	TP	1,4-Dioxane	0.00056	0.00064#	-14.3	122	0.00
61	TP	cis-1,3-Dichloropropene	0.172	0.178#	-3.5	110	0.00
62	I	Chlorobenzene-d5	1.000	1.000	0.0	111	0.00
63	S	Toluene-d8	1.274	1.269	0.4	111	0.00
64	TP	Toluene	0.412	0.409	0.7	106	0.00
65	TP	4-Methyl-2-pentanone	0.033	0.030#	9.1	116	0.00
66	TP	Tetrachloroethene	0.162	0.169	-4.3	111	0.00
68	TP	trans-1,3-Dichloropropene	* 10.000	8.883	11.2	115	0.00
70	TP	Ethyl methacrylate	0.133	0.125	6.0	112	0.00
71	TP	1,1,2-Trichloroethane	0.097	0.092#	5.2	108	0.00
72	TP	Chlorodibromomethane	* 10.000	8.735	12.7	108	0.00
73	TP	1,3-Dichloropropane	0.190	0.193	-1.6	113	0.00
74	TP	1,2-Dibromoethane	0.108	0.108#	0.0	112	0.00
76	TP	2-Hexanone	0.061	0.055	9.8	112	0.00
77	TP	Chlorobenzene	0.467	0.474	-1.5	108	0.00
78	TP	Ethylbenzene	0.778	0.808	-3.9	105	0.00
79	TP	1,1,1,2-Tetrachloroethane	0.148	0.143	3.4	110	0.00
80	TP	p/m Xylene	0.302	0.316	-4.6	105	0.00
81	TP	o Xylene	0.285	0.299	-4.9	106	0.00
82	TP	Styrene	0.459	0.486	-5.9	107	0.00
83	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109	0.00
84	TP	Bromoform	0.150	0.143	4.7	115	0.00
86	TP	Isopropylbenzene	1.551	1.679	-8.3	106	0.00
87	S	4-Bromofluorobenzene	0.911	0.938	-3.0	110	0.00
88	TP	Bromobenzene	0.365	0.367	-0.5	107	0.00
89	TP	n-Propylbenzene	1.802	1.934	-7.3	106	0.00
90	TP	1,4-Dichlorobutane	0.472	0.463	1.9	107	0.00
91	TP	1,1,2,2-Tetrachloroethane	0.254	0.246	3.1	109	0.00
92	TP	4-Ethyltoluene	1.469	1.668	-13.5	114	0.00

Data Path : K:\VOA122\2024\240729AICAL\
Data File : V22240729A17.D
Acq On : 29 Jul 2024 07:08 pm
Operator : VOA122:PID
Sample : C8260STD10PPB
Misc : WG1953132,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 30 07:09:42 2024
Quant Method : K:\VOA122\2024\240729AICAL\V122_240729A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jul 30 07:07:01 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound		AvgRF	CCRF	%Dev	Area%	Dev(min)
93 TP	2-Chlorotoluene		1.086	1.126	-3.7	106	0.00
94 TP	1,3,5-Trimethylbenzene		1.245	1.282	-3.0	104	0.00
95 TP	1,2,3-Trichloropropane		0.194	0.192	1.0	110	0.00
96 TP	trans-1,4-Dichloro-2-butene		0.086	0.079	8.1	103	0.00
97 TP	4-Chlorotoluene		1.121	1.158	-3.3	106	0.00
98 TP	tert-Butylbenzene		1.081	1.152	-6.6	106	0.00
101 TP	1,2,4-Trimethylbenzene		1.391	1.492	-7.3	107	0.00
102 TP	sec-Butylbenzene	*	10.000	10.208	-2.1	107	0.00
103 TP	p-Isopropyltoluene	*	10.000	10.063	-0.6	106	0.00
104 TP	1,3-Dichlorobenzene		0.724	0.738	-1.9	106	0.00
105 TP	1,4-Dichlorobenzene		0.718	0.720	-0.3	106	0.00
106 TP	p-Diethylbenzene		0.788	0.793	-0.6	107	0.00
107 TP	n-Butylbenzene	*	10.000	10.574	-5.7	110	0.00
108 TP	1,2-Dichlorobenzene		0.640	0.646	-0.9	106	0.00
109 TP	1,2,4,5-Tetramethylbenzene		1.081	1.082	-0.1	109	0.00
110 TP	1,2-Dibromo-3-chloropropane	*	10.000	9.267	7.3	115	0.00
111 TP	1,3,5-Trichlorobenzene		0.417	0.443	-6.2	109	0.00
112 TP	Hexachlorobutadiene	*	10.000	9.570	4.3	105	0.00
113 TP	1,2,4-Trichlorobenzene		0.355	0.361#	-1.7	107	0.00
114 TP	Naphthalene	*	10.000	9.621	3.8	112	0.00
115 TP	1,2,3-Trichlorobenzene		0.301	0.310#	-3.0	108	0.00

* Evaluation of CC level amount vs concentration.
(#) = Out of Range SPCC's out = 14 CCC's out = 0

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	**Lab Number**	: L2443206		
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001		
Instrument ID	: GONZO	**Calibration Date**	: 08/05/24 07:24		
Lab File ID	: VG240805A02	**Init. Calib. Date(s)**	: 07/12/24	07/13/24	
Sample No	: WG1955965-2	**Init. Calib. Times**	: 21:20	00:56	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	92	0
Dichlorodifluoromethane	0.265	0.159	-	40*	20	50	0
Chloromethane	0.227	0.158	-	30.4*	20	64	0
Vinyl chloride	0.235	0.204	-	13.2	20	72	0
Bromomethane	0.125	0.056	-	55.2*	20	41	0
Chloroethane	0.18	0.203	-	-12.8	20	100	0
Trichlorofluoromethane	0.345	0.313	-	9.3	20	85	0
Ethyl ether	0.115	0.107	-	7	20	87	0
1,1-Dichloroethene	0.189	0.171	-	9.5	20	79	0
Carbon disulfide	0.556	0.507	-	8.8	20	82	0
Freon-113	0.208	0.188	-	9.6	20	81	0
Acrolein	0.033	0.028	-	15.2	20	77	0
Methylene chloride	0.224	0.212	-	5.4	20	87	0
Acetone	10	8.412	-	15.9	20	86	0
trans-1,2-Dichloroethene	0.207	0.194	-	6.3	20	82	0
Methyl acetate	0.115	0.097	-	15.7	20	81	0
Methyl tert-butyl ether	0.636	0.537	-	15.6	20	79	0
tert-Butyl alcohol	0.018	0.013	-	27.8*	20	68	0
Diisopropyl ether	0.65	0.607	-	6.6	20	84	0
1,1-Dichloroethane	0.375	0.366	-	2.4	20	86	0
Halothane	0.172	0.168	-	2.3	20	86	0
Acrylonitrile	0.058	0.059	-	-1.7	20	94	0
Ethyl tert-butyl ether	0.639	0.551	-	13.8	20	79	0
Vinyl acetate	0.347	0.449	-	-29.4*	20	112	0
cis-1,2-Dichloroethene	0.238	0.215	-	9.7	20	81	0
2,2-Dichloropropane	0.313	0.299	-	4.5	20	86	0
Bromochloromethane	0.116	0.124	-	-6.9	20	95	0
Cyclohexane	0.356	0.292	-	18	20	72	0
Chloroform	0.384	0.379	-	1.3	20	86	0
Ethyl acetate	0.17	0.158	-	7.1	20	90	0
Carbon tetrachloride	0.311	0.313	-	-0.6	20	84	0
Tetrahydrofuran	0.056	0.049	-	12.5	20	77	0
Dibromofluoromethane	0.261	0.277	-	-6.1	20	99	0
1,1,1-Trichloroethane	0.354	0.339	-	4.2	20	84	0
2-Butanone	0.073	0.061	-	16.4	20	78	0
1,1-Dichloropropene	0.283	0.262	-	7.4	20	82	0
Benzene	0.857	0.825	-	3.7	20	83	0
tert-Amyl methyl ether	0.585	0.466	-	20.3*	20	73	0
1,2-Dichloroethane-d4	0.277	0.302	-	-9	20	97	0
1,2-Dichloroethane	0.273	0.28	-	-2.6	20	95	0
Methyl cyclohexane	0.333	0.273	-	18	20	69	0
Trichloroethene	0.242	0.23	-	5	20	85	0
Dibromomethane	0.135	0.134	-	0.7	20	89	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2443206	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: GONZO		Calibration Date	: 08/05/24 07:24	
Lab File ID	: VG240805A02		Init. Calib. Date(s)	: 07/12/24	07/13/24
Sample No	: WG1955965-2		Init. Calib. Times	: 21:20	00:56
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.209	0.2*	-	4.3	20	84	0
Bromodichloromethane	0.305	0.292*	-	4.3	20	86	0
1,4-Dioxane	0.00213	0.00174*	-	18.3	20	79	0
cis-1,3-Dichloropropene	0.341	0.318	-	6.7	20	84	0
Chlorobenzene-d5	1	1	-	0	20	100	0
Toluene-d8	1.255	1.205	-	4	20	95	0
Toluene	0.695	0.645	-	7.2	20	88	0
4-Methyl-2-pentanone	0.077	0.059	-	23.4*	20	74	0
Tetrachloroethene	0.305	0.311	-	-2	20	96	0
trans-1,3-Dichloropropene	0.38	0.344	-	9.5	20	87	0
Ethyl methacrylate	0.32	0.252	-	21.3*	20	79	0
1,1,2-Trichloroethane	0.191	0.175*	-	8.4	20	91	0
Chlorodibromomethane	0.302	0.299	-	1	20	96	0
1,3-Dichloropropane	0.38	0.352	-	7.4	20	89	0
1,2-Dibromoethane	0.242	0.227	-	6.2	20	93	0
2-Hexanone	0.142	0.103	-	27.5*	20	77	0
Chlorobenzene	0.775	0.743	-	4.1	20	92	0
Ethylbenzene	1.327	1.186	-	10.6	20	85	0
1,1,1,2-Tetrachloroethane	0.288	0.279	-	3.1	20	93	0
p/m Xylene	0.525	0.479	-	8.8	20	86	0
o Xylene	0.508	0.457	-	10	20	85	0
Styrene	0.861	0.804	-	6.6	20	89	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	105	0
Bromoform	0.354	0.327	-	7.6	20	99	0
Isopropylbenzene	2.237	1.886	-	15.7	20	83	0
4-Bromofluorobenzene	0.835	0.732	-	12.3	20	95	0
Bromobenzene	0.619	0.572	-	7.6	20	94	0
n-Propylbenzene	2.606	2.145	-	17.7	20	82	0
1,4-Dichlorobutane	0.718	0.631	-	12.1	20	92	0
1,1,2,2-Tetrachloroethane	0.497	0.445	-	10.5	20	95	0
4-Ethyltoluene	2.179	1.849	-	15.1	20	84	0
2-Chlorotoluene	1.598	1.349	-	15.6	20	86	0
1,3,5-Trimethylbenzene	1.929	1.668	-	13.5	20	86	0
1,2,3-Trichloropropane	0.416	0.343	-	17.5	20	86	0
trans-1,4-Dichloro-2-buten	0.114	0.114	-	0	20	116	0
4-Chlorotoluene	1.645	1.401	-	14.8	20	84	0
tert-Butylbenzene	1.559	1.345	-	13.7	20	84	0
1,2,4-Trimethylbenzene	1.9	1.641	-	13.6	20	85	0
sec-Butylbenzene	2.217	1.863	-	16	20	82	0
p-Isopropyltoluene	1.925	1.684	-	12.5	20	86	0
1,3-Dichlorobenzene	1.136	1.084	-	4.6	20	95	0
1,4-Dichlorobenzene	1.17	1.127	-	3.7	20	97	0
p-Diethylbenzene	1.106	0.966	-	12.7	20	86	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	Lab Number	: L2443206		
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001		
Instrument ID	: VOA122	Calibration Date	: 08/12/24 06:38		
Lab File ID	: V22240812A01	Init. Calib. Date(s)	: 07/29/24	07/29/24	
Sample No	: WG1958153-2	Init. Calib. Times	: 13:23	17:04	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	87	0
Dichlorodifluoromethane	0.197	0.19	-	3.6	20	77	0
Chloromethane	0.263	0.257	-	2.3	20	74	0
Vinyl chloride	0.208	0.21	-	-1	20	79	0
Bromomethane	0.084	0.075	-	10.7	20	87	0
Chloroethane	0.12	0.119	-	0.8	20	78	0
Trichlorofluoromethane	10	10.964	-	-9.6	20	89	0
Ethyl ether	0.07	0.065	-	7.1	20	78	0
1,1-Dichloroethene	0.138	0.149	-	-8	20	85	0
Carbon disulfide	0.454	0.443	-	2.4	20	76	0
Freon-113	0.143	0.162	-	-13.3	20	91	0
Iodomethane	0.182	0.17	-	6.6	20	86	0
Acrolein	0.024	0.023	-	4.2	20	79	0
Methylene chloride	0.183	0.166	-	9.3	20	76	0
Acetone	0.033	0.033	-	0	20	82	0
trans-1,2-Dichloroethene	0.162	0.167	-	-3.1	20	82	0
Methyl acetate	0.086	0.082	-	4.7	20	84	0
Methyl tert-butyl ether	0.309	0.296	-	4.2	20	81	0
tert-Butyl alcohol	0.00648	0.00787*	-	-21.5*	20	103	.01
Diisopropyl ether	0.581	0.549	-	5.5	20	81	0
1,1-Dichloroethane	0.331	0.317	-	4.2	20	76	0
Halothane	0.121	0.135	-	-11.6	20	89	0
Acrylonitrile	0.046	0.047	-	-2.2	20	84	0
Ethyl tert-butyl ether	0.418	0.393	-	6	20	83	0
Vinyl acetate	0.348	0.334	-	4	20	82	0
cis-1,2-Dichloroethene	0.179	0.184*	-	-2.8	20	82	0
2,2-Dichloropropane	0.207	0.222	-	-7.2	20	86	0
Bromochloromethane	0.085	0.098*	-	-15.3	20	92	0
Cyclohexane	10	10.039	-	-0.4	20	83	0
Chloroform	0.286	0.28*	-	2.1	20	81	0
Ethyl acetate	0.112	0.109	-	2.7	20	86	0
Carbon tetrachloride	0.206	0.239	-	-16	20	90	0
Tetrahydrofuran	0.037	0.037	-	0	20	86	0
Dibromofluoromethane	0.349	0.365	-	-4.6	20	89	0
1,1,1-Trichloroethane	0.241	0.255	-	-5.8	20	84	0
2-Butanone	0.047	0.047	-	0	20	92	0
1,1-Dichloropropene	0.195	0.186	-	4.6	20	76	0
Benzene	0.633	0.624	-	1.4	20	83	0
tert-Amyl methyl ether	0.202	0.191	-	5.4	20	88	0
1,2-Dichloroethane-d4	0.295	0.288	-	2.4	20	82	0
1,2-Dichloroethane	0.158	0.155	-	1.9	20	80	0
Methyl cyclohexane	10	9.784	-	2.2	20	87	0
Trichloroethene	0.135	0.132*	-	2.2	20	80	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2443206	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: VOA122		Calibration Date	: 08/12/24 06:38	
Lab File ID	: V22240812A01		Init. Calib. Date(s)	: 07/29/24	07/29/24
Sample No	: WG1958153-2		Init. Calib. Times	: 13:23	17:04
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Dibromomethane	0.068	0.07	-	-2.9	20	86	0
1,2-Dichloropropane	0.141	0.132*	-	6.4	20	75	0
Bromodichloromethane	0.167	0.165*	-	1.2	20	82	0
1,4-Dioxane	0.00056	0.00063*	-	-12.5	20	91	0
cis-1,3-Dichloropropene	0.172	0.17*	-	1.2	20	80	0
Chlorobenzene-d5	1	1	-	0	20	91	0
Toluene-d8	1.274	1.169	-	8.2	20	84	0
Toluene	0.412	0.386	-	6.3	20	82	0
4-Methyl-2-pentanone	0.033	0.028*	-	15.2	20	92	0
Tetrachloroethene	0.162	0.193	-	-19.1	20	104	0
trans-1,3-Dichloropropene	10	8.001	-	20	20	84	0
Ethyl methacrylate	0.133	0.109	-	18	20	80	0
1,1,2-Trichloroethane	0.097	0.085*	-	12.4	20	82	0
Chlorodibromomethane	10	9.516	-	4.8	20	98	0
1,3-Dichloropropane	0.19	0.168	-	11.6	20	81	0
1,2-Dibromoethane	0.108	0.108*	-	0	20	92	0
2-Hexanone	0.061	0.053	-	13.1	20	89	0
Chlorobenzene	0.467	0.465	-	0.4	20	87	0
Ethylbenzene	0.778	0.742	-	4.6	20	79	0
1,1,1,2-Tetrachloroethane	0.148	0.156	-	-5.4	20	99	0
p/m Xylene	0.302	0.31	-	-2.6	20	85	0
o Xylene	0.285	0.29	-	-1.8	20	84	0
Styrene	0.459	0.477	-	-3.9	20	86	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	100	0
Bromoform	0.15	0.151	-	-0.7	20	111	0
Isopropylbenzene	1.551	1.48	-	4.6	20	86	0
4-Bromofluorobenzene	0.911	0.774	-	15	20	83	0
Bromobenzene	0.365	0.367	-	-0.5	20	98	0
n-Propylbenzene	1.802	1.646	-	8.7	20	83	0
1,4-Dichlorobutane	0.472	0.4	-	15.3	20	85	0
1,1,2,2-Tetrachloroethane	0.254	0.214	-	15.7	20	87	0
4-Ethyltoluene	1.469	1.404	-	4.4	20	88	0
2-Chlorotoluene	1.086	0.938	-	13.6	20	81	0
1,3,5-Trimethylbenzene	1.245	1.181	-	5.1	20	87	0
1,2,3-Trichloropropane	0.194	0.16	-	17.5	20	84	0
trans-1,4-Dichloro-2-buten	0.086	0.077	-	10.5	20	92	0
4-Chlorotoluene	1.121	0.976	-	12.9	20	82	0
tert-Butylbenzene	1.081	1.099	-	-1.7	20	93	0
1,2,4-Trimethylbenzene	1.391	1.348	-	3.1	20	88	0
sec-Butylbenzene	10	9.438	-	5.6	20	90	0
p-Isopropyltoluene	10	9.706	-	2.9	20	94	0
1,3-Dichlorobenzene	0.724	0.748	-	-3.3	20	98	0
1,4-Dichlorobenzene	0.718	0.724	-	-0.8	20	97	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	**Lab Number**	: L2443206		
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001		
Instrument ID	: VOA122	**Calibration Date**	: 08/12/24 06:38		
Lab File ID	: V22240812A01	**Init. Calib. Date(s)**	: 07/29/24	07/29/24	
Sample No	: WG1958153-2	**Init. Calib. Times**	: 13:23	17:04	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	0.788	0.771	-	2.2	20	95	0
n-Butylbenzene	10	9.074	-	9.3	20	86	0
1,2-Dichlorobenzene	0.64	0.655	-	-2.3	20	98	0
1,2,4,5-Tetramethylbenzene	1.081	0.994	-	8	20	92	0
1,2-Dibromo-3-chloropropan	10	9.505	-	4.9	20	108	0
1,3,5-Trichlorobenzene	0.417	0.458	-	-9.8	20	103	0
Hexachlorobutadiene	10	10.72	-	-7.2	20	108	0
1,2,4-Trichlorobenzene	0.355	0.382*	-	-7.6	20	104	0
Naphthalene	10	9.65	-	3.5	20	103	0
1,2,3-Trichlorobenzene	0.301	0.33*	-	-9.6	20	105	0

* Value outside of QC limits.

Inst: VOA122 BFB: V10571
Initials: MJV IS/SS: V10600
Date: **08/12/24** ICAL: V10594A,V10595
Run **A**

Method
GC: 8260
Autosampler: 8260water
Concentrator: 8260 v122

QC:_____ Seq:_____

Vial	Data File	Sample		pH<2
1	V22240812ABF1	BFB TUNE 06:28		
1	V22240812A01	8260 CCAL LCS		
2	V22240812A02	8260 CCAL LCSD		
3	V22240812A03	8260 CCAL		
4	V22240812A04	BLK		
5	V22240812A05	METHOD BLK		
6	V22240812A06	L2444028-11,31,10,10,,A	NY/R2	pH<2
7	V22240812A07	d STD BENZ		
8	V22240812A08	L2444422-02,31,10,10,,A	NYCURVE+IM	pH<2
9	V22240812A09	L2444422-03,31,10,10,,A	NYCURVE+IM TB	pH<2
10	V22240812A10	L2444417-01D,31,2.0,10,,A	PACURVE8260	pH<2
11	V22240812A11	L2444417-02,31,10,10,,A	PACURVE8260	pH<2
12	V22240812A12	L2444466-03,31,10,10,,A	PACURVE8260 TB	pH<2
13	V22240812A13	L2444494-01,31,10,10,,A	NY/R2/10	pH<2
14	V22240812A14	L2444569-11,31,10,10,,A	NYCURVE+IM	pH<2
15	V22240812A15	L2444667-01,31,10,10,,A	NY/R2	pH<2
16	V22240812A16	L2444667-02,31,10,10,,A	NY/R2	pH<2
17	V22240812A17	L2444667-03,31,10,10,,A	NY/R2	pH<2
18	V22240812A18	L2444667-04,31,10,10,,A	NY/R2	pH<2
19	V22240812A19	L2444667-06,31,10,10,,A	NY/R2 TB	pH<2
20	V22240812A20	L2443206-04,31,10,10,,A	NY/R2 TB HS	pH>2
21	V22240812A21	L2444714-05,31,10,10,,A	NYTCL	pH<2
22	V22240812A22	L2444714-08,31,10,10,,A	NYTCL	pH<2
23	V22240812A23	L2444714-13,31,10,10,,A	NYTCL	pH<2
24	V22240812A24	L2444714-14,31,10,10,,A	NYTCL FB	pH<2
25	V22240812A25	L2445006-05,31,10,10,,A,R3E	NY/R2 TB	pH<2
26	V22240812A26	L2444700-01,31,10,10,,A	NYTCL	pH<2
27	V22240812A27	d STD BENZ		

Data Usability Summary Report

Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

121-125 Lake St., Ithaca, NY
Alpha Analytical SDG#L2443534
September 27, 2024
Sampling date: 8/1/2024

Prepared by:
Jodi Zimmerman
Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

DELIVERABLES

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data package for C&S Companies, project located at 121-125 Lake St., Ithaca, NY, Alpha Analytical SDG #L2443534 submitted to Vali-Data of WNY, LLC on September 20, 2024. This DUSR has been prepared in general compliance with USEPA National Functional Guidelines(NFG) and NYSDEC Analytical Services Protocols. The laboratory performed the analysis using the USEPA method Volatile Organics (8260D).

ID	Sample ID	Laboratory ID
1	MW-10 Pre-Sampling	L2443534-01
2	DUP	L2443534-02
3	MW-11 Pre-Sampling	L2443534-03
4	MW-01R Pre-Sampling	L2443534-04
5	MW-05 Pre-Sampling	L2443534-05
6	Trip Blank	L2443534-06

VOLATILE ORGANIC COMPOUNDS

The following items/criteria were reviewed for this analytical suite:

-Data Completeness
-Narrative and Data Reporting Forms
-Chain of Custody and Traffic Reports
-Holding Times
-Internal Standard (IS) Area Performance
-Surrogate Spike Recoveries
-Method Blank
-Field Duplicate Sample Precision
-Laboratory Control Samples
-MS/MSD
-Compound Quantitation
-Initial Calibration
-Continuing Calibration
-GC/MS Performance Check

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES

The data are acceptable for use except where qualified below in MS/MSD, Initial Calibration and Continuing Calibration.

Sample: DUSR ID#5 was diluted due to high target analyte concentrations.

DATA COMPLETENESS
All criteria were met.

NARRATIVE AND DATA REPORTING FORMS
All criteria were met.
Data was not reported to 3 significant figures. This does not affect the usability of the data.

CHAIN OF CUSTODY AND TRAFFIC REPORTS
All criteria were met.

HOLDING TIMES
All holding times were met except the pH of DUSR ID#6 was outside QC limits. This sample was analyzed within the 7-day window, so no further action is required.

INTERNAL STANDARD (IS)
All criteria were met.

SURROGATE SPIKE RECOVERIES
All criteria were met.

METHOD BLANK
All criteria were met.

FIELD DUPLICATE SAMPLE PRECISION
All criteria were met.

LABORATORY CONTROL SAMPLES
All criteria were met.

MS/MSD
All criteria were met except a target analyte was outside QC limits in the matrix spikes and should be qualified as estimated.

Target Analyte	%Rec #1MS	%Rec #1MSD	Qualifier	Associated Sample
Trichloroethene	70	60	J	1

COMPOUND QUANTITATION
All criteria were met.

INITIAL CALIBRATION
All criteria were met except several target analytes were outside QC limits in the initial calibrations (ICal) and/or the initial calibration verifications (ICV) and should be qualified as

estimated in the associated samples blanks and spikes.

ICal/ICV instrument	Target Analyte	RRF/%D	Qualifier	Associated Sample
ICal/ICV Gonzo	1,1,2-Trichloroethene	RRF	UJ/J	WG1956145, 1-6, 1MS/MSD
ICal/ICV Gonzo	1,4-Dioxane	RRF	UJ/J	WG1956145, 1-6, 1MS/MSD
ICV Gonzo	Bromodichloromethane	RRF	UJ/J	WG1956145, 1-6, 1MS/MSD
ICV Gonzo	Bromomethane	-69.9	UJ/J	WG1956145, 1-6, 1MS/MSD

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

CONTINUING CALIBRATION

All criteria were met except several target analytes were outside QC limits in the continuing calibrations and should be qualified as estimated in the associated samples blanks and spikes.

CCal ID	Target Analyte	RRF/%D	Qualifier	Associated Sample
WG1956145-2	Bromodichloromethane	RRF	UJ/J	WG1956145, 1-6, 1MS/MSD
WG1956145-2	1,4-Dioxane	RRF	UJ/J	WG1956145, 1-6, 1MS/MSD
WG1956145-2	1,1,2-Trichloroethene	RRF	UJ/J	WG1956145, 1-6, 1MS/MSD
WG1956145-2	Chloroethane	-28.3	UJ/J	WG1956145, 1-6, 1MS/MSD

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

GC/MS PERFORMANCE CHECK

All criteria were met.

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

August 19, 2024: This final report includes the results of all requested analyses.

August 08, 2024: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Sulfide and Dissolved Gases were subcontracted. A copy of each laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics

L2443534-06: The pH was greater than two; however, the sample was analyzed within the method required holding time.

Dissolved Metals

The WG1955685 CCV recovery, associated with L2443534-04, was above the acceptance criteria for Potassium. Any associated samples with positive detections were re-analyzed under a passing CCV. The samples that were non-detect for this element are reporting results from the original analyses.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelley Mielf Report Date: 08/19/24

Title: Technical Director/Representative

Matrix Spike Sample Summary
Form 3
Volatiles

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Client Sample ID	: MW-10 PRE SAMPLING	**Matrix (Level)**	: WATER (LOW)
Lab Sample ID	: L2443534-01	**Analysis Date**	: 08/06/24 12:02
Matrix Spike	: WG1956145-6	**MS Analysis Date**	: 08/06/24 16:48
Matrix Spike Dup	: WG1956145-7	**MSD Analysis Date**	: 08/06/24 17:12

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (ug/l)	Spike Added (ug/l)	Spike Conc. (ug/l)	%R	Spike Added (ug/l)	Spike Conc. (ug/l)	%R	RPD	Recovery Limits	RPD Limit
Vinyl chloride	ND	10	9.0	90	10	9.0	90	0	55-140	20
Chloroethane	ND	10	13	130	10	13	130	0	55-138	20
1,1-Dichloroethene	ND	10	9.6	96	10	9.8	98	2	61-145	20
trans-1,2-Dichloroethene	ND	10	9.9	99	10	9.6	96	3	70-130	20
Trichloroethene	35	10	42	70	10	41	60 Q	2	70-130	20
1,2-Dichlorobenzene	ND	10	9.2	92	10	9.4	94	2	70-130	20
1,3-Dichlorobenzene	ND	10	9.4	94	10	9.3	93	1	70-130	20
1,4-Dichlorobenzene	ND	10	9.4	94	10	9.5	95	1	70-130	20
Methyl tert butyl ether	ND	10	7.6	76	10	7.8	78	3	63-130	20
p/m-Xylene	ND	20	18	90	20	18	90	0	70-130	20
o-Xylene	ND	20	18	90	20	18	90	0	70-130	20
cis-1,2-Dichloroethene	12	10	21	90	10	21	90	0	70-130	20
Styrene	ND	20	18	90	20	18	90	0	70-130	20
Dichlorodifluoromethane	ND	10	6.1	61	10	5.9	59	3	36-147	20
Acetone	ND	10	8.2	82	10	8.5	85	4	58-148	20
Carbon disulfide	ND	10	9.4	94	10	9.1	91	3	51-130	20
2-Butanone	ND	10	9.1	91	10	8.0	80	13	63-138	20
4-Methyl-2-pentanone	ND	10	7.8	78	10	7.6	76	3	59-130	20
2-Hexanone	ND	10	6.3	63	10	6.8	68	8	57-130	20
Bromochloromethane	ND	10	10	100	10	10	100	0	70-130	20
1,2-Dibromoethane	ND	10	9.0	90	10	9.2	92	2	70-130	20
1,2-Dibromo-3-chloropropane	ND	10	8.4	84	10	8.2	82	2	41-144	20

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.002
Lab ID	: L2443534-01	Date Collected	: 08/01/24 10:30
Client ID	: MW-10 PRE SAMPLING	Date Received	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	Date Analyzed	: 08/06/24 12:02
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: MAG
Lab File ID	: VG240806A14	Instrument ID	: GONZO
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	0.84	0.50	0.18	
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-01	**Date Collected**	: 08/01/24 10:30
Client ID	: MW-10 PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A14	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	35	0.50	0.18	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	12	2.5	0.70	
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-01	**Date Collected**	: 08/01/24 10:30
Client ID	: MW-10 PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A14	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-02	**Date Collected**	: 08/01/24 00:00
Client ID	: DUP	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A15	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	0.80	0.50	0.18	
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-02	**Date Collected**	: 08/01/24 00:00
Client ID	: DUP	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A15	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	36	0.50	0.18	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	11	2.5	0.70	
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-02	**Date Collected**	: 08/01/24 00:00
Client ID	: DUP	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A15	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-03	**Date Collected**	: 08/01/24 12:00
Client ID	: MW-11 PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A16	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-03	**Date Collected**	: 08/01/24 12:00
Client ID	: MW-11 PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A16	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	0.61	0.50	0.18	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-03	**Date Collected**	: 08/01/24 12:00
Client ID	: MW-11 PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 12:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A16	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-04	**Date Collected**	: 08/01/24 14:00
Client ID	: MW-01R PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 13:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A17	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	14	2.5	0.70	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-04	**Date Collected**	: 08/01/24 14:00
Client ID	: MW-01R PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 13:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A17	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	0.20	0.50	0.18	J
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-04	**Date Collected**	: 08/01/24 14:00
Client ID	: MW-01R PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 13:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A17	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-05D	**Date Collected**	: 08/01/24 16:00
Client ID	: MW-05 PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 14:01
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A19	**Instrument ID**	: GONZO
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	25	7.0	U
75-34-3	1,1-Dichloroethane	ND	25	7.0	U
67-66-3	Chloroform	ND	25	7.0	U
56-23-5	Carbon tetrachloride	ND	5.0	1.3	U
78-87-5	1,2-Dichloropropane	ND	10	1.4	U
124-48-1	Dibromochloromethane	ND	5.0	1.5	U
79-00-5	1,1,2-Trichloroethane	ND	15	5.0	U
127-18-4	Tetrachloroethene	6.8	5.0	1.8	
108-90-7	Chlorobenzene	ND	25	7.0	U
75-69-4	Trichlorofluoromethane	ND	25	7.0	U
107-06-2	1,2-Dichloroethane	ND	5.0	1.3	U
71-55-6	1,1,1-Trichloroethane	ND	25	7.0	U
75-27-4	Bromodichloromethane	ND	5.0	1.9	U
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.6	U
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.4	U
75-25-2	Bromoform	ND	20	6.5	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.7	U
71-43-2	Benzene	ND	5.0	1.6	U
108-88-3	Toluene	ND	25	7.0	U
100-41-4	Ethylbenzene	ND	25	7.0	U
74-87-3	Chloromethane	ND	25	7.0	U
74-83-9	Bromomethane	ND	25	7.0	U
75-01-4	Vinyl chloride	2.5	10	0.71	J
75-00-3	Chloroethane	ND	25	7.0	U
75-35-4	1,1-Dichloroethene	2.5	5.0	1.7	J

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.002
Lab ID	: L2443534-05D	Date Collected	: 08/01/24 16:00
Client ID	: MW-05 PRE SAMPLING	Date Received	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	Date Analyzed	: 08/06/24 14:01
Sample Matrix	: WATER	Dilution Factor	: 10
Analytical Method	: 1,8260D	Analyst	: MAG
Lab File ID	: VG240806A19	Instrument ID	: GONZO
Sample Amount	: 1 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
156-60-5	trans-1,2-Dichloroethene	8.1	25	7.0	J
79-01-6	Trichloroethene	170	5.0	1.8	
95-50-1	1,2-Dichlorobenzene	ND	25	7.0	U
541-73-1	1,3-Dichlorobenzene	ND	25	7.0	U
106-46-7	1,4-Dichlorobenzene	ND	25	7.0	U
1634-04-4	Methyl tert butyl ether	ND	25	1.7	U
179601-23-1	p/m-Xylene	ND	25	7.0	U
95-47-6	o-Xylene	ND	25	7.0	U
156-59-2	cis-1,2-Dichloroethene	880	25	7.0	
100-42-5	Styrene	ND	25	7.0	U
75-71-8	Dichlorodifluoromethane	ND	50	10.	U
67-64-1	Acetone	ND	50	15.	U
75-15-0	Carbon disulfide	ND	50	10.	U
78-93-3	2-Butanone	ND	50	19.	U
108-10-1	4-Methyl-2-pentanone	ND	50	10.	U
591-78-6	2-Hexanone	ND	50	10.	U
74-97-5	Bromochloromethane	ND	25	7.0	U
106-93-4	1,2-Dibromoethane	ND	20	6.5	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	25	7.0	U
98-82-8	Isopropylbenzene	ND	25	7.0	U
87-61-6	1,2,3-Trichlorobenzene	ND	25	7.0	U
120-82-1	1,2,4-Trichlorobenzene	ND	25	7.0	U
79-20-9	Methyl Acetate	ND	20	2.3	U
110-82-7	Cyclohexane	ND	100	2.7	U
123-91-1	1,4-Dioxane	ND	2500	610	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-05D	**Date Collected**	: 08/01/24 16:00
Client ID	: MW-05 PRE SAMPLING	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 14:01
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A19	**Instrument ID**	: GONZO
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	25	7.0	U
108-87-2	Methyl cyclohexane	ND	100	4.0	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-06	**Date Collected**	: 08/01/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 13:38
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A18	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-06	**Date Collected**	: 08/01/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 13:38
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A18	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: L2443534-06	**Date Collected**	: 08/01/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 08/01/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 08/06/24 13:38
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MAG
Lab File ID	: VG240806A18	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: WG1956145-5	**Date Collected**	: NA
Client ID	: WG1956145-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/06/24 08:25
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240806A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: WG1956145-5	**Date Collected**	: NA
Client ID	: WG1956145-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/06/24 08:25
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240806A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2443534
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002
Lab ID	: WG1956145-5	**Date Collected**	: NA
Client ID	: WG1956145-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 08/06/24 08:25
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: VG240806A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2443534**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.002**
Instrument ID	**: GONZO**	**Ical Ref**	**: ICAL21287**
Calibration dates	**: 07/12/24 21:20 07/13/24 00:56**		

