SITE CHARACTERIZATION WORKPLAN FOR WILLIAM STREET PARK

CORNING, STEUBEN COUNTY, NEW YORK

Prepared For:

New York State Department of Environmental Conservation
Division of Environmental Remediation
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OCTOBER 2020

CERTIFICATION

I, Thomas C. Drachenberg, certify that I am currently a NYS registered professional engineer and that this William St. Park Site Characterization Workplan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

10-5-2020

Thomas C. Drachenberg
New York State Professional Engineer
License No. 086020

Date

Unauthorized alteration or addition to this engineering document is a violation of Section 7209. Provision 2 of the New York State Education Law.

SITE CHARACTERIZATION WORKPLAN WILLIAM ST. PARK, CORNING NY

1.0 PROJECT OBJECTIVES AND BACKGROUND

New York State Department of Environmental Conservation (NYSDEC) along with the New York State Department of Health (NYSDOH) have been overseeing the investigation and implementation of remedial activities associated with past disposal of waste materials from pre-cursor companies of Corning Incorporated. William St. & Hillvue Park is an approximately 28.4-acre site bounded by the Chemung River to the south; Denison Parkway and property owned by Corning Natural Gas Corp and NYSEG to the west; residential property and Hillvue Ave to the north; and Hillvue Park to the east. The site is zoned and used for community recreational purposes (general site location shown on Figure 1), and is a city park including a pavilion, playground area, and grass lawn areas; as well as flood control features including the levy. The NYSDEC site number is #851055 and the site map with boundaries is shown on Figure 1.

The park has been in existence since at least the mid-1950s, and based upon oral interviews, it was reported that dumping took place in the 1950s and that glass cullet is believed to be present in this park. Slag was identified on an adjacent residential property. There are no known previous site investigations.

Based on data from other sites in the surrounding area, the area is underlain by shale or siltstone of the upper Devonian period. Depth to bedrock has not been confirmed but is likely more than 80 feet below ground surface based on published information. The bedrock is overlain by alluvial silts and fine sand derived from post-glacial flood-plain deposits, generally exhibiting relatively low permeability. Shallow groundwater typically occurs within sands. Groundwater in the overburden is believed to be present within thirty feet of ground surface and flow in a northeasterly direction.

Parsons proposes to assist NYSDEC with the site characterization efforts at William St. & Hillvue Park to investigate potential impacts from target fill material containing ash, glass, and/or brick (glass manufacturing-related waste), potential presence and location of contaminants in sediments, surface and subsurface soils, and to determine if groundwater is being impacted. The primary contaminants of concern based on previous disposal of ash, glass, and/or brick have been identified as arsenic, cadmium, lead, and semi-volatile organic compounds (SVOCs). Investigations of neighboring properties are not included in this scope.

Tasks are further defined in subsequent sections, and include:

- Installation of test pit(s);
- Collection of surface soil samples;
- Collection of sediment samples;
- Installation of soil borings;
- Installation of groundwater monitoring wells;
- Collection of groundwater samples;
- Collection of forensic samples (if applicable); and
- Submittal of a final summary report.

2.0 HEALTH AND SAFETY

A Parsons' Safety, Health and Environment Plan (PSHEP) has been prepared for the investigation activities. All personnel and subcontractors working on the project are required to follow this plan for the work covered in this work plan. Prior to the start of work, the subcontractors shall submit a Subcontractor Safety, Health, and Environment Plan (SSHEP) along with specific Activity Hazard Analyses (AHAs) for tasks to be performed under this work plan. Work cannot commence until SSHEP and AHAs are reviewed and comments have been addressed. Copies of the PSHEP, SSHEP, and AHAs will be maintained at the support zone.

A generic Community Air Monitoring Plan (CAMP) prepared for this contract will be implemented for real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the upwind and downwind perimeter of each designated work area during invasive activities on-site. These readings should be provided on a weekly basis with all exceedances reported to NYSDEC and NYSDOH the same day or next business day if after hours along with the reason for exceedance, what was done to correct it, and if it was effective. The Plan will follow the NYSDOH Generic CAMP as further detailed in DER-10 Appendix 1A, and recommended response levels and action(s) will be implemented in the event of exceedance.

3.0 QUALITY CONTROL

Field activities will be conducted in accordance with the generic Quality Assurance Project Plan (QAPP), Field Activities Plan (FAP), and Health and Safety Plan (HASP) prepared by Parsons for the NYSDEC program. Site-specific elements and specific job safety analyses for test pits, soil borings, and monitoring well installation will be added to the HASP, as needed. The analytical laboratory selected for this project is certified by the New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP).

All proposed sample locations will be discussed with representatives of NYSDEC prior to implementation of this scope. Investigation/sample location may be modified with concurrence from NYSDEC.

Sampling will also be conducted for emerging contaminants as part of this investigation in general accordance with the applicable NYSDEC guidance (e.g. Guidelines for Sampling and Analysis of PFAS (NYSDEC, 2020)). One of these contaminants is Per- and Polyfluoroalkyl Substances (PFAS) compounds. PFAS can be found in many standard environmental sampling materials, including: Fluoropolymer bailer/tubing, some decontamination solutions, and pump bladders/valves. Two of the principal target analytes, perflourooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), have been broadly utilized in the production of various everyday items such as: waterproof/stain-resistant clothing, non-stick cookware, and many commonly used plastics. Another of the target analytes is 1,4-dioxane. 1,4-dioxane has been used in many products including the manufacturing of pharmaceuticals, personal care products, polyethylene terephthalate (PET) plastic, paint strippers, dyes, greases, varnishes and waxes. The field activities and methods included in the Field Activity Plan includes steps to prevent cross-contamination, and to avoid the introduction of external contaminant sources. These steps include, but are not limited to, use of sampling materials, tools, and PPE which are known to be free of emerging contaminants, use of compatible apparel, hygiene considerations, sample management considerations, quality assurance/quality control procedures, and use of source water and decontamination solutions that are demonstrated to be free of emerging contaminants.

4.0 SURVEYS/INVESTIGATIONS, ENVIRONMENTAL SAMPLING, AND IMPLEMENTATION

Parsons' approach to the remedial investigation is described in the following section. The overall program consists of a subsurface investigation, sediment sampling, a groundwater investigation, and a surface soil investigation. Each portion of the investigation work will follow NYSDEC guidelines outlined in Division of Environmental Remediation (DER)-10 Technical Guidance document. The flood control berm was excluded from the sampling efforts contained within this workplan.

The overall program consists of:

1. Geophysical investigation (utility mapping)
2. Site survey of utilities and as-built investigation coordinates for soil borings, groundwater monitoring wells and test pits/excavations
3. Subsurface investigation utilizing test pits and soil borings
4. Sediment sampling
5. Monitoring well installation and groundwater investigation

4.1 Geophysical Investigation

A geophysical investigation will initially be performed at the site to locate subsurface utilities and/or subsurface anomalies at sixteen soil boring locations and up to four test pit locations (see Figure 1 for proposed locations). Prior to site activities, Dig Safe NY will be contacted to locate utility lines that enter and/or cross the property. The geophysical survey will be conducted to detect buried structures and subsurface utilities within the specified locations, and/or to trace a particular utility line or system. The geophysical surveyor will apply the appropriate surface geophysical method(s) to search for utilities and/or buried obstructions. Geophysical technologies may include but not be limited to ground penetrating radar (GPR), radio frequency (RF), and electromagnetic induction (EM). These techniques will be used to locate subsurface utility lines or subsurface features within a 10-ft. radius of each proposed intrusive activity. Specific features may include subsurface utilities, subsurface anomalies, large voids, former subsurface structures, abandoned utilities, and former utility trenches. Based on an interpretation of data, the geophysical surveyor will mark the targets on the ground surface, for subsequent survey performed by others after the boring work and well installations are completed. Paint and flagging shall be used for marking of lines, showing any underground site utilities or obstructions.

