REMEDIAL ACTION WORK PLAN

for the

FORMER CAMILLUS CUTLERY COMPANY SITE

52 & 54 Genesee Street
Village of Camillus
Onondaga County, New York

Brownfield Cleanup Program
Site No. C734142

Prepared for:

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APPENDICES

1.0 INTRODUCTION

TDK Engineering Associates, P.C. (TDK) has prepared this Remedial Action Work Plan (RAWP) for the Former Camillus Cutlery Company Site - Brownfield Cleanup Program (BCP) Site I.D. C734142 (Site). The RAWP describes the implementation of the proposed remedies for the Areas of Concern (AOCs) within the Site, based on the findings of the Remedial Investigation (RI)[1], supplemental RI[2] and consistent with the Alternatives Analysis Report[3] and June 14, 2016 Fact Sheet[4] prepared by the New York State Department of Environmental Conservation (DEC).

2.0 SITE DESCRIPTION AND HISTORY

The 4.3-acre BCP Site is located at the former Camillus Cutlery Company property, 52 & 54 Genesee Street in the Village of Camillus (Village), Onondaga County, New York, approximately ½-mile south of the Camillus/Warners exit off New York State Route 5. The Site is bordered by residential properties to the west and northwest, commercial or municipal properties to south and commercial properties to the southwest, southeast, east and northeast (across Newport Road).

The Camillus Cutlery primarily produced knives, with secondary products including but not limited to machetes, marlin spikes and surgical scalpels. Manufacturing operations began during the 1890's and continued until the mid-2000's. At the time the facility was closed (2007), two buildings occupied the Site. These included the 21,000 square foot (footprint area) western building (West Building) and the larger eastern building (East Building) that encompassed a footprint of approximately 57,000 square feet. The East Building was destroyed in a fire in February 2013.

Additional information concerning the Site's manufacturing and environmental history is provided in the RI report.

3.0 PROPOSED SITE RE-DEVELOPMENT

The overall objective of the project is for the Volunteer, Camillus Mills, LLC (Camillus Mills) to redevelop the former world renowned knife manufacturing facility into a new, mixed-use residential and commercial campus. The current business plan calls for the creation of a predominantly (80%)

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[1] *Remedial Investigation Report for the Former Camillus Cutlery Company Site – Brownfield Cleanup Program Site No. C734142*, prepared by TDK Engineering, dated March 30, 2016.

[2] *Remedial Investigation Supplemental Report for the Former Camillus Cutlery Company Site – Brownfield Cleanup Program Site No. C734142*, prepared by TDK, dated June 7, 2016.

[3] *Alternatives Analysis Report for the Former Camillus Cutlery Company Site – Brownfield Cleanup Program Site No. C734142*, prepared by TDK, dated March 31, 2016.

[4] *Fact Sheet – Remedy Proposed for Brownfield Site Contamination; Public Comment Period Announced, prepared by DEC*, dated June 14, 2016.

residential development of the West Building, with its remaining space being utilized for commercial purposes. The balance of the Site will be similarly developed at some point in the future.

4.0 SUMMARY OF ENVIRONMENTAL CONDITIONS

The Remedial Investigation (RI) included the advancement of twenty soil borings, installation of nine groundwater monitoring wells and collection of representative soil and groundwater samples from the soil borings and monitoring wells, in addition to four surface soil samples. Evaluation of soil vapor intrusion included the installation of five soil and four sub-slab vapor probes, in addition to the collection and analysis of two indoor (West Building) and outdoor air samples.

Areas of Concern (AOCs) which were identified as a result are described below. Refer to the previously referenced RI reports for additional information regarding the scope and findings of the RI.

Soils

AOC-1 and AOC-2.1 (East Parcel)

- These areas are located in the vicinity of a former process water collection area (AOC-1) and air discharge exhaust from grinding operations (AOC-2.1). Constituents exceeding Restricted-Residential (RR) Soil Cleanup Objectives (SCOs)[5] included several semi-volatile organic compounds (SVOCs; benzo[a]anthracene, benzo[b]flouranthene and chrysene).
- Several metals which were associated with former facility operations that were performed near these AOC's, such as heat treating/tempering, finishing and/or wastewater processing, were detected at levels exceeding RR SCOs (e.g., chromium and copper).

AOC-2.2 (West Parcel)

- A trace detection of an SVOC (benzo(b)flouranthene) which exceeded the RR SCO was reported in the south lawn area (surface soils).

Soil Vapor

AOC-3.1 (West Parcel)

- The SVI evaluation indicated the presence of trichloroethylene (TCE) below the building slab and indoor air at concentrations which exceed New York State Department of Health (DOH) criteria. Trace levels of TCE were reported in soil vapor probes immediately exterior to the building.