Calibration Files

L11 =VG240712P03.D L1 =VG240712P06.D L2 =VG240712P07.D L3 =VG240712P08.D L4 =VG240712P09.D

L6 =VG240712P10.D L8 =VG240712P11.D L10 =VG240712P12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
40) TP	1,1-Dichloropr		0.207	0.287	0.297	0.312	0.305	0.256	0.317	0.283	13.83
41) TP	Benzene	0.745	0.717	0.890	0.923	0.917	0.917	0.768	0.976	0.857	11.42
42) TP	Tertiary-Amyl Methyl Ether		0.544	0.559	0.586	0.605	0.621	0.519	0.662	0.585	8.39
43) S	1,2-Dichloroethane-d4	0.288	0.279	0.281	0.289	0.268	0.272	0.264	0.278	0.277	3.23
44) TP	1,2-Dichloroet		0.270	0.289	0.274	0.278	0.279	0.231	0.290	0.273	7.30
47) TP	Methyl cyclohe		0.234	0.330	0.364	0.384	0.364	0.301	0.353	0.333	15.41
48) TP	Trichloroethene	0.246	0.210	0.248	0.249	0.253	0.250	0.207	0.270	0.242	9.05
50) TP	Dibromomethane		0.135	0.140	0.139	0.136	0.137	0.114	0.144	0.135	7.28
51) TP	1,2-Dichloropr		0.171	0.219	0.220	0.219	0.221	0.183	0.231	0.209	10.76
53) TP	2-Chloroethyl		0.109	0.117	0.122	0.135	0.140	0.117	0.146	0.126	10.96
54) TP	Bromodichlorom		0.278	0.312	0.313	0.314	0.321	0.264	0.334	0.305	8.10
57) TP	1,4-Dioxane		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002#	3.92
58) TP	cis-1,3-Dichlo		0.308	0.338	0.350	0.350	0.359	0.301	0.383	0.341	8.39
59) I	Chlorobenzene-d5	----------ISTD----------									
60) S	Toluene-d8	1.258	1.266	1.270	1.267	1.248	1.246	1.258	1.232	1.255	1.03
61) TP	Toluene		0.628	0.724	0.733	0.716	0.720	0.606	0.738	0.695	7.82
62) TP	4-Methyl-2-pen		0.061	0.077	0.079	0.081	0.083	0.070	0.086	0.077	11.14
63) TP	Tetrachloroethene		0.238	0.323	0.326	0.324	0.321	0.274	0.329	0.305	11.51
65) TP	trans-1,3-Dich		0.347	0.369	0.394	0.389	0.403	0.341	0.421	0.380	7.79
67) TP	Ethyl methacry		0.299	0.305	0.320	0.331	0.340	0.287	0.358	0.320	7.77
68) TP	1,1,2-Trichlor		0.191	0.188	0.193	0.193	0.198	0.166	0.207	0.191#	6.61
69) TP	Chlorodibromom		0.263	0.303	0.312	0.311	0.320	0.270	0.331	0.302	8.47
70) TP	1,3-Dichloropr		0.367	0.389	0.397	0.386	0.392	0.327	0.403	0.380	6.83
71) TP	1,2-Dibromoethane		0.241	0.246	0.245	0.242	0.250	0.211	0.257	0.242	6.11
72) TP	2-Hexanone		0.159	0.134	0.135	0.148	0.145	0.123	0.151	0.142	8.54
73) TP	Chlorobenzene		0.704	0.802	0.813	0.790	0.801	0.673	0.839	0.775	7.92
74) TP	Ethylbenzene		1.116	1.365	1.404	1.372	1.389	1.178	1.465	1.327	9.70
75) TP	1,1,1,2-Tetrac		0.230	0.294	0.301	0.303	0.310	0.258	0.321	0.288	11.16
76) TP	p/m Xylene		0.438	0.518	0.557	0.544	0.554	0.468	0.593	0.525	10.39
77) TP	o Xylene		0.426	0.524	0.538	0.525	0.530	0.446	0.567	0.508	10.15
78) TP	Styrene		0.686	0.836	0.902	0.891	0.920	0.779	1.014	0.861	12.32
79) I	1,4-Dichlorobenzene-d4	----------ISTD----------									
80) TP	Bromoform		0.330	0.332	0.345	0.368	0.372	0.325	0.408	0.354	8.43
82) TP	Isopropylbenzene		1.696	2.246	2.377	2.403	2.343	2.056	2.540	2.237	12.60
83) S	4-Bromofluorobenzene	0.840	0.858	0.860	0.809	0.839	0.814	0.843	0.820	0.835	2.31
84) TP	Bromobenzene		0.578	0.641	0.639	0.638	0.629	0.541	0.664	0.619	6.94

Evaluate Continuing Calibration Report

Data Path : K:\Gonzo\2024\240712PICAL\
Data File : VG240712P17.D
Acq On : 13 Jul 2024 2:55 am
Operator : GONZO:PID
Sample : C8260STD10PPB
Misc : WG1947004,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 15 09:47:19 2024
Quant Method : K:\Gonzo\2024\240712PICAL\G_240712P_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Jul 15 09:43:32 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	100	0.00
2	TP	Dichlorodifluoromethane	0.265	0.246	7.2	84	0.00
3	TP	Chloromethane	0.227	0.260	-14.5	114	0.00
4	TP	Vinyl chloride	0.235	0.243	-3.4	93	0.00
5	TP	Bromomethane	0.125	0.212	-69.6#	172	0.00
6	TP	Chloroethane	0.180	0.196	-8.9	105	0.00
7	TP	Trichlorofluoromethane	0.345	0.344	0.3	101	0.00
8	TP	Ethyl ether	0.115	0.116	-0.9	102	0.00
10	TP	1,1-Dichloroethene	0.189	0.187	1.1	94	0.00
11	TP	Carbon disulfide	0.556	0.499	10.3	87	0.00
12	TP	Freon-113	0.208	0.195	6.2	91	0.00
13	TP	Iodomethane	0.365	0.234	35.9#	67	0.00
14	TP	Acrolein	0.033	0.022	33.3#	63	0.00
15	TP	Methylene chloride	0.224	0.220	1.8	98	0.00
17	TP	Acetone	* 10.000	9.753	2.5	107	0.00
18	TP	trans-1,2-Dichloroethene	0.207	0.205	1.0	94	0.00
19	TP	Methyl acetate	0.115	0.111	3.5	101	0.00
20	TP	Methyl tert-butyl ether	0.636	0.546	14.2	87	0.00
21	TP	tert-Butyl alcohol	0.018	0.018	0.0	102	0.00
22	TP	Diisopropyl ether	0.650	0.658	-1.2	99	0.00
23	TP	1,1-Dichloroethane	0.375	0.385	-2.7	98	0.00
24	TP	Halothane	0.172	0.169	1.7	94	0.00
25	TP	Acrylonitrile	0.058	0.053	8.6	91	0.00
26	TP	Ethyl tert-butyl ether	0.639	0.611	4.4	95	0.00
27	TP	Vinyl acetate	0.347	0.348	-0.3	94	0.00
28	TP	cis-1,2-Dichloroethene	0.238	0.242	-1.7	99	0.00
29	TP	2,2-Dichloropropane	0.313	0.278	11.2	87	0.00
30	TP	Bromochloromethane	0.116	0.113	2.6	94	0.00
31	TP	Cyclohexane	0.356	0.319	10.4	85	0.00
32	TP	Chloroform	0.384	0.402	-4.7	99	0.00
33	TP	Ethyl acetate	0.170	0.168	1.2	104	0.00
34	TP	Carbon tetrachloride	0.311	0.319	-2.6	93	0.00
35	TP	Tetrahydrofuran	0.056	0.054	3.6	93	0.00
36	S	Dibromofluoromethane	0.261	0.258	1.1	99	0.00
37	TP	1,1,1-Trichloroethane	0.354	0.365	-3.1	98	0.00
39	TP	2-Butanone	0.073	0.075	-2.7	104	0.00
40	TP	1,1-Dichloropropene	0.283	0.296	-4.6	100	0.00
41	TP	Benzene	0.857	0.889	-3.7	97	0.00
42	TP	tert-Amyl methyl ether	0.585	0.570	2.6	98	0.00

Evaluate Continuing Calibration Report

Data Path : K:\Gonzo\2024\240712PICAL\
Data File : VG240712P17.D
Acq On : 13 Jul 2024 2:55 am
Operator : GONZO:PID
Sample : C8260STD10PPB
Misc : WG1947004,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 15 09:47:19 2024
Quant Method : K:\Gonzo\2024\240712PICAL\G_240712P_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Jul 15 09:43:32 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
43	S	1,2-Dichloroethane-d4	0.277	0.297	-7.2	103	0.00
44	TP	1,2-Dichloroethane	0.273	0.285	-4.4	104	0.00
47	TP	Methyl cyclohexane	0.333	0.308	7.5	85	0.00
48	TP	Trichloroethene	0.242	0.245	-1.2	98	0.00
50	TP	Dibromomethane	0.135	0.137	-1.5	99	0.00
51	TP	1,2-Dichloropropane	0.209	0.217	-3.8	99	0.00
53	TP	2-Chloroethyl vinyl ether	0.126	0.109	13.5	90	0.00
54	TP	Bromodichloromethane	0.305	0.298#	2.3	95	0.00
57	TP	1,4-Dioxane	0.00213	0.00212#	0.5	105	0.00
58	TP	cis-1,3-Dichloropropene	0.341	0.350	-2.6	100	0.00
59	I	Chlorobenzene-d5	1.000	1.000	0.0	100	0.00
60	S	Toluene-d8	1.255	1.277	-1.8	101	0.00
61	TP	Toluene	0.695	0.721	-3.7	98	0.00
62	TP	4-Methyl-2-pentanone	0.077	0.078	-1.3	99	0.00
63	TP	Tetrachloroethene	0.305	0.310	-1.6	95	0.00
65	TP	trans-1,3-Dichloropropene	0.380	0.396	-4.2	100	0.00
67	TP	Ethyl methacrylate	0.320	0.313	2.2	97	0.00
68	TP	1,1,2-Trichloroethane	0.191	0.195#	-2.1	101	0.00
69	TP	Chlorodibromomethane	0.302	0.307	-1.7	98	0.00
70	TP	1,3-Dichloropropane	0.380	0.402	-5.8	101	0.00
71	TP	1,2-Dibromoethane	0.242	0.245	-1.2	100	0.00
72	TP	2-Hexanone	0.142	0.143	-0.7	106	0.00
73	TP	Chlorobenzene	0.775	0.821	-5.9	101	0.00
74	TP	Ethylbenzene	1.327	1.359	-2.4	97	0.00
75	TP	1,1,1,2-Tetrachloroethane	0.288	0.307	-6.6	102	0.00
76	TP	p/m Xylene	0.525	0.552	-5.1	99	0.00
77	TP	o Xylene	0.508	0.530	-4.3	98	0.00
78	TP	Styrene	0.861	0.911	-5.8	101	0.00
79	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00
80	TP	Bromoform	0.354	0.346	2.3	100	0.00
82	TP	Isopropylbenzene	2.237	2.332	-4.2	98	0.00
83	S	4-Bromofluorobenzene	0.835	0.818	2.0	101	0.00
84	TP	Bromobenzene	0.619	0.642	-3.7	101	0.00
85	TP	n-Propylbenzene	2.606	2.616	-0.4	96	0.00
86	TP	1,4-Dichlorobutane	0.718	0.708	1.4	99	0.00
87	TP	1,1,2,2-Tetrachloroethane	0.497	0.510	-2.6	104	0.00
88	TP	4-Ethyltoluene	2.179	2.268	-4.1	99	0.00

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	**Lab Number**	: L2443534		
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.002		
Instrument ID	: GONZO	**Calibration Date**	: 08/06/24 07:14		
Lab File ID	: VG240806A02	**Init. Calib. Date(s)**	: 07/12/24	07/13/24	
Sample No	: WG1956145-2	**Init. Calib. Times**	: 21:20	00:56	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	95	0
Dichlorodifluoromethane	0.265	0.161	-	39.2*	20	52	0
Chloromethane	0.227	0.169	-	25.6*	20	70	.02
Vinyl chloride	0.235	0.204	-	13.2	20	74	0
Bromomethane	0.125	0.094	-	24.8*	20	72	0
Chloroethane	0.18	0.231	-	-28.3*	20	116	0
Trichlorofluoromethane	0.345	0.35	-	-1.4	20	98	0
Ethyl ether	0.115	0.096	-	16.5	20	80	0
1,1-Dichloroethene	0.189	0.182	-	3.7	20	86	0
Carbon disulfide	0.556	0.508	-	8.6	20	84	0
Freon-113	0.208	0.199	-	4.3	20	88	0
Acrolein	0.033	0.027	-	18.2	20	76	0
Methylene chloride	0.224	0.21	-	6.3	20	89	0
Acetone	10	7.569	-	24.3*	20	80	0
trans-1,2-Dichloroethene	0.207	0.208	-	-0.5	20	90	0
Methyl acetate	0.115	0.091	-	20.9*	20	78	0
Methyl tert-butyl ether	0.636	0.524	-	17.6	20	79	0
tert-Butyl alcohol	0.018	0.013	-	27.8*	20	71	0
Diisopropyl ether	0.65	0.593	-	8.8	20	84	0
1,1-Dichloroethane	0.375	0.36	-	4	20	86	0
Halothane	0.172	0.175	-	-1.7	20	92	0
Acrylonitrile	0.058	0.057	-	1.7	20	93	0
Ethyl tert-butyl ether	0.639	0.533	-	16.6	20	78	0
Vinyl acetate	0.347	0.445	-	-28.2*	20	114	0
cis-1,2-Dichloroethene	0.238	0.231	-	2.9	20	89	0
2,2-Dichloropropane	0.313	0.304	-	2.9	20	90	0
Bromochloromethane	0.116	0.127	-	-9.5	20	99	0
Cyclohexane	0.356	0.297	-	16.6	20	75	0
Chloroform	0.384	0.372	-	3.1	20	86	0
Ethyl acetate	0.17	0.154	-	9.4	20	90	0
Carbon tetrachloride	0.311	0.32	-	-2.9	20	88	0
Tetrahydrofuran	0.056	0.051	-	8.9	20	82	0
Dibromofluoromethane	0.261	0.268	-	-2.7	20	97	0
1,1,1-Trichloroethane	0.354	0.353	-	0.3	20	89	0
2-Butanone	0.073	0.057	-	21.9*	20	75	0
1,1-Dichloropropene	0.283	0.257	-	9.2	20	82	0
Benzene	0.857	0.833	-	2.8	20	85	0
tert-Amyl methyl ether	0.585	0.459	-	21.5*	20	74	0
1,2-Dichloroethane-d4	0.277	0.301	-	-8.7	20	98	0
1,2-Dichloroethane	0.273	0.286	-	-4.8	20	99	0
Methyl cyclohexane	0.333	0.273	-	18	20	71	0
Trichloroethene	0.242	0.233	-	3.7	20	89	0
Dibromomethane	0.135	0.136	-	-0.7	20	93	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	Lab Number	: L2443534		
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.002		
Instrument ID	: GONZO	Calibration Date	: 08/06/24 07:14		
Lab File ID	: VG240806A02	Init. Calib. Date(s)	: 07/12/24	07/13/24	
Sample No	: WG1956145-2	Init. Calib. Times	: 21:20	00:56	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.209	0.202	-	3.3	20	87	0
Bromodichloromethane	0.305	0.296*	-	3	20	90	0
1,4-Dioxane	0.00213	0.00194*	-	8.9	20	91	0
cis-1,3-Dichloropropene	0.341	0.322	-	5.6	20	87	0
Chlorobenzene-d5	1	1	-	0	20	98	0
Toluene-d8	1.255	1.219	-	2.9	20	94	0
Toluene	0.695	0.672	-	3.3	20	90	0
4-Methyl-2-pentanone	0.077	0.062	-	19.5	20	76	0
Tetrachloroethene	0.305	0.326	-	-6.9	20	98	0
trans-1,3-Dichloropropene	0.38	0.352	-	7.4	20	87	0
Ethyl methacrylate	0.32	0.257	-	19.7	20	78	0
1,1,2-Trichloroethane	0.191	0.185*	-	3.1	20	93	0
Chlorodibromomethane	0.302	0.313	-	-3.6	20	98	0
1,3-Dichloropropane	0.38	0.365	-	3.9	20	90	0
1,2-Dibromoethane	0.242	0.24	-	0.8	20	96	0
2-Hexanone	0.142	0.104	-	26.8*	20	76	0
Chlorobenzene	0.775	0.784	-	-1.2	20	94	0
Ethylbenzene	1.327	1.26	-	5	20	88	0
1,1,1,2-Tetrachloroethane	0.288	0.298	-	-3.5	20	97	0
p/m Xylene	0.525	0.519	-	1.1	20	91	0
o Xylene	0.508	0.489	-	3.7	20	89	0
Styrene	0.861	0.827	-	3.9	20	90	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	102	0
Bromoform	0.354	0.335	-	5.4	20	100	0
Isopropylbenzene	2.237	2.015	-	9.9	20	87	0
4-Bromofluorobenzene	0.835	0.744	-	10.9	20	94	0
Bromobenzene	0.619	0.629	-	-1.6	20	101	0
n-Propylbenzene	2.606	2.32	-	11	20	87	0
1,4-Dichlorobutane	0.718	0.652	-	9.2	20	93	0
1,1,2,2-Tetrachloroethane	0.497	0.476	-	4.2	20	99	0
4-Ethyltoluene	2.179	1.986	-	8.9	20	88	0
2-Chlorotoluene	1.598	1.419	-	11.2	20	88	0
1,3,5-Trimethylbenzene	1.929	1.777	-	7.9	20	89	0
1,2,3-Trichloropropane	0.416	0.363	-	12.7	20	89	0
trans-1,4-Dichloro-2-buten	0.114	0.124	-	-8.8	20	123	0
4-Chlorotoluene	1.645	1.488	-	9.5	20	88	0
tert-Butylbenzene	1.559	1.45	-	7	20	89	0
1,2,4-Trimethylbenzene	1.9	1.743	-	8.3	20	88	0
sec-Butylbenzene	2.217	1.998	-	9.9	20	86	0
p-Isopropyltoluene	1.925	1.801	-	6.4	20	90	0
1,3-Dichlorobenzene	1.136	1.15	-	-1.2	20	99	0
1,4-Dichlorobenzene	1.17	1.186	-	-1.4	20	100	0
p-Diethylbenzene	1.106	1.005	-	9.1	20	87	0

* Value outside of QC limits.

Inst: Gonzo
Initials: PID
Date: **08/06/24**
Run: **A**

BFB: V10571
IS/SS: V10584
ICAL: V10544C,V10585

Method
GC 8260_RTX_VMS
Autosampler: 8260water
Concentrator: 8260

QC: ____ Seq:

Vial	DATA FILE	SAMPLE			pH<2
1	VG240806ABF1	BFB TUNE 06:36			
1	VG240806A01	8260 CCAL QC FAILS			
2	VG240806A02	8260 CCAL LCS			
3	VG240806A03	8260 CCAL LCSD			
4	VG240806A04	BLK			
5	VG240806A05	METHOD BLK			
6	VG240806A06	L2443323-01,31,10,10,,A	NYTCL		pH<2
7	VG240806A07	L2443323-02,31,10,10,,A	NYTCL		pH<2
8	VG240806A08	L2443323-03,31,10,10,,A	NYTCL		pH<2
9	VG240806A09	L2443323-04,31,10,10,,A	NYTCL		pH<2
10	VG240806A10	L2443323-05,31,10,10,,A	NYTCL		pH<2
11	VG240806A11	L2443323-06,31,10,10,,A	NYTCL		pH<2
12	VG240806A12	L2443339-01,31,10,10,,A	PA/BTEX,MTBE,IPB,NAPH		pH<2
13	VG240806A13	L2443339-02,31,10,10,,A	PA/BTEX,MTBE,IPB,NAPH		pH<2
14	VG240806A14	L2443534-01,31,10,10,,A	NY/R2		pH<2
15	VG240806A15	L2443534-02,31,10,10,,A	NY/R2		pH<2
16	VG240806A16	L2443534-03,31,10,10,,A	NY/R2		pH<2
17	VG240806A17	L2443534-04,31,10,10,,A	NY/R2		pH<2
18	VG240806A18	L2443534-06,31,10,10,,A	NY/R2	TB	pH>2
19	VG240806A19	l2443534-05D,31,1.0,10,,a	NY/R2		pH<2
20	VG240806A20	L2443344-01,31,10,10,,A	PA/BTEX,MTBE,IPB,NAPH		pH<2
21	VG240806A21	L2443690-01,31,10,10,,A	8260NH		pH<2
22	VG240806A22	L2443690-02,31,10,10,,A	8260NH		pH<2
23	VG240806A23	L2443690-03,31,10,10,,A	8260NH		pH<2
24	VG240806A24	L2443690-04,31,10,10,,A	8260NH		pH<2
25	VG240806A25	L2443690-05,31,10,10,,A	8260NH	TB	pH<2
26	VG240806A26	L2443534-01MS,31,10,10,,A1	NY/R2		pH<2
27	VG240806A27	L2443534-01MSD,31,10,10,,A2	NY/R2		pH<2

Data Usability Summary Report

Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

121-125 Lake St., Ithaca, NY
Alpha Analytical SDG#L2449259
September 27, 2024
Sampling date: 8/28/2024

Prepared by:
Jodi Zimmerman
Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

DELIVERABLES

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data package for C&S Companies, project located at 121-125 Lake St., Ithaca, NY, Alpha Analytical SDG #L2449259 submitted to Vali-Data of WNY, LLC on September 20, 2024. This DUSR has been prepared in general compliance with USEPA National Functional Guidelines(NFG) and NYSDEC Analytical Services Protocols. The laboratory performed the analysis using the USEPA method Volatile Organics (8260D).

ID	Sample ID	Laboratory ID
1	IJW-01 Baseline	L2449259-01
2	IJW-02 Baseline	L2449259-02
3	IJW-03 Baseline	L2449259-03
4	Trip Blank	L2449259-04

VOLATILE ORGANIC COMPOUNDS

The following items/criteria were reviewed for this analytical suite:

-Data Completeness
-Narrative and Data Reporting Forms
-Chain of Custody and Traffic Reports
-Holding Times
-Internal Standard (IS) Area Performance
-Surrogate Spike Recoveries
-Method Blank
-Field Duplicate Sample Precision
-Laboratory Control Samples
-MS/MSD
-Compound Quantitation
-Initial Calibration
-Continuing Calibration
-GC/MS Performance Check

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES

The data are acceptable for use except where qualified below in MS/MSD, Compound Quantitation, Initial Calibration and Continuing Calibration.

Samples: DUSR ID#2, #3 and #3MS/MSD were diluted due to high target analyte

concentrations.

DATA COMPLETENESS
All criteria were met.

NARRATIVE AND DATA REPORTING FORMS
All criteria were met.
Data was not reported to 3 significant figures. This does not affect the usability of the data.

CHAIN OF CUSTODY AND TRAFFIC REPORTS
All criteria were met.

HOLDING TIMES
All holding times were met.

INTERNAL STANDARD (IS)
All criteria were met.

SURROGATE SPIKE RECOVERIES
All criteria were met.

METHOD BLANK
All criteria were met.

FIELD DUPLICATE SAMPLE PRECISION
No field duplicate was acquired.

LABORATORY CONTROL SAMPLES
All criteria were met except the %Rec of some target analytes was outside QC limits, high in the laboratory control samples. These target analytes were not detected in the associated samples, so no further action is required.

MS/MSD
All criteria were met except several target analyte were outside QC limits in the matrix spikes and should be qualified as estimated.

Target Analyte	%Rec #3MS	%Rec #3MSD	Qualifier	Associated Sample
Trichloroethene	143	133	JH	3
trans-1,2-Dichloroethene	135	135	JH	3

The %Rec of some target analytes was outside QC limits, high in the matrix spikes. These target analytes were not detected in the associated samples, so no further action is required.
Some target analytes were outside QC limits in the matrix spike or the matrix spike duplicate but not both, so no further action is required.

COMPOUND QUANTITATION
All criteria were met except a target analyte was detected in a sample blank and should be qualified as estimated in the associated samples in which it was detected.

Blank ID	Target Analyte	Concentration(ug/L)	Qualifier	Associated Sample
4	Trichloroethene	.22	JH	1-3

INITIAL CALIBRATION
All criteria were met except several target analytes were outside QC limits in the initial calibrations (ICal) and/or the initial calibration verifications (ICV) and should be qualified as estimated in the associated samples blanks and spikes.

ICal/ICV instrument	Target Analyte	RRF/%D	Qualifier	Associated Sample
ICal/ICV VOA108	1,1,2-Trichloroethene	RRF	UJ/J	WG1969019, 1-4, 1MS/MSD
ICal/ICV VOA108	1,4-Dioxane	RRF	UJ/J	WG1969019, 1-4, 1MS/MSD
ICV VOA108	Cyclohexane	-55.5	UJ/J	WG1969019, 1-4, 1MS/MSD
ICV VOA108	Methylcyclohexane	-68.4	UJ/J	WG1969019, 1-4, 1MS/MSD

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

CONTINUING CALIBRATION
All criteria were met except several target analytes were outside QC limits in the continuing calibrations and should be qualified as estimated in the associated samples blanks and spikes.

CCal ID	Target Analyte	RRF/%D	Qualifier	Associated Sample
WG1969019-2	1,4-Dioxane	RRF	UJ/J	WG1969019, 1-4, 1MS/MSD
WG1969019-2	Dichlorodifluoromethane	-41.3	UJ/J	WG1969019, 1-4, 1MS/MSD
WG1969019-2	Freon 113	-26.4	UJ/J	WG1969019, 1-4, 1MS/MSD
WG1969019-2	Cyclohexane	-70.5	UJ/J	WG1969019, 1-4, 1MS/MSD
WG1969019-2	Methylcyclohexane	-81.3	UJ/J	WG1969019, 1-4, 1MS/MSD
WG1969019-2	Tetrachloroethene	-25	UJ/J	WG1969019, 1-4, 1MS/MSD

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

GC/MS PERFORMANCE CHECK
All criteria were met.

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Dissolved Gases and Sulfide were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

L2449259-01J, -02J, and -03J: The sample was received above the appropriate pH for the Dissolved Metals analysis. The laboratory added additional HNO3 to a pH <2.

L2449259-03L: The sample was received below the appropriate pH for the Subcontract - Sulfide analysis. The laboratory added additional NaOH to a pH >12.

L2449259-01 through -04: The analyses performed were specified by the client.

Iron, Ferrous

L2449259-01, -02, and -03: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey Report Date: 09/12/24

Title: Technical Director/Representative

Laboratory Control Sample Summary
Form 3
Volatiles

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Matrix (Level)	: WATER (LOW)		
LCS Sample ID	: WG1969019-3 **Analysis Date** : 09/07/24 06:31	**File ID**	: V08240907A01
LCSD Sample ID	: WG1969019-4 **Analysis Date** : 09/07/24 06:54	**File ID**	: V08240907A02

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ug/l)	Found (ug/l)	%R	True (ug/l)	Found (ug/l)	%R	RPD	Recovery Limits	RPD Limit
Trichloroethene	10	11	110	10	11	110	0	70-130	20
1,2-Dichlorobenzene	10	11	110	10	11	110	0	70-130	20
1,3-Dichlorobenzene	10	11	110	10	11	110	0	70-130	20
1,4-Dichlorobenzene	10	11	110	10	11	110	0	70-130	20
Methyl tert butyl ether	10	9.9	99	10	10	100	1	63-130	20
p/m-Xylene	20	23	115	20	23	115	0	70-130	20
o-Xylene	20	22	110	20	22	110	0	70-130	20
cis-1,2-Dichloroethene	10	10	100	10	11	110	10	70-130	20
Styrene	20	20	100	20	20	100	0	70-130	20
Dichlorodifluoromethane	10	14	140	10	14	140	0	36-147	20
Acetone	10	9.8	98	10	11	110	12	58-148	20
Carbon disulfide	10	11	110	10	11	110	0	51-130	20
2-Butanone	10	10	100	10	11	110	10	63-138	20
4-Methyl-2-pentanone	10	9.0	90	10	9.6	96	6	59-130	20
2-Hexanone	10	9.1	91	10	9.8	98	7	57-130	20
Bromochloromethane	10	10	100	10	11	110	10	70-130	20
1,2-Dibromoethane	10	11	110	10	11	110	0	70-130	20
1,2-Dibromo-3-chloropropane	10	11	110	10	11	110	0	41-144	20
Isopropylbenzene	10	12	120	10	12	120	0	70-130	20
1,2,3-Trichlorobenzene	10	11	110	10	11	110	0	70-130	20
1,2,4-Trichlorobenzene	10	11	110	10	11	110	0	70-130	20
Methyl Acetate	10	9.6	96	10	9.6	96	0	70-130	20
Cyclohexane	10	17	170 Q	10	17	170 Q	0	70-130	20
1,4-Dioxane	500	520	104	500	480	96	8	56-162	20
Freon-113	10	13	130	10	13	130	0	70-130	20
Methyl cyclohexane	10	18	180 Q	10	19	190 Q	5	70-130	20

Matrix Spike Sample Summary
Form 3
Volatiles

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Client Sample ID	: IJW-03 BASELINE	**Matrix (Level)**	: WATER (LOW)
Lab Sample ID	: L2449259-03	**Analysis Date**	: 09/07/24 15:20
Matrix Spike	: WG1969019-6	**MS Analysis Date**	: 09/07/24 16:05
Matrix Spike Dup	: WG1969019-7	**MSD Analysis Date**	: 09/07/24 16:27

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (ug/l)	Spike Added (ug/l)	Spike Conc. (ug/l)	%R	Spike Added (ug/l)	Spike Conc. (ug/l)	%R	RPD	Recovery Limits	RPD Limit
Methylene chloride	ND	20	24	120	20	24	120	0	70-130	20
1,1-Dichloroethane	ND	20	27	135 Q	20	26	130	4	70-130	20
Chloroform	11	20	36	125	20	35	120	3	70-130	20
Carbon tetrachloride	ND	20	30	150 Q	20	29	145 Q	3	63-132	20
1,2-Dichloropropane	ND	20	24	120	20	24	120	0	70-130	20
Dibromochloromethane	ND	20	24	120	20	23	115	4	63-130	20
1,1,2-Trichloroethane	ND	20	24	120	20	23	115	4	70-130	20
Tetrachloroethene	2.4	20	31	143 Q	20	29	133 Q	7	70-130	20
Chlorobenzene	ND	20	25	125	20	24	120	4	75-130	20
Trichlorofluoromethane	ND	20	29	145	20	29	145	0	62-150	20
1,2-Dichloroethane	ND	20	24	120	20	24	120	0	70-130	20
1,1,1-Trichloroethane	ND	20	28	140 Q	20	28	140 Q	0	67-130	20
Bromodichloromethane	0.52J	20	24	120	20	24	120	0	67-130	20
trans-1,3-Dichloropropene	ND	20	23	115	20	23	115	0	70-130	20
cis-1,3-Dichloropropene	ND	20	21	105	20	21	105	0	70-130	20
Bromoform	ND	20	21	105	20	21	105	0	54-136	20
1,1,2,2-Tetrachloroethane	ND	20	22	110	20	22	110	0	67-130	20
Benzene	ND	20	26	130	20	25	125	4	70-130	20
Toluene	ND	20	26	130	20	25	125	4	70-130	20
Ethylbenzene	ND	20	26	130	20	25	125	4	70-130	20
Chloromethane	ND	20	28	140 Q	20	28	140 Q	0	64-130	20
Bromomethane	ND	20	30	150 Q	20	28	140 Q	7	39-139	20

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-01	**Date Collected**	: 08/28/24 09:15
Client ID	: IJW-01 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 14:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A22	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	54	2.5	0.70	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	0.30	0.50	0.18	J
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	1.4	0.50	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	0.14	1.0	0.07	J
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	0.28	0.50	0.17	J

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-01	**Date Collected**	: 08/28/24 09:15
Client ID	: IJW-01 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 14:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A22	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	4.3	2.5	0.70	
79-01-6	Trichloroethene	120	0.50	0.18	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	16	2.5	0.70	
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-01	**Date Collected**	: 08/28/24 09:15
Client ID	: IJW-01 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 14:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A22	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-02D	**Date Collected**	: 08/28/24 10:36
Client ID	: IJW-02 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 15:43
Sample Matrix	: WATER	**Dilution Factor**	: 50
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A25	**Instrument ID**	: VOA108
Sample Amount	: 0.2 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	120	35.	U
75-34-3	1,1-Dichloroethane	ND	120	35.	U
67-66-3	Chloroform	ND	120	35.	U
56-23-5	Carbon tetrachloride	ND	25	6.7	U
78-87-5	1,2-Dichloropropane	ND	50	6.8	U
124-48-1	Dibromochloromethane	ND	25	7.4	U
79-00-5	1,1,2-Trichloroethane	ND	75	25.	U
127-18-4	Tetrachloroethene	98	25	9.0	
108-90-7	Chlorobenzene	ND	120	35.	U
75-69-4	Trichlorofluoromethane	ND	120	35.	U
107-06-2	1,2-Dichloroethane	ND	25	6.6	U
71-55-6	1,1,1-Trichloroethane	ND	120	35.	U
75-27-4	Bromodichloromethane	ND	25	9.6	U
10061-02-6	trans-1,3-Dichloropropene	ND	25	8.2	U
10061-01-5	cis-1,3-Dichloropropene	ND	25	7.2	U
75-25-2	Bromoform	ND	100	32.	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	25	8.4	U
71-43-2	Benzene	ND	25	8.0	U
108-88-3	Toluene	ND	120	35.	U
100-41-4	Ethylbenzene	ND	120	35.	U
74-87-3	Chloromethane	ND	120	35.	U
74-83-9	Bromomethane	ND	120	35.	U
75-01-4	Vinyl chloride	68	50	3.6	
75-00-3	Chloroethane	ND	120	35.	U
75-35-4	1,1-Dichloroethene	20	25	8.4	J