4.2 Test Pit Trenches

As shown on Figure 1, up to four test pit locations will be excavated in areas of the park where a review of aerial figures indicates the potential presence of target fill. Information from the geophysical survey will also be used to site the test pit locations.

Test pit depths will extend up to 8 feet (ft.) below ground surface (bgs.) to visually identify subject material from former disposal operations. In general, the test pits will be approximately 10 to 25 foot-long and 2-ft. wide. Excavated soils will temporarily be placed on plastic sheeting, and covered during rain events. Given that the test pits will be conducted in close proximity to children's play areas, that the parks are not secured sites, and that there are sandy soils present, the test pits should be backfilled prior to the end of each day's work. Only if this is not possible, caution tape, orange construction fencing, and temporary construction barriers will be placed around open excavations whenever subcontractors will be off-site (e.g., overnight). No person will enter any test pit excavation. Excavations will cease if significant groundwater, subject material, and/or other significant gross contamination is encountered. Soil excavated from test pits will be placed back into the excavations upon completion of each test pit. The excavation contractor will attempt to keep impacted material separate from "cleaner" overburden materials during the excavations. Impacted materials will be placed back in the excavation first with "cleaner" materials placed on top.

The test pits will be photo documented and the depth of any subject material will be noted on test pit logs and/or the field book. Excavated soils will also be screened with a photoionization detector (PID) will be used for screening soils by selecting material and placing it in a sealed plastic bag. The sample headspace will be recorded. and readings will be noted on the test pit log and/or field book. Up to two soil samples may be collected by Parsons from each test pit (up to eight samples total) if elevated PID readings are encountered and/or based on visual/olfactory observations identify subject material or impacted soils. If subject material or other visually impacted material (e.g., staining, odors, PID hits) are encountered, one sample be taken from the subject/impacted material and another from the native material directly below the fill layer or impacts. As indicated in Table 1, all samples will be analyzed for total and TCLP metals (including mercury), along with total semi-volatile organic compound (SVOCs). The remaining parameters will be analyzed on 20% of the samples collected based on field observations. In addition, quality assurance/quality control (QA/QC) samples (field duplicates, equipment blanks, and matrix spike/matrix spike duplicate [MS/MSD]) will be collected at a 1:20 ratio of samples collected. Prior to filling laboratory bottleware, each soil sample collected for analysis will be field homogenized. Soil samples will be secured in laboratory-provided bottleware, packaged with ice, and shipped to the laboratory following chain of custody (COC) procedures. As previously noted in Section 2.0, care will be taken to prevent cross contamination of samples, especially introduction of emerging contaminants into the samples.

In addition, if waste glass is encountered during the test pit investigations, archive sample will be collected for further forensics analysis. Archive glass samples will be collected per the *Corning Forensics Investigation Workplan/Approach Memorandum* (Parsons, 2020) included as Attachment 1. If forensics samples are collected, the NYSDEC project manager (Brianna Scharff) will be notified of the sample collection.

The bucket of the excavator used for the test pits will be decontaminated between tests pits by washing equipment with a high-pressure steam washer within a constructed decontamination pad. Decontamination rinsates will be containerized in 55-gallon steel drums and moved to central waste accumulation point for further characterization and disposal.

Upon completion of test pitting, work areas will need to be restored to the same condition as before the investigation. Restoration activities may include regrading and seeding of disturbed areas. Track mats will be utilized to transit across grass areas to minimize damage. Additional restoration may also be needed along these access areas.

4.3 Surface Soil Sampling

As shown on Figure 1, sixteen (16) surface soil samples will be collected throughout the site and analyzed for the parameters on Table 1.

Surface soil samples will be collected from the top two inches (0–2 inches bgs, excluding the ground cover or sod layer) at each proposed location shown in Figure 1 using appropriate decontaminated sampling equipment (e.g. stainless-steel spoon, shovel, etc.). Soil samples will be physically described using the Burmeister and Unified Soil Classification System (USCS), photo documented, and screened with a PID. Field information will be recorded on a sample log and/or field book. As noted previously, QA/QC samples will be analyzed for the parameters will be collected and analyzed at a rate of 1:20 field samples. Prior to filling laboratory bottleware, each soil sample collected for analysis will be field homogenized. Soil samples will then be secured in laboratory-provided bottleware and shipped as previously noted in Section 4.2.

Similar to Section 4.2, if waste glass is encountered during the sampling, archive samples will also be collected for further forensic analysis as described in Attachment 1.

Sample equipment will be decontaminated between sample locations by washing equipment using a phosphate free cleaning solution (e.g., alconox) along with a distilled water rinse. As previously noted in Section 2.0 care will be taken to prevent cross contamination of samples, especially introduction of emerging contaminants into the samples. Decontamination rinsates will be containerized in 55-gallon steel drums and transported to a central waste staging area for further characterization and disposal.

4.4 Sediment Sampling

In addition to the surface soil samples, thirteen (13) sediment samples will be collected throughout the area of the site which falls below the Mean High-Water Mark (MHWM) of the Chemung River (Figure 1). These samples will be evaluated as sediments per NYSDEC's Screening and Assessment of Contaminated Sediments guidance document (analytes shown on Table 1).

The MHWM was determined for this workplan based on the preliminary field inspection observations. Prior to sampling, the MHWM will be confirmed based on the hydrologic data (taken from the nearest USGS gaging station, number 01529950[1], located less than 0.2 miles downstream from the east-most edge of the site at Hillvue Park), and a calculation of the 2-year high flow elevation adjusted for riverbed slope. NYSDEC and USF&W will be consulted on the final MHWM. If needed, a biological survey will be performed to refine the demarcation between terrestrial and aquatic habitat, consistent with NYS regulations and in consultation with NYSDEC in order to determine the final MHWM. Figure 1 is intended as an approximation to generally illustrate the conceptual site layout including a MHWM. The MHWM and sediment sampling locations will be revised once the surveys are completed and prior to sample collection.

The number of sediment sample locations was calculated based on Balduck's method for calculating the minimum number of samples that should be collected to characterize a contaminated sediment site[2]:

$$N = (Df)\cdot(30)\cdot\left((W)\cdot(L)\cdot\left(\frac{1}{1.2x10^6}\right)\right)^{0.33}$$

Where:

- N = the total number of coring (sampling) stations;
- D*f* = a dredge factor consisting of a multiplier (unitless) from 0.5 to 3 based on the site's dredging, environmental or pollutant history and other case specific factors;
- W = the width (in yards) of a single contaminated sediment area or the widest contaminated sediment area where there are multiple areas to be evaluated; and
- L = the length (in yards) of a single contaminated sediment area or the sum of the lengths of the parts of a combined area being evaluated.

For this calculation, the number of sampling stations was determined assuming a dredge factor [D*f*] of 2 (given there are no previous sediment data from the site however there is a likelihood of contamination based on the

[1] https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=01529950
[2] *Screening and Assessment of Contaminated Sediment.* Appendix F. NYSDEC, June 2014

history of surrounding land uses), a width [W] from the river edge to the MHWM (12 yd.), and a length [L] of the sediment area (880 yd.). These assumptions computed in the above equation resulted in N = 12.58, which accounts for the 13 sediment sampling locations planned for this effort. The sampling locations will be located in the field using a hand-held GPS unit to ensure that the sediment samples are collected below the MHWM.