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-02D	**Date Collected**	: 08/28/24 10:36
Client ID	: IJW-02 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 15:43
Sample Matrix	: WATER	**Dilution Factor**	: 50
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A25	**Instrument ID**	: VOA108
Sample Amount	: 0.2 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	120	35.	U
79-01-6	Trichloroethene	5200	25	8.8	
95-50-1	1,2-Dichlorobenzene	ND	120	35.	U
541-73-1	1,3-Dichlorobenzene	ND	120	35.	U
106-46-7	1,4-Dichlorobenzene	ND	120	35.	U
1634-04-4	Methyl tert butyl ether	ND	120	8.3	U
179601-23-1	p/m-Xylene	ND	120	35.	U
95-47-6	o-Xylene	ND	120	35.	U
156-59-2	cis-1,2-Dichloroethene	2100	120	35.	
100-42-5	Styrene	ND	120	35.	U
75-71-8	Dichlorodifluoromethane	ND	250	50.	U
67-64-1	Acetone	ND	250	73.	U
75-15-0	Carbon disulfide	ND	250	50.	U
78-93-3	2-Butanone	ND	250	97.	U
108-10-1	4-Methyl-2-pentanone	ND	250	50.	U
591-78-6	2-Hexanone	ND	250	50.	U
74-97-5	Bromochloromethane	ND	120	35.	U
106-93-4	1,2-Dibromoethane	ND	100	32.	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	120	35.	U
98-82-8	Isopropylbenzene	ND	120	35.	U
87-61-6	1,2,3-Trichlorobenzene	ND	120	35.	U
120-82-1	1,2,4-Trichlorobenzene	ND	120	35.	U
79-20-9	Methyl Acetate	ND	100	12.	U
110-82-7	Cyclohexane	ND	500	14.	U
123-91-1	1,4-Dioxane	ND	12000	3000	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-02D	**Date Collected**	: 08/28/24 10:36
Client ID	: IJW-02 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 15:43
Sample Matrix	: WATER	**Dilution Factor**	: 50
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A25	**Instrument ID**	: VOA108
Sample Amount	: 0.2 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	120	35.	U
108-87-2	Methyl cyclohexane	ND	500	20.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-03D	**Date Collected**	: 08/28/24 12:18
Client ID	: IJW-03 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 15:20
Sample Matrix	: WATER	**Dilution Factor**	: 2
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A24	**Instrument ID**	: VOA108
Sample Amount	: 5 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	5.0	1.4	U
75-34-3	1,1-Dichloroethane	ND	5.0	1.4	U
67-66-3	Chloroform	11	5.0	1.4	
56-23-5	Carbon tetrachloride	ND	1.0	0.27	U
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	U
124-48-1	Dibromochloromethane	ND	1.0	0.30	U
79-00-5	1,1,2-Trichloroethane	ND	3.0	1.0	U
127-18-4	Tetrachloroethene	2.4	1.0	0.36	
108-90-7	Chlorobenzene	ND	5.0	1.4	U
75-69-4	Trichlorofluoromethane	ND	5.0	1.4	U
107-06-2	1,2-Dichloroethane	ND	1.0	0.26	U
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.4	U
75-27-4	Bromodichloromethane	0.52	1.0	0.38	J
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.33	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	U
75-25-2	Bromoform	ND	4.0	1.3	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.33	U
71-43-2	Benzene	ND	1.0	0.32	U
108-88-3	Toluene	ND	5.0	1.4	U
100-41-4	Ethylbenzene	ND	5.0	1.4	U
74-87-3	Chloromethane	ND	5.0	1.4	U
74-83-9	Bromomethane	ND	5.0	1.4	U
75-01-4	Vinyl chloride	28	2.0	0.14	
75-00-3	Chloroethane	ND	5.0	1.4	U
75-35-4	1,1-Dichloroethene	1.7	1.0	0.34	

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-03D	**Date Collected**	: 08/28/24 12:18
Client ID	: IJW-03 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 15:20
Sample Matrix	: WATER	**Dilution Factor**	: 2
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A24	**Instrument ID**	: VOA108
Sample Amount	: 5 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	2.0	5.0	1.4	J
79-01-6	Trichloroethene	98	1.0	0.35	
95-50-1	1,2-Dichlorobenzene	ND	5.0	1.4	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	1.4	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	1.4	U
1634-04-4	Methyl tert butyl ether	ND	5.0	0.33	U
179601-23-1	p/m-Xylene	ND	5.0	1.4	U
95-47-6	o-Xylene	ND	5.0	1.4	U
156-59-2	cis-1,2-Dichloroethene	180	5.0	1.4	
100-42-5	Styrene	ND	5.0	1.4	U
75-71-8	Dichlorodifluoromethane	ND	10	2.0	U
67-64-1	Acetone	ND	10	2.9	U
75-15-0	Carbon disulfide	ND	10	2.0	U
78-93-3	2-Butanone	ND	10	3.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	U
591-78-6	2-Hexanone	ND	10	2.0	U
74-97-5	Bromochloromethane	ND	5.0	1.4	U
106-93-4	1,2-Dibromoethane	ND	4.0	1.3	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.4	U
98-82-8	Isopropylbenzene	ND	5.0	1.4	U
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.4	U
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.4	U
79-20-9	Methyl Acetate	ND	4.0	0.47	U
110-82-7	Cyclohexane	ND	20	0.54	U
123-91-1	1,4-Dioxane	ND	500	120	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-03D	**Date Collected**	: 08/28/24 12:18
Client ID	: IJW-03 BASELINE	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 15:20
Sample Matrix	: WATER	**Dilution Factor**	: 2
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A24	**Instrument ID**	: VOA108
Sample Amount	: 5 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	5.0	1.4	U
108-87-2	Methyl cyclohexane	ND	20	0.79	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-04	**Date Collected**	: 08/28/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 14:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A23	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: L2449259-04	Date Collected	: 08/28/24 00:00
Client ID	: TRIP BLANK	Date Received	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	Date Analyzed	: 09/07/24 14:58
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: MJV
Lab File ID	: V08240907A23	Instrument ID	: VOA108
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	0.22	0.50	0.18	J
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449259-04	**Date Collected**	: 08/28/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 08/28/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/07/24 14:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V08240907A23	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1969019-5	**Date Collected**	: NA
Client ID	: WG1969019-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/07/24 08:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: TMS
Lab File ID	: V08240907A05	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1969019-5	**Date Collected**	: NA
Client ID	: WG1969019-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/07/24 08:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: TMS
Lab File ID	: V08240907A05	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449259
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1969019-5	**Date Collected**	: NA
Client ID	: WG1969019-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/07/24 08:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: TMS
Lab File ID	: V08240907A05	**Instrument ID**	: VOA108
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2449259**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: VOA108**	**Ical Ref**	**: ICAL21441**
Calibration dates	**: 08/29/24 17:25 08/29/24 20:47**		

Calibration Files

L11 =V08240829N03.d L1 =V08240829N05.d L2 =V08240829N07.d L3 =V08240829N08.d L4 =V08240829N09.d

L6 =V08240829N10.d L8 =V08240829N11.d L10 =V08240829N12.d

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
40) TP	1,1-Dichloropr		0.202	0.238	0.252	0.234	0.249	0.287	0.315	0.254	14.64
41) TP	Benzene	0.764	0.769	0.853	0.930	0.876	0.912	0.922	0.979	0.876	8.79
42) TP	Tertiary-Amyl Methyl Ether		0.415	0.455	0.561	0.564	0.610	0.620	0.670	0.557	16.47
43) S	1,2-Dichloroethane-d4	0.281	0.282	0.282	0.283	0.273	0.279	0.277	0.283	0.280	1.25
44) TP	1,2-Dichloroet		0.285	0.282	0.303	0.279	0.280	0.275	0.284	0.284	3.13
47) TP	Methyl cyclohe			0.260	0.235	0.216	0.219	0.343	0.417	*Q	0.9945
48) TP	Trichloroethene	0.213	0.213	0.236	0.247	0.233	0.240	0.259	0.283	0.240	9.66
50) TP	Dibromomethane		0.133	0.146	0.157	0.148	0.150	0.148	0.155	0.148	5.38
51) TP	1,2-Dichloropr		0.182	0.202	0.230	0.219	0.228	0.228	0.240	0.218	9.16
53) TP	2-Chloroethyl			0.087	0.119	0.129	0.139	0.141	0.149	0.127	17.51
54) TP	Bromodichlorom		0.284	0.314	0.347	0.323	0.337	0.336	0.351	0.327	7.03
57) TP	1,4-Dioxane		0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002#	10.88
58) TP	cis-1,3-Dichlo		0.266	0.304	0.366	0.357	0.373	0.370	0.392	0.347	12.91
59) I	Chlorobenzene-d5	----------ISTD----------									
60) S	Toluene-d8	1.196	1.202	1.213	1.237	1.176	1.178	1.137	1.131	1.184	3.07
61) TP	Toluene		0.578	0.675	0.750	0.676	0.699	0.702	0.762	0.692	8.74
62) TP	4-Methyl-2-pen			0.049	0.066	0.068	0.078	0.077	0.086	0.071	18.27
63) TP	Tetrachloroethene		0.284	0.341	0.340	0.296	0.296	0.336	0.375	0.324	10.12
65) TP	trans-1,3-Dich		0.276	0.328	0.399	0.376	0.395	0.379	0.405	0.365	12.88
67) TP	Ethyl methacry			0.199	0.288	0.295	0.338	0.333	0.370	0.304	19.56
68) TP	1,1,2-Trichlor		0.169	0.191	0.217	0.193	0.204	0.195	0.211	0.197#	7.96
69) TP	Chlorodibromom		0.315	0.321	0.382	0.347	0.364	0.348	0.370	0.350	7.17
70) TP	1,3-Dichloropr		0.360	0.361	0.417	0.375	0.389	0.369	0.388	0.380	5.33
71) TP	1,2-Dibromoethane		0.219	0.230	0.269	0.240	0.247	0.234	0.244	0.240	6.53
72) TP	2-Hexanone			0.071	0.099	0.105	0.119	0.116	0.126	0.106	18.71
73) TP	Chlorobenzene		0.788	0.817	0.935	0.838	0.865	0.850	0.910	0.858	5.98
74) TP	Ethylbenzene		0.999	1.134	1.332	1.253	1.277	1.342	1.476	1.259	12.27
75) TP	1,1,1,2-Tetrac		0.290	0.319	0.378	0.340	0.347	0.338	0.360	0.339	8.33
76) TP	p/m Xylene		0.373	0.451	0.568	0.531	0.550	0.577	0.657	0.529	17.41
77) TP	o Xylene		0.348	0.442	0.568	0.536	0.561	0.572	0.643	0.524	18.74
78) TP	Styrene		0.562	0.715	0.960	0.907	0.978	0.987		*L	0.9992
79) I	1,4-Dichlorobenzene-d4	----------ISTD----------									
80) TP	Bromoform		0.363	0.345	0.428	0.375	0.416	0.393	0.445	0.395	9.21
82) TP	Isopropylbenzene		1.638	1.854	2.272	1.988	2.060	2.256	2.584	2.093	14.80
83) S	4-Bromofluorobenzene	0.723	0.732	0.709	0.726	0.689	0.705	0.695	0.692	0.709	2.34
84) TP	Bromobenzene		0.660	0.658	0.787	0.651	0.690	0.666	0.731	0.692	7.25

Evaluate Continuing Calibration Report

Data Path : K:\VOA108\2024\240829N-ICAL\
Data File : V08240829N17.d
Acq On : 29 Aug 2024 10:39 pm
Operator : VOA108:PID
Sample : C8260STD10PPB
Misc : WG1966886,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 03 11:35:58 2024
Quant Method : K:\VOA108\2024\240829N-ICAL\V108_240829N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Sep 03 11:34:04 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound		AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene		1.000	1.000	0.0	106	0.00
2	TP	Dichlorodifluoromethane		0.206	0.180	12.6	94	0.00
3	TP	Chloromethane		0.216	0.231	-6.9	106	0.00
4	TP	Vinyl chloride		0.306	0.313	-2.3	104	0.00
5	TP	Bromomethane		0.269	0.311	-15.6	118	0.00
6	TP	Chloroethane		0.278	0.298	-7.2	107	0.00
7	TP	Trichlorofluoromethane		0.480	0.588	-22.5#	135	0.00
8	TP	Ethyl ether		0.194	0.204	-5.2	107	0.00
10	TP	1,1-Dichloroethene		0.185	0.196	-5.9	114	0.00
11	TP	Carbon disulfide		0.632	0.571	9.7	97	0.00
12	TP	Freon-113		0.182	0.222	-22.0#	137	0.00
13	TP	Iodomethane		0.400	0.312	22.0#	80	0.00
14	TP	Acrolein		0.029	0.023	20.7#	87	0.00
15	TP	Methylene chloride		0.243	0.234	3.7	97	0.00
17	TP	Acetone		0.044	0.043	2.3	101	0.00
18	TP	trans-1,2-Dichloroethene		0.225	0.230	-2.2	107	0.00
19	TP	Methyl acetate		0.106	0.105	0.9	103	0.00
20	TP	Methyl tert-butyl ether		0.618	0.548	11.3	92	0.00
21	TP	tert-Butyl alcohol		0.016	0.017	-6.3	112	0.00
22	TP	Diisopropyl ether		0.614	0.603	1.8	100	0.00
23	TP	1,1-Dichloroethane		0.392	0.396	-1.0	100	0.00
24	TP	Halothane		0.180	0.202	-12.2	117	0.00
25	TP	Acrylonitrile		0.057	0.057	0.0	101	0.00
26	TP	Ethyl tert-butyl ether		0.639	0.610	4.5	100	0.00
27	TP	Vinyl acetate		0.443	0.387	12.6	90	0.00
28	TP	cis-1,2-Dichloroethene		0.259	0.254	1.9	99	0.00
29	TP	2,2-Dichloropropane		0.292	0.280	4.1	100	0.00
30	TP	Bromochloromethane		0.148	0.144	2.7	98	0.00
31	TP	Cyclohexane	*	10.000	15.551	-55.5#	138	0.00
32	TP	Chloroform		0.418	0.420	-0.5	99	0.00
33	TP	Ethyl acetate		0.152	0.154	-1.3	109	0.00
34	TP	Carbon tetrachloride		0.326	0.368	-12.9	117	0.00
35	TP	Tetrahydrofuran		0.047	0.045	4.3	104	0.00
36	S	Dibromofluoromethane		0.304	0.299	1.6	103	0.00
37	TP	1,1,1-Trichloroethane		0.348	0.379	-8.9	113	0.00
39	TP	2-Butanone		0.063	0.064	-1.6	101	0.00
40	TP	1,1-Dichloropropene		0.254	0.283	-11.4	119	0.00
41	TP	Benzene		0.876	0.870	0.7	99	0.00
42	TP	tert-Amyl methyl ether		0.557	0.542	2.7	102	0.00

Evaluate Continuing Calibration Report

Data Path : K:\VOA108\2024\240829N-ICAL\
Data File : V08240829N17.d
Acq On : 29 Aug 2024 10:39 pm
Operator : VOA108:PID
Sample : C8260STD10PPB
Misc : WG1966886,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 03 11:35:58 2024
Quant Method : K:\VOA108\2024\240829N-ICAL\V108_240829N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Sep 03 11:34:04 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
43	S	1,2-Dichloroethane-d4	0.280	0.275	1.8	103	0.00
44	TP	1,2-Dichloroethane	0.284	0.280	1.4	97	0.00
47	TP	Methyl cyclohexane	* 10.000	16.837	-68.4#	144	0.00
48	TP	Trichloroethene	0.240	0.253	-5.4	108	0.00
50	TP	Dibromomethane	0.148	0.149	-0.7	100	0.00
51	TP	1,2-Dichloropropane	0.218	0.220	-0.9	101	0.00
53	TP	2-Chloroethyl vinyl ether	0.127	0.104	18.1	92	0.00
54	TP	Bromodichloromethane	0.327	0.312	4.6	95	0.00
57	TP	1,4-Dioxane	0.00165	0.00177#	-7.3	109	0.00
58	TP	cis-1,3-Dichloropropene	0.347	0.343	1.2	99	0.00
59	I	Chlorobenzene-d5	1.000	1.000	0.0	109	0.00
60	S	Toluene-d8	1.184	1.208	-2.0	107	0.00
61	TP	Toluene	0.692	0.711	-2.7	103	0.00
62	TP	4-Methyl-2-pentanone	0.071	0.066	7.0	110	0.00
63	TP	Tetrachloroethene	0.324	0.369	-13.9	118	0.00
65	TP	trans-1,3-Dichloropropene	0.365	0.370	-1.4	101	0.00
67	TP	Ethyl methacrylate	0.304	0.279	8.2	106	0.00
68	TP	1,1,2-Trichloroethane	0.197	0.199#	-1.0	100	0.00
69	TP	Chlorodibromomethane	0.350	0.349	0.3	100	0.00
70	TP	1,3-Dichloropropane	0.380	0.386	-1.6	101	0.00
71	TP	1,2-Dibromoethane	0.240	0.239	0.4	97	0.00
72	TP	2-Hexanone	0.106	0.095	10.4	105	0.00
73	TP	Chlorobenzene	0.858	0.879	-2.4	103	0.00
74	TP	Ethylbenzene	1.259	1.307	-3.8	107	0.00
75	TP	1,1,1,2-Tetrachloroethane	0.339	0.348	-2.7	100	0.00
76	TP	p/m Xylene	0.529	0.549	-3.8	105	0.00
77	TP	o Xylene	0.524	0.538	-2.7	103	0.00
78	TP	Styrene	* 20.000	19.030	4.8	102	0.00
79	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	107	0.00
80	TP	Bromoform	0.395	0.418	-5.8	104	0.00
82	TP	Isopropylbenzene	2.093	2.406	-15.0	113	0.00
83	S	4-Bromofluorobenzene	0.709	0.743	-4.8	109	0.00
84	TP	Bromobenzene	0.692	0.742	-7.2	101	0.00
85	TP	n-Propylbenzene	2.441	2.709	-11.0	112	0.00
86	TP	1,4-Dichlorobutane	0.658	0.681	-3.5	101	0.00
87	TP	1,1,2,2-Tetrachloroethane	0.494	0.514	-4.0	98	0.00
88	TP	4-Ethyltoluene	2.075	2.496	-20.3#	117	0.00

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	Lab Number	: L2449259		
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001		
Instrument ID	: VOA108	Calibration Date	: 09/07/24 06:31		
Lab File ID	: V08240907A01	Init. Calib. Date(s)	: 08/29/24	08/29/24	
Sample No	: WG1969019-2	Init. Calib. Times	: 17:25	20:47	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	107	0
Dichlorodifluoromethane	0.206	0.291	-	-41.3*	20	153	0
Chloromethane	0.216	0.257	-	-19	20	119	0
Vinyl chloride	0.306	0.368	-	-20.3*	20	124	0
Bromomethane	0.269	0.339	-	-26*	20	130	0
Chloroethane	0.278	0.296	-	-6.5	20	107	0
Trichlorofluoromethane	0.48	0.61	-	-27.1*	20	142	0
Ethyl ether	0.194	0.195	-	-0.5	20	103	0
1,1-Dichloroethene	0.185	0.214	-	-15.7	20	126	0
Carbon disulfide	0.632	0.674	-	-6.6	20	115	0
Freon-113	0.182	0.23	-	-26.4*	20	144	0
Acrolein	0.029	0.028	-	3.4	20	108	0
Methylene chloride	0.243	0.243	-	0	20	102	0
Acetone	0.044	0.043	-	2.3	20	102	0
trans-1,2-Dichloroethene	0.225	0.24	-	-6.7	20	113	0
Methyl acetate	0.106	0.102	-	3.8	20	102	0
Methyl tert-butyl ether	0.618	0.614	-	0.6	20	105	0
tert-Butyl alcohol	0.016	0.015	-	6.3	20	103	-.01
Diisopropyl ether	0.614	0.614	-	0	20	103	0
1,1-Dichloroethane	0.392	0.409	-	-4.3	20	105	0
Halothane	0.18	0.2	-	-11.1	20	117	-.01
Acrylonitrile	0.057	0.058	-	-1.8	20	105	0
Ethyl tert-butyl ether	0.639	0.627	-	1.9	20	104	0
Vinyl acetate	0.443	0.424	-	4.3	20	100	0
cis-1,2-Dichloroethene	0.259	0.267	-	-3.1	20	105	0
2,2-Dichloropropane	0.292	0.355	-	-21.6*	20	128	0
Bromochloromethane	0.148	0.152	-	-2.7	20	105	0
Cyclohexane	10	17.045	-	-70.5*	20	154	0
Chloroform	0.418	0.434	-	-3.8	20	103	0
Ethyl acetate	0.152	0.142	-	6.6	20	101	0
Carbon tetrachloride	0.326	0.391	-	-19.9	20	126	0
Tetrahydrofuran	0.047	0.046	-	2.1	20	107	0
Dibromofluoromethane	0.304	0.294	-	3.3	20	102	0
1,1,1-Trichloroethane	0.348	0.396	-	-13.8	20	119	0
2-Butanone	0.063	0.064	-	-1.6	20	102	0
1,1-Dichloropropene	0.254	0.294	-	-15.7	20	125	0
Benzene	0.876	0.922	-	-5.3	20	106	0
tert-Amyl methyl ether	0.557	0.544	-	2.3	20	103	0
1,2-Dichloroethane-d4	0.28	0.267	-	4.6	20	101	0
1,2-Dichloroethane	0.284	0.286	-	-0.7	20	101	0
Methyl cyclohexane	10	18.126	-	-81.3*	20	158	0
Trichloroethene	0.24	0.258	-	-7.5	20	112	0
Dibromomethane	0.148	0.151	-	-2	20	102	-.01

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2449259	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: VOA108		Calibration Date	: 09/07/24 06:31	
Lab File ID	: V08240907A01		Init. Calib. Date(s)	: 08/29/24	08/29/24
Sample No	: WG1969019-2		Init. Calib. Times	: 17:25	20:47
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.218	0.227	-	-4.1	20	105	0
Bromodichloromethane	0.327	0.333	-	-1.8	20	103	0
1,4-Dioxane	0.00165	0.00172*	-	-4.2	20	108	0
cis-1,3-Dichloropropene	0.347	0.362	-	-4.3	20	106	0
Chlorobenzene-d5	1	1	-	0	20	107	0
Toluene-d8	1.184	1.217	-	-2.8	20	105	0
Toluene	0.692	0.775	-	-12	20	110	0
4-Methyl-2-pentanone	0.071	0.064	-	9.9	20	104	-.01
Tetrachloroethene	0.324	0.405	-	-25*	20	127	0
trans-1,3-Dichloropropene	0.365	0.399	-	-9.3	20	107	0
Ethyl methacrylate	0.304	0.278	-	8.6	20	103	0
1,1,2-Trichloroethane	0.197	0.206	-	-4.6	20	101	0
Chlorodibromomethane	0.35	0.373	-	-6.6	20	104	0
1,3-Dichloropropane	0.38	0.408	-	-7.4	20	104	0
1,2-Dibromoethane	0.24	0.261	-	-8.8	20	104	-.01
2-Hexanone	0.106	0.096	-	9.4	20	103	-.01
Chlorobenzene	0.858	0.941	-	-9.7	20	107	0
Ethylbenzene	1.259	1.43	-	-13.6	20	114	0
1,1,1,2-Tetrachloroethane	0.339	0.372	-	-9.7	20	105	0
p/m Xylene	0.529	0.601	-	-13.6	20	113	0
o Xylene	0.524	0.579	-	-10.5	20	109	0
Styrene	20	19.997	-	0	20	105	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	109	0
Bromoform	0.395	0.406	-	-2.8	20	104	0
Isopropylbenzene	2.093	2.503	-	-19.6	20	121	0
4-Bromofluorobenzene	0.709	0.703	-	0.8	20	106	0
Bromobenzene	0.692	0.755	-	-9.1	20	105	0
n-Propylbenzene	2.441	2.822	-	-15.6	20	120	0
1,4-Dichlorobutane	0.658	0.672	-	-2.1	20	102	0
1,1,2,2-Tetrachloroethane	0.494	0.515	-	-4.3	20	101	0
4-Ethyltoluene	2.075	2.42	-	-16.6	20	117	0
2-Chlorotoluene	1.542	1.766	-	-14.5	20	110	0
1,3,5-Trimethylbenzene	1.887	2.203	-	-16.7	20	115	0
1,2,3-Trichloropropane	0.397	0.404	-	-1.8	20	102	0
trans-1,4-Dichloro-2-buten	0.131	0.137	-	-4.6	20	99	0
4-Chlorotoluene	1.572	1.753	-	-11.5	20	107	0
tert-Butylbenzene	1.564	1.926	-	-23.1*	20	123	0
1,2,4-Trimethylbenzene	1.854	2.149	-	-15.9	20	112	0
sec-Butylbenzene	2.154	2.69	-	-24.9*	20	127	0
p-Isopropyltoluene	1.981	2.413	-	-21.8*	20	123	0
1,3-Dichlorobenzene	1.321	1.476	-	-11.7	20	107	0
1,4-Dichlorobenzene	1.357	1.484	-	-9.4	20	106	0
p-Diethylbenzene	1.232	1.405	-	-14	20	123	0

* Value outside of QC limits.

Data Usability Summary Report

Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

121-125 Lake St., Ithaca, NY
Alpha Analytical SDG#L2449503
September 27, 2024
Sampling date: 8/29/2024

Prepared by:
Jodi Zimmerman
Vali-Data of WNY, LLC
20 Hickory Grove Spur
Fulton, NY 13069

DELIVERABLES

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data package for C&S Companies, project located at 121-125 Lake St., Ithaca, NY, Alpha Analytical SDG #L2449503 submitted to Vali-Data of WNY, LLC on September 20, 2024. This DUSR has been prepared in general compliance with USEPA National Functional Guidelines(NFG) and NYSDEC Analytical Services Protocols. The laboratory performed the analysis using the USEPA method Volatile Organics (8260D).

ID	Sample ID	Laboratory ID
1	IJW-04 Baseline	L2449503-01
2	IJW-05 Baseline	L2449503-02
3	DUP Baseline	L2449503-03
4	Trip Blank	L2449503-04

Sample ID#4 was not recorded on the Chain of Custody. C&S Companies confirmed that this sample was sent.

VOLATILE ORGANIC COMPOUNDS

The following items/criteria were reviewed for this analytical suite:

-Data Completeness
-Narrative and Data Reporting Forms
-Chain of Custody and Traffic Reports
-Holding Times
-Internal Standard (IS) Area Performance
-Surrogate Spike Recoveries
-Method Blank
-Field Duplicate Sample Precision
-Laboratory Control Samples
-MS/MSD
-Compound Quantitation
-Initial Calibration
-Continuing Calibration
-GC/MS Performance Check

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES

The data are acceptable for use except where qualified below in Initial Calibration and

Continuing Calibration.

Samples: DUSR ID#1-3 were diluted due to high target analyte concentrations.

DATA COMPLETENESS
All criteria were met.

NARRATIVE AND DATA REPORTING FORMS
All criteria were met.
Data was not reported to 3 significant figures. This does not affect the usability of the data.

CHAIN OF CUSTODY AND TRAFFIC REPORTS
All criteria were met.

HOLDING TIMES
All holding times were met.

INTERNAL STANDARD (IS)
All criteria were met.

SURROGATE SPIKE RECOVERIES
All criteria were met.

METHOD BLANK
All criteria were met.

FIELD DUPLICATE SAMPLE PRECISION
All criteria were met except trans-1,2-Dichloroethene was detected in DUSR ID#1 but was not detected in #3.

LABORATORY CONTROL SAMPLES
All criteria were met.

MS/MSD
No MS/MSD was acquired.

COMPOUND QUANTITATION
All criteria were met.

INITIAL CALIBRATION
All criteria were met except several target analytes were outside QC limits in the initial calibrations (ICal) and/or the initial calibration verifications (ICV) and should be qualified as estimated in the associated samples blanks and spikes.

ICal/ICV instrument	Target Analyte	RRF/%D	Qualifier	Associated Sample
ICal/ICV VOA122	Bromodichloromethane	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	Trichloroethene	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	1,1,2-Trichloroethene	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	1,4-Dioxane	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	Bromochloromethane	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	cis-1,2-Dichloroethene	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	Chloroform	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	1,2-Dibromoethane	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	cis-1,3-Dichloropropene	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	1,2-Dichloropropane	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	1,2,3-Trichlorobenzene	RRF	UJ/J	WG1968351, 1-4
ICal/ICV VOA122	1,2,4-Trichlorobenzene	RRF	UJ/J	WG1968351, 1-4

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

CONTINUING CALIBRATION

All criteria were met except several target analytes were outside QC limits in the continuing calibrations and should be qualified as estimated in the associated samples blanks and spikes.

CCal ID	Target Analyte	RRF/%D	Qualifier	Associated Sample
WG1968351-2	Bromodichloromethane	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	Trichloroethene	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	1,1,2-Trichloroethene	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	1,4-Dioxane	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	Bromochloromethane	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	cis-1,2-Dichloroethene	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	Chloroform	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	1,2-Dibromoethane	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	cis-1,3-Dichloropropene	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	1,2-Dichloropropane	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	1,2,3-Trichlorobenzene	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	4-Methyl-2-pentanone	RRF	UJ/J	WG1968351, 1-4
WG1968351-2	Tetrachloroethene	-24.1	UJ/J	WG1968351, 1-4

Some target analytes were outside laboratory QC limits but within NFG QC limits, so no further action is required.

GC/MS PERFORMANCE CHECK

All criteria were met.

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analyses of Dissolved Gases and Sulfide were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

L2449503-01 and -02: The sample was received above the appropriate pH for the Dissolved Metals analysis. The laboratory added additional HNO3 to a pH <2.

Iron, Ferrous

L2449503-01 and -02: The sample was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristen Walker Report Date: 09/15/24

Title: Technical Director/Representative

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-01D	**Date Collected**	: 08/29/24 09:05
Client ID	: IJW-04 BASELINE	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 15:42
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A23	**Instrument ID**	: VOA122
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	25	7.0	U
75-34-3	1,1-Dichloroethane	ND	25	7.0	U
67-66-3	Chloroform	ND	25	7.0	U
56-23-5	Carbon tetrachloride	ND	5.0	1.3	U
78-87-5	1,2-Dichloropropane	ND	10	1.4	U
124-48-1	Dibromochloromethane	ND	5.0	1.5	U
79-00-5	1,1,2-Trichloroethane	ND	15	5.0	U
127-18-4	Tetrachloroethene	74	5.0	1.8	
108-90-7	Chlorobenzene	ND	25	7.0	U
75-69-4	Trichlorofluoromethane	ND	25	7.0	U
107-06-2	1,2-Dichloroethane	ND	5.0	1.3	U
71-55-6	1,1,1-Trichloroethane	ND	25	7.0	U
75-27-4	Bromodichloromethane	ND	5.0	1.9	U
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.6	U
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.4	U
75-25-2	Bromoform	ND	20	6.5	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.7	U
71-43-2	Benzene	ND	5.0	1.6	U
108-88-3	Toluene	ND	25	7.0	U
100-41-4	Ethylbenzene	ND	25	7.0	U
74-87-3	Chloromethane	ND	25	7.0	U
74-83-9	Bromomethane	ND	25	7.0	U
75-01-4	Vinyl chloride	33	10	0.71	
75-00-3	Chloroethane	ND	25	7.0	U
75-35-4	1,1-Dichloroethene	4.4	5.0	1.7	J

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-01D	**Date Collected**	: 08/29/24 09:05
Client ID	: IJW-04 BASELINE	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 15:42
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A23	**Instrument ID**	: VOA122
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	7.2	25	7.0	J
79-01-6	Trichloroethene	1200	5.0	1.8	
95-50-1	1,2-Dichlorobenzene	ND	25	7.0	U
541-73-1	1,3-Dichlorobenzene	ND	25	7.0	U
106-46-7	1,4-Dichlorobenzene	ND	25	7.0	U
1634-04-4	Methyl tert butyl ether	ND	25	1.7	U
179601-23-1	p/m-Xylene	ND	25	7.0	U
95-47-6	o-Xylene	ND	25	7.0	U
156-59-2	cis-1,2-Dichloroethene	690	25	7.0	
100-42-5	Styrene	ND	25	7.0	U
75-71-8	Dichlorodifluoromethane	ND	50	10.	U
67-64-1	Acetone	ND	50	15.	U
75-15-0	Carbon disulfide	ND	50	10.	U
78-93-3	2-Butanone	ND	50	19.	U
108-10-1	4-Methyl-2-pentanone	ND	50	10.	U
591-78-6	2-Hexanone	ND	50	10.	U
74-97-5	Bromochloromethane	ND	25	7.0	U
106-93-4	1,2-Dibromoethane	ND	20	6.5	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	25	7.0	U
98-82-8	Isopropylbenzene	ND	25	7.0	U
87-61-6	1,2,3-Trichlorobenzene	ND	25	7.0	U
120-82-1	1,2,4-Trichlorobenzene	ND	25	7.0	U
79-20-9	Methyl Acetate	ND	20	2.3	U
110-82-7	Cyclohexane	ND	100	2.7	U
123-91-1	1,4-Dioxane	ND	2500	610	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-01D	**Date Collected**	: 08/29/24 09:05
Client ID	: IJW-04 BASELINE	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 15:42
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A23	**Instrument ID**	: VOA122
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	25	7.0	U
108-87-2	Methyl cyclohexane	ND	100	4.0	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: L2449503-02D	Date Collected	: 08/29/24 11:15
Client ID	: IJW-05 BASELINE	Date Received	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	Date Analyzed	: 09/05/24 16:07
Sample Matrix	: WATER	Dilution Factor	: 5
Analytical Method	: 1,8260D	Analyst	: MJV
Lab File ID	: V22240905A24	Instrument ID	: VOA122
Sample Amount	: 2 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	12	3.5	U
75-34-3	1,1-Dichloroethane	4.0	12	3.5	J
67-66-3	Chloroform	ND	12	3.5	U
56-23-5	Carbon tetrachloride	ND	2.5	0.67	U
78-87-5	1,2-Dichloropropane	ND	5.0	0.68	U
124-48-1	Dibromochloromethane	ND	2.5	0.74	U
79-00-5	1,1,2-Trichloroethane	ND	7.5	2.5	U
127-18-4	Tetrachloroethene	ND	2.5	0.90	U
108-90-7	Chlorobenzene	ND	12	3.5	U
75-69-4	Trichlorofluoromethane	ND	12	3.5	U
107-06-2	1,2-Dichloroethane	ND	2.5	0.66	U
71-55-6	1,1,1-Trichloroethane	ND	12	3.5	U
75-27-4	Bromodichloromethane	ND	2.5	0.96	U
10061-02-6	trans-1,3-Dichloropropene	ND	2.5	0.82	U
10061-01-5	cis-1,3-Dichloropropene	ND	2.5	0.72	U
75-25-2	Bromoform	ND	10	3.2	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.5	0.84	U
71-43-2	Benzene	ND	2.5	0.80	U
108-88-3	Toluene	ND	12	3.5	U
100-41-4	Ethylbenzene	ND	12	3.5	U
74-87-3	Chloromethane	ND	12	3.5	U
74-83-9	Bromomethane	ND	12	3.5	U
75-01-4	Vinyl chloride	66	5.0	0.36	
75-00-3	Chloroethane	ND	12	3.5	U
75-35-4	1,1-Dichloroethene	2.8	2.5	0.84	

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: L2449503-02D	Date Collected	: 08/29/24 11:15
Client ID	: IJW-05 BASELINE	Date Received	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	Date Analyzed	: 09/05/24 16:07
Sample Matrix	: WATER	Dilution Factor	: 5
Analytical Method	: 1,8260D	Analyst	: MJV
Lab File ID	: V22240905A24	Instrument ID	: VOA122
Sample Amount	: 2 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
156-60-5	trans-1,2-Dichloroethene	3.6	12	3.5	J
79-01-6	Trichloroethene	53	2.5	0.88	
95-50-1	1,2-Dichlorobenzene	ND	12	3.5	U
541-73-1	1,3-Dichlorobenzene	ND	12	3.5	U
106-46-7	1,4-Dichlorobenzene	ND	12	3.5	U
1634-04-4	Methyl tert butyl ether	ND	12	0.83	U
179601-23-1	p/m-Xylene	ND	12	3.5	U
95-47-6	o-Xylene	ND	12	3.5	U
156-59-2	cis-1,2-Dichloroethene	420	12	3.5	
100-42-5	Styrene	ND	12	3.5	U
75-71-8	Dichlorodifluoromethane	ND	25	5.0	U
67-64-1	Acetone	ND	25	7.3	U
75-15-0	Carbon disulfide	ND	25	5.0	U
78-93-3	2-Butanone	ND	25	9.7	U
108-10-1	4-Methyl-2-pentanone	ND	25	5.0	U
591-78-6	2-Hexanone	ND	25	5.0	U
74-97-5	Bromochloromethane	ND	12	3.5	U
106-93-4	1,2-Dibromoethane	ND	10	3.2	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	12	3.5	U
98-82-8	Isopropylbenzene	ND	12	3.5	U
87-61-6	1,2,3-Trichlorobenzene	ND	12	3.5	U
120-82-1	1,2,4-Trichlorobenzene	ND	12	3.5	U
79-20-9	Methyl Acetate	ND	10	1.2	U
110-82-7	Cyclohexane	ND	50	1.4	U
123-91-1	1,4-Dioxane	ND	1200	300	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-02D	**Date Collected**	: 08/29/24 11:15
Client ID	: IJW-05 BASELINE	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 16:07
Sample Matrix	: WATER	**Dilution Factor**	: 5
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A24	**Instrument ID**	: VOA122
Sample Amount	: 2 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	12	3.5	U
108-87-2	Methyl cyclohexane	ND	50	2.0	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-03D	**Date Collected**	: 08/29/24 00:00
Client ID	: DUP BASELINE	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 16:32
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A25	**Instrument ID**	: VOA122
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	25	7.0	U
75-34-3	1,1-Dichloroethane	ND	25	7.0	U
67-66-3	Chloroform	ND	25	7.0	U
56-23-5	Carbon tetrachloride	ND	5.0	1.3	U
78-87-5	1,2-Dichloropropane	ND	10	1.4	U
124-48-1	Dibromochloromethane	ND	5.0	1.5	U
79-00-5	1,1,2-Trichloroethane	ND	15	5.0	U
127-18-4	Tetrachloroethene	73	5.0	1.8	
108-90-7	Chlorobenzene	ND	25	7.0	U
75-69-4	Trichlorofluoromethane	ND	25	7.0	U
107-06-2	1,2-Dichloroethane	ND	5.0	1.3	U
71-55-6	1,1,1-Trichloroethane	ND	25	7.0	U
75-27-4	Bromodichloromethane	ND	5.0	1.9	U
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.6	U
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.4	U
75-25-2	Bromoform	ND	20	6.5	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.7	U
71-43-2	Benzene	ND	5.0	1.6	U
108-88-3	Toluene	ND	25	7.0	U
100-41-4	Ethylbenzene	ND	25	7.0	U
74-87-3	Chloromethane	ND	25	7.0	U
74-83-9	Bromomethane	ND	25	7.0	U
75-01-4	Vinyl chloride	32	10	0.71	
75-00-3	Chloroethane	ND	25	7.0	U
75-35-4	1,1-Dichloroethene	4.1	5.0	1.7	J

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-03D	**Date Collected**	: 08/29/24 00:00
Client ID	: DUP BASELINE	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 16:32
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A25	**Instrument ID**	: VOA122
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	25	7.0	U
79-01-6	Trichloroethene	1200	5.0	1.8	
95-50-1	1,2-Dichlorobenzene	ND	25	7.0	U
541-73-1	1,3-Dichlorobenzene	ND	25	7.0	U
106-46-7	1,4-Dichlorobenzene	ND	25	7.0	U
1634-04-4	Methyl tert butyl ether	ND	25	1.7	U
179601-23-1	p/m-Xylene	ND	25	7.0	U
95-47-6	o-Xylene	ND	25	7.0	U
156-59-2	cis-1,2-Dichloroethene	700	25	7.0	
100-42-5	Styrene	ND	25	7.0	U
75-71-8	Dichlorodifluoromethane	ND	50	10.	U
67-64-1	Acetone	ND	50	15.	U
75-15-0	Carbon disulfide	ND	50	10.	U
78-93-3	2-Butanone	ND	50	19.	U
108-10-1	4-Methyl-2-pentanone	ND	50	10.	U
591-78-6	2-Hexanone	ND	50	10.	U
74-97-5	Bromochloromethane	ND	25	7.0	U
106-93-4	1,2-Dibromoethane	ND	20	6.5	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	25	7.0	U
98-82-8	Isopropylbenzene	ND	25	7.0	U
87-61-6	1,2,3-Trichlorobenzene	ND	25	7.0	U
120-82-1	1,2,4-Trichlorobenzene	ND	25	7.0	U
79-20-9	Methyl Acetate	ND	20	2.3	U
110-82-7	Cyclohexane	ND	100	2.7	U
123-91-1	1,4-Dioxane	ND	2500	610	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-03D	**Date Collected**	: 08/29/24 00:00
Client ID	: DUP BASELINE	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 16:32
Sample Matrix	: WATER	**Dilution Factor**	: 10
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A25	**Instrument ID**	: VOA122
Sample Amount	: 1 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	25	7.0	U
108-87-2	Methyl cyclohexane	ND	100	4.0	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	Lab Number	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	Project Number	: X55.002.001
Lab ID	: L2449503-04	Date Collected	: 08/29/24 00:00
Client ID	: TRIP BLANK	Date Received	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	Date Analyzed	: 09/05/24 15:18
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: MJV
Lab File ID	: V22240905A22	Instrument ID	: VOA122
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-04	**Date Collected**	: 08/29/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 15:18
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A22	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: L2449503-04	**Date Collected**	: 08/29/24 00:00
Client ID	: TRIP BLANK	**Date Received**	: 08/29/24
Sample Location	: 121-125 LAKE ST., ITHACA, NY	**Date Analyzed**	: 09/05/24 15:18
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: MJV
Lab File ID	: V22240905A22	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1968351-5	**Date Collected**	: NA
Client ID	: WG1968351-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/05/24 08:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: V22240905A05	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1968351-5	**Date Collected**	: NA
Client ID	: WG1968351-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/05/24 08:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: V22240905A05	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
123-91-1	1,4-Dioxane	ND	250	61.	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C&S Companies	**Lab Number**	: L2449503
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001
Lab ID	: WG1968351-5	**Date Collected**	: NA
Client ID	: WG1968351-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/05/24 08:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260D	**Analyst**	: PID
Lab File ID	: V22240905A05	**Instrument ID**	: VOA122
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2449503**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: VOA122**	**Ical Ref**	**: ICAL21346**
Calibration dates	**: 07/29/24 13:23 07/29/24 17:04**		

Calibration Files

L11 =V22240729A03.D L1 =V22240729A04.D L2 =V22240729A06.D L3 =V22240729A08.D L4 =V22240729A09.D

L6 =V22240729A10.D L8 =V22240729A11.D L10 =V22240729A12.D

		Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
1)	I	Fluorobenzene	----------ISTD----------									
2)	TP	Dichlorodifluo			0.147	0.215	0.223	0.209	0.195	0.195	0.197	13.62
3)	TP	Chloromethane		0.252	0.295	0.303	0.277	0.253	0.239	0.225	0.263	10.94
4)	TP	Vinyl chloride	0.202	0.176	0.199	0.232	0.231	0.217	0.206	0.203	0.208	8.84
5)	TP	Bromomethane		0.070	0.076	0.075	0.079	0.088	0.095	0.102	0.084	14.11
6)	TP	Chloroethane		0.118	0.132	0.133	0.126	0.117	0.110	0.108	0.120	8.39
7)	TP	Trichlorofluor		0.144	0.179	0.257	0.263	0.252	0.238	0.239	*L	0.9987
8)	TP	Ethyl ether		0.067	0.069	0.073	0.070	0.071	0.070	0.068	0.070	2.76
10)	TP	1,1-Dichloroet		0.110	0.126	0.152	0.154	0.146	0.139	0.139	0.138	11.23
11)	TP	Carbon disulfide		0.404	0.455	0.510	0.491	0.451	0.438	0.433	0.454	7.85
12)	TP	Freon-113			0.097	0.154	0.159	0.150	0.147	0.151	0.143	16.09
13)	TP	Iodomethane			0.122	0.172	0.190	0.199	0.203	0.204	0.182	17.53
14)	TP	Acrolein		0.018	0.024	0.025	0.025	0.025	0.025	0.024	0.024	11.30
15)	TP	Methylene chlo		0.237	0.204	0.191	0.173	0.164	0.159	0.156	0.183	16.00
17)	TP	Acetone			0.040	0.035	0.033	0.032	0.031	0.030	0.033	10.98
18)	TP	trans-1,2-Dich		0.148	0.169	0.177	0.166	0.160	0.157	0.155	0.162	5.98
19)	TP	Methyl acetate		0.103	0.089	0.085	0.084	0.083	0.081	0.077	0.086	9.89
21)	TP	Methyl tert butyl ether		0.254	0.268	0.317	0.328	0.328	0.339	0.333	0.309	11.02
22)	TP	tert-Butyl alc		0.004	0.006	0.007	0.007	0.007	0.007	0.007	0.006#	15.62
24)	TP	Diisopropyl ether		0.493	0.543	0.594	0.622	0.617	0.616	0.586	0.581	8.17
25)	TP	1,1-Dichloroet		0.311	0.358	0.365	0.340	0.319	0.315	0.306	0.331	7.23
26)	TP	Halothane		0.096	0.110	0.132	0.127	0.127	0.126	0.126	0.121	10.56
27)	TP	Acrylonitrile		0.045	0.044	0.049	0.048	0.046	0.045	0.043	0.046	4.17
28)	TP	Ethyl tert-but		0.324	0.354	0.413	0.457	0.456	0.468	0.453	0.418	13.74
29)	TP	Vinyl acetate		0.273	0.289	0.353	0.379	0.386	0.385	0.367	0.348	13.51
30)	TP	cis-1,2-Dichlo		0.168	0.196	0.197	0.183	0.172	0.172	0.168	0.179#	6.96
31)	TP	2,2-Dichloropr		0.174	0.196	0.224	0.220	0.211	0.211	0.212	0.207	8.20
32)	TP	Bromochloromet		0.084	0.092	0.093	0.084	0.081	0.080	0.078	0.085#	6.73
33)	TP	Cyclohexane			0.183	0.351	0.378	0.354	0.352	0.353	*L	0.9993
34)	TP	Chloroform		0.283	0.310	0.303	0.286	0.274	0.278	0.268	0.286#	5.37
35)	TP	Ethyl acetate			0.096	0.111	0.116	0.118	0.118	0.114	0.112	7.47
36)	TP	Carbon tetrachloride	0.179	0.145	0.171	0.233	0.236	0.228	0.228	0.231	0.206	17.40
37)	TP	Tetrahydrofuran			0.035	0.038	0.038	0.037	0.037	0.036	0.037	3.72
38)	S	Dibromofluoromethane	0.356	0.382	0.381	0.359	0.339	0.326	0.329	0.324	0.349	6.78
39)	TP	1,1,1-Trichlor		0.184	0.221	0.263	0.260	0.255	0.254	0.252	0.241	11.85
41)	TP	2-Butanone			0.042	0.044	0.049	0.050	0.049	0.047	0.047	6.75

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2449503**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: VOA122**	**Ical Ref**	**: ICAL21346**
Calibration dates	**: 07/29/24 13:23 07/29/24 17:04**		

Calibration Files

L11 =V22240729A03.D L1 =V22240729A04.D L2 =V22240729A06.D L3 =V22240729A08.D L4 =V22240729A09.D

L6 =V22240729A10.D L8 =V22240729A11.D L10 =V22240729A12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
42) TP	1,1-Dichloropr		0.128	0.160	0.214	0.222	0.214	0.213	0.213	0.195	18.52
44) TP	Benzene	0.577	0.517	0.672	0.656	0.692	0.662	0.658	0.633	0.633	9.17
45) TP	Tertiary-Amyl Methyl Ether		0.172	0.171	0.190	0.208	0.218	0.230	0.228	0.202	12.43
46) S	1,2-Dichloroethane-d4	0.286	0.306	0.301	0.305	0.293	0.289	0.294	0.289	0.295	2.57
47) T	1,2-Dichloroet		0.154	0.165	0.170	0.162	0.154	0.154	0.149	0.158	4.65
50) TP	Methyl cyclohe			0.094	0.200	0.226	0.224	0.233	0.238	*L	0.9996
51) TP	Trichloroethene	0.133	0.113	0.124	0.143	0.143	0.140	0.141	0.141	0.135#	8.23
53) TP	Dibromomethane		0.065	0.068	0.071	0.070	0.068	0.069	0.067	0.068	2.99
54) TP	1,2-Dichloropr		0.115	0.131	0.154	0.152	0.147	0.147	0.143	0.141#	9.64
56) TP	2-Chloroethyl		0.039	0.041	0.053	0.059	0.063	0.063	0.061	0.054	18.80
57) TP	Bromodichlorom		0.138	0.157	0.175	0.176	0.174	0.176	0.173	0.167#	8.74
60) TP	1,4-Dioxane		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001#	5.34
61) TP	cis-1,3-Dichloropropene	0.121	0.126	0.149	0.186	0.197	0.199	0.201	0.197	0.172#	19.89
62) I	Chlorobenzene-d5	----------ISTD----------									
63) S	Toluene-d8	1.265	1.258	1.267	1.262	1.281	1.288	1.295	1.276	1.274	1.03
64) TP	Toluene		0.347	0.400	0.427	0.437	0.427	0.429	0.416	0.412	7.55
65) TP	4-Methyl-2-pen			0.023	0.028	0.034	0.037	0.038	0.037	0.033	18.50
66) TP	Tetrachloroethene		0.107	0.132	0.169	0.181	0.179	0.181	0.181	0.162	18.41
68) TP	trans-1,3-Dichloropropene		0.112	0.139	0.175	0.208	0.214	0.217	0.212	*L	0.9992
70) TP	Ethyl methacry			0.090	0.124	0.141	0.147	0.149	0.144	0.133	17.01
71) TP	1,1,2-Trichlor		0.072	0.079	0.094	0.102	0.111	0.111	0.108	0.097#	16.46
72) TP	Chlorodibromom		0.089	0.117	0.139	0.157	0.162	0.164	0.161	*L	0.9995
73) TP	1,3-Dichloropr		0.151	0.163	0.188	0.207	0.208	0.208	0.200	0.190	12.35
74) TP	1,2-Dibromoethane		0.077	0.089	0.107	0.119	0.123	0.123	0.120	0.108#	16.86
76) TP	2-Hexanone			0.045	0.055	0.064	0.069	0.069	0.066	0.061	15.23
77) TP	Chlorobenzene		0.417	0.478	0.486	0.486	0.471	0.470	0.458	0.467	5.15
78) TP	Ethylbenzene		0.611	0.710	0.850	0.854	0.821	0.817	0.780	0.778	11.36
79) TP	1,1,1,2-Tetrac		0.107	0.127	0.144	0.161	0.166	0.168	0.166	0.148	15.82
80) TP	p/m Xylene		0.220	0.271	0.332	0.334	0.323	0.322	0.310	0.302	13.84
81) TP	o Xylene		0.200	0.259	0.313	0.315	0.308	0.308	0.296	0.285	14.79
82) TP	Styrene		0.304	0.416	0.503	0.521	0.507	0.499	0.464	0.459	16.79
83) I	1,4-Dichlorobenzene-d4	----------ISTD----------									
84) TP	Bromoform		0.110	0.118	0.137	0.162	0.172	0.176	0.179	0.150	19.06
86) TP	Isopropylbenzene		1.046	1.323	1.726	1.771	1.679	1.676	1.637	1.551	17.18
87) S	4-Bromofluorobenzene	0.911	0.911	0.900	0.932	0.924	0.900	0.900	0.908	0.911	1.31
88) TP	Bromobenzene		0.335	0.355	0.374	0.380	0.370	0.371	0.370	0.365	4.18

Initial Calibration Summary
Form 6
Volatiles

Client	**: C&S Companies**	**Lab Number**	**: L2449503**
Project Name	**: FORMER ITHACA GUN FACTORY BCP**	**Project Number**	**: X55.002.001**
Instrument ID	**: VOA122**	**Ical Ref**	**: ICAL21346**
Calibration dates	**: 07/29/24 13:23 07/29/24 17:04**		

Calibration Files
L11 =V22240729A03.D L1 =V22240729A04.D L2 =V22240729A06.D L3 =V22240729A08.D L4 =V22240729A09.D
L6 =V22240729A10.D L8 =V22240729A11.D L10 =V22240729A12.D

	Compound	L11	L1	L2	L3	L4	L6	L8	L10	Avg	%RSD
89) TP	n-Propylbenzene		1.282	1.530	1.993	2.048	1.948	1.952	1.864	1.802	15.83
90) TP	1,4-Dichlorobu		0.423	0.442	0.474	0.497	0.492	0.489	0.483	0.472	5.94
91) TP	1,1,2,2-Tetrac		0.237	0.231	0.246	0.267	0.266	0.266	0.263	0.254	6.06
92) TP	4-Ethyltoluene		1.049	1.261	1.602	1.644	1.579	1.593	1.555	1.469	15.29
93) TP	2-Chlorotoluene		0.883	1.048	1.156	1.157	1.108	1.131	1.117	1.086	8.88
94) TP	1,3,5-Trimethy		0.876	1.095	1.350	1.365	1.327	1.358	1.343	1.245	15.14
95) TP	1,2,3-Trichlor		0.162	0.186	0.191	0.205	0.202	0.204	0.205	0.194	8.07
96) TP	trans-1,4-Dich		0.063	0.078	0.083	0.094	0.095	0.096	0.095	0.086	14.50
97) TP	4-Chlorotoluene		0.906	1.071	1.192	1.204	1.158	1.166	1.146	1.121	9.26
98) TP	tert-Butylbenzene		0.714	0.853	1.187	1.236	1.189	1.202	1.183	1.081	19.23
101) TP	1,2,4-Trimethy		0.970	1.245	1.527	1.538	1.479	1.505	1.471	1.391	15.13
102) TP	sec-Butylbenzene		0.953	1.168	1.721	1.779	1.693	1.711	1.646	*L	0.9992
103) TP	p-Isopropyltol		0.760	0.980	1.439	1.476	1.423	1.444	1.406	*L	0.9995
104) TP	1,3-Dichlorobe		0.643	0.722	0.760	0.757	0.734	0.732	0.718	0.724	5.42
105) TP	1,4-Dichlorobe		0.681	0.712	0.743	0.738	0.714	0.722	0.712	0.718	2.86
106) TP	p-Diethylbenzene			0.566	0.809	0.846	0.825	0.842	0.840	0.788	13.93
107) TP	n-Butylbenzene		0.629	0.830	1.214	1.226	1.171	1.197	1.177	*L	0.9996
108) TP	1,2-Dichlorobe		0.568	0.628	0.667	0.670	0.653	0.655	0.639	0.640	5.50
109) TP	1,2,4,5-Tetram			0.737	1.085	1.193	1.167	1.175	1.128	1.081	16.00
110) TP	1,2-Dibromo-3-		0.007	0.027	0.033	0.037	0.040	0.040	0.040	*L	0.9993
111) TP	1,3,5-Trichlor		0.347	0.382	0.443	0.449	0.433	0.439	0.427	0.417	9.11
112) TP	Hexachlorobuta		0.091	0.104	0.150	0.152	0.147	0.155	0.160	*L	0.9989
113) TP	1,2,4-Trichlor		0.285	0.311	0.368	0.385	0.380	0.381	0.374	0.355#	11.26
114) TP	Naphthalene		0.486	0.583	0.770	0.883	0.870	0.861	0.815	*L	0.9987
115) TP	1,2,3-Trichlor		0.237	0.280	0.315	0.328	0.320	0.320	0.310	0.301#	10.69

Evaluate Continuing Calibration Report

Data Path : K:\VOA122\2024\240729AICAL\
Data File : V22240729A17.D
Acq On : 29 Jul 2024 07:08 pm
Operator : VOA122:PID
Sample : C8260STD10PPB
Misc : WG1953132,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 30 07:09:42 2024
Quant Method : K:\VOA122\2024\240729AICAL\V122_240729A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jul 30 07:07:01 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	115	0.00
2	TP	Dichlorodifluoromethane	0.197	0.162	17.8	87	0.00
3	TP	Chloromethane	0.263	0.280	-6.5	107	0.00
4	TP	Vinyl chloride	0.208	0.209	-0.5	104	0.00
5	TP	Bromomethane	0.084	0.074	11.9	114	0.00
6	TP	Chloroethane	0.120	0.124	-3.3	107	0.00
7	TP	Trichlorofluoromethane	* 10.000	10.782	-7.8	115	0.00
8	TP	Ethyl ether	0.070	0.073	-4.3	116	0.00
10	TP	1,1-Dichloroethene	0.138	0.143	-3.6	108	0.00
11	TP	Carbon disulfide	0.454	0.435	4.2	98	0.00
12	TP	Freon-113	0.143	0.170	-18.9	127	0.00
13	TP	Iodomethane	0.182	0.085	53.3#	57	0.00
14	TP	Acrolein	0.024	0.017	29.2#	78	0.00
15	TP	Methylene chloride	0.183	0.173	5.5	104	0.00
17	TP	Acetone	0.033	0.033	0.0	111	0.00
18	TP	trans-1,2-Dichloroethene	0.162	0.165	-1.9	107	0.00
19	TP	Methyl acetate	0.086	0.082	4.7	112	0.00
21	TP	Methyl tert-butyl ether	0.309	0.278	10.0	101	0.00
22	TP	tert-Butyl alcohol	0.00648	0.00709#	-9.4	122	0.00
24	TP	Diisopropyl ether	0.581	0.562	3.3	109	0.00
25	TP	1,1-Dichloroethane	0.331	0.339	-2.4	107	0.00
26	TP	Halothane	0.121	0.135	-11.6	117	0.00
27	TP	Acrylonitrile	0.046	0.044	4.3	104	0.00
28	TP	Ethyl tert-butyl ether	0.418	0.405	3.1	113	0.00
29	TP	Vinyl acetate	0.348	0.305	12.4	99	0.00
30	TP	cis-1,2-Dichloroethene	0.179	0.183#	-2.2	107	0.00
31	TP	2,2-Dichloropropane	0.207	0.191	7.7	98	0.00
32	TP	Bromochloromethane	0.085	0.081#	4.7	100	0.00
33	TP	Cyclohexane	* 10.000	10.905	-9.0	119	0.00
34	TP	Chloroform	0.286	0.286#	0.0	109	0.00
35	TP	Ethyl acetate	0.112	0.110	1.8	114	0.00
36	TP	Carbon tetrachloride	0.206	0.220	-6.8	109	0.00
37	TP	Tetrahydrofuran	0.037	0.036	2.7	110	0.00
38	S	Dibromofluoromethane	0.349	0.346	0.9	111	0.00
39	TP	1,1,1-Trichloroethane	0.241	0.249	-3.3	109	0.00
41	TP	2-Butanone	0.047	0.045	4.3	116	0.00
42	TP	1,1-Dichloropropene	0.195	0.208	-6.7	112	0.00
44	TP	Benzene	0.633	0.643	-1.6	113	0.00
45	TP	tert-Amyl methyl ether	0.202	0.185	8.4	112	0.00

Evaluate Continuing Calibration Report

Data Path : K:\VOA122\2024\240729AICAL\
Data File : V22240729A17.D
Acq On : 29 Jul 2024 07:08 pm
Operator : VOA122:PID
Sample : C8260STD10PPB
Misc : WG1953132,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 30 07:09:42 2024
Quant Method : K:\VOA122\2024\240729AICAL\V122_240729A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jul 30 07:07:01 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
46	S	1,2-Dichloroethane-d4	0.295	0.300	-1.7	113	0.00
47	T	1,2-Dichloroethane	0.158	0.160	-1.3	108	0.00
50	TP	Methyl cyclohexane	* 10.000	10.681	-6.8	128	0.00
51	TP	Trichloroethene	0.135	0.133#	1.5	107	0.00
53	TP	Dibromomethane	0.068	0.068	0.0	111	0.00
54	TP	1,2-Dichloropropane	0.141	0.143#	-1.4	107	0.00
56	TP	2-Chloroethyl vinyl ether	0.054	0.046	14.8	101	0.00
57	TP	Bromodichloromethane	0.167	0.161#	3.6	106	0.00
60	TP	1,4-Dioxane	0.00056	0.00064#	-14.3	122	0.00
61	TP	cis-1,3-Dichloropropene	0.172	0.178#	-3.5	110	0.00
62	I	Chlorobenzene-d5	1.000	1.000	0.0	111	0.00
63	S	Toluene-d8	1.274	1.269	0.4	111	0.00
64	TP	Toluene	0.412	0.409	0.7	106	0.00
65	TP	4-Methyl-2-pentanone	0.033	0.030#	9.1	116	0.00
66	TP	Tetrachloroethene	0.162	0.169	-4.3	111	0.00
68	TP	trans-1,3-Dichloropropene	* 10.000	8.883	11.2	115	0.00
70	TP	Ethyl methacrylate	0.133	0.125	6.0	112	0.00
71	TP	1,1,2-Trichloroethane	0.097	0.092#	5.2	108	0.00
72	TP	Chlorodibromomethane	* 10.000	8.735	12.7	108	0.00
73	TP	1,3-Dichloropropane	0.190	0.193	-1.6	113	0.00
74	TP	1,2-Dibromoethane	0.108	0.108#	0.0	112	0.00
76	TP	2-Hexanone	0.061	0.055	9.8	112	0.00
77	TP	Chlorobenzene	0.467	0.474	-1.5	108	0.00
78	TP	Ethylbenzene	0.778	0.808	-3.9	105	0.00
79	TP	1,1,1,2-Tetrachloroethane	0.148	0.143	3.4	110	0.00
80	TP	p/m Xylene	0.302	0.316	-4.6	105	0.00
81	TP	o Xylene	0.285	0.299	-4.9	106	0.00
82	TP	Styrene	0.459	0.486	-5.9	107	0.00
83	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109	0.00
84	TP	Bromoform	0.150	0.143	4.7	115	0.00
86	TP	Isopropylbenzene	1.551	1.679	-8.3	106	0.00
87	S	4-Bromofluorobenzene	0.911	0.938	-3.0	110	0.00
88	TP	Bromobenzene	0.365	0.367	-0.5	107	0.00
89	TP	n-Propylbenzene	1.802	1.934	-7.3	106	0.00
90	TP	1,4-Dichlorobutane	0.472	0.463	1.9	107	0.00
91	TP	1,1,2,2-Tetrachloroethane	0.254	0.246	3.1	109	0.00
92	TP	4-Ethyltoluene	1.469	1.668	-13.5	114	0.00

Evaluate Continuing Calibration Report

Data Path : K:\VOA122\2024\240729AICAL\
Data File : V22240729A17.D
Acq On : 29 Jul 2024 07:08 pm
Operator : VOA122:PID
Sample : C8260STD10PPB
Misc : WG1953132,ICAL
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 30 07:09:42 2024
Quant Method : K:\VOA122\2024\240729AICAL\V122_240729A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jul 30 07:07:01 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound		AvgRF	CCRF	%Dev	Area%	Dev(min)
93 TP	2-Chlorotoluene		1.086	1.126	-3.7	106	0.00
94 TP	1,3,5-Trimethylbenzene		1.245	1.282	-3.0	104	0.00
95 TP	1,2,3-Trichloropropane		0.194	0.192	1.0	110	0.00
96 TP	trans-1,4-Dichloro-2-butene		0.086	0.079	8.1	103	0.00
97 TP	4-Chlorotoluene		1.121	1.158	-3.3	106	0.00
98 TP	tert-Butylbenzene		1.081	1.152	-6.6	106	0.00
101 TP	1,2,4-Trimethylbenzene		1.391	1.492	-7.3	107	0.00
102 TP	sec-Butylbenzene	*	10.000	10.208	-2.1	107	0.00
103 TP	p-Isopropyltoluene	*	10.000	10.063	-0.6	106	0.00
104 TP	1,3-Dichlorobenzene		0.724	0.738	-1.9	106	0.00
105 TP	1,4-Dichlorobenzene		0.718	0.720	-0.3	106	0.00
106 TP	p-Diethylbenzene		0.788	0.793	-0.6	107	0.00
107 TP	n-Butylbenzene	*	10.000	10.574	-5.7	110	0.00
108 TP	1,2-Dichlorobenzene		0.640	0.646	-0.9	106	0.00
109 TP	1,2,4,5-Tetramethylbenzene		1.081	1.082	-0.1	109	0.00
110 TP	1,2-Dibromo-3-chloropropane	*	10.000	9.267	7.3	115	0.00
111 TP	1,3,5-Trichlorobenzene		0.417	0.443	-6.2	109	0.00
112 TP	Hexachlorobutadiene	*	10.000	9.570	4.3	105	0.00
113 TP	1,2,4-Trichlorobenzene		0.355	0.361#	-1.7	107	0.00
114 TP	Naphthalene	*	10.000	9.621	3.8	112	0.00
115 TP	1,2,3-Trichlorobenzene		0.301	0.310#	-3.0	108	0.00

* Evaluation of CC level amount vs concentration.
(#) = Out of Range SPCC's out = 14 CCC's out = 0

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2449503	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: VOA122		Calibration Date	: 09/05/24 06:38	
Lab File ID	: V22240905A01		Init. Calib. Date(s)	: 07/29/24	07/29/24
Sample No	: WG1968351-2		Init. Calib. Times	: 13:23	17:04
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	101	0
Dichlorodifluoromethane	0.197	0.22	-	-11.7	20	104	0
Chloromethane	0.263	0.217	-	17.5	20	73	0
Vinyl chloride	0.208	0.236	-	-13.5	20	103	0
Bromomethane	0.084	0.066	-	21.4*	20	89	0
Chloroethane	0.12	0.125	-	-4.2	20	95	0
Trichlorofluoromethane	10	10.97	-	-9.7	20	104	0
Ethyl ether	0.07	0.066	-	5.7	20	92	0
1,1-Dichloroethene	0.138	0.158	-	-14.5	20	105	0
Carbon disulfide	0.454	0.499	-	-9.9	20	99	0
Freon-113	0.143	0.165	-	-15.4	20	108	0
Acrolein	0.024	0.019	-	20.8*	20	76	0
Methylene chloride	0.183	0.172	-	6	20	92	0
Acetone	0.033	0.026	-	21.2*	20	75	0
trans-1,2-Dichloroethene	0.162	0.168	-	-3.7	20	96	0
Methyl acetate	0.086	0.061	-	29.1*	20	73	0
Methyl tert-butyl ether	0.309	0.284	-	8.1	20	91	0
tert-Butyl alcohol	0.00648	0.00665*	-	-2.6	20	101	0
Diisopropyl ether	0.581	0.442	-	23.9*	20	76	0
1,1-Dichloroethane	0.331	0.323	-	2.4	20	90	0
Halothane	0.121	0.13	-	-7.4	20	100	0
Acrylonitrile	0.046	0.039	-	15.2	20	82	0
Ethyl tert-butyl ether	0.418	0.363	-	13.2	20	89	0
Vinyl acetate	0.348	0.243	-	30.2*	20	70	0
cis-1,2-Dichloroethene	0.179	0.182*	-	-1.7	20	94	0
2,2-Dichloropropane	0.207	0.225	-	-8.7	20	102	0
Bromochloromethane	0.085	0.091*	-	-7.1	20	99	0
Cyclohexane	10	10.18	-	-1.8	20	98	0
Chloroform	0.286	0.28*	-	2.1	20	94	0
Ethyl acetate	0.112	0.078	-	30.4*	20	71	0
Carbon tetrachloride	0.206	0.222	-	-7.8	20	97	0
Tetrahydrofuran	0.037	0.027	-	27*	20	72	0
Dibromofluoromethane	0.349	0.334	-	4.3	20	94	0
1,1,1-Trichloroethane	0.241	0.243	-	-0.8	20	94	0
2-Butanone	0.047	0.034	-	27.7*	20	78	0
1,1-Dichloropropene	0.195	0.197	-	-1	20	94	0
Benzene	0.633	0.651	-	-2.8	20	101	0
tert-Amyl methyl ether	0.202	0.182	-	9.9	20	97	0
1,2-Dichloroethane-d4	0.295	0.256	-	13.2	20	85	0
1,2-Dichloroethane	0.158	0.138	-	12.7	20	83	0
Methyl cyclohexane	10	10.909	-	-9.1	20	115	0
Trichloroethene	0.135	0.13*	-	3.7	20	92	0
Dibromomethane	0.068	0.065	-	4.4	20	93	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies		Lab Number	: L2449503	
Project Name	: FORMER ITHACA GUN FACTORY BCP		Project Number	: X55.002.001	
Instrument ID	: VOA122		Calibration Date	: 09/05/24 06:38	
Lab File ID	: V22240905A01		Init. Calib. Date(s)	: 07/29/24	07/29/24
Sample No	: WG1968351-2		Init. Calib. Times	: 13:23	17:04
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.141	0.134*	-	5	20	88	0
Bromodichloromethane	0.167	0.158*	-	5.4	20	92	0
1,4-Dioxane	0.00056	0.00063*	-	-12.5	20	107	0
cis-1,3-Dichloropropene	0.172	0.174*	-	-1.2	20	95	0
Chlorobenzene-d5	1	1	-	0	20	101	0
Toluene-d8	1.274	1.219	-	4.3	20	98	0
Toluene	0.412	0.415	-	-0.7	20	98	0
4-Methyl-2-pentanone	0.033	0.028*	-	15.2	20	98	0
Tetrachloroethene	0.162	0.201	-	-24.1*	20	121	0
trans-1,3-Dichloropropene	10	8.18	-	18.2	20	96	0
Ethyl methacrylate	0.133	0.108	-	18.8	20	88	0
1,1,2-Trichloroethane	0.097	0.086*	-	11.3	20	92	0
Chlorodibromomethane	10	9.02	-	9.8	20	102	0
1,3-Dichloropropane	0.19	0.177	-	6.8	20	95	0
1,2-Dibromoethane	0.108	0.105*	-	2.8	20	99	0
2-Hexanone	0.061	0.044	-	27.9*	20	81	0
Chlorobenzene	0.467	0.482	-	-3.2	20	100	0
Ethylbenzene	0.778	0.814	-	-4.6	20	97	0
1,1,1,2-Tetrachloroethane	0.148	0.149	-	-0.7	20	105	0
p/m Xylene	0.302	0.329	-	-8.9	20	100	0
o Xylene	0.285	0.305	-	-7	20	98	0
Styrene	0.459	0.493	-	-7.4	20	99	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	106	0
Bromoform	0.15	0.146	-	2.7	20	113	0
Isopropylbenzene	1.551	1.668	-	-7.5	20	102	0
4-Bromofluorobenzene	0.911	0.838	-	8	20	95	0
Bromobenzene	0.365	0.385	-	-5.5	20	109	0
n-Propylbenzene	1.802	1.871	-	-3.8	20	99	0
1,4-Dichlorobutane	0.472	0.388	-	17.8	20	87	0
1,1,2,2-Tetrachloroethane	0.254	0.223	-	12.2	20	96	0
4-Ethyltoluene	1.469	1.536	-	-4.6	20	101	0
2-Chlorotoluene	1.086	1.055	-	2.9	20	96	0
1,3,5-Trimethylbenzene	1.245	1.293	-	-3.9	20	101	0
1,2,3-Trichloropropane	0.194	0.17	-	12.4	20	94	0
trans-1,4-Dichloro-2-buten	0.086	0.069	-	19.8	20	87	0
4-Chlorotoluene	1.121	1.081	-	3.6	20	96	0
tert-Butylbenzene	1.081	1.21	-	-11.9	20	108	0
1,2,4-Trimethylbenzene	1.391	1.408	-	-1.2	20	97	0
sec-Butylbenzene	10	10.353	-	-3.5	20	104	0
p-Isopropyltoluene	10	10.602	-	-6	20	108	0
1,3-Dichlorobenzene	0.724	0.774	-	-6.9	20	107	0
1,4-Dichlorobenzene	0.718	0.746	-	-3.9	20	106	0
p-Diethylbenzene	0.788	0.828	-	-5.1	20	108	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: C&S Companies	**Lab Number**	: L2449503		
Project Name	: FORMER ITHACA GUN FACTORY BCP	**Project Number**	: X55.002.001		
Instrument ID	: VOA122	**Calibration Date**	: 09/05/24 06:38		
Lab File ID	: V22240905A01	**Init. Calib. Date(s)**	: 07/29/24	07/29/24	
Sample No	: WG1968351-2	**Init. Calib. Times**	: 13:23	17:04	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
n-Butylbenzene	10	10.193	-	-1.9	20	102	0
1,2-Dichlorobenzene	0.64	0.671	-	-4.8	20	106	0
1,2,4,5-Tetramethylbenzene	1.081	1.077	-	0.4	20	105	0
1,2-Dibromo-3-chloropropan	10	9.78	-	2.2	20	118	0
1,3,5-Trichlorobenzene	0.417	0.484	-	-16.1	20	115	0
Hexachlorobutadiene	10	11.745	-	-17.4	20	125	0
1,2,4-Trichlorobenzene	0.355	0.406	-	-14.4	20	117	0
Naphthalene	10	9.993	-	0.1	20	112	0
1,2,3-Trichlorobenzene	0.301	0.34*	-	-13	20	114	0

* Value outside of QC limits.