To assess exposure potential to ecological and human health receptors, the sediment samples will be collected at the following sample intervals:

- 0-6 inches;
- 6-12 inches; and
- 12-24 inches.

Sampling will follow protocols as described in Section 4.5. As shown on Table 1, all samples will be analyzed for total and TCLP metals [including mercury] and SVOCs, and the remaining parameters will be analyzed on 20% of the samples collected based on field observations. Results from the analytical sampling will be compared to Sediment Guidance Values[3]. As previously noted in Section 2.0 care will be taken to prevent cross contamination of samples, especially introduction of emerging contaminants into the samples. Following the same decontamination steps as the surface soil sampling efforts, decontamination rinsates will be containerized in 55-gallon steel drums and transported to a central waste staging area for further characterization and disposal. As noted in Sections 4.2 and 4.3, if waste glass is encountered during the sampling, archive samples will also be collected for further forensic analysis as described in Attachment 1.

This workplan assumes additional permitting or access agreements are not required in order to perform sediment sampling within the MHWM boundary.

4.5 Soil Borings

As shown on Figure 1, borings will be advanced at sixteen locations throughout the site. Soil boring locations were selected based on historic aerial imagery that indicated previous ground disturbances, and the previous soil investigation work performed by the City of Corning in 1976.

As previously noted, Dig Safe NY will be contacted and a geophysical investigation will be conducted prior to intrusive work to identify underground utilities or buried obstructions at each proposed boring location. Soil borings will be advanced utilizing Geoprobe direct push technology, to a depth of 16-ft. (bgs.) [4] utilizing MacroCore™ samplers equipped with PFAS-free acetate liners. If a confining layer is encountered prior to 16-ft., the drilling will cease and discussed with NYSDEC.

Soil samples will be collected continuously until borings are terminated. Each sample interval will be visually classified using the Burmeister and USCS soil classification systems. Descriptions of the collected samples will be recorded in the field logbook or soil boring log form. Any non-native material present in the sample will be noted and described (type, color, texture, moisture content, etc.) and any layer of fill material containing ash, brick and/or glass will be noted in the field logs. Photographs of the soil samples and any fill material containing ash, brick, and/or glass will be taken to provide in the final report. Each sample will also be screened for the presence of VOCs with a PID as previously noted and readings will be recorded on the boring log and/or field book.

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[3] *Screening and Assessment of Contaminated Sediment*. NYSDEC, June 2014

[4] As described in the Background section, groundwater in the overburden is believed to be present within thirty feet of ground surface. If groundwater is not encountered within the first 16-ft., borings may need to be advanced until the water table is reached. Further discussions will be conducted with NYSDEC to continue the borings if groundwater is not encountered within 40-ft. bgs.

Sample equipment will be decontaminated between sample intervals by washing equipment using a phosphate free cleaning solution (e.g., alconox) along with a distilled water rinse. As previously noted in Section 2.0 care will be taken to prevent cross contamination of samples, especially introduction of merging contaminants into the samples. All necessary equipment, material, and supplies will be provided by the drilling subcontractor and will be compatible for collection of emerging contaminant samples (e.g., PFAS free). All "down hole" drilling equipment will be decontaminated inside the decontamination pad, using a high-pressure steam wash. Drill cuttings and decontamination rinsates will be containerized in 55-gallon steel drums and transported to a central waste staging area for further characterization and disposal.

Analytical samples will be selected and submitted for the following sample intervals:

- 0-6 inches;
- 6-12 inches;
- 12-24 inches; and
- Bottom interval of the boring.

Two additional sample intervals will be selected for laboratory analysis based on the following order of preference:

- Presence of subject material (if subject material is encountered, then one additional sample will also be taken from the subject material and another from the native material directly below the fill layer);
- The highest PID reading or other visual evidence of impacts such as staining or odors; or
- Interval directly above the water table.

As shown on Table 1, all samples will be analyzed for total and TCLP metals (including mercury) and SVOCs. The remaining parameters will be analyzed on 20% of the samples collected at locations based on field observations. If insufficient volume is recovered for full analyses, material from the sample interval either above or below the target interval will be composited with the target interval and submitted for analysis. Additional soil samples may be submitted for laboratory analyses based on field observations and based on discussions with representatives of NYSDEC, if applicable. QA/QC samples will be collected on a 1:20 ratio and samples will be placed in laboratory-provided bottleware and shipped to the laboratory as previously noted.

As noted in Sections 4.2 and 4.3, if waste glass is encountered during the sampling, archive samples will also be collected for further forensic analysis as described in Attachment 1.

Ten of the sixteen soil borings will be grouted to the surface when complete, and the other six locations will be converted to monitoring wells (see Section 4.6 for more details). After grouting is complete, the surface and surrounding area will be restored to previous conditions. As previously noted in Section 4.2, track mats may be used to access the boring locations and minimize ground disturbances. If required, access routes will also be restored.

4.6 Monitoring Wells

WELL INSTALLATION

As shown on Figure 1, at six (6) of the sixteen (16) soil boring locations, monitoring wells will be installed to evaluate potential impacts to groundwater and determine approximate groundwater flow direction. If field conditions (e.g., the presence of suspect material or other subsurface conditions) warrant relocation of any monitoring wells from the proposed locations shown, NYSDEC authorization will be obtained in advance of monitoring well installation to approve such changes. The monitoring wells will be installed using 4.25-inch ID Hollow Stem Augers and constructed with 10-ft long 2" ID schedule 40 PVC factory slotted (0.01 inch) screen, with the screen extending at least 2 ft. above the water table interface, unless field conditions warrant otherwise.

Riser detail shall be a 2” ID schedule 40 PVC threaded joint casing extending to the ground surface. An 8-inch flush mount steel protective casing will be installed at the surface. A monitoring well detail is shown on Figure 2.

The installation procedure generally includes the following steps (with minor adjustments, as needed, to account for field conditions):

1. Advance borehole to desired depth using appropriately sized hollow stem augers as described above.
2. Place a threaded cap on the bottom of the lowest section of well PVC to keep the inside of the casing dry and to keep sand from clogging the casing.
3. Place a pipe clamp on the top of the casing, and manually lower this first section inside of the borehole. Install another pipe clamp on top of the second section of casing. Attach this casing to the top of the casing in the borehole. Remove the lower pipe clamp, and slowly lower the casing. This procedure of clamping and incrementally adding and lowering the casing inside the borehole continues until the casing rests on the bottom of the borehole.
4. The annulus around the outside of the screen will be backfilled with clean sand (#0 US Silica sand) from 6 inches below the bottom of the well screen to 2-ft. above the top of the screen using a tremie pipe.
5. Install a 2-ft. thick bentonite seal above the top of the well screen and filter pack sand. Bentonite pellets, if used, shall not exceed one-half inch diameter. If the bentonite seal is positioned above the water table, the bentonite shall be installed in one-foot lifts with each hydrated a minimum of 30 minutes between lifts before proceeding. Clean potable water shall be added to hydrate the bentonite. After placement of the final lift, the bentonite seal shall be allowed to hydrate an additional two hours before grouting begins.
6. Cement grout shall be placed above the bentonite seal to the ground surface and will be incorporated into the surface completion pad.
7. Complete installation with an appropriately sized flush mount steel protective casing. These curb boxes will be fitted over the well head and will be set in an approximate 2-ft. by 2-ft. square concrete pad. The surface of the pad will be sloped away from the well vault to facilitate drainage.
8. A locking J-plug will be installed as well.

As previously noted in Section 2.0, care will be taken to prevent the introduction of emerging contaminants into the completed monitoring wells. Downhole drilling equipment will be decontaminated between wells as previously noted and the area around the wells (including access routes) will be restored to previous conditions.