Appendix F

NYSDEC Form A

Form A
Summary of Green Remediation Metrics

Site Name: Former Ithaca Gun Factory Site Code: C755019 Operable Unit: _____
Address: 121 - 125 Lake Street City: Ithaca
State: New York Zip: 14850 County: Tompkins

Reporting Period
Contract Period From: _____ To: _____
Reporting Period From: July 2024 To: August 2024 Is this a Final Report? Yes ☐ No ☒

Contact Information
Preparer's Name: Hayden Haas Phone No.: 315-455-2000
Preparer's Affiliation: C&S Engineers, Inc. Company Code: _____
Contract No. _____

Materials & Waste Generation: Quantify the materials used or consumed and the management of waste generated on-site.

	Current Reporting Period (Include Units)	Total to Date (Include Units)
Materials Brought to the Site		
• Topsoil		
• Fill		
• Silt Fence		
• Silt Logs		
• Aggregate Base Course		
• Geotextile		
• Solidification Additives		
• Activated carbon		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
Total Wastes Generated On-Site		
• Remedy Generated Waste		
• Contractor Generated Waste		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		

Provide a description of any implemented waste reduction programs appropriate for this project in the space provided on the certification page.

Recycled and Bio-Based Content in Imported Products and Materials: Quantify all materials and products imported to the site, including cost of materials/dollar values. Provide total percentages of recycled and bio-based of products and materials.

List Products and Materials Below	Total $ Value Provided	Total Percent of Recycled Content	Total Percent of Bio-based Content

Provide additional descriptions, as necessary, in the space provided on certification page.

Solid Waste Disposal and Diversion: Quantify all solid wastes generated, and indicate whether material was disposed or diverted for recycling or reuse.

Solid Waste Material	Date	Disposed or Diverted	Volume (Ton or CY)	Disposal/Recycling Facility Name	Comments (if not diverted, state why)
TSCA Contaminated Sediment					
Non-TSCA Contaminated Sediment					
Cleared Vegetation					
Spent Granular Activated Carbon					
Monitoring Well Removal Debris					
Other: Sampling Wastes	July 2024 - August 2024	Disposed	50 pounds	Local Municipal Landfill	
Other:					
Other:					
Other:					
Other:					
Other:					

Provide descriptions in the space provided on the certification page of all wastes that were redirected for recycling or reuse. Indicate full names and addresses of facilities.

Energy Usage: Quantify the amount of energy used on-site and portion of that voluntarily derived from renewable energy sources.

	Current Reporting Period (KWh)	Total to Date (KWh)
Total electricity usage		
Of that total amount, provide quantity:		
• Derived from renewable source (i.e., solar, wind)		
• Other:		

Provide descriptions in the space provided on the certification page of all reported energy use reduction programs appropriate to this project, including use of electricity derived from renewable sources.

Water Usage: Quantify the volume of water used on-site from difference sources.

	Current Reporting Period (Gallons)	Total to Date (Gallons)
Total quantity of water used on-site		
Of that total amount, provide the quantity obtained from:		
• Public potable water supply	300 gallons	
• Surface water		
• On-site treated groundwater		
• Reclaimed treated water		
• Collected or diverted storm water	1,200 gallons	
• Re-Injected groundwater		
• Other:		
• Other:		

Provide descriptions in the space provided on the certification page of any reported water use reduction programs applied. Please note if reused/injected groundwater is pre-treated.

Emissions: Quantify the distance traveled for delivery of supplies and removal of waste.

	Current Reporting Period (Miles)	Total to Date (Miles)
Off-site mobile fuel combustion	2,432	
Other:		

Provide descriptions in the space provided on the certification page of practices such as use of local vendors within 150 miles of the site and on-site stationary fuel use reduction programs.

Quantify the number of hours that diesel and other equipment with the potential to emit hazardous air pollutants (HAPs) or greenhouse gas (GHG) emissions was operated on-site.

	Current Reporting Period (Hours)	Total to Date (Hours)
On-site diesel excavation/construction equipment usage	80	
Other on-site processes generating emissions		
Other: Gasoline Trash Pump	2	

Quantify the VOC emissions from active remediation systems on-site.

	Current Reporting Period (lbs VOCs emitted)	Total to Date (lbs VOCs emitted)
Operating soil remediation equipment		
Operating groundwater remediation equipment		
Other:		

Provide descriptions in the space provided on the certification page of the type of equipment used, rating, emission control devices used and other means to reduce emissions.

Land and Ecosystem: Quantify the amount of land and/or ecosystems disturbed by construction and the area of land and/or ecosystems restored to a natural condition.

	Current Reporting Period (Acres)	Total to Date (Acres)
Total land area disturbed		
Total land area restored		
Increase in area for storm water infiltration (vs pre-disturbed conditions)		
Increase in area of native species plantings (vs pre-disturbed conditions)		
Other:		

Quantify the amount of land and/or ecosystems remediated.

	Current Reporting Period (Acres)	Total to Date (Acres)
Total area of land impacted by contamination		
Total area of land remediated to unrestricted use		
Total area of land remediated to other future site use		

Additional Comments on Green Remediation Programs Implemented: *Provide descriptions in the space provided of other green remediation practices performed during the project.*

Descriptions of green remediation programs reported above (Attach additional sheet if needed)
Materials and Products Imported:
Waste Generation:

Descriptions of green remediation programs reported above (Attach additional sheet if needed)
Recycled and Bio-Based Content in Imported Products and Materials:
Solid Waste Disposal and Diversion:
Energy Use:
Water Use:
Emissions:
Land and Ecosystem:
Other:

CERTIFICATION BY CONTRACTOR
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including the last day of the period covered by this application. _____ _____ **Date** **Contractor**

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Appendix G

Appendix G-1: Redox Proposed Injection Amendment

Appendix G-2: Redox ABC+ Fact Sheet

Appendix G-3: Redox RTB-1 Fact Sheet

Appendix G-1

Redox Proposed Injection Amendment

REDOX TECH

"Providing Innovative Soil and Groundwater Solutions"

October 07 2024

Christine Curtis, PE
Project Engineer
Matrix Environmental Technologies, Inc
908-399-3651

RE: Former Ithaca Gun BCP

Delivery to: Matrix Env. (Jobsite)
121 Lake Street
Ithaca NY 14850

Product	Amount	Unit	Unit Price	Total
ABC+ (w/45-micron ZVI)	2500	lbs.	$1.75	$4,375.00
RTB-1 (DHC bacteria)	10	L	$140.00	$1,400.00
Guar Gum	50	lbs.	$3.25	$162.50
Sodium Sulfite	5.00	lbs.	$13.50	$67.50
Shipping (ABC+, Guar etc)	1.00	each	$935.00	$935.00
Shipping (RTB-1)	1.00	round-trip	$250.00	$250.00
			Subtotal	$7,190.00
			Sales Tax %	0.000%
			Sales Tax	N/A
			Total	$7,190.00

Redox Tech is not registered to collect sales tax in this jurisdiction
Quotation is valid for 30 days. Payment terms not to exceed 60 days
Authorized acceptance complete below

Printed Name: _____

Title: _____

Signature: _____ Date: _____

Appendix G-2

Redox ABC+ Fact Sheet

REDOX TECH, LLC

"Providing Innovative In Situ Soil and Groundwater Treatment"

ABC+ PRODUCT ANNOUNCEMENT

Redox Tech, Inc is pleased to offer an enhanced version of our industry proven Anaerobic Biochem (ABC®) formula, promoting both anaerobic biodegradation and reductive dechlorination of halogenated solvents in groundwater. This product, Anaerobic Biochem Plus (ABC+), is a mixture of our ABC® formula and Zero Valent Iron (ZVI). Formulated and mixed on a site-by-site basis, up to fifty percent (50%) by weight of ZVI can be added. ZVI has been proven and widely accepted as an effective in situ remediation technology of chlorinated solvents such as TCA, PCE, TCE, and daughter products. The degradation process using ZVI is an abiotic reductive dechlorination process occurring on the surface of the granular iron, with the iron acting as an electron donor.

The addition of ZVI to the ABC® mixture provides a number of advantages for enhanced reductive dechlorination (ERD). The ZVI will provide an immediate reduction. The ABC® will provide short-term and long-term nutrients to anaerobic growth, which also assists to create a reducing environment. ABC® contains soluble lactic acid and a phosphate buffer that provides phosphates, which are a micronutrient for bioremediation, and maintains the pH in a range that is best suited for microbial growth. In addition, the corrosion of iron metal yields ferrous iron and hydrogen, both of which are possible reducing agents. The hydrogen gas produced is also an excellent energy source for a wide variety of anaerobic bacteria.

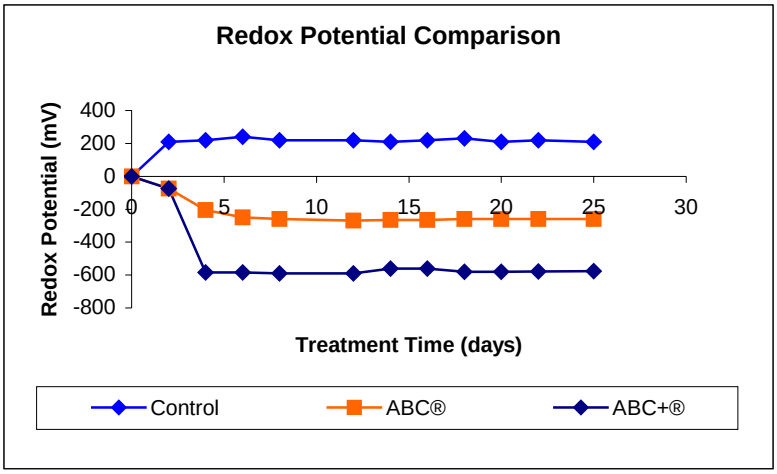
The ABC® and ZVI are mixed with potable water and emplaced in the subsurface simultaneously. The dilution factor (i.e. water content) can be adjusted to achieve optimal dispersion and distribution based on site-specific parameters such as well spacing, permeability of the formation, and contaminant concentrations. The solution can be emplaced by a variety of techniques, including injection through wells or drill rods (for permeable geologic environments such as sands and fractured rock), hydraulic fracturing (for lower permeable environments such as silt and clay), and through soil blending (for all unconsolidated shallow depth applications less than 20 ft bgs). All of these techniques are part of Redox Tech's service offerings.

Benefits of ABC+ include:

- The presence of ZVI allows for the rapid and complete dechlorination of target compounds. Degradation rates using ZVI are several orders of magnitude greater than under natural conditions. As a consequence, the process does not result in the formation of daughter products other than ethane, ethane, and methane.
- ABC® will last up to 12 months in the subsurface environment due to slow releasing compounds, allowing for long-term anaerobic biodegradation
- By creating a reducing environment, ABC+ has the ability to provide long term immobilization of heavy metals (e.g. Ni, Zn, Hg, As)
- Does not require direct contact to act on target constituents.
-

[1]ABC® is protected by US Patents 6,001,252 and 6,472,198. Trademark pending

- Does not divert groundwater flow. ABC is typically mixed at a 15% by weight solution with water. The viscosity of the solution is similar to sugar water and therefore does not measurably influence groundwater flow paths. Due to the relatively low volume of ZVI used, it does not measurably lower the bulk permeability of the formation.
- Ease of handling. The ABC$^+$ product is comprised of food grade compounds and therefore does not require high-levels of personal protective equipment (PPE) or special training to handle. The ZVI is a stable compound that also requires low-level PPE protection.
- Patent protection: Redox Tech is licensed under Enviromental Technologies, Inc. (an Adventus Company) who is the current holder of patents pertaining to remediation using ZVI. Therefore, Redox Tech is able to market, sell, and emplace our ABC$^+$ product. There is no patent infringement risk to the client in selecting the ABC$^+$ approach.
- Price advantage. The cost of the ABC$^+$ formula is an extremely competitive approach in relation to other ERD products on the market.
- ABC$^+$ produces a significantly lower redox potential of approximately –600 mV



Let Redox Tech help formulate a remedial program for your site today. For more information visit our web page at www.redox-tech.com or contact:

John Haselow
Redox Tech, LLC
200 Quade Drive
Cary, NC 27513
Phone: 919-678-0140
FAX: 919-678-0150
jhaselow@redox-tech.com

Appendix G-3

Redox RTB-1 Fact Sheet

Shaw's 4000-L Fermentor and Cell Concentrator

Simply Available

Shaw maintains the largest and most advanced fermentation facility in the environmental industry and is staffed with the industry's most experienced fermentation scientists. SDC-9™ cultures can be produced in volumes up to 4000 L per batch for treatment of even the largest contaminated sites. Typical lead times for large cultures (>200 L) are only 2 weeks, and smaller cultures are often available on even shorter notice.

About Shaw Environmental, Inc.

From restoring contaminated sites like the Fernald Closure Project in Ohio, a former uranium processing facility, to devising innovative solutions to complex environmental issues, such as the removal of MTBE and perchlorate, to designing modern, safe solid waste landfills, Shaw is a worldwide leader in environmental protection and remediation.

Using our engineering, design, and construction expertise, we work with our clients to:

- Remediate contamination and restore land to a usable state
- Safely dispose of hazardous and toxic waste, including high-level waste
- Develop modern solid waste landfills and transfer stations
- Keep the air and water contaminant-free
- Respond quickly and efficiently to emergency situations

Shaw's broad experience and multidisciplinary approach provide the expertise and flexibility to meet your environmental project needs.

Contact

Robert J. Steffan, PhD
Director, Biotechnology Applications
17 Princess Road
Lawrenceville, NJ 08648
Phone: 609.895.5350
rob.steffan@shawgrp.com

www.shawgrp.com/bioaugmentation

33M032006D_3
04.17.08

The Simple Choice for Bioaugmentation™

Shaw's Dechlorinating Culture, SDC-9™

Shaw® a world of Solutions™

Shaw's Dechlorinating Culture—SDC-9™

The Simple Choice for Bioaugmentation™

Simply Better

- Degrades mixed chlorinated solvents (PCE, TCE, cDCE, VC, TCA, CT, CF)
- Not inhibited by Chloroform like other commercially available cultures
- Rapid and complete degradation of cDCE and Vinyl Chloride
- Degrades high concentrations of contaminants

Simply More for Your Money

- Lowest per-liter prices
- Highest DHC concentrations
- 10-fold cell concentration available to reduce shipping costs
- SDC-9 delivery kegs allow inexpensive and flexible culture injection
- No requirement for a Shaw technician to be on-site for injection

Simply Available

- 4000 L fermentation capacity
- Typical lead times only 2 weeks
- Affordable overnight UPS shipping

Simply Guaranteed

- Guaranteed lowest price!
- Guaranteed DHC concentrations
- Guaranteed highest activity
- Guaranteed lowest overnight shipping cost
- Cell concentration guarantees lowest culture impurities

Simply Better

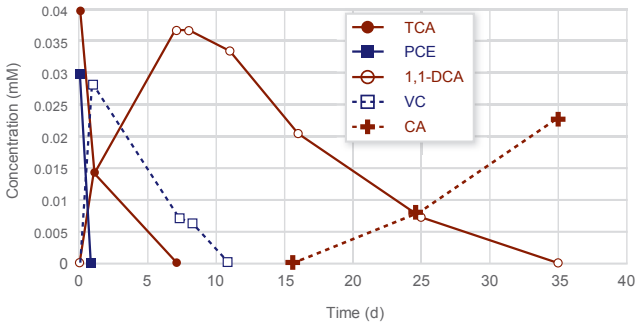
Shaw Environmental, Inc., a Shaw Group Company (Shaw) developed SDC-9™ specifically to treat chlorinated solvent contaminated aquifers. The culture contains Dehalococcoides sp. (DHC) bacteria that degrade a wide range of chlorinated contaminants via dehalorespiration. In addition to degrading highly chlorinated ethenes like PCE and TCE, the culture rapidly dechlorinates cDCE and vinyl chloride to non-toxic ethene, making it well suited for treating sites where remediation of PCE and TCE has stalled at these intermediates. In addition, SDC-9™ contains microbes capable of dehalogenating halomethanes (e.g., carbon tetrachloride and chloroform) and haloethanes (e.g. 1,1,1-TCA and 1,1-DCA), as well as mixtures of these halogenated contaminants. SDC-9™ is not inhibited by chloroform like other commercially available cultures. The culture has been successfully applied at sites throughout the United States, including some of the largest in situ bioaugmentation projects performed to date. The culture works effectively with any electron donor known to support reductive dehalogenation (e.g., vegetable oil, lactate, molasses, whey, etc.).

Simply More for Your Money

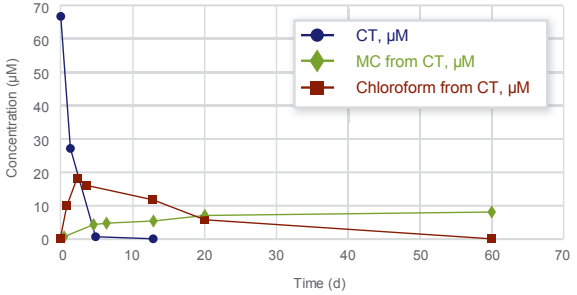
Kegs are shipped on ice in coolers and supplied with 2 quick connects (one for gas and one for liquid) that are fitted with hose barbs for attaching 1/4" ID tubing.

Shaw is the only company that concentrates its bacterial cultures before shipment to your site. The cell concentration process removes >90% of the fermentation by-products that accumulate during the fermentation process. This ensures that injection of SDC-9™ does not create unnecessary water quality issues. It also reduces shipping volume to ensure rapid and cost-effective delivery of SDC-9™ cultures. 180 L of SDC-9™ can be shipped overnight to your site in a single cooler. Overnight shipping allows your cultures to have their greatest activity when they arrive at your site.

Degradation of Mixed Chlorinated Solvents (PCE and 1,1,1-TCA) by SDC-9



Biodegradation of Carbon Tetrachloride by SDC-9



Shaw® a world of Solutions™

Appendix H

Spreadsheets For Environmental Footprint Analysis (SEFA)

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019
Former Ithaca Gun Factory BCP Site - Groundwater Injection Remediation

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
On-Site																						
On-site Renewable Energy																						
Renewable electricity generated on-site	MWh	0														0	0	0	0	0	0	0
Landfill gas combusted on-site for energy use	ccf CH_4	0														0	0	0	0	0	0	0
On-site biodiesel use	gal	0														0	0	0	0	0	0	0
On-site biodiesel use - Other	gal	0														0	0	0	0	0	0	0
User-defined on-site renewable energy use #1	TBD	0														0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0														0	0	0	0	0	0	0
On-Site Conventional Energy																						
Grid electricity	MWh	0														0	0	0	0	0	0	0
On-site diesel use - Other	Gal	0														0	0	0	0	0	0	0
On-site diesel use <75 hp	Gal	76.33027523														76.330275	0	0	0	0	0	76.330275
On-site diesel use 75<hp<750	Gal	0														0	0	0	0	0	0	0
On-site diesel use >750 hp	Gal	0														0	0	0	0	0	0	0
On-site gasoline use - Other	Gal	0														0	0	0	0	0	0	0
On-site gasoline use <25 hp	Gal	0.657894737														0.6578947	0	0	0	0	0	0.6578947
On-site gasoline use >25 hp	Gal	0														0	0	0	0	0	0	0
On-site natural gas use	ccf	0														0	0	0	0	0	0	0
On-site compressed natural gas use - Other	ccf	0														0	0	0	0	0	0	0
On-site compressed natural gas use	ccf	0														0	0	0	0	0	0	0
On-site liquified petroleum gas use - Other	gal	0														0	0	0	0	0	0	0
On-site liquified petroleum gas use	gal	0														0	0	0	0	0	0	0
Other forms of on-site conventional energy use #1	TBD	0														0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0														0	0	0	0	0	0	0
Other On-site Emissions																						
On-site HAP process emissions	Lbs	0														0	0	0	0	0	0	0
On-site GHG emissions	Lbs CO2e	0														0	0	0	0	0	0	0
On-site carbon storage	Lbs CO2e	0														0	0	0	0	0	0	0
GHG avoided by flaring on-site landfill methane	ccf CH4	0														0	0	0	0	0	0	0
Other on-site NOx emissions or reductions	Lbs	0														0	0	0	0	0	0	0
Other on-site SOx emissions or reductions	Lbs	0														0	0	0	0	0	0	0
Other on-site PM emissions or reductions	Lbs	0														0	0	0	0	0	0	0
Electricity Generation																						
Grid electricity	MWh	0														0	0	0	0	0	0	0
Voluntary purchase of renewable electricity	MWh	0														0	0	0	0	0	0	0
Voluntary purchase of RECs	MWh	0														0	0	0	0	0	0	0

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019
Former Ithaca Gun Factory BCP Site - Groundwater Injection Remediation

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Transportation																						
Transportation Fuel Use Breakdown																						
Biodiesel use - Personnel Transport	gal	0														0	0	0	0	0	0	0
Biodiesel use - Personnel Transport - User Defined	gal	0														0	0	0	0	0	0	0
Biodiesel use - Equipment Transport	gal	0														0	0	0	0	0	0	0
Biodiesel use - Equipment Transport - User Defined	gal	0														0	0	0	0	0	0	0
Biodiesel use - Material Transport	gal	0														0	0	0	0	0	0	0
Biodiesel use - Material Transport - User Defined	gal	0														0	0	0	0	0	0	0
Biodiesel use - Waste Transport	gal	0														0	0	0	0	0	0	0
Biodiesel use - Waste Transport - User Defined	gal	0														0	0	0	0	0	0	0
Diesel use - Personnel Transport - other vehicles	gal	10.6														10.6	0	0	0	0	0	10.6
Diesel use - Personnel Transport - car	gal	0														0	0	0	0	0	0	0
Diesel use - Personnel Transport - passenger truck	gal	0														0	0	0	0	0	0	0
Diesel use - Personnel Transport - User Defined	gal	0														0	0	0	0	0	0	0
Diesel use - Equipment Transport	gal	156.9														156.9	0	0	0	0	0	156.9
Diesel use - Equipment Transport - User Defined	gal	0														0	0	0	0	0	0	0
Diesel use - Material Transport	gal	1184														1184	0	0	0	0	0	1184
Diesel use - Material Transport - User Defined	gal	0														0	0	0	0	0	0	0
Diesel use - Waste Transport	gal	14.3														14.3	0	0	0	0	0	14.3
Diesel use - Waste Transport - User Defined	gal	0														0	0	0	0	0	0	0
Gasoline use - Personnel Transport - other vehicles	gal	0														0	0	0	0	0	0	0
Gasoline use - Personnel Transport - car	gal	0														0	0	0	0	0	0	0
Gasoline use - Personnel Transport - passenger truck	gal	81.3														81.3	0	0	0	0	0	81.3
Gasoline use - Personnel Transport - User Defined	gal	0														0	0	0	0	0	0	0
Gasoline use - Equipment Transport	gal	0														0	0	0	0	0	0	0
Gasoline use - Equipment Transport - User Defined	gal	0														0	0	0	0	0	0	0
Natural Gas use - Personnel Transport	ccf	0														0	0	0	0	0	0	0
Natural Gas use - Personnel Transport - User Defined	ccf	0														0	0	0	0	0	0	0
Natural Gas use - Equipment Transport	ccf	0														0	0	0	0	0	0	0
Conventional Energy																						
Transportation diesel use	gal	1365.8														1365.8	0	0	0	0	0	1365.8
Transportation gasoline use	gal	81.3														81.3	0	0	0	0	0	81.3
Transportation natural gas use	ccf	0														0	0	0	0	0	0	0
User-defined conventional energy transportation #1	TBD	10														10	0	0	0	0	0	10
User-defined conventional energy transportation #2	TBD	0														0	0	0	0	0	0	0
Renewable Energy																						
Transportation biodiesel use	gal	0														0	0	0	0	0	0	0
User-defined renewable energy transportation #1	TBD	0														0	0	0	0	0	0	0
User-defined renewable energy transportation #2	TBD	0														0	0	0	0	0	0	0
Off-Site																						
Construction Materials																						
Aluminum, Rolled Sheet	lb	0														0	0	0	0	0	0	0
Asphalt, mastic	lb	0														0	0	0	0	0	0	0
Asphalt, paving-grade	lb	0														0	0	0	0	0	0	0
Ethanol, Corn, 95%	lb	0														0	0	0	0	0	0	0
Ethanol, Corn, 99.7%	lb	0														0	0	0	0	0	0	0
Ethanol, Petroleum, 99.7%	lb	0														0	0	0	0	0	0	0
Gravel/Sand Mix, 65% Gravel	lb	0														0	0	0	0	0	0	0
Gravel/sand/clay	lb	0														0	0	0	0	0	0	0
HDPE	lb	0														0	0	0	0	0	0	0
Photovoltaic system (installed)	W	0														0	0	0	0	0	0	0
PVC	lb	0														0	0	0	0	0	0	0
Portland cement, US average	lb	0																				
Ready-mixed concrete, 20 MPa	ft3	0														0	0	0	0	0	0	0
Round Gravel	lb	0														0	0	0	0	0	0	0
Sand	lb	0														0	0	0	0	0	0	0
Stainless Steel	lb	0														0	0	0	0	0	0	0
Steel	lb	0														0	0	0	0	0	0	0
Other refined construction materials	lb	0														0	0	0	0	0	0	0
Other unrefined construction materials	lb	0														0	0	0	0	0	0	0

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019
Former Ithaca Gun Factory BCP Site - Groundwater Injection Remediation

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Treatment Materials & Chemicals																						
Cheese Whey	lbs	0														0	0	0	0	0	0	0
Emulsified vegetable oil	lbs	0														0	0	0	0	0	0	0
Granular activated carbon, primary	lbs	0														0	0	0	0	0	0	0
Granular activated carbon, regenerated	lbs	0														0	0	0	0	0	0	0
Hydrogen Peroxide, 50% in H2O	lbs	0														0	0	0	0	0	0	0
Iron (II) Sulfate	lbs	0														0	0	0	0	0	0	0
Lime, Hydrated, Packed	lbs	0														0	0	0	0	0	0	0
Molasses	lbs	0														0	0	0	0	0	0	0
Phosphoric Acid, 70% in H2O	lbs	0														0	0	0	0	0	0	0
Potassium Permanganate	lbs	0														0	0	0	0	0	0	0
Sodium Hydroxide, 50% in H2O	lbs	0														0	0	0	0	0	0	0
Other Treatment Chemicals & Materials	lbs	0														0	0	0	0	0	0	0
Material Type																						
Total Virgin Refined Materials	tons	1.28732														1.28732	0	0	0	0	0	1.28732
Total Recycled Refined Materials	tons	0														0	0	0	0	0	0	0
Total Reused Refined Materials	tons	0														0	0	0	0	0	0	0
Total Refined Material	tons	1.28732														1.28732	0	0	0	0	0	1.28732
Total Virgin Unrefined Materials	tons	0														0	0	0	0	0	0	0
Total Recycled Unrefined Materials	tons	0														0	0	0	0	0	0	0
Total Reused Unrefined Materials	tons	0														0	0	0	0	0	0	0
Total Unrefined Material	tons	0														0	0	0	0	0	0	0
Fuel Processing																						
Biodiesel produced	gal	0														0	0	0	0	0	0	0
Diesel produced	gal	1442.130275														1442.1303	0	0	0	0	0	1442.1303
Gasoline produced	gal	81.95789474														81.957895	0	0	0	0	0	81.957895
Compressed natural gas produced	ccf	0														0	0	0	0	0	0	0
Liquified petroleum gas produced	gal	0														0	0	0	0	0	0	0
Natural gas produced	ccf	0														0	0	0	0	0	0	0
Water Use																						
Public Water Supply	gal x 1000	0														0	0	0	0	0	0	0
Extracted Groundwater	gal x 1000	0														0	0	0	0	0	0	0
Surface Water	gal x 1000	0														0	0	0	0	0	0	0
Reclaimed Water	gal x 1000	0.5														0.5	0	0	0	0	0	0.5
Collected/Diverted Storm Water	gal x 1000	0														0	0	0	0	0	0	0
User-defined water resource #1	gal x 1000	0														0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0														0	0	0	0	0	0	0
Waste/Recycle Handling																						
Hazardous waste incineration	lbs	0														0	0	0	0	0	0	0
Off-site waste water treatment (POTW)	gal x 1000	1.5														1.5	0	0	0	0	0	1.5
Off-site non-hazardous waste landfill	tons	0.1														0.1	0	0	0	0	0	0.1
Off-site hazardous waste landfill	tons	0														0	0	0	0	0	0	0
Recycled/Reused On-Site	tons	0														0	0	0	0	0	0	0
Recycled/Reused Off-Site	tons	0														0	0	0	0	0	0	0
Solid Waste Totals																						
Total Non-Hazardous Waste	tons	0.1														0.1	0	0	0	0	0	0.1
Total Hazardous Waste	tons	0														0	0	0	0	0	0	0
Total Recycled/Reused	tons	0														0	0	0	0	0	0	0
Total Waste (all types)	tons	0.1														0.1	0	0	0	0	0	0.1

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Lab Services																						
Off-site Laboratory Analysis - Other	sample	34														34	0	0	0	0	0	34
Off-site Laboratory Analysis - Metals	sample	26														26	0	0	0	0	0	26
Off-site Laboratory Analysis - Mercury	sample	0														0	0	0	0	0	0	0
Off-site Laboratory Analysis - Inorganic Anions	sample	26														26	0	0	0	0	0	26
Off-site Laboratory Analysis - Alkalinity	sample	26														26	0	0	0	0	0	26
Off-site Laboratory Analysis - Perchlorate	sample	0														0	0	0	0	0	0	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	26														26	0	0	0	0	0	26
Off-site Laboratory Analysis - Sulfate	sample	26														26	0	0	0	0	0	26
Off-site Laboratory Analysis - PCBs	sample	0														0	0	0	0	0	0	0
Off-site Laboratory Analysis - VOCs	sample	26														26	0	0	0	0	0	26
Off-site Laboratory Analysis - SVOCs	sample	0														0	0	0	0	0	0	0
Resource Extraction for Electricity																						
Coal extraction and processing	MWh	0														0	0	0	0	0	0	0
Natural gas extraction and processing	MWh	0														0	0	0	0	0	0	0
Nuclear fuel extraction and processing	MWh	0														0	0	0	0	0	0	0
Oil extraction and processing	MWh	0														0	0	0	0	0	0	0
Other fuel extraction and processing	MWh	0														0	0	0	0	0	0	0
Electricity Transmission																						
Transmission and distribution losses	MWh	0														0	0	0	0	0	0	0
Other																						
User-defined material #1	L	0														0	0	0	0	0	0	0
User-defined material #2	TBD	0														0	0	0	0	0	0	0
User-defined material #3	TBD	0														0	0	0	0	0	0	0
User-defined material #4	TBD	0														0	0	0	0	0	0	0
User-defined material #5	TBD	0														0	0	0	0	0	0	0
User-defined material #6	TBD	0														0	0	0	0	0	0	0
User-defined material #7	TBD	0														0	0	0	0	0	0	0
User-defined material #8	TBD	0														0	0	0	0	0	0	0
User-defined material #9	TBD	0														0	0	0	0	0	0	0
User-defined material #10	TBD	0														0	0	0	0	0	0	0
User-defined material #11	TBD	0														0	0	0	0	0	0	0
User-defined material #12	TBD	0														0	0	0	0	0	0	0
User-defined material #13	TBD	0														0	0	0	0	0	0	0
User-defined material #14	TBD	0														0	0	0	0	0	0	0
User-defined material #15	TBD	0														0	0	0	0	0	0	0
User-defined material #16	TBD	0														0	0	0	0	0	0	0
User-defined material #17	TBD	0														0	0	0	0	0	0	0
User-defined material #18	TBD	0														0	0	0	0	0	0	0
User-defined material #19	TBD	0														0	0	0	0	0	0	0
User-defined material #20	TBD	0														0	0	0	0	0	0	0
User-defined Waste Destinations																						
User-defined recycled/reused on-site #1	TBD	0														0	0	0	0	0	0	0
User-defined recycled/reused on-site #2	TBD	0														0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0														0	0	0	0	0	0	0
User-defined recycled/reused off-site #1	TBD	0														0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0														0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0														0	0	0	0	0	0	0
User-defined non-hazardous waste destination #1	TBD	0														0	0	0	0	0	0	0
User-defined non-hazardous waste destination #2	TBD	0														0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0														0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0														0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0														0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0														0	0	0	0	0	0	0