WELL DEVELOPMENT

Following installation, each new monitoring well will be developed to remove material which may have settled in and around the well screen. All necessary equipment, material, and supplies will be provided by the drilling subcontractor and will be compatible for collection of emerging contaminant samples (e.g., PFAS free). Groundwater monitoring wells will not be developed until the cement-bentonite grout has been in place and allowed to cure for at least 24 hours. Groundwater parameters (i.e., turbidity, pH, temperature, and specific conductivity) will be recorded before, and during well development by Parsons. Development will be considered complete when field parameters have stabilized or until a maximum of ten well volumes have been removed or achieving a turbidity reading of 50 neophelometric turbidity units (NTUs) or lower.

If the well goes dry during development, it will be allowed to recharge to 80 percent of the initial water level and pumped or bailed again. The well will be considered developed after pumping the well dry three times. Development water will be temporarily contained using drums and stored on-site at a central waste accumulation area. Well development equipment will also be decontamination between wells by using new tubing or washing equipment with a phosphate free detergent and distilled water rinse as previously noted. Following development, the monitoring wells will be allowed to equilibrate for a minimum of 24 hours prior to groundwater sampling.

GROUNDWATER SAMPLING

One (1) round of groundwater sampling will be conducted at each well, using low flow sampling techniques. Prior to sampling, the water level in each well will be measured and recorded to the nearest to the nearest 0.01-foot using an electronic water level meter. Groundwater sampling equipment (e.g., down-hole pumps) will be decontaminated between samples by washing equipment with phosphate free solution followed by a distilled (DI) water rinse. Purge water and decontamination water will be transferred to drums for characterization and disposal.

Groundwater samples will be analyzed as shown in Table 1 and results from the laboratory will be compared to NYSDEC Ambient Water Quality Standards presented in Technical and Operational Guidance Series 1.1.1 NYCRR Part 703). For QA/QC purposes, duplicate samples, equipment blanks and MS/MSD samples will be collected and analyzed at a rate of 1:20 field samples. Trip blanks will also be included in VOC sample coolers and analyzed for Target Compound List VOCs.

As previously noted in Section 2.0 care will be taken to prevent cross contamination of samples, especially introduction of emerging contaminants into the samples. Any non-dedicated well sampling equipment will be decontaminated between wells locations.

4.7 Site Survey

Following the completion of investigation activities, a licensed professional land surveyor registered to practice in the state of New York will collect as-built data from the test pits, surface/sediment sample locations, borings, and monitoring well locations. Horizontal survey data will be based on the North American Datum 83 New York State Plane (Central Zone) coordinate system (in feet). Elevations will be based on the North American Vertical Datum 88. Approximate property lines and existing street boundaries will be placed within the mapping limits using available Steuben County tax mapping.

4.8 Waste Handling

Investigation-derived waste (IDW), including excess soils from soil borings, decontamination rinsates, well development water, purge water, and other used materials (such as personal protective equipment, acetate Geoprobe liners, poly sheeting, etc.), will be placed in Department of Transportation-approved 55-gallon 17-H type drums. The IDW will be classified as hazardous or non-hazardous based on characterization results and will be disposed of in accordance with applicable NYSDEC regulations. Appropriate equipment capable of handling and/or moving IDW stored to the designated waste storage area will be used, and IDW drums will be stored in an area lined with polyurethane sheeting for secondary containment.

5.0 REPORT PREPARATION

Data obtained during the field investigations identified in this scope of work will be validated, evaluated, and summarized. A Preliminary Site Characterization Report will then be prepared following completion of the investigation and receipt of analytical data. This report will document investigation activities specified in this work plan. Groundwater flow direction will be documented from water level measurements. Chemical analytical results for soil and groundwater will be compared to 6 NYCRR Part 375 guidelines for various potential future land uses and State of New York Class GA water quality standards respectively. The document will include Category B data validation, and an evaluation of data for reclassification/delisting, or continuation of next steps of the site characterization.

6.0 SCHEDULE

Following approval of this Scope of Work by NYSDEC, the schedule shown below will be implemented. The work scope described herein is assumed to be completed during 2020.

Task Name	Start	Finish
Geophysical Investigation & Utilities Demarcation	Week 1	Week 1
Drilling Mobilization	Week 1	Week 2
Test Pitting	Week 1	Week 1
Drilling/Well Installation/Surface Soil/Sediment Sample Collection	Week 2	Week 4
As-built Coordinates & Elevations Survey	Week 5	Week 5
Well Development	Week 5	Week 5
Groundwater Sampling	Week 5	Week 5
Data Management and Reporting Tasks	2 months after completion of field activities	

FIGURES

NOTES

- Soil boring and test pit locations are approximate and may be subject to change based on field observations. Symbols of borings and test pits are not to scale.
- The mean high water mark represented is approximate. Sediment sample number and locations will be revised and discussed with NYSDEC once MHWM is delineated before the beginning of work.

LEGEND

- PREVIOUS CITY INVESTIGATION BORING LOCATIONS
- PROPOSED BORING LOCATIONS
- PROPOSED BORING & MONITORING WELL LOCATIONS
- PROPOSED SURFACE SOIL SAMPLING LOCATIONS
- PROPOSED SEDIMENT SAMPLING LOCATIONS
- HISTORIC SUSPECT DISTURBANCE OUTLINE
- PROPOSED TEST PIT LOCATIONS
- APPROXIMATE MEAN HIGH WATER MARK (MHWM)