Input Worksheet for Input Template

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 1**	**Groundwater Injections**

General Scope

Groundwater Injections

Example Items Eliminated through Screening Process

Other Notes and References

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Matrix	8	10	Heavy-Duty Truck	Diesel	80	7.55		10.6	Matrix trip to site and back from hotel
C&S Staff	12	128	Light-Duty/Passenger Truck	Gasoline	1536	18.9		81.3	trip to site and back

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes
Skid-steer - small (60 HP)	60	50%	Diesel less than 75 hp	1.834862385	8	14.67889908	1	1	314	314	Truck (mpg)	Diesel	6		52.3	
Other - HP varies	21	75%	Diesel less than 75 hp	0.963302752	64	61.65137615	0.75	1	314	314	Truck (mpg)	Diesel	6		52.3	Compressor
Other - HP varies	5	50%	Gasoline <25 hp	0.328947368	2	0.657894737	0.005	1	314	314	Truck (mpg)	Diesel	6		52.3	Trash pump

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Input Template

Remedy Component that this Input worksheet is part of:	Component 1	Groundwater Injections

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
					Estimated Total Electricity Usage Based on Above	0	
					Renewable Electricity Generated On-Site*		
					Total Electricity Usage Based on Personnel Transportation	0	
					Total Grid Electricity Used	0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
			Totals	0	0	0

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
			Total	0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
Emulsified vegetable oil	lb	2500	1.25	Refined	Virgin	No	1000	1776		No	1776	Truck (mpg)	Diesel	6		296.000	ABC+
Other Treatment Chemicals & Materials	lb	50	0.025	Refined	Virgin	No	500	1776		No	1776	Truck (mpg)	Diesel	6		296.000	guar gum
User-defined material #1	L	10	0.00982	Refined	Virgin	No	500	1776		No	1776	Truck (mpg)	Diesel	6		296.000	RTB-1
Other Treatment Chemicals & Materials	lb	5	0.0025	Refined	Virgin	No	500	1776		No	1776	Truck (mpg)	Diesel	6		296.000	sodium sulfite
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Input Template

Remedy Component that this Input worksheet is part of:	Component 1	Groundwater Injections

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
Off-site waste water treatment (POTW)	gal x 1000	1.5	6.255	50			No	50	Truck single unit (gptm)	Diesel	0.032258065		10.1	
Off-site non-hazardous waste landfill	tons	0.1	0.1	25			No	25	Truck (mpg)	Diesel	6		4.2	
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

**** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.***

***** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
Reclaimed Water	gal x 1000	0.5	2.085	Bedrock	Remedial waste water		Used during injections
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

**** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.***

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for Input Template

Remedy Component that this Input worksheet is part of:	Component 1	Groundwater Injections

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		**Units**	**Quantity**	**Notes**
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Off-site Laboratory Analysis - VOCs	26	
Off-site Laboratory Analysis - Inorganic Anions	26	
Off-site Laboratory Analysis - Alkalinity	26	
Off-site Laboratory Analysis - Nitrogen/Nitrate	26	
Off-site Laboratory Analysis - Sulfate	26	
Off-site Laboratory Analysis - Metals	26	
Off-site Laboratory Analysis - Other	34	
Totals	**190**	

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Groundwater Injections - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	76.330275	0.139	10.609908	22.21	1695.2954	0.1565	11.945688	0.000145	0.0110679	0.0145	1.106789	0.00004	0.0030532
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0.6578947	0.124	0.0815789	17.48	11.5	0.037	0.0243421	0.00025	0.0001645	0.165	0.1085526	0.00008	5.263E-05
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**11**		**1,707**		**12**		**0**		**1**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**10.69**		**1,707**		**12**		**0**		**1**		**0**

Groundwater Injections - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Former Ithaca Gun Factory BCP Site
Groundwater Injection Remediation
Groundwater Injections

Groundwater Injections - Transportation Footprint (Scope 3a)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Conventional Energy														
Transportation diesel use	gal	1365.8	0.139	189.8462	22.5	30730.5	0.17	232.186	0.0054	7.37532	0.0034	4.64372	0.0000052	0.0071022
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	81.3	0.124	10.0812	19.79	1608.927	0.035	2.8455	0.00036	0.029268	0.003	0.2439	0.00661	0.537393
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**200**		**32,339**		**235**		**7**		**5**		**1**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**200**		**32339**		**235**		**7**		**5**		**1**

Groundwater Injections - Off-Site Footprint (Scope 3b)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0

Notes:

Groundwater Injections - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	**Units**	**Usage**	**Factor**	**MMBtus**	**Factor**	**lbs CO2e**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	1442.1303	0.017	24.516215	3.02	4355.2334	0.0051	7.3548644	0.0062	8.9412077	0.0017	2.4516215	0.0011	1.5863433
Gasoline produced	gal	81.957895	0.033	2.7046105	2.8	229.48211	0.0046	0.3770063	0.005	0.4097895	0.0015	0.1229368	0.001	0.0819579
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**27.220825**		**4584.7155**		**7.7318707**		**9.3509972**		**2.5745583**		**1.6683012**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Groundwater Injections - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	**Units**	**Usage**	**Factor**	**MMBtus**	**Factor**	**lbs CO2e**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	1.5	0.015	0.0225	4.4	6.6	0.016	0.024	0.015	0.0225	NP		NP	
Off-site non-hazardous waste landfill	ton	0.1	0.16	0.016	25	2.5	0.14	0.014	0.075	0.0075	0.4	0.04	0.0014	0.00014
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	34	0.058071	1.974415	6.8534384	233.01691	0.131402	4.4676666	0.3038758	10.331776	0.0455698	1.549374	0.0330165	1.122562
Off-site Laboratory Analysis - Metals	sample	26	0.212	5.512	27.4693	714.2018	0.6423	16.6998	1.5072	39.1872	0.2264	5.8864	0.1643	4.2718
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	26	0.0074025	0.1924637	0.6459478	16.794643	0.0067681	0.1759712	0.0147929	0.3846145	0.0022024	0.0572623	0.0015542	0.0404103
Off-site Laboratory Analysis - Alkalinity	sample	26	0.0174398	0.4534357	1.3381922	34.792997	0.0070106	0.1822763	0.0132496	0.3444908	0.00194	0.0504412	0.0012831	0.03336
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	26	0.0336475	0.8748351	4.29897	111.77322	0.0954592	2.4819387	0.2226646	5.7892796	0.0335099	0.8712579	0.0242506	0.6305156
Off-site Laboratory Analysis - Sulfate	sample	26	0.0141225	0.3671843	1.4726728	38.289493	0.0079807	0.207497	0.0136024	0.3536619	0.0019797	0.051473	0.0012015	0.0312392
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	26	0.0762045	1.9813167	9.016814	234.43716	0.104498	2.716949	0.2270738	5.9039188	0.0339508	0.8827218	0.0235892	0.6133197
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Notes:														

Groundwater Injections - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	**Units**	**Usage**	**Factor**	**MMBtus**	**Factor**	**lbs CO2e**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**
User-defined Materials														
User-defined material #1	L	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #4	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #5	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #6	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #7	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #8	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #9	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
User-defined recycled/reused off-site #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		(lbs CO2e/u		Ox(lbs/unit)		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
User-defined non-hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**38.614976**		**5977.1218**		**34.701969**		**71.675939**		**11.963489**		**8.411648**

Groundwater Injections - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0.6578947	0.124	0.0815789	17.48	11.5	0.037	0.0243421	0.00025	0.0001645	0.165	0.1085526	0.00008	5.263E-05
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	81.3	0.124	10.0812	19.79	1608.927	0.035	2.8455	0.00036	0.029268	0.003	0.2439	0.00661	0.537393
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	81.957895	0.033	2.7046105	2.8	229.48211	0.0046	0.3770063	0.005	0.4097895	0.0015	0.1229368	0.001	0.0819579
Total Gasoline Footprint		**81.957895**		**12.867389**		**1849.9091**		**3.2468484**		**0.4392219**		**0.4753895**		**0.6194035**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	76.330275	0.139	10.609908	22.21	1695.2954	0.1565	11.945688	0.000145	0.0110679	0.0145	1.106789	0.00004	0.0030532
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	1365.8	0.139	189.8462	22.5	30730.5	0.17	232.186	0.0054	7.37532	0.0034	4.64372	0.0000052	0.0071022
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	1442.1303	0.017	24.516215	3.02	4355.2334	0.0051	7.3548644	0.0062	8.9412077	0.0017	2.4516215	0.0011	1.5863433
Total Diesel Footprint		**1442.1303**		**224.97232**		**36781.029**		**251.48655**		**16.327596**		**8.2021305**		**1.5964987**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Note: Please refer to the "Default Conversions" tab for references for the default conversion factors used on this calculation sheet.

Space below available for notes and calculations:

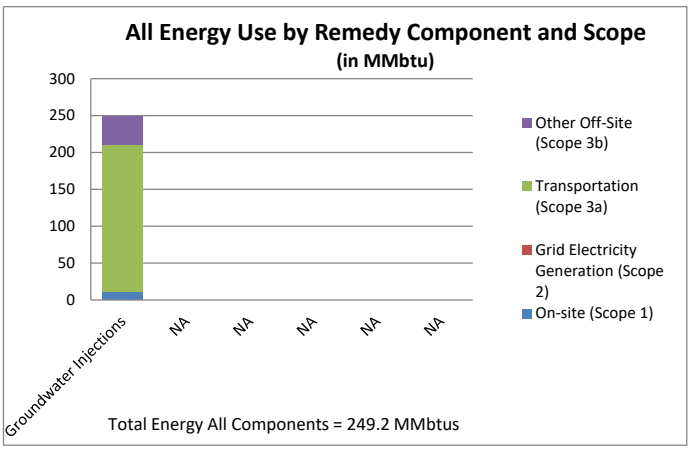
Environmental Footprint Summary

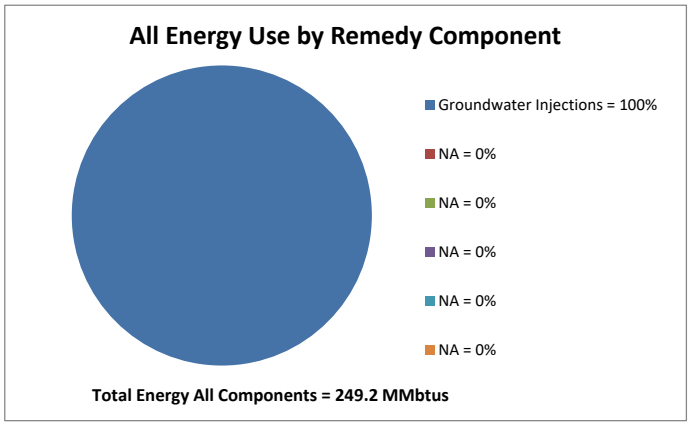
Core Element	Metric		Unit of Measure	Footprint						
				Groundwater Injections	NA	NA	NA	NA	NA	Total
Materials & Waste	M&W-1	Refined materials used on-site	Tons	1.3	0.0	0.0	0.0	0.0	0.0	1.3
	M&W-2	% of refined materials from recycled or reused material	%	0.0%						0.0%
	M&W-3	Unrefined materials used on-site	Tons	0.000	0.000	0.000	0.000	0.000	0.000	0.0
	M&W-4	% of unrefined materials from recycled or reused material	%							
	M&W-5	On-site hazardous waste disposed of off-site	Tons	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	M&W-6	On-site non-hazardous waste disposed of off-site	Tons	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	M&W-7	Recycled or reused waste	Tons	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	M&W-8	% of total potential waste recycled or reused	%	0.0%						0.0%
Water (used on-site)	W-1	Public water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-2	Groundwater use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-3	Surface water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-4	Reclaimed water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-5	Storm water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-6	User-defined water resource #1	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-7	User-defined water resource #2	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-8	Wastewater generated	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Energy	E-1	Total energy used (on-site and off-site)	MMBtu	249.2	0.0	0.0	0.0	0.0	0.0	249.2
	E-2	Energy voluntarily derived from renewable resources								
	E-2A	On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-2B	Voluntary purchase of renewable electricity	MWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-3	Voluntary purchase of RECs	MWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-4	On-site grid electricity use	MWh	0.000	0.000	0.000	0.000	0.000	0.000	0.0
Air	A-1	On-site NOx, SOx, and PM emissions	Pounds	13.2	0.0	0.0	0.0	0.0	0.0	13.2
	A-2	On-site HAP emissions	Pounds	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	A-3	Total NOx, SOx, and PM emissions	Pounds	378.9	0.0	0.0	0.0	0.0	0.0	378.9
	A-3A	Total NOx emissions	Pounds	281.7	0.0	0.0	0.0	0.0	0.0	281.7
	A-3B	Total SOx emissions	Pounds	79.1	0.0	0.0	0.0	0.0	0.0	79.1
	A-3C	Total PM emissions	Pounds	18.1	0.0	0.0	0.0	0.0	0.0	18.1
	A-4	Total HAP emissions	Pounds	9.0	0.0	0.0	0.0	0.0	0.0	9.0
	A-5	Total greenhouse gas emissions	Tons CO2e*	20.0	0.0	0.0	0.0	0.0	0.0	20.0
Land & Ecosystems	Qualitative Description									

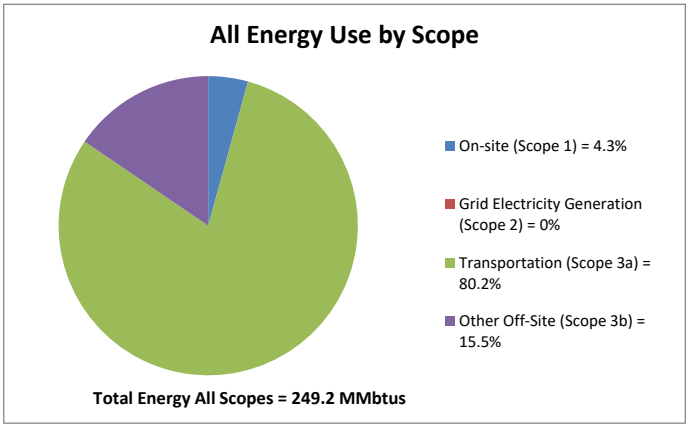
** Total greenhouse gases emissions (in CO2e) include consideration of CO2, CH4, and N2O (Nitrous oxide) emissions.*
"MMBtu" = millions of Btus
"MG" = millions of gallons
"CO2e" = carbon dioxide equivalents of global warming potential
"MWh" = megawatt hours (i.e., thousands of kilowatt-hours or millions of Watt-hours)
"Tons" = short tons (2,000 pounds)

The above metrics are consistent with EPA's Methodology for Understanding and Reducing a Project's Environmental Footprint (EPA 542-R-12-002), February 2012

Notes:







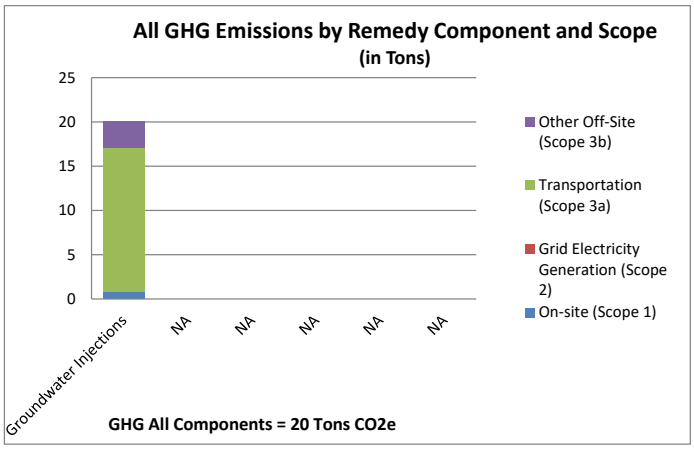
Total Energy
MMbtus

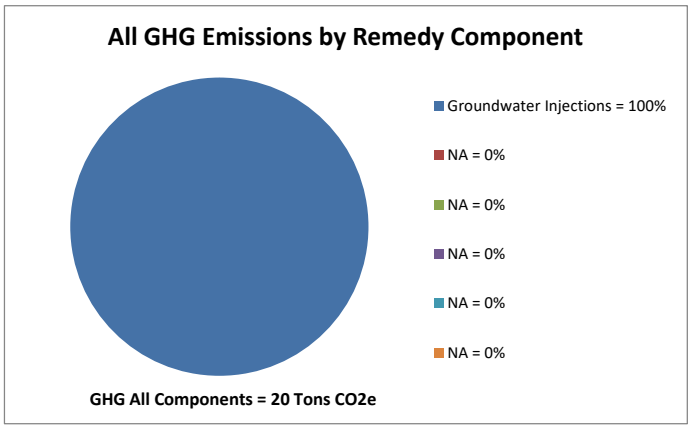
	Groundwa	NA	NA	NA	NA	NA	Total	
On-site (Scope 1)	10.7	0.0	0.0	0.0	0.0	0.0	10.7	
Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Electricity
nsportation (Scope 3a)	199.9	0.0	0.0	0.0	0.0	0.0	199.9	Tran
her Off-Site (Scope 3b)	38.6	0.0	0.0	0.0	0.0	0.0	38.6	Oth
Total	249.2	0.0	0.0	0.0	0.0	0.0	249.2	

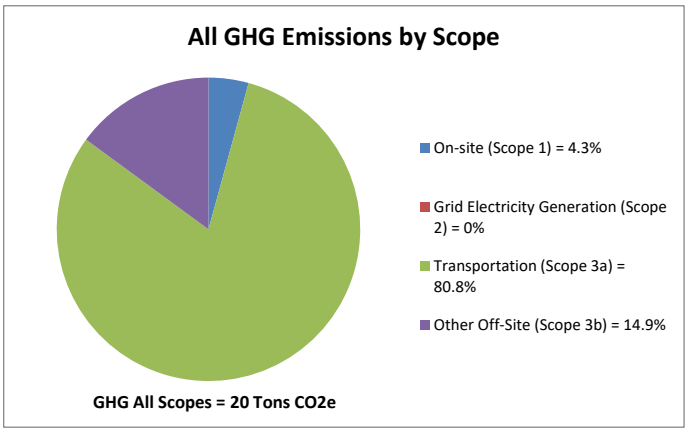
Groundwater Injections = 100%
NA = 0%
NA = 0%
NA = 0%
NA = 0%
NA = 0%

On-site (Scope 1) = 4.3%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 80.2%
Other Off-Site (Scope 3b) = 15.5%

Total Energy All Components = 249.2 MMbtus
Total Energy All Scopes = 249.2 MMbtus







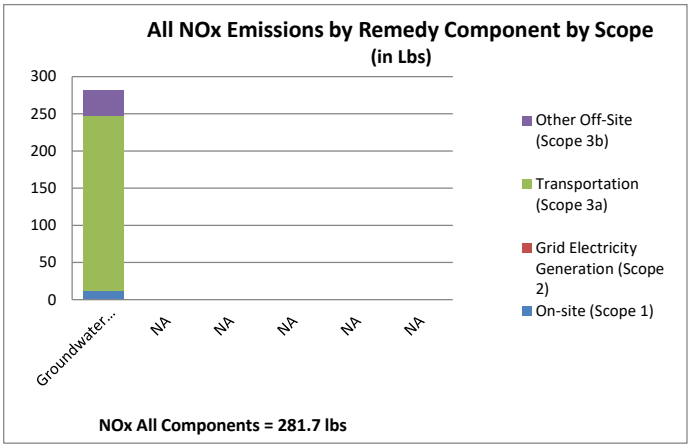
GHG
Tons CO2e

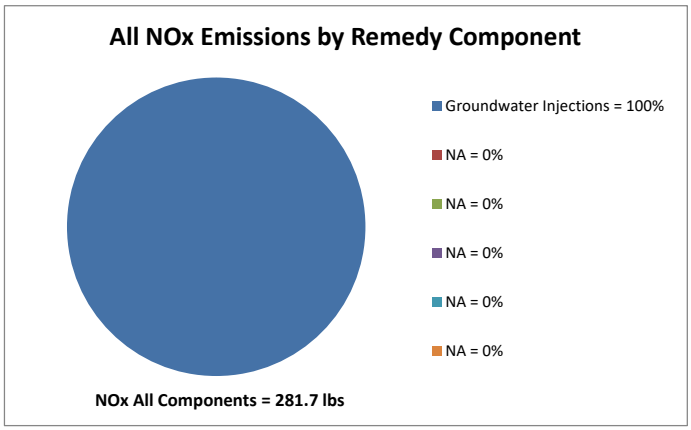
	Groundwa	NA	NA	NA	NA	NA	Total	
On-site (Scope 1)	0.9	0.0	0.0	0.0	0.0	0.0	0.9	
Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	l Electricity
sportation (Scope 3a)	16.2	0.0	0.0	0.0	0.0	0.0	16.2	Tran
er Off-Site (Scope 3b)	3.0	0.0	0.0	0.0	0.0	0.0	3.0	Oth
Total	20.0	0.0	0.0	0.0	0.0	0.0	20.0	

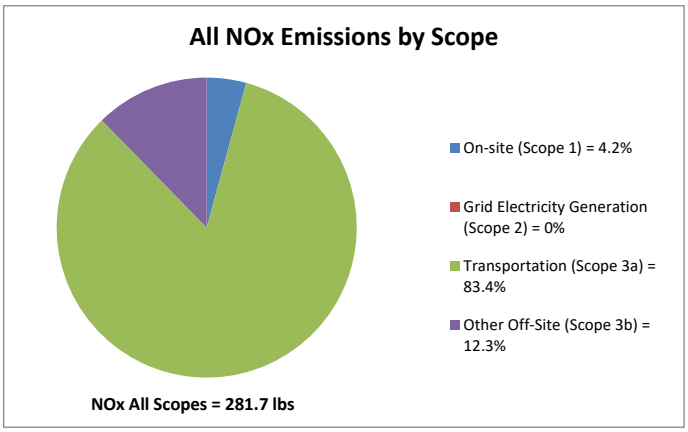
Groundwater Injections = 100%
NA = 0%
NA = 0%
NA = 0%
NA = 0%
NA = 0%

On-site (Scope 1) = 4.3%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 80.8%
Other Off-Site (Scope 3b) = 14.9%

GHG All Components = 20 Tons CO2e
GHG All Scopes = 20 Tons CO2e







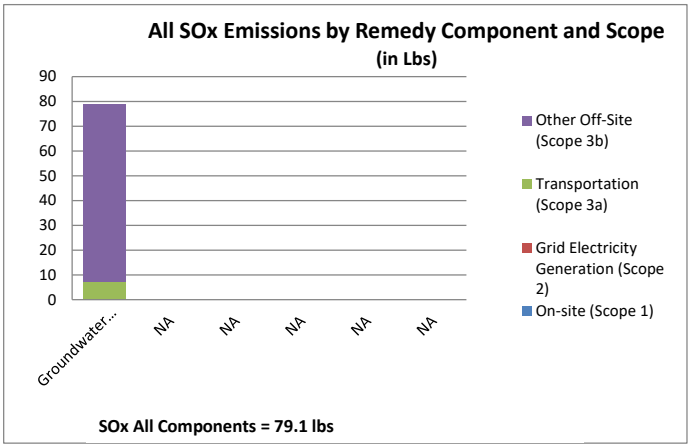
NOx lbs

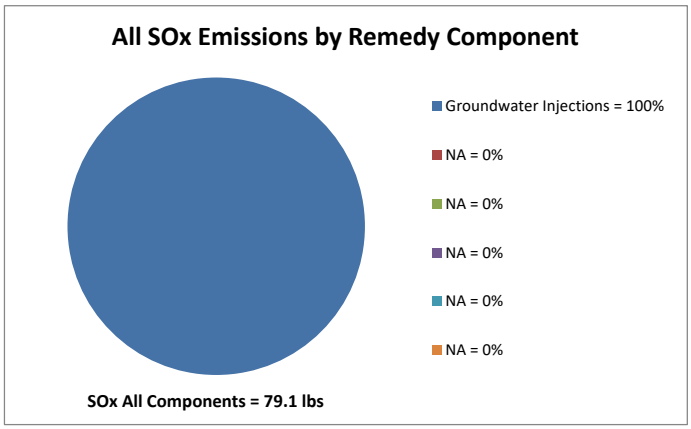
	Groundwa	NA	NA	NA	NA	NA	Total	
On-site (Scope 1)	12.0	0.0	0.0	0.0	0.0	0.0	12.0	
Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	l Electricity
sportation (Scope 3a)	235.0	0.0	0.0	0.0	0.0	0.0	235.0	Tran
er Off-Site (Scope 3b)	34.7	0.0	0.0	0.0	0.0	0.0	34.7	Oth
Total	281.7	0.0	0.0	0.0	0.0	0.0	281.7	

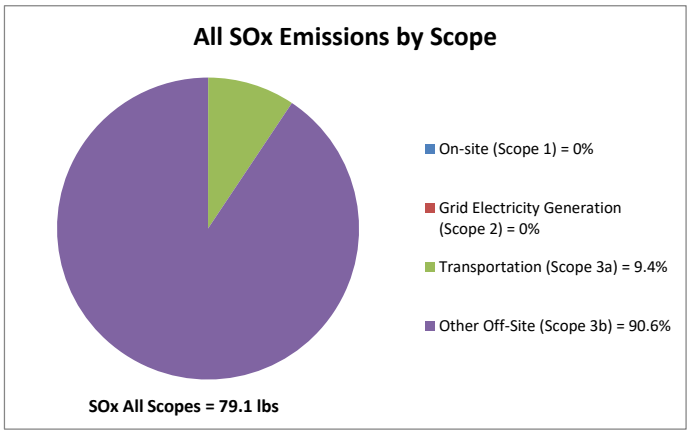
Groundwater Injections = 100%
NA = 0%
NA = 0%
NA = 0%
NA = 0%
NA = 0%

On-site (Scope 1) = 4.2%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 83.4%
Other Off-Site (Scope 3b) = 12.3%

NOx All Components = 281.7 lbs
NOx All Scopes = 281.7 lbs







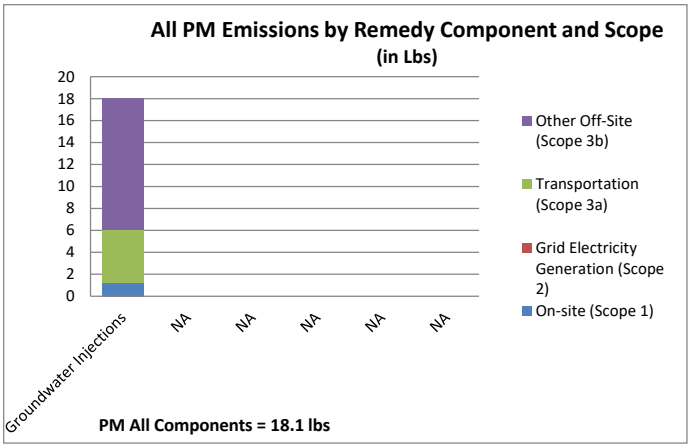
SOx lbs

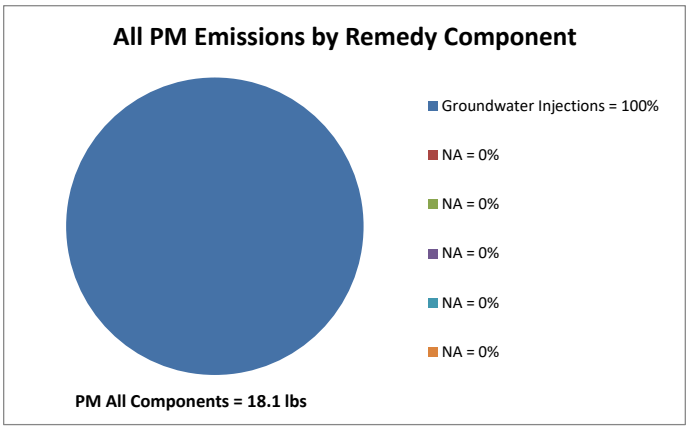
	Groundwa	NA	NA	NA	NA	NA	Total	
On-site (Scope 1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	l Electricity
ısportation (Scope 3a)	7.4	0.0	0.0	0.0	0.0	0.0	7.4	Tran
ıer Off-Site (Scope 3b)	71.7	0.0	0.0	0.0	0.0	0.0	71.7	Oth
Total	79.1	0.0	0.0	0.0	0.0	0.0	79.1	

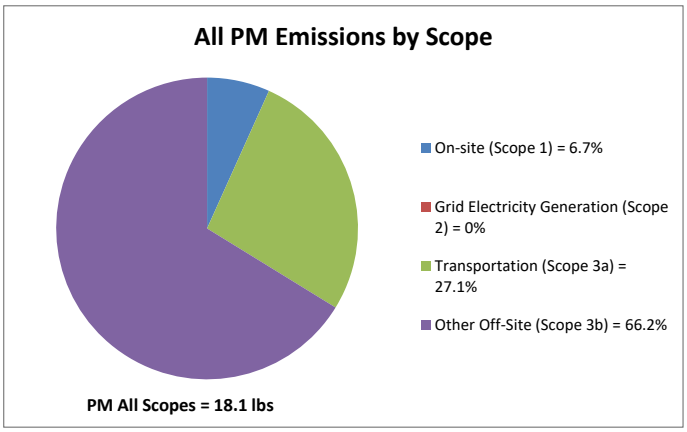
Groundwater Injections = 100%
NA = 0%
NA = 0%
NA = 0%
NA = 0%
NA = 0%

On-site (Scope 1) = 0%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 9.4%
Other Off-Site (Scope 3b) = 90.6%

SOx All Components = 79.1 lbs
SOx All Scopes = 79.1 lbs







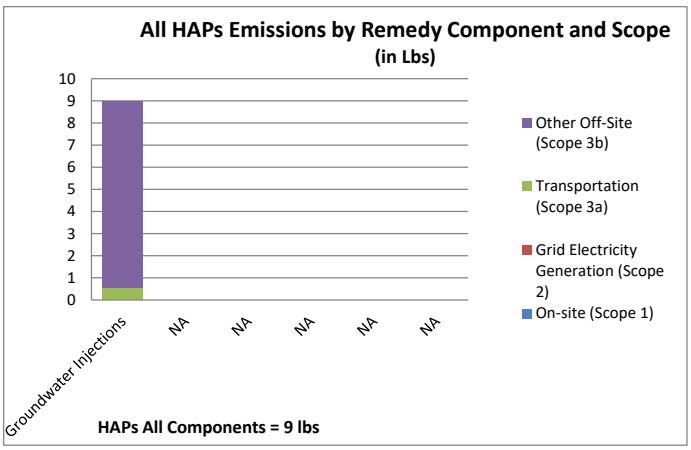
PM lbs

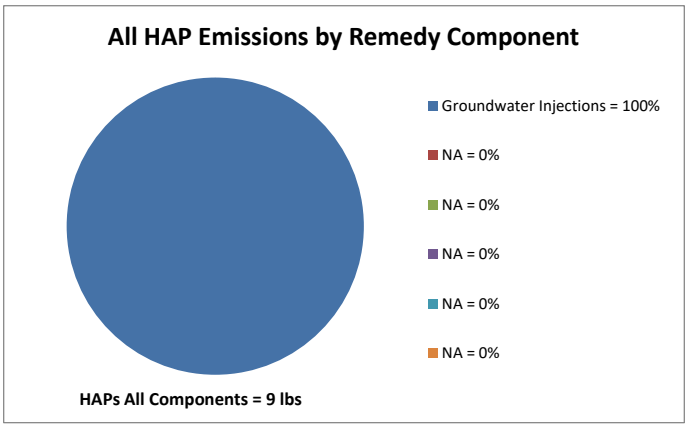
	Groundwa	NA	NA	NA	NA	NA	Total	
On-site (Scope 1)	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	l Electricity
sportation (Scope 3a)	4.9	0.0	0.0	0.0	0.0	0.0	4.9	Tran
er Off-Site (Scope 3b)	12.0	0.0	0.0	0.0	0.0	0.0	12.0	Oth
Total	18.1	0.0	0.0	0.0	0.0	0.0	18.1	

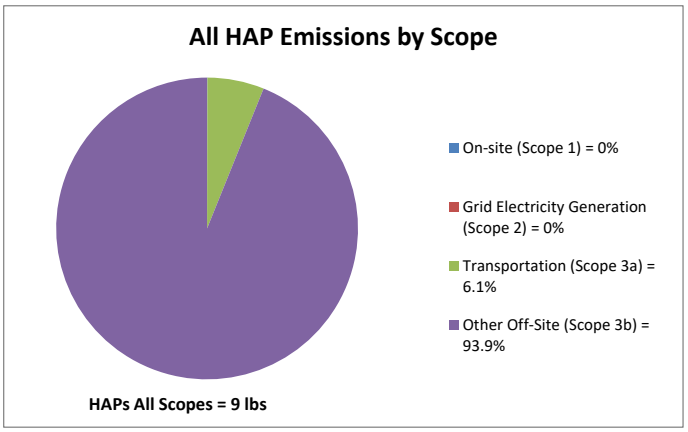
Groundwater Injections = 100%
NA = 0%
NA = 0%
NA = 0%
NA = 0%
NA = 0%

On-site (Scope 1) = 6.7%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 27.1%
Other Off-Site (Scope 3b) = 66.2%

PM All Components = 18.1 lbs
PM All Scopes = 18.1 lbs







HAPs lbs	Groundwa	NA	NA	NA	NA	NA	Total
On-site (Scope 1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ısportation (Scope 3a)	0.5	0.0	0.0	0.0	0.0	0.0	0.5
ıer Off-Site (Scope 3b)	8.4	0.0	0.0	0.0	0.0	0.0	8.4
Total	9.0	0.0	0.0	0.0	0.0	0.0	9.0

Groundwater Injections = 100%
NA = 0%
NA = 0%
NA = 0%
NA = 0%
NA = 0%

HAPs All Components = 9 lbs
HAPs All Scopes = 9 lbs

On-site (Scope 1) = 0%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 6.1%
Other Off-Site (Scope 3b) = 93.9%

Groundwater Injections - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**11**	**1,707**	**12**	**0**	**1**	**13**	**0**
Grid Electricity Generation (Scope 2)	**0.000**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**200**	**32,339**	**235**	**7**	**5**	**247**	**1**
Other Off-Site (Scope 3b)	**39**	**5,977**	**35**	**72**	**12**	**118**	**8**
Remedy Totals	**249**	**40,023**	**282**	**79**	**18**	**379**	**9**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file: SEFA_calculations_(121718).xlsx

Appendix I

Green Remediation BMP Tracker and NYSDEC Form A

(Date(s)) GREEN REMEDATION METRICS TRACKING LOG

(to be used for Daily / Weekly / or Phase Tracking)

Project Number / Name:

Client:

Address:

Project Start Date: **Project End Date:** **___ of ___**

Equipment Emissions

Equipment Type	Fuel Type	Hours of Operation	Time of Idling or not in Use
On-site diesel equipment			
Other:			
Other:			
Other:			
Other:			
Other:			

VOC Emissions

Type of Equipment	Hours of Operation	Volume of VOCs Emitted	lbs VOCs Emitted
Soil remediation equipment			
Groundwater remediation equipment			
Other:			
Other:			

Materials & Waste Totals

(See truck logs for more detail)

Imported Materials

Type of Material	Total Quantity	Origin	# of Trips	Miles from Site
Topsoil				
Fill				
Silt Fence				
Silt Logs				
Aggregate Base Course				
Geotextile				
Solidification Additives				
Activated Carbon				
Other:				
Other:				

Total Waste Generated On-Site

Type of Material	Total Quantity	Origin	Exported?	Miles from Site
Remedy Generated Waste				
Contractor Generated Waste				
Other:				
Other:				

Solid Waste Disposal and Diversion

Type of Material	Total Quantity	Disposal Location	# of Trips	Miles from Site
TSCA Contaminated Sediment				
Non-TSCA Contaminated Sediment				
Cleared Vegetation				
Spent Granular Activated Carbon				
Monitoring Well Removal Debris				
Other:				
Other:				

Recycled / Bio-Based Products

Type of Material	Total $ Value	% Recycled Content	% Bio-based Content

Energy Usage

Energy Type	KWh	Total Used	Type of Generation
Total Electricity Usage			
Total Renewable			
Other:			
Other:			

Water Usage

Type of Water	Gallons	Reason for Usage	Provider
Total Water Usage			
Public potable water supply			
Surface water			
On-site treated groundwater			
Reclaimed treated groundwater			
Collected or diverted storm water			
Re-Injected groundwater			
Other:			
Other:			

Land / Ecosystem Tracking

Land Disturbance Type	Total Area	Land Finished / Restored Type	COC Type
Total land area disturbed			
total land area restored			
Increase in area for storm water infiltration (vs pre-disturbed)			
Increase in area of native species plantings (vs pre-disturbed)			
Total area of land impacted by contamination			
Total area of land remediated to unrestricted use			
Total area of land remediated to other future use			

Additional Comments:

See Daily CAMP Log or Daily Truck Log for more details on work completed, materials imported/exported, and materials/resources used.

Form A
Summary of Green Remediation Metrics

Site Name: _____ Site Code: _____ Operable Unit: _____
Address: _____ City: _____
State: _____ Zip: _____ County: _____

Reporting Period
Contract Period From: _____To: _____
Reporting Period From: _____To: _____ Is this a Final Report? Yes ☐ No ☐

Contact Information
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____ Company Code: _____
Contract No. _____

Materials & Waste Generation: Quantify the materials used or consumed and the management of waste generated on-site.

	Current Reporting Period (Include Units)	Total to Date (Include Units)
Materials Brought to the Site		
• Topsoil		
• Fill		
• Silt Fence		
• Silt Logs		
• Aggregate Base Course		
• Geotextile		
• Solidification Additives		
• Activated carbon		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
Total Wastes Generated On-Site		
• Remedy Generated Waste		
• Contractor Generated Waste		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		
• Other:		

Provide a description of any implemented waste reduction programs appropriate for this project in the space provided on the certification page.

Recycled and Bio-Based Content in Imported Products and Materials: Quantify all materials and products imported to the site, including cost of materials/dollar values. Provide total percentages of recycled and bio-based of products and materials.

List Products and Materials Below	Total $ Value Provided	Total Percent of Recycled Content	Total Percent of Bio-based Content

Provide additional descriptions, as necessary, in the space provided on certification page.

Solid Waste Disposal and Diversion: Quantify all solid wastes generated, and indicate whether material was disposed or diverted for recycling or reuse.

Solid Waste Material	Date	Disposed or Diverted	Volume (Ton or CY)	Disposal/Recycling Facility Name	Comments (if not diverted, state why)
TSCA Contaminated Sediment					
Non-TSCA Contaminated Sediment					
Cleared Vegetation					
Spent Granular Activated Carbon					
Monitoring Well Removal Debris					
Other:					
Other:					
Other:					
Other:					
Other:					
Other:					

Provide descriptions in the space provided on the certification page of all wastes that were redirected for recycling or reuse. Indicate full names and addresses of facilities.

Energy Usage: Quantify the amount of energy used on-site and portion of that voluntarily derived from renewable energy sources.

	Current Reporting Period (KWh)	Total to Date (KWh)
Total electricity usage		
Of that total amount, provide quantity:		
• Derived from renewable source (i.e., solar, wind)		
• Other:		

Provide descriptions in the space provided on the certification page of all reported energy use reduction programs appropriate to this project, including use of electricity derived from renewable sources.

Water Usage: Quantify the volume of water used on-site from difference sources.

	Current Reporting Period (Gallons)	Total to Date (Gallons)
Total quantity of water used on-site		
Of that total amount, provide the quantity obtained from:		
• Public potable water supply		
• Surface water		
• On-site treated groundwater		
• Reclaimed treated water		
• Collected or diverted storm water		
• Re-Injected groundwater		
• Other:		
• Other:		

Provide descriptions in the space provided on the certification page of any reported water use reduction programs applied. Please note if reused/injected groundwater is pre-treated.

Emissions: Quantify the distance traveled for delivery of supplies and removal of waste.

	Current Reporting Period (Miles)	Total to Date (Miles)
Off-site mobile fuel combustion		
Other:		

Provide descriptions in the space provided on the certification page of practices such as use of local vendors within 150 miles of the site and on-site stationary fuel use reduction programs.

Quantify the number of hours that diesel and other equipment with the potential to emit hazardous air pollutants (HAPs) or greenhouse gas (GHG) emissions was operated on-site.

	Current Reporting Period (Hours)	Total to Date (Hours)
On-site diesel excavation/construction equipment usage		
Other on-site processes generating emissions		
Other:		

Quantify the VOC emissions from active remediation systems on-site.

	Current Reporting Period (lbs VOCs emitted)	Total to Date (lbs VOCs emitted)
Operating soil remediation equipment		
Operating groundwater remediation equipment		
Other:		

Provide descriptions in the space provided on the certification page of the type of equipment used, rating, emission control devices used and other means to reduce emissions.

Land and Ecosystem: Quantify the amount of land and/or ecosystems disturbed by construction and the area of land and/or ecosystems restored to a natural condition.

	Current Reporting Period (Acres)	Total to Date (Acres)
Total land area disturbed		
Total land area restored		
Increase in area for storm water infiltration (vs pre-disturbed conditions)		
Increase in area of native species plantings (vs pre-disturbed conditions)		
Other:		

Quantify the amount of land and/or ecosystems remediated.

	Current Reporting Period (Acres)	Total to Date (Acres)
Total area of land impacted by contamination		
Total area of land remediated to unrestricted use		
Total area of land remediated to other future site use		

Additional Comments on Green Remediation Programs Implemented: *Provide descriptions in the space provided of other green remediation practices performed during the project.*

Descriptions of green remediation programs reported above (Attach additional sheet if needed)
Materials and Products Imported:
Waste Generation:

Descriptions of green remediation programs reported above (Attach additional sheet if needed)
Recycled and Bio-Based Content in Imported Products and Materials:
Solid Waste Disposal and Diversion:
Energy Use:
Water Use:
Emissions:
Land and Ecosystem:
Other:

CERTIFICATION BY CONTRACTOR
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including the last day of the period covered by this application. _____ _____ **Date** **Contractor**

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Appendix J

Health and Safety Plan

Health and Safety Plan for Investigation and Remedial Activities

at

The Former Ithaca Gun Factory BCP Site
121-125 Lake Street
City of Ithaca, Tompkins County, New York

Site No. C755019

Prepared by:

C&S Engineers, Inc.
499 Col Eileen Collins Blvd.
Syracuse, New York 13212

July 2022

EMERGENCY PHONE NUMBERS

Emergency Service 911

Police: Ithaca Police Department ..... (607) 272-9973

Fire: Ithaca Fire Department ..... (607) 272-1234

Hospital: Cayuga Medical Center ..... (607) 274-4011

Department of Public Works ..... (607) 274-6527

National Response Center ..... (800) 424-8802

Poison Control Center ..... (800) 222-1222

Center for Disease Control ..... (800) 311-3435

NYSDEC Region 7 (Cortland, New York) ..... (607) 753-3095

C&S Engineers ..... (315) 455-2000

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FIGURES

Figure 1 Site Location Map
Figure 2 Site Layout

APPENDICES

Appendix A – Map and Directions to Hospital
Appendix B – Guidance on Incident Investigation and Reporting

SECTION 1 – GENERAL INFORMATION

This Health and Safety Plan (HASP) addresses health and safety considerations for the activities that personnel employed by C&S Engineers, Inc., may be engaged in during site investigation and remedial activities at the Former Ithaca Gun Factory BCP site located in Ithaca, New York (Site). Figure 1 shows the approximate location of the Site. This HASP will be implemented by the Health and Safety Officer (HSO) during site work. All personnel engaged in site investigation, soil excavation and handling, remediation, and other activities associated with the implementation of the site investigation and remedy are required to maintain current HAZWOPER training, including initial 40-hour training, on-the-job training, and consistent annual 8-hour refresher training, as per the requirements of 29 CFR 1910.120.

Compliance with this HASP is required of C&S personnel who enter this Site. The content of the HASP may change or undergo revision based upon additional information made available to the health, safety, and training (H&S) committee, monitoring results or changes in the technical scope of work. Any changes proposed must be reviewed by the H&S committee.

1.1 Responsibilities

Project Manager……	Nevin Bradford Phone: (315) 703-4284 Cell: (315) 529-0482
Health and Safety Manager……	Brent Testut Phone: (315) 703-4376 Cell: (707) 631-8846
Site Health and Safety Officer……..	Hayden Haas Phone: (315) 703-4158 Cell: (315) 317-2446
Emergency Coordinator…….	Hayden Haas Phone: (315) 703-4158 Cell: (315) 317-2446

1.2 Applicable Standards and Regulations References

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. Where a conflict or overlap among regulations and/or these specifications exist, the most stringent requirements shall apply. The Hazardous Material Engineer will determine which requirements are most stringent.

1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

a. ANSI Z89.1, Personnel Protective Equipment-Protective Headwear for Industrial Workers-Requirements (Latest Revision)
b. ANSI Z87.1, Occupational and Educational Personal Eye and Face Protection Devices
c. *ANSI Z9.2,* Fundamentals Governing the Design and Operation of Local Exhaust Systems
d. *ANSI Z88.2-80,* Practices for Respiratory Protection

2. CODE OF FEDERAL REGULATIONS (CFR)
    a. 29 CFR Subpart DWalking-Working Surfaces
    b. 29 CFR 1910 Occupational Safety and Health Standards-All Sections
    c. 29 CFR 1926 Safety and Health Regulations for Construction-All Sections
    d. 40 CFR 50.6 National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
    e. 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants (NESHAPS)-Subpart A-General Provisions
    f. 49 CFR 172 Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

3. NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)
    a. Publication Number 87-108 Respiratory Decision Logic
    b. NIOSH/OSHA Booklet 3142 Lead in Construction
    c. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH Publication 85-115)

4. U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
    a. PUB 3126 Working with Lead in the Construction Industry
    b. 29 CFR 1910, Subpart I, Appendix B-Non-Mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection

SECTION 2 – HEALTH AND SAFETY PERSONNEL

The following information briefly describes the health and safety designations and general responsibilities for this Site.

2.1 Project Manager (PM)

The PM is responsible for the overall project including the implementation of the HASP. Specifically, this includes allocating adequate manpower, equipment, and time resources to conduct Site activities safely.

2.2 Health and Safety Manager

- Has the overall responsibility for coordinating and reporting health and safety activities and the health and safety of Site Workers.
- Must have completed, at a minimum, the OSHA 30-Hour Construction Safety Training, and either the 24-Hour training course for the Occasional Hazardous Waste Site Worker or the 40-Hour training course for the Hazardous Waste Operations Worker that meets OHSA 29 CFR 1910.
- Must have completed the 8-Hour Site supervisor/manager's course for supervisors and managers having responsibilities for hazardous waste Site operations and management.
- Directs and coordinates health and safety monitoring activities.
- Ensures that field teams utilize proper personal protective equipment (PPE).
- Conducts initial on-site specific training prior to Site Workers commencing work.
- Conducts and documents daily and periodic safety briefings.
- Ensures that field team members comply with this HASP.
- Immediately notifies the Project Manager of all accident/incidents.
- Determines upgrading or downgrading of PPE based on Site conditions and/or real time monitoring results.
- Ensures that monitoring instruments are calibrated daily or as the manufacturer's instructions determine.
- Provides daily summaries of field operations and progress to the Project Manager.
- Submits and maintains all documentation required in this HASP and any other pertinent health and safety documentation.

2.3 Health and Safety Officer (HSO)

- Must be designated by the Health and Safety Manager and at a minimum, have the OSHA 10-Hour Construction Safety Training.
- Must schedule and attend a Pre-Construction Safety Meeting with the Health and Safety Manager to discuss the Subcontractor Safety Requirements and must attend the Weekly Subcontractor Coordination Meeting.
- Responsible for ensuring subcontractors and their lower tier contractors comply with project safety requirements.
- Must make frequent and regular inspections of their work areas and activities and ensure hazards that are under their control are corrected immediately and all other hazards are reported to the Project Manager and Health and Safety Manager.
- Must report all work-related injuries, regardless of severity, to the Project Manager and the Health and Safety Manager within 24 hours after they occur.

2.4 Emergency Coordinator

- The Emergency Coordinator or his on-site designee will, in coordination with The Town of Ithaca, implement the emergency response procedures outlined in Section 12 whenever conditions at the Site warrant such action.
- The Emergency Coordinator or his on-site designee will be responsible for assuring the evacuation, emergency treatment, emergency transport of C&S personnel as necessary, and notification of emergency response units (refer to phone listing in the beginning of this HASP) and the appropriate management staff.

2.5 Site Workers

- Report any unsafe or potentially hazardous conditions to the HSO and the Health and Safety Manager.
- Maintain knowledge of the information, instructions, and emergency response actions contained in the HASP.
- Comply with rules, regulations, and procedures as set forth in this HASP, including any revisions that are instituted.
- Prevent unauthorized personnel from entering work Site.

SECTION 3 – PERTINENT SITE INFORMATION

3.1 Site Location and General History

The property is located at 121-125 Lake Street, in the City of Ithaca, in Tompkins County, New York. Ithaca Falls and Fall Creek are situated to the north, Cornell University to the east, Lake Street to the south, and a residential neighborhood to the west.

The 1.63-acre site consists of two separate parcels. The eastern parcel historically operated as Ithaca Gun Factory with several manufacturing buildings that previously occupied the property and were demolished in 2009. The western parcel is currently occupied by a single-story building and a boiler stack on the site.

The site property is positioned on the side of a hill; however, most of the site is terraced with significant level areas suitable for development. Elevations at the site range from approximately 490 feet above mean sea level (amsl) in the western portion of the site to 545 feet amsl in the eastern portion of the site.

Current Zoning/Uses: Currently the site is vacant and consists mostly of open land; it is zoned industrial. Surrounding land uses to the east, south and west are mostly residential. Property that is contiguous along the northern and western portions of this site are part of Ithaca Falls Overlook Environmental Restoration Program (ERP) site, which is maintained and owned by the City of Ithaca.

Site History and Suspect Recognized Environmental Conditions

Past Use of the Site: The site was originally developed for industrial use in 1813. Companies that may have operated at the site prior to the Ithaca Gun Company include the Ithaca Manufacturing Company (agricultural equipment) and the W.H. Baker & Company gun factory.

The Ithaca Gun Company operated at the site from 1885 through 1986. The main operations included manufacture of firearms and munitions. Supporting manufacturing activities and site uses included spray-painting, drying gun stocks in ovens, firing ranges, metal plating, machine shop, and forging. Prior uses by the Ithaca Gun Company appear to have led to contamination of both on-site and near off-site areas.

From 1995 to 1998, following discovery of lead shot in the Falls Creek gorge area, soil sampling was conducted in on-site and off-site areas. In 2000, leaking transformers and associated PCB-contaminated soils were removed from the site. From 2000 to 2002, the EPA conducted a removal assessment, limited building demolition, and soil removal activities mostly on adjacent off-site areas; however, some portions of the former Ithaca Gun Factory property were included. In 2001, an Environmental Site Assessment and a Site Investigation were completed for and funded by the site owner at that time. In 2002, this site was part of the property included within the Voluntary Cleanup Agreement for the Ithaca Gun Company Site, with the site identification of V00511. In 2009, the on-site

buildings were demolished and removed from the site. Funding for the demolition activities was at least partially supported by the Empire State Development Restore NY program. Post-demolition site investigation activities have included surface soil screening and sampling, and groundwater sampling.

The primary contaminant of concern in surface and subsurface soil is lead, found at concentrations exceeding restricted residential soil cleanup objectives. A few other metals, some semi-volatile organic compounds (SVOCs) and PCBs have also been detected in isolated areas of subsurface soil and will be addressed by the site-wide remedy. The thickness of soil and fill materials at the site ranges from 0 to 15.5 feet on the site.

The primary contaminants of concern in groundwater are volatile organic compounds (VOCs), specifically cis-1,2- dichloroethane (CDCE), tetrachloroethene (PCE), trichloroethene (TCE) and vinyl chloride (VC). The highest concentrations of contaminants occur on-site within the eastern parcel groundwater in the fractured bedrock. Although the movement of groundwater is reduced vertically by a decrease in fractures with increased depth, contaminated groundwater does migrate off-site.

Off-site groundwater has been investigated and continues to be monitored by the NYSDEC as part of the Former Ithaca Gun Factory – Off-site remedial program (Site No.: C755019A). Based on sampling results, only one site-related compound, TCE, has been detected in off-site groundwater, but at concentrations that meet the groundwater standard. Due to the presence of TCE, the NYSDEC has conducted a soil vapor intrusion evaluation as part of the off-site remedial program.

Various organic and inorganic contaminants are present in soil, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), various heavy metals, and pesticides. The majority of these contaminants exist within the historic fill material or where it has been deposited.

Various organic and inorganic contaminants are present in groundwater, including VOCs and heavy metals. The majority of these contaminants exist within the site groundwater.

The specific contaminants currently known to exist in each media are as follows:

Media	Contaminant Class	Identified Compounds
Soil	PCBs	Total PCBs
	SVOCs	Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Indeno(1,2,3-c,d)pyrene Dibenzo(a,h)anthracene
	Metals	Arsenic Cadmium

Media	Contaminant Class	Identified Compounds
		Copper Lead Nickel Mercury Silver Selenium Zinc
	Pesticides	4.4'-DDD 4,4'-DDE 4,4'-DDT
Groundwater	VOCs	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene Benzene Chloroform cis-1,2-Dichloroethene Tetrachloroethene 1,2-Dichloroethene Trichloroethene Vinyl Chloride
	Metals	Iron Manganese Sodium

Based on the nature of site contaminants, direct contact with contaminated soil or inhalation of airborne dust originating from contaminated areas of the site pose the primary exposure risk. Due volatile organic compound contamination identified at the sites there is a potential for inhalation of VOCs causing a low exposure concern (see section 8 for exposure monitoring).

SECTION 4 – SITE HAZARDS EVALUATION

4.1 Chemical Hazards

Nature of Chemical Hazards

The Site soils and groundwater have been sampled and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, PCBs, pesticides, and herbicides. In addition, soil vapor has been sampled and analyzed for VOCs; and suspect asbestos-containing building materials (ACBMs) and lead-based paints (LBPs) have been sampled and analyzed, all ACM and LBP materials are believed to have since been removed. No sampling/analysis for perfluorinated compounds (PFCs) has been conducted to date. The associated laboratory analysis and on-site observations revealed that the following chemicals / materials of concern exist at the Site:

- Metals (including lead, arsenic, cadmium, copper, nickel, mercury, silver, selenium, and zinc)
- Chlorinated volatile organic compounds (CVOCs)
- Semi-volatile organic compounds (including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-c,d)pyrene, and dibenzo(a,h)anthracene)
- Benzene
- Pesticides (including 4.4-DDD, 4,4-DDE, and 4,4-DDT)
- Polychlorinated biphenyls (PCBs)

Common Routes of Exposure

The contaminants at the Site may enter the human body in a variety of ways. Based on the nature of site contaminants, the chemical routes of exposure anticipated from the remedial activities at this site include:

Route	Mechanism	Control
Absorption	Dermal (skin) contact with impacted soil on-site resulting in absorption of chemicals of concern through the skin and into the blood stream.	Proper use of PPE will minimize risks of exposure at the site.
Ingestion	Chemicals / materials of concern can come in direct contact with the mouth from soil or other contaminated areas (PPE, skin, tools, etc.) and enter the bloodstream through the stomach lining.	Proper care in handling PPE and tools, refraining from eating and drinking at the Site, and frequent hand washing with soap and water will minimize risks of exposure.
Inhalation	Volatile vapors and/or contaminants attached to dust and particulates can be entrained by wind and become airborne across the site and be subsequently inhaled through the nose and / or mouth. This exposure	Conduct monitoring of air quality for particulates and VOC in worker breathing zones and at downwind perimeters of work zones. Employ methods that minimize the creation of dust and utilize dust suppression

Route	Mechanism	Control
	route is the most likely way for worker exposure to occur.	techniques to minimize dust and particulates. Respirators with appropriate filtration and organic adsorption cartridges should be available to on-site workers in case volatile compounds become a nuisance or health hazard.

4.2 Physical Hazards

Based upon the anticipated field activities, the following potential physical hazardous conditions may exist:

Category	Mechanism	Control
Mechanical Equipment	The use of typical mechanical equipment such as drill rigs and sampling vehicles can create a potential for crushing and pinching hazards due to movement and positioning of the equipment, movement of lever arms and hydraulics, and entanglement of clothing and appendages in exposed drives and tracks. Mechanical equipment can also create a potential for impact of steel tools, masts, and cables should equipment rigging fail, or other structural failures occur during hydraulic equipment operation.	Heavy equipment work must be conducted only by trained, experienced personnel. If possible, personnel must remain outside the turning radius of large, moving equipment. At a minimum, personnel must maintain visual contact with the equipment operator. When not operational, equipment must be set and locked so that it cannot be activated, released, dropped, etc. The mechanical equipment stated above represents typical equipment that is ordinarily used during this scope of work, but is not meant to be an all-inclusive list. Similar precautions should be used around other mechanical equipment deployed to the Site that is not listed above.
Excavations and Trenches	The use of excavation/trenching such as removal of overburden soils, installation of utilities, and site grading operations can cause potential for suffocation, crushing, or other injury from falling material. Advancement of excavation and trenches can also create possible damage/failure of any installed underground utility services and create hazards. Other hazards created can included tripping, slipping, or falling. Entering an excavation or trench could have the possibility of an explosive, flammable,	Ensure compliance with OSHA's construction standard for excavations (29 CFR 1926 Subpart P). Designate a Competent Person responsible for selecting and implementing the appropriate protective system(s), assuring appropriate means of access and egress for excavations greater than four (4) feet in depth, and for ensuring that potential atmospheric and physical hazards associated with any excavation / trenching activities are completed in accordance with Subpart P and other applicable OSHA Standards.

Category	Mechanism	Control
	toxic, or oxygen-deficient atmosphere within the excavation or trench.	
Noise	Work around large equipment often creates excessive noise. Noise can cause workers to be startled, annoyed, and/or distracted; as well as causing pain, physical damage to the ear, and temporary and/or permanent hearing loss; and can interfere with communication.	If workers are subjected to noise exceeding an 8-hour time-weighted average sound level of 85 dBA, hearing protection will be required with an appropriate noise reduction rating to comply with 29 CFR 1910.95 and to reduce noise levels below levels of concern.
Slips/Trips/Falls	Personnel may encounter slip, trip, and fall hazards associated with excavations, manways, and construction debris and materials. Precautionary measures should be taken by identifying and removing slip, trip, and fall hazards prior to commencing work.	In the event slip, trip, and fall hazards cannot be removed or minimized, site workers will be shown the location of the physical hazard and be asked to avoid it during work activities.
Fire/Explosion	The potential for fire and/or explosion emergencies is always present on the Site.	Field vehicles will be equipped with a fire extinguisher. Employees, contractors and workers must be trained in the proper use of fire suppression equipment. However, large fires that cannot be controlled with a fire extinguisher shall be handled by professionals. The proper authorities shall be notified in these instances, as well as the HSO and Health and Safety Manager.
Cold Exposure	Persons working in the outdoors in temperatures at or below freezing may be subject to frostbite. Extreme cold for a short time may cause injury to exposed body surfaces or result in a profound generalized cooling which can cause death. Areas of the body such as fingers, toes, and ears, are the most susceptible to cold stress. Ambient air temperature and wind velocity are two factors which influence the development of a cold weather injury. Local injury resulting from exposure to cold temperatures is known as “frostbite.” There are several degrees of damage in which frostbite of the extremities can be categorized, as follows: ○ Frost nip or incipient frostbite is characterized by sudden bleaching or whitening of the skin.	Wear several layers of dry clothes so that you can vary the amount of clothing to match the conditions. If there is wind, wear a windbreaker, since wind increases the effects of cold air and in turn lowers your body’s core temperature even faster. Don’t get overheated. Sweat can dampen clothing and in turn lead to over-cooling. Keep hands, feet, ears, and face warm. These are the areas of the body where frostbite tends to strike first. Heart disease and the use of sedatives or excessive alcohol will make you more susceptible to cold stress. If you feel chilly or sleepy, or have pain in your extremities, go to a warm shelter to recover.

Category	Mechanism	Control
	○ Superficial frostbite occurs when the skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient. ○ Deep frostbite is characterized by tissues that are cold, pale, and solid; this is an extremely serious injury.	
Heat Exposure/Stress	Heat stress can result from a number of contributing factors, including environmental conditions, clothing, and workload as well as the physical condition of the individual. Since heat stress is one of the most common injuries / symptoms associated with outdoor work conducted with direct solar load, and, in particular, because wearing PPE can increase the risk of developing heat stress, workers must be capable of recognizing the signs and symptoms of heat-related illnesses. Signs and symptoms of heat-related illnesses which all on-site personnel should be aware, include the following: ○ Heat rash may result from continuous exposure to heat or humid air. ○ Heat cramps are caused by heavy sweating and may include muscle spasms and pain in the hands, feet, and abdomen. ○ Heat exhaustion is indicated by pale, cool, and moist skin; heavy sweating; dizziness; nausea; and fainting. ○ Heat stroke is indicated by red, hot, and unusually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; rapid pulse; and coma. Immediate action must be taken to cool the body before serious injury or death occurs.	The following will steps will be taken to limit heat exposure: adjust schedules, take breaks, limit heavy work in protective clothing or in a hot environment may require more time resting than working. Schedule heavy work in the coolest part of the day. Have shaded rest shelters with chairs or benches. Drink Fluids. Sweating cools the body, but it also robs the body of fluid. Drink enough fluids to replace what you lose. You may not feel thirsty until you've become dehydrated. Drink regularly throughout the day. Don't wait until you're thirsty. Monitor for signs of potential heat exposure and stress through use of the "buddy system', with frequent communication between site personnel. Take scheduled breaks and hydrate frequently throughout the day. Maintain an adequate supply of cold water and electrolyte containing drinks in support zone of site. In the event that personnel are observed to exhibit dizziness, disorientation, heat rash, slurred speech, dry mouth, heat cramps, or other symptoms of heat stress, discontinue work immediately and move affected person(s) to a location that is free from direct sunlight. Perform personal decontamination procedures outlined in Section 10.4 of this HASP and provide fluids (preferably "Gatorade" or similar product that will replenish electrolytes). Monitor condition during

Category	Mechanism	Control
		to evaluate whether there is notable improvement in their condition.
Utilities	Overhead and underground utilities exist within the Work Area, which may expose workers to electrocution hazards, explosive hazards, and volatile vapors.	Dig Safely New York shall be contacted a minimum of three business days prior to initiating the field activities, to arrange for the identification and markout of buried utilities at the site. The contact number for Dig Safely New York is 1-800-962-7962. In the event of inadvertent damage to buried utilities, all work shall cease, and the situation shall be evaluated by the HSO.

4.3 Environmental Hazards

Based upon the anticipated field activities, the following potential environmental hazardous conditions may exist:

Category	Hazard	Control
Biological	Ticks, bees/wasps, mosquitos, spiders, snakes, rabid animals	There are no known species of poisonous spiders or snakes common to the area. Minimize potential exposure to by wearing wear long pants and safety shoes. Change clothing and carefully examine for evidence of insects and ticks upon undressing, immediately following return from the site. Avoid contact with any animals, either wild or domestic, that may be encountered while conducting the field activities, and notify the local office of the New York State Department of Health (NYSDOH) in the event that animals are observed to elicit strange behavior. In the event of contact with an animal that is behaving in a strange manner, the NYSDOH should be contacted immediately.
Biological	Poison Ivy, Poison Oak	Familiarize yourself with the characteristics and appearance of poison ivy and poison oak. Be cognizant of vegetation while conducting work activities. Minimize potential exposure to by wearing

Category	Hazard	Control
		wear long pants and safety shoes. Change clothing immediately following return from the site.
Weather	Wet surfaces, lighting, high winds (falling objects, contaminated dust), hail, excessive heat, extreme cold, snow and ice.	Remain cognizant of weather conditions, forecasts, and changing weather conditions. Exercise extra caution during wet and inclement site conditions to minimize risk of slips and falls. Avoid work during periods of high winds to reduce risk of injury from falling objects and airborne contaminant migration. Cease work and monitor conditions in the event that lightning is observed or suspected in the area, or in the event that other weather conditions pose a health or safety hazard.

SECTION 5 – TRAINING

5.1 Site-Specific Training

Training will be provided that specifically addresses the activities, procedures, monitoring, and equipment for the Site operations prior to going on Site. Training will include familiarization with Site and facility layout, known and potential hazards, and emergency services at the Site, and details all provisions contained within this HASP. This training will also allow Site Workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity.

5.2 Safety Briefings

C&S project personnel will be given briefings by the HSO on a daily or as needed basis to further assist Site workers in conducting their activities safely. Pertinent information will be provided when new operations are to be conducted. Changes in work practices must be implemented due to new information made available, or if Site or environmental conditions change. Briefings will also be given to facilitate conformance with prescribed safety practices. When conformance with these practices is not occurring or if deficiencies are identified during safety audits, the project manager will be notified.

5.3 Daily Tailgate Safety Meeting

The HSO or the HSO designee will be responsible for conducting a daily tailgate safety meeting prior to start of any work activities. The contractor and workers will be responsible for attending daily tailgate safety meetings, as well as providing any additional insight into any possible hazards which might be anticipated or encountered throughout the day on the Site. The meeting will discuss any measures which will be implemented throughout the day to mitigate any hazards. The meetings are designed to create awareness of any hazards and their associated mitigation measures at the Site. If conditions at the Site change and new hazards are determined to be present, work will be stopped and an additional safety meeting will be conducted. The daily tailgate meetings discussions will be logged, as well as all who attended.

SECTION 6 – SITE CONTROL

6.1 Authorized Entry

Personnel authorized to enter the Site while operations are being conducted must be approved by the HSO. Authorization will involve completion of appropriate training courses, medical examination requirements, and review and sign-off of this HASP. No C&S personnel should enter the work zone alone. Each site visitor should check in with the HSO or Project Manager prior to entering the work zones.

6.2 Site Control Measures

Site control measures will minimize potential contamination of on-site personnel, protect the public from potential on-site hazards, and prevent vandalism of equipment and materials. Site control measures also enhance response in emergency situation. For this project, the primary site control measure will be a temporary fence or other barrier installed along the Site boundary for the duration of the project.

Areas where intrusive work will occur will be routinely divided into three distinct areas: an Exclusion Zone, a Contamination Reduction Zone (CRZ), and a Support Zone.

Exclusion Zone

The Exclusion Zone will be designated as the area where the highest potential for exposure by dermal or inhalation routes exists. The Exclusion Zone coincides with areas being excavated. PPE is required and a daily log will be kept of all personnel entering this zone.

The Exclusion Zone for work areas will be demarcated with barrier tape.

Approval for entry into the Exclusion Zone will require compliance with OSHA training and medical surveillance requirements (29 CFR 1910.120). Subcontractor and vendor equipment will not be permitted to enter the Exclusion Zone without prior authorization and will be subject to Site decontamination procedures. All personnel and equipment shall be decontaminated when leaving the Exclusion Zone. No eating, drinking, or smoking will be permitted in the Exclusion Zone.

Contamination Reduction Zone (CRZ)

The Contractor will establish the CRZ in an area between the Exclusion Zone and Support Zone. Approval for entry into the CRZ will require compliance with OSHA training and medical surveillance requirements (29 CFR 1910.120). Access to the Exclusion Zone will be through the CRZ. The CRZ will be designated as the area immediately adjacent to and surrounding the Exclusion Zone. The probability of dermal and inhalation exposure is lower in the CRZ than in the Exclusion Zone. The CRZ includes facilities for personnel and equipment decontamination. PPE worn in the Exclusion Zone may not be worn outside the CRZ, except during emergencies. No eating, drinking, or smoking will be permitted in the CRZ.

Support Zone

The Support Zone includes all areas outside the CRZ and Loading Zone. The exposure potential in the Support Zone is minimal. The Support Zone provides a changing area for personnel entering the CRZ and Exclusion Zone, as well as an area for the storage of clean equipment and materials. Protective clothing worn in the Exclusion Zone will not be allowed to be worn in the Support Zone, except in emergencies. It is the responsibility of the Project Manager to control access to the Site and to assure proper security. Any evidence of unauthorized entry will be noted in the daily log.

Under no circumstances will the general public be permitted to access the work area. All preapproved visitors will be briefed on the HASP, and shall sign the Daily Site Sign-In / Sign-Out Log. Pre-approved visitors will be permitted in the immediate area of active operations only with approval from the Contractor's HSO or Project Manager. All personal vehicles are restricted to the Support Zone.