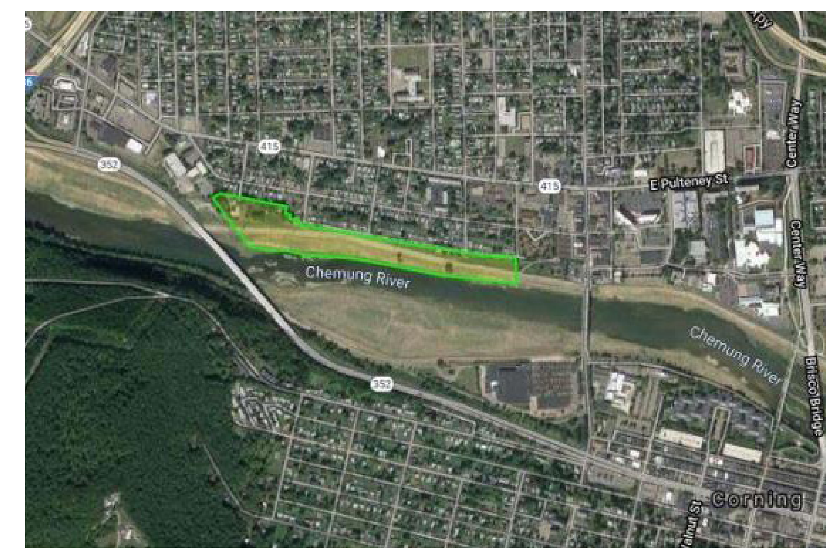


FIGURE 1

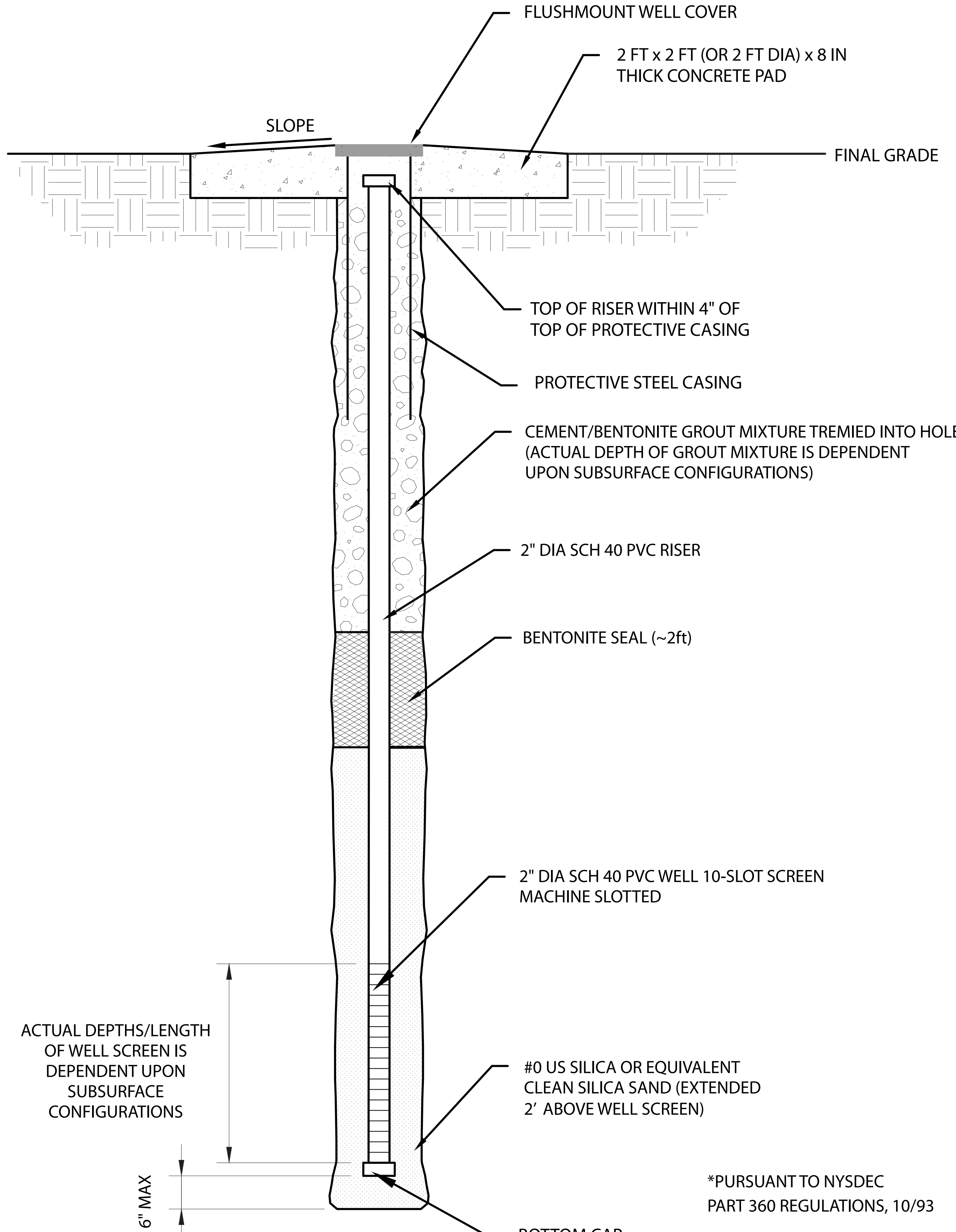
NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

WILLIAM ST. PARK P-SITE INVESTIGATION

SITE PLAN

PARSONS

301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560



*PURSUANT TO NYSDEC
PART 360 REGULATIONS, 10/93

NOT TO SCALE

FIGURE 2

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

WILLIAM ST. PARK P-SITE INVESTIGATION

TYPICAL MONITORING
WELL DETAIL

PARSONS

301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

TABLES

TABLE 1
ANALYTICAL DATA SUMMARY FOR SITE CHARACTERIZATION (WILLIAM ST. PARK, CORNING NY)

Task	Sample Type	Analysis	Method	Turn-Around-Time	Samples	QA/QC Samples						Total
						Duplicate	Equipment Blank	Trip Blank	Field Blank	MS	MSD	
Surface Soil Sampling[1]	Soil	Metals	SW846 6010D/SW7471B	Standard	16	1	1	0	0	1	1	20
	Soil	TCLP Metals	SW6010C/SW7470A	Standard	16	1	1	0	0	1	1	20
	Soil	SVOCs + 1,4-Dioxane	SW8270D	Standard	16	1	1	0	0	1	1	20
	Soil	Cyanide	SW9012B	Standard	16	1	1	0	0	1	1	20
	Soil	Hexavalent & Trivalent Chromium	SW7196A	Standard	16	1	1	0	0	1	1	20
	Soil	VOCs	SW8260C	Standard	16	1	1	0	0	1	1	20
	Soil	Pesticides	SW8081B	Standard	16	1	1	0	0	1	1	20
	Soil	PCBs + Total	SW8082A	Standard	16	1	1	0	0	1	1	20
	Soil	Herbicides	SW8151A	Standard	16	1	1	0	0	1	1	20
	Soil	TPH	EPA 1664 (SGT HEM)	Standard	16	1	1	0	0	1	1	20
	Soil	PFAS	Modified EPA 537.1	Standard	16	1	1	0	0	1	1	20
Sediment Soil Sampling[2,3]	Sediment	Metals	SW6010D/SW7471B	Standard	39	2	2	0	0	2	2	47
	Sediment	TCLP Metals	SW6010C/SW7470A	Standard	39	2	2	0	0	2	2	47
	Sediment	SVOCs + 1,4-Dioxane	SW846 8270D	Standard	39	2	2	0	0	2	2	47
	Sediment	Cyanide	SW9012B	Standard	8	1	1	0	0	1	1	12
	Sediment	Hexavalent & Trivalent Chromium	SW7196A	Standard	8	1	1	0	0	1	1	12
	Sediment	VOCs	SW8260C	Standard	8	1	1	0	0	1	1	12
	Sediment	Pesticides	SW8081B	Standard	8	1	1	0	0	1	1	12
	Sediment	PCBs + Total	SW8082A	Standard	8	1	1	0	0	1	1	12
	Sediment	Herbicides	SW8151A	Standard	8	1	1	0	0	1	1	12
	Sediment	TPH	EPA 1664 (SGT HEM)	Standard	8	1	1	0	0	1	1	12
	Sediment	PFAS	Modified EPA 537.1	Standard	8	1	1	0	0	1	1	12
	Sediment	Total Organic Carbon	Lloyd Kahn	Standard	8	1	1	0	0	1	1	12
Test Pit Sampling[1,3]	Soil	Metals	SW6010D/SW7471B	Standard	8	1	1	0	0	1	1	12
	Soil	TCLP Metals	SW6010C/SW7470A	Standard	8	1	1	0	0	1	1	12
	Soil	SVOCs + 1,4-Dioxane	SW846 8270D	Standard	8	1	1	0	0	1	1	12
	Soil	Cyanide	SW9012B	Standard	4	1	1	0	0	1	1	8
	Soil	Hexavalent & Trivalent Chromium	SW7196A	Standard	4	1	1	0	0	1	1	8
	Soil	VOCs	SW8260C	Standard	4	1	1	0	0	1	1	8
	Soil	Pesticides	SW8081B	Standard	4	1	1	0	0	1	1	8
	Soil	PCBs + Total	SW8082A	Standard	4	1	1	0	0	1	1	8
	Soil	Herbicides	SW8151A	Standard	4	1	1	0	0	1	1	8
	Soil	TPH	EPA 1664 (SGT HEM)	Standard	4	1	1	0	0	1	1	8
	Soil	PFAS	Modified EPA 537.1	Standard	4	1	1	0	0	1	1	8
Soil Boring Sampling[1,3]	Soil	Metals	SW6010D/SW7471B	Standard	80	4	4	0	0	4	4	96
	Soil	TCLP Metals	SW6010C/SW7470A	Standard	80	4	4	0	0	4	4	96
	Soil	SVOCs + 1,4-Dioxane	SW846 8270D	Standard	80	4	4	0	0	4	4	96
	Soil	Cyanide	SW9012B	Standard	16	1	1	0	0	1	1	20
	Soil	Hexavalent & Trivalent Chromium	SW7196A	Standard	16	1	1	0	0	1	1	20
	Soil	VOCs	SW8260C	Standard	16	1	1	0	0	1	1	20
	Soil	Pesticides	SW8081B	Standard	16	1	1	0	0	1	1	20
	Soil	PCBs + Total	SW8082A	Standard	16	1	1	0	0	1	1	20
	Soil	Herbicides	SW8151A	Standard	16	1	1	0	0	1	1	20
	Soil	TPH	EPA 1664 (SGT HEM)	Standard	16	1	1	0	0	1	1	20
	Soil	PFAS	Modified EPA 537.1	Standard	16	1	1	0	0	1	1	20