6.3 Communications

A phone will be located on Site to be utilized by personnel conducting investigation. Cell phones will be the primary means of communicating with emergency support services/facilities.

SECTION 7 – PERSONAL PROTECTIVE EQUIPMENT

7.1 Personal Protective Equipment – General

The level of protection to be worn by field personnel will be defined and controlled by the HSO. Depending upon the type and levels of material present or anticipated at the site, varying degrees of protective equipment will be needed. If the possible hazards are unknown, a reasonable level of protection will be taken until sampling and monitoring results can ascertain potential risks. The levels of protection listed below are based on USEPA Guidelines. A list of the appropriate clothing for each level is also provided.

Level A protection must be worn when a reasonable determination has been made that the highest available level of respiratory, skin, eye, and mucous membrane protection is needed. It should be noted that while Level A provides maximum available protection, it does not protect against all possible hazards. Consideration of the heat stress that can arise from wearing Level A protection should also enter into the decision-making process. Level A protection includes:

- Open circuit, pressure-demand self-contained breathing apparatus (SCBA)
- Totally encapsulated chemical resistant suit
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level B protection must be used when the highest level of respiratory protection is needed, but hazardous material exposure to the few unprotected areas of the body (e.g., the back of the neck) is unlikely. Level B protection includes:

- Open circuit, pressure-demand SCBA or pressure airline with escape air bottle
- Chemical protective clothing: Overalls and long sleeved jacket; disposal chemical resistant coveralls; coveralls; one or two piece chemical splash suit with hood
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level C must be used when the required level of respiratory protection is known, or reasonably assumed to be, not greater than the level of protection afforded by air purifying respirators; and hazardous materials exposure to the few unprotected areas of the body (e.g. the back of the neck) is unlikely. Level C protection includes:

- Full or half face air-purifying respirator

- Chemical protective clothing: Overalls and long-sleeve jacket; disposable chemical resistant coveralls; coveralls; one- or two-piece chemical splash suit
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level D is the basic work uniform. It cannot be worn on any site where respiratory or skin hazards exist. Level D protection includes:

- Safety boots/shoes
- Safety glasses
- Hard hat with optional face shield

Note that the use of SCBA and airline equipment is contingent upon the user receiving special training in the proper use and maintenance of such equipment.

7.2 Personal Protective Equipment – Site Specific

Level D with some modification will be required when working in the work zone on this Site. In addition to the basic work uniform specified by Level D protection, Nitrile gloves will be required when contact with soil and/or groundwater is likely. Hearing protection will be worn when power equipment is used to perform subsurface work. An upgrade to a higher level (Level C) of protection may occur if determined necessary by the HSO.

SECTION 8 – MONITORING PROCEDURES

8.1 Monitoring During Site Operations

All Site environmental monitoring should be accompanied by periodic meteorological monitoring of appropriate climatic conditions. All ground intrusive activities will also be monitored under the Community Air Monitoring Plan (CAMP) included in the Pre-Designed Investigation work plan.

8.1.1 Surface Soil Operation

Monitoring will be performed by the HSO or field personnel during the conduct of work. A photoionization detector (PID) equipped with a 10.6 eV lamp will be utilized to monitor for the presence of volatile organic vapors within the breathing zone, the surface soil holes, and sursurface samples upon their retrieval. The PID will be field checked for calibration accuracy three times per day (morning, lunch, and end of day.

8.1.2 Drilling / Test Pit Operations (Monitoring Well Installation and Subsurface Borings)

Monitoring will be performed by the HSO or drilling observer during the conduct of work. A photoionization detector (PID) equipped with a 10.6 eV lamp will be utilized to monitor for the presence of volatile organic vapors within the breathing zone, the borehole, and subsurface samples upon their retrieval. Drill cuttings and excavation spoils will also be monitored by use of the PID. The PID will be field checked for calibration accuracy three times per day (morning, lunch, and end of day. If subsurface conditions warrant, a combustible gas indicator (CGI) with oxygen alarm may also be used to monitor the borehole for the presence of combustible gases. Similar monitoring of fluids produced during well development will also be conducted.

8.1.3 Soil Excavation and Trenching Operation (Soil Removal, Hauling, Staging, and Grading)

Monitoring will be performed by the HSO or remedial observer during the conduct of work. A photoionization detector (PID) equipped with a 10.6 eV lamp will be utilized to monitor for the presence of volatile organic vapors within the breathing zone, the excavation or trench, and any subsurface samples upon their retrieval. Excavation and trenching spoils will also be monitored by use of the PID. The PID will be field checked for calibration accuracy three times per day (morning, lunch, and end of day. If subsurface conditions warrant, a combustible gas indicator (CGI) with oxygen alarm may also be used to monitor the borehole for the presence of combustible gases.

8.2 Action Levels

If readings on the PID exceed 10 ppm for more than fifteen minutes consecutively, then personal protective equipment should be upgraded to Level C. The air purifying respirator used with Level C protective equipment must be equipped with organic vapor cartridges. If readings on the explosive gas meter are within a range of 10%-25% of the LEL then continuous monitoring will be implemented. Readings above 25% of the LEL indicate the potential for an explosive condition. Sources of ignition should be removed and the Site should be evacuated.

8.3 Personal Monitoring Procedures

Personal monitoring shall be performed as a contingency measure in the event that VOC concentrations are consistently above the 10-ppm action level as detected by the PID. If the concentration of VOCs is above this action level, then amendments to the HASP must be made before work can continue at the Site.

SECTION 9 – SAFETY CONSIDERATIONS FOR SITE OPERATIONS

9.1 General

Standard safe work practices that will be followed include:

- Do not climb over/under drums, or other obstacles.
- Do not enter the work zone alone.
- Practice contamination avoidance, on and off-site.
- Plan activities ahead of time, and use caution when conducting concurrently running activities.
- No eating, drinking, chewing or smoking is permitted in work zones.
- Due to the unknown nature of waste placement at the Site, extreme caution should be practiced during excavation activities.
- Apply immediate first aid to any and all cuts, scratches, abrasions, etc.
- Be alert to your own physical condition. Watch your buddy for signs of fatigue, exposure, etc.
- A work/rest regimen will be initiated when ambient temperatures and protective clothing create a potential heat or cold stress situation.
- No work will be conducted without adequate natural light or without appropriate supervision.
- Task safety briefings will be held prior to onset of task work.
- Ignition of flammable liquids within or through improvised heating devices (barrels, etc.) or space heaters is forbidden.
- Entry into areas of spaces where toxic or explosive concentrations of gases or dust may exist without proper equipment is prohibited.
- Any injury or unusual health effect must be reported to the Site HSO.
- Prevent splashing or spilling of potentially contaminated materials.
- Use of contact lenses is prohibited while on site.
- Beards and other facial hair that would impair the effectiveness of respiratory protection are prohibited if respiratory protection is necessary.
- Field crew members should be familiar with the physical characteristics of investigations, including:
    - Wind direction in relation to potential sources
    - Accessibility to co-workers, equipment, and vehicles
    - Communication
    - Hot zones (areas of known or suspected contamination)

- Site access
- Nearest water sources

- The number of personnel and equipment in potentially contaminated areas should be minimized consistent with site operations.

9.2 Field Operations

The HSO or designee will be present on-site during all intrusive work, e.g., drilling operations, excavations, trenching, and will provide monitoring to oversee that appropriate levels of protection and safety procedures are utilized by C&S Engineers, Inc., personnel. The use of salamanders or other equipment with an open flame is prohibited and the use of protective clothing, especially hard hats and boots, will be required during drilling or other heavy equipment operations. First aid kits will be located in designated locations on the Site, these locations will be known to all contractors and site workers prior to begging work.

SECTION 10 – DECONTAMINATION PROCEDURES

10.1 General Decontamination

Decontamination involves physically removing contaminants and/or converting them chemically into innocuous substances. Only general guidance can be given on methods and techniques for decontamination. Decontamination procedures are designed to:

- Remove contaminant(s).
- Avoid spreading the contamination from the work zone.
- Avoid exposing unprotected personnel outside of the work zone to contaminants.

10.2 Contamination Avoidance

Contamination avoidance is the first and best method for preventing spread of contamination from a hazardous site. Each person involved in site operations must practice the basic methods of contamination avoidance listed below. Additional precautions may be required in the HASP.

- Know the limitations of all protective equipment being used.
- Do not enter a contaminated area unless it is necessary to carry out a specific objective.
- When in a contaminated area, avoid touching anything unnecessarily.
- Walk around pools of liquids, discolored areas, or any area that shows evidence of possible contamination.
- Walk upwind of contamination, if possible.
- Do not sit or lean against anything in a contaminated area. If you must kneel (e.g., to take samples), use a plastic ground sheet.
- If at all possible, do not set sampling equipment directly on contaminated areas. Place equipment on a protective cover such as a ground cloth.
- Use the proper tools necessary to safely conduct the work.

10.3 Reducing Contamination

Specific methods that may reduce the chance of contamination are:

- Use of remote sampling techniques.
- Opening containers by non-manual means.
- Bagging monitoring instruments.
- Use of drum grapplers.
- Watering down dusty areas.

10.4 Personal Decontamination

All personnel leaving the contaminated area of a site (or the Exclusion Zone) must be decontaminated to remove any harmful chemicals or hazards that may have adhered to them. Decontamination methods can include the following

- Physically remove contaminants
- Inactivate contaminants by chemical detoxification
- Remove contaminants by a combination of both physical and chemical means.

Physical removal of any contaminated is the method which will be use at the Site. First any gross material can be removed by physical means involving dislodging or displacement of any materials followed by rinsing and wiping off any remaining materials.

Loose contaminants such as dust and soil that cling to workers clothing, can be removed with water or a liquid rinse. Removal of electrostatically attached materials can be enhanced by coating the clothing with anti-static solutions. These are available commercially as wash additives or anti-static sprays.

If needed, any grossly contaminated clothing will be disposed of in the same manner as outline in Section 11.

10.5 Equipment Decontamination

Equipment which will need to be decontaminated includes tools, monitoring equipment, and personal protective equipment. Items to be decontaminated will be brushed off, rinsed, and dropped into a plastic container supplied for that purpose. They will then be washed with a detergent solution and rinsed with clean water. Monitoring instruments may be wrapped in plastic bags prior to entering the field in order to reduce the potential for contamination. Instrumentation that is contaminated during field operations will be carefully wiped down. Heavy equipment, if utilized for operations where it may be contaminated, will have prescribed decontamination procedures to prevent contaminant materials from potentially leaving the Site. On-site contractors, such as drillers or backhoe operators, will be responsible for decontaminating all construction equipment prior to demobilization.

SECTION 11 – DISPOSAL PROCEDURES

All discarded materials, waste materials, or other objects shall be handled in such a way as to reduce or eliminate the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left on-site. All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary and segregated for proper disposal. All contaminated waste materials shall be disposed of as required by the provisions included in the contract and consistent with regulatory provisions. All non-contaminated materials shall be collected and bagged for appropriate disposal. Investigation Derived Waste (IDW) will be managed and characterized. Characterization of IDW may require TCLP sampling and analysis consistent with the work plan for the Site and DER-10 Technical Guidance for Site Investigation and Remediation dated May 2010.

SECTION 12 – EMERGENCY RESPONSE PROCEDURES

As a result of the hazards at the Site, and the conditions under which operations are conducted, there is the possibility of emergency situations. This section establishes procedures for the implementation of an emergency plan.

12.1 Emergency Coordinator

Emergency Coordinator: ..... Hayden Haas……. Work Phone: (315) 703-4349

The Emergency Coordinator or his on-site designee will, in concert with the City of Ithaca, implement the emergency response procedures whenever conditions at the site warrant such action. The Emergency Coordinator or his on-site designee will be responsible for assuring the evacuation, emergency treatment, emergency transport of C&S personnel or workers as necessary, and notification of emergency response units (**refer to phone listing** in the beginning of this HASP) and the appropriate management staff.

12.2 Evacuation

In the event of an emergency situation, such as fire, explosion, significant release of toxic gases, etc., all personnel will evacuate and assemble in a designated assembly area. The Emergency Coordinator or his on-site designee will have authority to contact outside services as required. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The Emergency Coordinator or his on-site designee must see that access for emergency equipment is provided and that all ignition sources have been shut down once the emergency situation is established. Once the safety of all personnel is established, the Fire Department and other emergency response groups will be notified by telephone of the emergency.

12.3 Potential / Actual Fire or Explosion

Immediately evacuate the Site and notify local fire and police departments, and other appropriate emergency response groups, if LEL values are above 25% in the work zone or if an actual fire or explosion has taken place.

12.4 Environmental Incident (Spread or Release of Contamination)

Control or stop the spread of contamination if possible. Notify the Emergency Coordinator and the Project Manager. Other appropriate response groups will be notified as appropriate.

12.5 Personnel Injury

Emergency first aid shall be applied on-site as necessary. Then, decontaminate (en route if necessary) and transport the individual to nearest medical facility if needed. The

ambulance/rescue squad shall be contacted for transport as necessary in an emergency. A map of directions to the nearest hospital is shown in Attachment A.

12.6 Personnel Exposure

- *Skin Contact*: Use copious amounts of soap and water. Wash/rinse affected area thoroughly, and then provide appropriate medical attention. Eyes should be thoroughly rinsed with water for at least 15 minutes.
- *Inhalation*: Move to fresh air and/or, if necessary, decontaminate and transport to emergency medical facility.
- *Ingestion*: Decontaminate and transport to emergency medical facility.
- *Puncture Wound/Laceration*: Decontaminate, if possible, and transport to emergency medical facility.

12.7 Adverse Weather Conditions

In the event of adverse weather conditions, the HSO will determine if work can continue without sacrificing the health and safety of field workers.

12.8 Incident Investigation and Reporting

In the event of an incident, procedures discussed in the Medical Emergency/Incident Response Protocol, presented in **Appendix B** of this HASP, shall be followed.

FIGURE 1

SITE LOCATION MAP

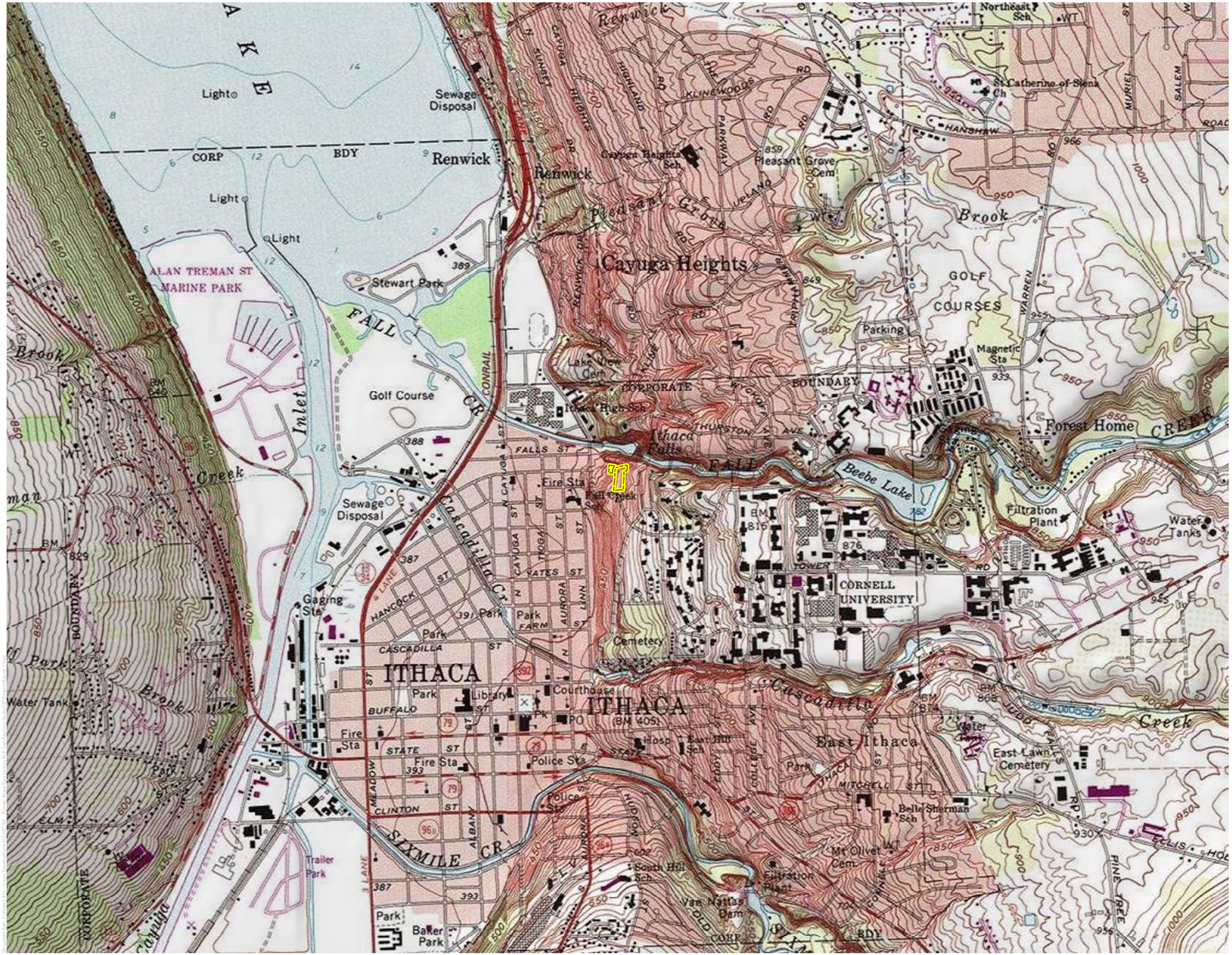


Figure 1

Site Location Map

Legend

Subject Parcel

N

0 750 1,500 3,000 Feet

1 inch = 2,000 feet
When printed at 11 in. by 17 in.

Former Ithaca Gun Factory
Pre-Design Investigation

Sources: . Created by C&S Engineers, Inc.

FIGURE 2

SITE LAYOUT

C&S COMPANIES®

Figure 2

BCP Site Boundary

Legend

BCP PARCEL BOUNDARY

N

0 20 40 80 Feet

1 inch = 40 feet
When printed at 11 in. by 17 in.

Client Logo(s)

Former Ithaca Gun Factory
Pre-Design Investigation

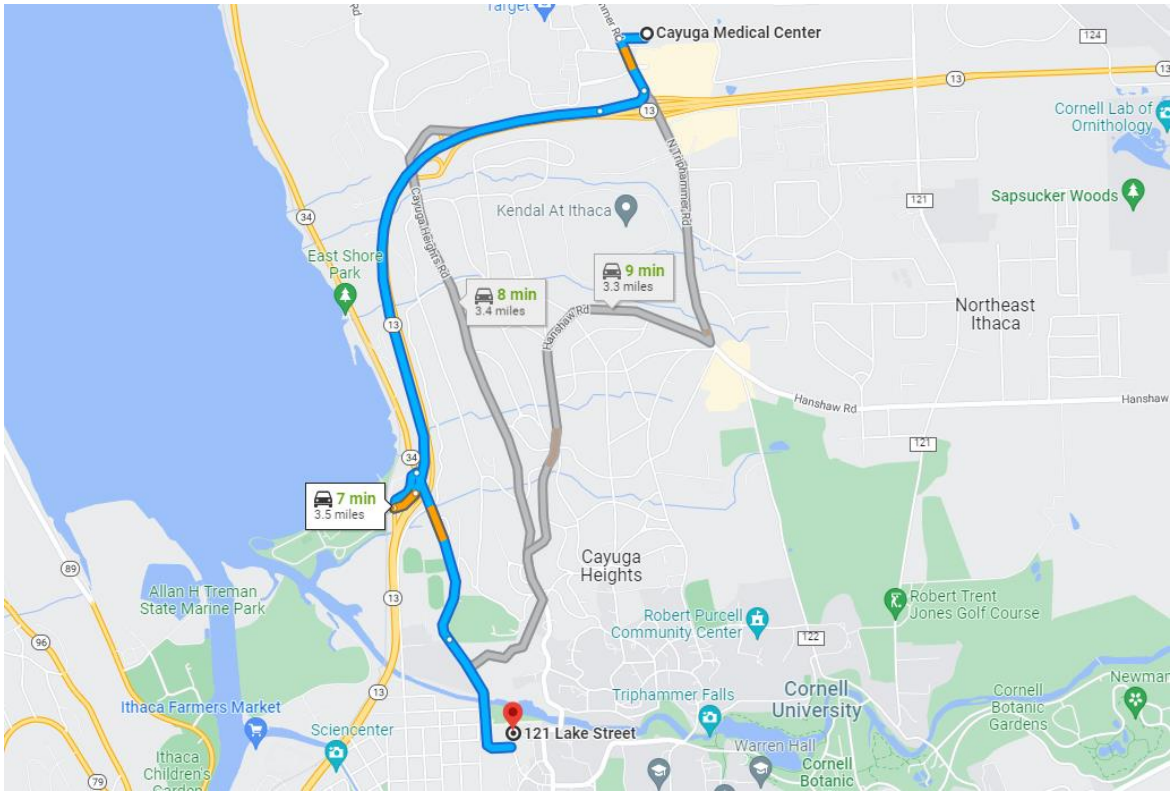
Sources: . Created by C&S Engineers, Inc.

Document Path: H:\Projects\XXX - Various Developments\XXX-000(00)\...\Former Ithaca Gun Factory BCP Investigation\Graphics\Graphics\Figure 2.mxd

Attachment A

MAP AND DIRECTIONS TO HOSPITAL

Attachment A – Map and Directions to Cayuga Medical Center



Cayuga Medical Center
2333 N Triphammer Rd # 302, Ithaca, NY 14850

- Get on NY-13 S from N Triphammer Rd
  - 2 min (0.4 mi)
  - Head west toward N Triphammer Rd
  - 430 ft
  - Turn left onto N Triphammer Rd
  - 0.2 mi
  - Turn right to merge onto NY-13 S
  - 0.2 mi
- Follow NY-13 S to Gibbs Dr/James L Gibbs Dr in Ithaca. Take the exit toward NY-34 N/Stewart Park/Auburn from NY-13 S
  - 2 min (1.8 mi)
  - Merge onto NY-13 S
  - 1.8 mi
  - Take the exit toward NY-34 N/Stewart Park/Auburn
  - 443 ft
- Take E Shore Dr to Lake St
  - 3 min (1.2 mi)
  - Turn right onto Gibbs Dr/James L Gibbs Dr
  - 0.2 mi
  - Turn right onto NY-34 S/E Shore Dr
    Continue to follow E Shore Dr
  - 0.6 mi
  - Continue onto Lake St
    Destination will be on the left
  - 0.5 mi

Appendix B

GUIDANCE ON INCIDENT INVESTIGATION AND REPORTING

MEDICAL EMERGENCY / INCIDENT RESPONSE PROTOCOL

1.0 PURPOSE

From time to time employees of C&S Engineers, Inc. will sustain an injury while working on the job. While every effort is being made to prevent this, in the event of an injury or illness on the job, the following procedures will be implemented. This format may also be utilized in the event of a property damage incident.

2.0 SCOPE

This guideline applies to all C&S Engineers, Inc. job sites and employees.

3.0 GUIDELINES

Upon notification or awareness of an incident/accident with injuries or illness the Emergency Coordinator or his On-Site Designee will:

1. Ensure that the injured employee is receiving immediate first aid and medical care.
2. Notify Emergency Services (911) if injuries are severe.
3. Stabilize the work area; ensure that no one else can be injured.
4. Notify the Project Manager at the earliest possible convenience**.**
5. Notify the Owner/Client at the earliest possible convenience.

To assist the Health and Safety Manager in the root cause analysis, the Emergency Coordinator or his On-Site Designee will also make an attempt to:

1. Obtain the names and phone numbers of witnesses.
2. Preserve the accident scene if possible for analysis.

3.1 Injury Management

1. If the patient is stable with non-life threatening injuries, the foreman will ensure the employee is transported to the emergency medical facility listed in Section 1 of the HASP. Directions to the nearest emergency medical facility are located in **Attachment A** of the HASP.

At no time will an injured employee drive themselves to medical care.

2. If the patient has serious or life threatening injuries, the emergency coordinator or his on- site designee will notify the emergency services for the area for treatment and transport to a hospital or emergency room. Serious injuries can be considered but not limited to head injuries, loss of consciousness, severe laceration or amputation, fractured bones, burns and eye injuries.

3. Following the treatment and care of the injured employee, the emergency coordinator or his on-site designee and the project manager will initiate the completion of the first injury report. The Health & Safety Manager will assist.

3.2 Project Manager

1. Upon notification of a personal injury or illness on the job site, will notify C&S Engineers, Inc, President and Corporate Legal and C&S Companies Health and Safety Manager.
2. Will report to the worksite to initiate the first injury report.
3. Will report to the treatment facility to check on the well being of the injured employee.
4. The project manager will ensure that the treatment facility is aware that this is a workers compensation case.
5. Will assist the Health and Safety Manager in the analysis of the incident.

3.3 Health & Safety Manager

1. Upon notification of the personal injury will determined if it is necessary to report to the treatment facility or the accident site, depending on the nature of the injuries and the circumstances of the accident.
2. Will report to the worksite to begin a root cause analysis investigation of the accident.
3. The investigation may include interview of witnesses, field crew , and project manager, the photographing of the scene, reconstruction of the accident scene, using test instruments and taking measurements. The Health and Safety Manager may draw diagrams from the information learned.
4. The Health and Safety Manager will work with the owner/client as necessary to investigate the accident.
5. The Health & Safety manager will ensure that the site is safe to resume work.
6. The Health & Safety Manager shall initiate the New York State Compensation form requirements (C-2) and forward a copy of the C-2 to the C & S Engineers, Inc. controller for transmittal to the Compensation Carrier within 8 hrs of notification of the incident or by the end of the next business day.
7. The Health and Safety manager, upon completion of the investigation, will provide the
8. Project Manager with a written investigative report (copy to the President)
9. The accident will be reviewed at the next Project Managers meeting with the intent to prevent further or similar events on other projects.
10. The Health & Safety Manager will assess the incident to determine OSHA record ability and make record if necessary on the OSHA 300 form, within five working days.

4.0 INCIDENT RESPONSE

4.1 Purpose

To prevent the occurrence of accidents on C&S Engineers, Inc., work sites and to establish a procedure for investigation and reporting of incidents occurring in, or related to C&S work activities.

4.2 Scope

Applies to all incidents related to C&S Engineers, Inc. work activities.

4.3 Definitions

Accident - An undesired event resulting in personal injury and/or property damage, and/or equipment failure.

Fatality - An injury or illness resulting in death of the individual.

Incident - Any occurrence which results in, or could potentially result in, the need for medical care or property damage. Such incidents shall include lost time accidents or illness, medical treatment cases, unplanned exposure to toxic materials or any other significant occurrence resulting in property damage or in "near misses."

Incidence Rate - the number of injuries, illnesses, or lost workdays related to a common exposure base of 100 full-time workers. The rate is calculated as:

N/EH x 200,000

N = number of injuries and illnesses or lost workday cases; EH = total hours worked by all associates during calendar year. 200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

Injury - An injury such as a cut, fracture, sprain, amputation, etc. which results from a work accident or from a single instantaneous event in the work environment.

Lost Workday Case - A lost workday case occurs when an injured or ill employee experiences days away from work beginning with the next scheduled work day. Lost workday cases do not occur unless the employee is effected beyond the day of injury or onset of illness.

Recordable Illness - An illness that results from the course of employment and must be entered on the OSHA 300 Log and Summary of Occupational Injuries and Illnesses. These illnesses require medical treatment and evaluation of work related injury. For example, dermatitis, bronchitis, irritation of eyes, nose, and throat can result from work and non-work related incidents.

Recordable Injury - An injury that results from the course of employment and must be entered on the OSHA 300 Log and Summary of Occupational Injuries and Illnesses. These injuries require medical treatment; may involve loss of consciousness; may result in restriction of work or motion or transfer to another job; or result in a fatality.

Near Miss - An incident which, if occurring at a different time or in a different personnel or equipment configuration, would have resulted in an incident.

4.4 Responsibilities

Employees - It shall be the responsibility of all C&S Engineers, Inc. employees to report all incidents as soon as possible to the HSC, regardless of the severity.

Human Resources - has overall responsibility for maintaining accident/ incident reporting and investigations according to current regulations and recording injuries/ illness on the OSHA 300 log, and posting the OSHA 300 log.

Emergency Coordinator - It is the responsibility of the Emergency Coordinator to investigate and prepare an appropriate report of all accidents, illnesses, and incidents occurring on or related to C&S Engineers, Inc. work. The Emergency Coordinator shall complete Attachment A within 24 hours of the incident occurrence.

Health and Safety Manager (HSM) - It is the responsibility of the HSM to investigate and prepare an appropriate report of all lost time injuries and illnesses and significant incidents occurring on or related to C&S Companies. The HSM shall maintain the OSHA 300 form.

Project Managers (PM) - It shall be the PM's responsibility to promptly correct any deficiencies in personnel, training, actions, or any site or equipment deficiencies that were determined to cause or contribute to the incident investigated.

5.0 GUIDELINES

5.1 Incident Investigation

The Project Manager will immediately investigate the circumstances surrounding the incident and will make recommendations to prevent recurrence. The HSM shall be immediately notified by telephone if a serious accident/ incident occurs. The incident shall be evaluated to determine whether it is OSHA recordable. If the incident is determined to be OSHA 300 recordable, it shall be entered on the OSHA 300 form.

The Project Manager with assistance from the HSM must submit to the office an incident report form pertaining to any incident resulting in injury or property damage.

5.2 Incident Report

The completed incident report must be completed by the Project Manager within 12 hours of the incident and distributed to the HSM, and Human Resources. This form shall be maintained by Human Resources for at least five years for all OSHA recordable cases. This form serves as an equivalent to the OSHA 101 form.

5.3 Incident Follow-up Report

The Incident Follow-Up Report (Attachment B) shall be distributed with the Incident Report within one week of the incident. Delay in filing this report shall be explained in a brief memorandum.

5.4 Reporting of Fatalities or Multiple Hospitalization Accidents

Fatalities or accidents resulting in the hospitalization of three or more employees must be reported to OSHA verbally or in writing within 8 hours. The report must contain 1) circumstances surrounding the accident(s), 2) the number of fatalities, and 3) the extent of any injuries.

5.5 OSHA 300A Summary Form

Recordable cases must be entered on the log within six workdays of receipt of the information that a recordable case has occurred. The OSHA log must be kept updated to within 45 calendar days.
OSHA 300 forms must be updated during the 5 year retention period, if there is a change in the extent or outcome of an injury or illness which affects an entry on a log. If a change is necessary, the original entry should be lined out and a corrected entry made on that log. New entries should be made for previously unrecorded cases that are discovered or for cases that initially weren't recorded but were found to be recordable after the end of the year. Log totals should also be modified to reflect these changes.

5.6 Posting

The log must be summarized at the end of the calendar year and the summary must be posted from February 1 through May 31.

5.7 OSHA 300A

Facilities selected by the Bureau of Labor Statistics (BLS) to participate in surveys of occupational injuries and illnesses will receive the OSHA 300A. The data from the annual summary on the OSHA 300 log should be transferred to the OSHA 300A, other requested information provided and the form returned as instructed by the BLS.

5.8 Access to OSHA Records

All OSHA records (accident reporting forms and OSHA 300 logs) should be available for inspection and copying by authorized Federal and State government officials.

Employees, former employees, and their representatives must be given access for inspection and copying to only the log, OSHA No. 300, for the establishment in which the employee currently works or formerly worked.

6.0 REFERENCES

29 CFR Part 1904

7.0 ATTACHMENTS

Attachment A - Incident Investigation Form
Attachment B - Incident Follow-Up Report
Attachment C - Establishing Recordability

ATTACHMENT A

INCIDENT INVESTIGATION FORM

Accident investigation should include:

Location: _____

Time of Day: _____

Accident Type: _____

Victim: _____

Nature of Injury: _____

Released Injury: _____

Hazardous Material: _____

Unsafe Acts: _____

Unsafe Conditions: _____

Policies, Decisions: _____

_____

Personal Factors: _____

_____

Environmental Factors: _____

_____

_____

ATTACHMENT B

INCIDENT FOLLOW-UP REPORT

Date _____

Foreman: _____

Date of Incident: _____

Site: _____

Brief description of incident: _____

_____

_____

_____

_____

Outcome of incident: _____

_____

_____

_____

Physician's recommendations: _____

_____

_____

_____

Date the injured returned to work: _____

Project Manager Signature: _____

Date: _____

ATTACH ANY ADDITIONAL INFORMATION TO THIS FORM

ATTACHMENT B

ATTACHMENT ESTABLISHING RECORDABILITY

1. Deciding whether to record a case and how to classify the case.

   Determine whether a fatality, injury or illness is recordable.

   A fatality is recordable if:

   - Results from employment

   An injury is recordable if:

   - Results from employment and
   - It requires medical treatment beyond first aid or
   - Results in restricted work activity or job transfer, or
   - Results in lost work day or
   - Results in loss of consciousness

   An illness is recordable if:

   - It results from employment

2. Definition of "Resulting from Employment"

   Resulting from employment is when the injury or illness results from an event or exposure in the work environment. The work environment is primarily composed of: 1) The employer's premises, and 2) other locations where associates are engaged in work-related activities or are present as a condition of their employment.

   The employer's premises include company rest rooms, hallways, cafeterias, sidewalks and parking lots. Injuries occurring in these places are generally considered work related.

   The employer's premises EXCLUDES employer controlled ball fields, tennis courts, golf courses, parks, swimming pools, gyms, and other similar recreational facilities, used by associates on a voluntary basis for their own benefit, primarily during off work hours.

   Ordinary and customary commute, is not generally considered work related.

   Employees injured or taken ill while engaged in consuming food, as part of a normal break or activity is not considered work related. Employees injured or taken ill as the result of smoking, consuming illegal drugs, alcohol or applying make up are generally not considered work related. Employee injured by un authorized horseplay is generally not considered work related, however, an employee injured as a result of a fight or other workplace violence act, may be considered work related.

Associates who travel on company business are considered to be engaged in work related activities all the time they spend in the interest of the company. This includes travel to and from customer contacts, and entertaining or being entertained for purpose of promoting or discussing business. Incidents occurring during normal living activities (eating, sleeping, recreation) or if the associate deviates from a reasonably direct route of travel are not considered OSHA recordable.

3. Distinction between Medical Treatment and First Aid.

First aid:

Any one-time treatment, and any follow up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, etc., which do not ordinarily require medical care. Such one time treatment, and follow up visit for the purpose of observation, is considered first aid even though provided by a physician or registered professional personnel.

Medical Treatment (recordable):

a) Must be treated only by a physician or licensed medical personnel.
b) Impairs bodily function (i.e. normal use of senses, limbs, etc.).
c) Results in damage to physical structure of a non-superficial nature (fractures).
d) Involves complications requiring follow up medical treatment.