TABLE 1 (CONTINUED)
ANALYTICAL DATA SUMMARY FOR SITE CHARACTERIZATION (WILLIAM ST. PARK, CORNING NY)

Task	Sample Type	Analysis	Method	Turn-Around-Time	Samples	QA/QC Samples						Total
						Duplicate	Equipment Blank	Trip Blank	Field Blank	MS	MSD	
Groundwater Sampling[4]	Groundwater	VOCs	SW8260C	Standard	8	1	2	1	0	1	1	**14**
	Groundwater	SVOCs + 1,4-Dioxane	SW8270D/SW8270D SIM	Standard	8	1	2	0	0	1	1	**13**
	Groundwater	Pesticides	SW8081A	Standard	8	1	2	0	0	1	1	**13**
	Groundwater	PCBs + Total	SW8082A	Standard	8	1	2	0	0	1	1	**13**
	Groundwater	Herbicides	SW8151A	Standard	8	1	2	0	0	1	1	**13**
	Groundwater	Metals	SW846 6010D/SW7470A	Standard	8	1	2	0	0	1	1	**13**
	Groundwater	TPH	EPA 1664 (SGT HEM)	Standard	8	1	2	0	0	1	1	**13**
	Groundwater	PFAS	Modified EPA 537.1	Standard	8	1	2	0	1	1	1	**14**
Waste Characterization Sampling	Soil	TCLP	SW1311	Standard	1	0	0	0	0	0	0	**1**
	Soil	TCLP Volatiles	SW8260C	Standard	1	0	0	0	0	0	0	**1**
	Soil	TCLP Semivolatiles	SW8270D	Standard	1	0	0	0	0	0	0	**1**
	Soil	TCLP Pesticides	SW8081B	Standard	1	0	0	0	0	0	0	**1**
	Soil	TCLP Herbicides	SW8151A	Standard	1	0	0	0	0	0	0	**1**
	Soil	TCLP Metals	SW6010C/SW7470A	Standard	1	0	0	0	0	0	0	**1**
	Soil	PCBs + Total	SW8082A	Standard	1	0	0	0	0	0	0	**1**
	Soil	Corrosivity	SW9045	Standard	1	0	0	0	0	0	0	**1**
	Soil	Ignitability	SW1030	Standard	1	0	0	0	0	0	0	**1**
	Soil	Reactivity	SW7.3.3.2/SW7.3.4.2	Standard	1	0	0	0	0	0	0	**1**
	Water	VOCs	SW8260C	Standard	1	0	0	0	0	0	0	**1**
	Water	SVOCs	SW8270D	Standard	1	0	0	0	0	0	0	**1**
	Water	Pesticides	SW8081B	Standard	1	0	0	0	0	0	0	**1**
	Water	Herbicides	SW8151A	Standard	1	0	0	0	0	0	0	**1**
	Water	Total Cyanide	SW9012B	Standard	1	0	0	0	0	0	0	**1**
	Water	PCBs + Total	SW8082A	Standard	1	0	0	0	0	0	0	**1**
	Water	Metals	SW6010D/SW7470A	Standard	1	0	0	0	0	0	0	**1**
	Water	Corrosivity (pH)	SW9040	Standard	1	0	0	0	0	0	0	**1**
	Water	Flashpoint	SW1010	Standard	1	0	0	0	0	0	0	**1**
	Water	Reactivity	SW7.3.3.2/SW7.3.4.2	Standard	1	0	0	0	0	0	0	**1**

NOTES:
1. NYCRR Subpart 375 Compounds
2. NYSDEC Screening and Assessment of Contaminated Sediment
3. An additional soil sample will be collected from native materials directly under any ash/brick/glass layer encountered
4. NYSDEC Ambient Water Quality Standard TOGS 1.1.1

ATTACHMENT 1
NYSDEC Corning Forensics Investigation Workplan/ Approach Memorandum

NYSDEC CORNING FORENSICS INVESTIGATION WORKPLAN/APPROACH MEMO

Background

New York State Department of Environmental Conservation (NYSDEC) along with the New York State Department of Health (NYSDOH) have been overseeing the investigation and implementation of remedial activities associated with past disposal of waste materials from pre-cursor companies of Corning Incorporated. These waste materials were used as fill in an area bounded by the Chemung River to the south, Post Creek to the east, I-86 to the north, and Pyrex Street to the west (the Study Area). As shown on Figure 1, the Study Area includes the Corning Painted Post High School property; the Corning Christian Academy property; the City of Corning Memorial Stadium property; a residential area consisting of 326 individual properties; and flood control areas along the Chemung River and Post Creek. Previous investigations identified fill areas that contain ash, brick, and/or glass in both residential and school properties. These investigations of both site soils and groundwater identified primary contaminants of concern in soils including lead, arsenic, cadmium and semi-volatile organic compounds (SVOCs). No impacts to groundwater have been identified to date from historic fill operations.

Parsons has been contracted to assist NYSDEC with third party oversight of Corning Incorporated's efforts to address contamination in the Study Area and several satellite sites outside of the Study Area where Corning Incorporated has consented to investigating the sites for evidence of historical waste disposal by Corning Incorporated. To date those additional satellite properties include:

- The Guthrie Medical Center;
- The City of Corning Fire Department;
- Corning Min-Storage (Rt 414)/Post Creek Properties; and
- The Van Etten property

In addition to investigations/remediation activities in the Study Area and the above satellite properties, Parsons has been assigned to investigate several additional properties outside of the Study Area where Corning Incorporated has declined to perform initial site characterizations to assess if there are potential impacts to the properties from the disposal of waste glass similar to what was observed within the Study Area.

Much of the waste materials observed within the Study area and satellite sites (specifically, the Van Etten property) was either waste materials from the demolition of furnaces (e.g., glass fused to bricks) or suspected of being proprietary/patented Corning Incorporated glass/products. Some examples of the glass materials observed within the Study Area or satellite property fill materials included:

- Leaded crystal glass;
- Colored glass including "Vaseline" glass that was suspected to be a specific Corning Incorporated product;
- Pipettes/glass tubing that was suspected to be a specific Corning Incorporated manufacturing process;
- Thermometers (triangular in cross section that was suspected to be a specific Corning Incorporated manufacturing process; and
- Borosilicate feedstock ("Chicklets") that were suspected to be used in the manufacturing of CorningWare.

This document helps define the tasks associated with the forensics approach. The tasks detailed below may not necessarily occur chronologically and will likely be conducted regularly during ongoing remediation and site investigation activities. It is also likely that information gathered during one task may inform the processes or understanding of a separate task, and as such, this workplan provides a general approach and may be modified as new information is collected.

Objective

The overall objective of the Forensics Approach described herein is to characterize waste materials found at satellite properties, to determine if legally defensible similarities (e.g., uniquely similar appearance, properties, presence of specific chemicals or chemical patterns, etc.) can be drawn with known waste sources attributable to Corning Incorporated, or other potential identifiable sources. It is understood that the findings of this approach may be used as a basis for the Department's designation of responsibility for investigating and remediating these properties onto Corning Incorporated, and/or other potential parties.

Task I – Collection and Preparation of Archive Samples

Parsons will collect and archive samples of the different glass types, as well as other materials potentially disposed by Corning Incorporated including ash and brick, found at each of the active remediation areas (Study Area (OU 1-5), Guthrie Medical Center, City of Corning Fire Dept, Van Etten property, and any other investigation areas either performed by Corning Incorporated or others). The purpose of this task is to identify and collect specific waste items associated with historical Corning Incorporated glass manufacturing waste disposal throughout the area. As archive samples are collected, relevant sample collection information will be recorded in a field log (Attachment 1). Archive samples collected will be labeled and stored in Parsons field trailer for future reference. In addition, Parsons and/or NYSDEC will notify Corning Incorporated of any sample collection and will provide split samples to them upon request.

Sample Collection Procedure

When an archive sample is identified in the field for collection, the following actions will be taken:

- Alert NYSDEC and Corning Incorporated of field archive sample collection.
- Photograph waste and surrounding undisturbed archaeological conditions (if possible) prior to collection. Note the following:
  - Orientation and depth
  - Description of material
  - Relative proportions of ash brick, glass
- Collect archive sample item(s) and seal into clear Zip-Loc bag. If requested by Corning Incorporated, and if feasible, either split a single piece of glass or collect enough material to provide Corning Incorporated a split sample.
- Label archive sample bag with unique ID#, collection date and location (Area, Parcel ID, etc.).
- Record additional information relevant to sample collection. 'Relevant' information may include archaeological information (soil type encountered, depth of disposal, location/GPS coordinate, waste profile description including types of waste encountered and waste type %).
- A specific Standard Operating Procedure that details the collection of samples is included as Attachment 1.
- If splitting of a sample would otherwise impact the ability to get test results for the sampled material, or would otherwise alter the nature of the material to damage its evidentiary value, then Parsons and/or DEC shall take the sample without splitting with Corning, Incorporated and will properly maintain the sample. Prior to that material being tested or evaluated, Corning, Incorporated shall be notified of the tests, testing protocol and testing lab that the material is being taken to and shall be given sample results once the sampling results have been finalized.

Task II – Archive Sample Observation, Testing, and Characterization

Physical and Visual Observations

After collection, archive samples will be observed for distinguishing physical and visual characteristics. As noted above, the glass manufacturing expert will be used to help identify different types of wastes and glass. The list below provides a basis for characteristics that may be observed. Any physical parameters observed will be recorded into the archive sample library (see Task III).

- Size (photograph with ruler)
- Color
- Opacity
- Fracture
- UV/Fluorescence Testing – certain chemicals used in glass production respond to UV light (e.g. fluorescence)
- Other distinguishing characteristics

Archive Sample Analytical Testing List (In-Development)

It is hypothesized that chemical composition, structural properties or other non-physical traits may help further define and identify archive samples. It's likely that some samples may exhibit similar physical and visual characteristics but may differ in composition or structure, potentially indicating production from different sources. In addition to observation of physical and visual characteristics, it may be necessary to perform analytical testing to help develop reliable characterization of samples.

As the investigation continues, and with input from subject-matter experts, analytical (or other) testing may be developed to further characterize archive samples. These procedures will be identified and defined (as addendum to herein). The intent is to have enough archive material to maintain a library of the different waste materials (described in Task III) in the event that archive sample need to be submitted for chemical analysis or other testing which would require the sample to be crushed/destroyed.

- Total metals analysis
- TCLP (Toxicity Characteristic Leaching Procedure)
- Specific Gravity
- Refractive index
- X-Ray Fluorescence (potentially could use a handheld unit for field)
- Optical (light) microscopy
- Scanning Electron Microscopy/Energy Dispersive X-ray Spectroscopy (SEM EDS)
- Other testing (being considered at this time)
    - X-Ray Photoelectron Spectrometry
    - Sr and Pb Isotopes

Task III – Archive Sample Library Development and Consolidation

Archive samples will be collected and catalogued into an archive sample library. The archive sample library will be developed as a repository for information helpful in defining specific and discrete types of wastes encountered in the Study Area and satellite properties where Corning Incorporated is performing characterization investigations. As such, the archive sample library will serve as a reference to help define and categorize wastes as encountered on investigation sites led by NYSDEC.

The physical contents of the archive sample library will be stored on site and may be used as reference during field activities. A digital library will be developed to provide backup to field data and will serve as a comprehensive database and tool for identifying and categorizing future archive samples. The digital library database will contain information generated from Tasks I & II related to archive sample collection (ID#, collection location, etc.), physical and visual sample observations, and sample characterization test results (fluorescence, etc.).

The archive sample library may also consist of additional information helpful in establishing a broader understanding of waste disposal and distribution. Maps (or GIS databases) and visual figures may be developed to help track sample locations and distribution.

Task IV – Review of Site Records and Historical Manufacturing Processing History

Parsons will research any historical documentation associated with the disposal sites and historical glass manufacturing processes. Relevant information discovered during this process will be organized for retrieval and future reference. The purpose of this task is to broaden the team's understanding of the waste disposal activities associated with the area and to aid in the intelligence of field sample identification and characterization.

To the extent possible, a list of relevant glass types that were produced by Corning will be developed along with the specific glass chemistry for each product. This information will be used to optimize the analytical program. This effort may include attempts to obtain additional information from the Corning Museum of Glass library. Similarly, "non-Corning" glass producers or processors in the area and the glass that they produced will be noted where possible.

NYSDEC CORNING FORENSICS GLASS SAMPLING STANDARD OPERATING PROCEDURE

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b. Appendix B sample Chain of Custody Form 4

1. Objective

The purpose of this task is to identify and collect specific waste items associated with historical Corning Incorporated glass manufacturing waste disposal throughout the area. The overall objective of the forensics sampling procedure is to characterize waste materials found at satellite properties, to determine if similarities (e.g., uniquely similar appearance, properties, presence of specific chemicals or chemical patterns, etc.) can be drawn with known waste sources attributable to Corning Incorporated, or other potential identifiable sources. Performing this work involves an obligation to preserving unique shapes, markings, etc. of archive samples and to the safety of employees.

2. Procedure

a. Equipment and Supplies

The following equipment will be used:

- Clear Zip-Loc bags
- Bag labels
- Digital camera
- PPE in accordance with the HASP
- Sample logs
- Ruler
- Handheld GPS unit
- Tape measure
- Ultraviolet flashlight
- Fibrous brush
- Basic glass cutting equipment - different equipment may be utilized based on site- and sample-specific circumstances, including:
  - Triangular file
  - Hammer & chisel
  - Other hand tools (as applicable)

b. Notification

Prior to any archive sample being collected, to the extent practical, Corning Incorporated will be alerted of field archive sample collection. Split samples may be provided to Corning Incorporated upon request. If splitting of a sample would otherwise impact the ability to get test results for the sampled material, or would otherwise alter the nature of the material to damage it beyond its intended use as an archive sample, then Parsons and/or DEC shall take the sample without splitting with Corning, Incorporated and will properly maintain the sample. NYSDEC solely reserves the right to refuse to split a sample.

c. Sampling Method

Prior to collecting archive samples, the following observations will be noted in the glass archiving sampling record log (Appendix A):

- Site name;
- Project number;

- Sampling date & time;
- Weather at time of sampling;
- Samplers;
- Sample ID;
- Parcel ID;
- Sampling Method;
- Location (GPS coordinates);
- Surrounding soil (or subject material) type & appearance;
- Sample orientation;
- Proportions of ash, brick, and/or glass surrounding the sample;
- Optionally, if the following physical properties are applicable to a specific archive sample, record dimensions, shape, and color of the archive sample. Record opacity, fracture, and UV/fluorescence as applicable after sample collection; and
- Other notable observations.

To the extent possible, archive samples will be logged prior to being disturbed (e.g., moved by an excavator). A digital camera will be used to take photos of the archive sample and location; a ruler will be staged in the photo frame as a dimensional reference. A handheld GPS will be used to determine the location of the archive sample. An ultraviolet flashlight will be used to determine fluorescence of the archive sample after sample collection. A sketch of the sample location relative to property landmarks (e.g., fenceline, vegetation, shed, etc.) must be drawn and recorded in a field book.

When handling the archive sample, samplers will don nitrile gloves. Prior to the archive sample being split or bagged, a fibrous brush will be used to remove debris attached to glass or brick material.

NYSDEC and Corning Incorporated will be notified before collection of any archive sample. If requested by Corning Incorporated, and where reasonable, larger pieces of glass may be split sampled into two pieces. A glass cutting device will be used to split the sample into two halves (to the extent possible). Glass pieces may be cut by scoring the glass with a triangular file and then breaking along the score, by breaking with a hammer and chisel, or by another appropriate hand methods. If hand tools are inadequate to physically split the glass sample, additional methods may be considered (e.g., a wet saw). Alternative methods of splitting samples will need to consider health and safety risks and generation/disposal of wastes prior to implementing.

If splitting a glass piece may harm its integrity, damage a unique and distinguishable shape, isn't feasible due to its size or shape, or presents another issue, field personnel will collect two pieces of similar material found together. One piece of the sample will be offered to Corning Incorporated as a split sample. NYSDEC and Corning Incorporated can discuss these instances, if they arise and may make a future arrangement to split the piece.

The cutting device and splitting method (e.g., cut, crushed, or alternative method) must be noted on the glass archiving sampling record log (Appendix A). Additionally, an estimate of the percentage of the glass that is salvageable for archiving must be noted on the log. Once the archive sample is split, a photo must be taken of the glass samples. If an archive sample is unevenly split, NYSDEC reserves the right to choose the piece(s) to collect.

A label must be affixed to the Zip-Loc bag containing the archive sample. The following information must be noted on the label:

- Sample ID
- Chain of Custody number
- Sampler(s)
- Date sample collected
- Collection location (Area, Parcel ID, etc.)
- Sampler company (i.e., Parsons)
- Client (i.e., NYSDEC)

In the event a Corning Incorporated representative is unable to be present during the archive sample collection, the sample will be collected and stored in a secure location (e.g., the Parsons trailer). Corning Incorporated will be notified of the completion of the sampling effort. At Corning Incorporated's request, the archive sampling information will be shared. The archive sample may be split when a Corning Incorporated representative is present.

d. Chain of Custody

Archive samples will be collected under a chain of custody (Appendix B).

- The total number of samples on a chain is limited to 20.
- If the chain has multiple pages, it must be noted (e.g., Page 1 of 2).
- At the end of the workday, a picture will be taken of the chain to capture an electronic copy of the signed chain. A .pdf copy of the signed chain will be sent to the Parsons project manager and the Parsons data management team.

The *Site ID* consists of the work location (e.g., Study Area, Van Etten Rd, etc.) that the archive sample is collected from. Each location has its own *Site ID*. Site IDs for each work location will be as follows, and this SOP will be amended as needed to list additional Site IDs.

Work Location	Site ID
Study Area	SA
Stewart Park	Stewart
Van Etten	Van
Guthrie Medical Center	GMC
Guthrie Center North Parking Lot	GCNPL
City of Corning Fire Department	CCFD
Post Creek	Post

<u>Chain Numbers</u> are the *Site ID* + *Sampling Date* (e.g., SA-072420 are the archive samples collected in the Study Area on July 24, 2020).

<u>Field Sample IDs</u> must be unique. The *Field Sample ID* for locations within the Study Area consists of the *Site ID* + *Residence Number* + *Date* + *Sequential Number* + *Sample Type* (AG for archive glass, FB for furnace brick, and ASH for ash). For example, SA-Res012-072420-01-AG would be the first sample collected at Study Area Residence 12 on July 24, 2020 and would consist of archive glass. The *Field Sample ID* for locations outside of the study area will consist of *Site ID* + *Date* + *Sequential Number* + *Sample Type*. For example, Stewart-101220-04-FB would be the fourth sample collected at Stewart Park on October 12, 2020 and would consist of furnace brick.

3. Attachments

A. APPENDIX A GLASS ARCHIVING SAMPLING RECORD LOG

B. APPENDIX B SAMPLE CHAIN OF CUSTODY FORM

PARSONS
GLASS ARCHIVING SAMPLING RECORD

SITE NAME: ______________________
PROJECT NUMBER: 452163.03000
SAMPLING DATE / TIME: ______________________
WEATHER: ______________________
SAMPLERS: ____________ of Parsons
____________ of ____________
____________ of ____________

SAMPLE ID: ______________________
PARCEL ID: ______________________
SAMPLING METHOD: Hand collection

DESCRIPTION OF SAMPLING POINT

LOCATION: ______________________
SURROUNDING SOIL/SUBJECT MATERIAL TYPE & APPEARANCE: ______________________
ORIENTATION: ______________________
DEPTH TO TOP: ______________________
DEPTH TO BOTTOM: ______________________
ABG* PROPORTIONS: ______________________

ARCHIVE SAMPLE DESCRIPTION

DIMENSIONS (Photograph with ruler): ______________________
SHAPE: ______________________
COLOR: ______________________
OPACITY: ______________________
FRACTURE: ______________________
UV/FLUORESCENCE TESTING: ______________________
OTHER: ______________________

CHAIN OF CUSTODY

SAMPLE SPLIT?: Y | N
SPLITTING DEVICE: ______________________
SPLIT METHOD: ______________________
SPLIT RECOVERY %: ______________________
CHAIN OF CUSTODY NUMBER: ______________________
SHIPPED VIA: Dropped off at
____

COMMENTS / MISCELLANEOUS ______________________

*ABG denotes ash, brick, and/or glass

Submitted to:

Chain Of Custody / Analysis Request

AESI Ref:
COC # :
Lab Use Only
Lab Proj #
Lab ID
Job No.

Privileged & Confidential

Site Name:

EDD To:

Location of Site:

Client Contact: (name, co., address)

Sampler:

P O #

Analysis Turnaround Time:

Standard -

2 weeks -

1 week -

Next Day -

Hardcopy Report To:

Invoice To:

Sample Identification

Grab/Composite | MS/MSD | Field Filtered Sample ?

Preservative: 0 | 0 | 2

	Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Units
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Special Instructions:
Samples will be held at the Parsons field office following sample collection, and may be submitted under chain of custody for analytical testing at a later date.

Notes:

Sample Collected/Held by	Company			Company		Condition		Custody Seals Intact	
	Date/Time			Date/Time		Cooler Temp.			
Transferred to Archived by	Company			Company		Condition		Custody Seals Intact	
	Date/Time			Date/Time		Cooler Temp.			

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):