[5] New York Codes, Rules and Regulations, Title 6 (6NYCRR), Chapter IV, Subpart 375-6: *Remedial Program Soil Cleanup Objectives*.

AOC-3.2 (East Parcel)

- The SVI evaluation also identified a zone below the southern area of the former (East) building slab, where TCE was present. As no specific development plans are currently proposed in this area, AOC-3.2 will be addressed through the Site Management Plan (SMP).

Groundwater

- The analytical data for the most recent (January 2016) round of sampling and analysis indicated groundwater results are below regulatory standards, across the Site with respect to constituents of concern.

The analytical data is summarized and AOC's shown on *Figures RI-1A* and *RI-1B* [Appendix 1]. Refer to the RI Reports as/if needed for additional information concerning investigation of the Site and development of the AOCs.

5.0 REMEDIAL ACTION OBJECTIVES

The Remedial Action Objectives (RAOs) are medium-specific objectives for protection of public health and the environment and are based on Standards, Criteria and Guidance (SCG) developed by the DEC [Section 6.0].

Soils

RAOs for Protection of Public Health

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

RAOs for Protection of Public Health

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

6.0 STANDARDS, CRITERIA AND GUIDANCE

The proposed remedies were developed in consideration of the following SCG documents:

Soil:

- New York Codes, Rules and Regulations, Title 6 (6NYCRR), Chapter IV, Subpart 375-6:

Remedial Program Soil Cleanup Objectives, and DEC *CP-51 / Soil Cleanup Guidance*, Issued October 21, 2010.

Soil Vapor:

- NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, October 2006.
- NYSDOH *Trichloroethene (TCE) In Indoor and Outdoor Air – August 2015 Fact Sheet*.

Regulatory Guidance Documents:

- DEC *DER-10 / Technical Guidance for Site Investigation and Remediation*, May 2010.
- DEC *DER-31 / Green Remediation*, January 20, 2011.
- DEC *CP-43: Groundwater Monitoring Well Decommissioning Policy*, November 3, 2009.

7.0 DESCRIPTION OF THE REMEDY

General descriptions of the proposed remedy components are provided in the following paragraphs. More specific information concerning implementation of the remedy is provided in Sections 8 - 17.

7.1 Site Cover

The cover system will consist of 2 feet of soil cover within lawn areas, and concrete slabs or pavement within building, sidewalk or parking lot areas. The former East building's concrete slab will serve as a cover within the eastern area of the site.

The proposed Site cover areas are indicated on the *Cover Section Plan* [*Figure RA-3*, Appendix 1].

Soil Cover

Impacted soil will be removed from the AOCs, as needed to provide a minimum 2 feet of cover soils within lawn areas, relative to final ground surface elevations and in consideration of preserving mature vegetation and minimizing disturbance of the creek embankment.

The removed soils will be replaced with clean soils or structural fill (e.g., crushed stone). Documentation samples will be obtained at the excavation limits for comparison of remaining constituent levels to applicable Soil Cleanup Objectives (SCOs).

Contaminated soils (i.e., soils exceeding applicable SCOs) will be disposed of off-site at DEC-permitted facilities.

Site areas other than the AOCs which will be comprised of soil cover (i.e., lawns) will be evaluated in accordance with the Site Management Plan (SMP).

Concrete or Pavement

Cleaning of the floor drains within the former East Building slab has been partially completed (i.e., fire brick oven and recessed concrete floor areas), consistent with the Remedial Investigation Work Plan[6]. The remainder of the floor drain cleaning program will be performed in conjunction with implementation of the remedy.

As the former East Building pad will function as part of the Site cap, upon completion of the cleaning program the majority of drains, utility trenches, catch basins etc. will be filled with flowable fill material (i.e., low strength concrete, or "K-Crete"), including provisions for drainage of the slab.

Other site areas to be covered with concrete or pavement are shown on *Figure RA-3*, Appendix 1.

7.2 Vapor Mitigation System

A proprietary (i.e., Cupolex[7]) structural dome sub-slab depressurization (i.e., soil vapor extraction – SVE) and concrete flooring system will be installed. Vapors will be recovered using vent pipes, which will be routed to the building roof.

The system will have the flexibility to be operated as either a passive or active system, depending on the results of air monitoring following installation and completion of building construction to a stage that is suitable for testing. If indoor air sampling results indicate that an active system is necessary, an in-line fan/blower used for vapor recovery will be positioned on the building roof.

The existing concrete floor slab would be demolished, crushed and re-used on-site as structural fill, consistent with the DEC's *DER-31/Green Remediation* Program Policy. In the event that the concrete is contaminated, it will be disposed of off-site at a DEC-permitted facility.

Following removal of the concrete floor slab and prior to installation of the Cupolex system, an evaluation of subsurface conditions within the building footprint will be performed. The evaluation will include field-screening of soils using a photo-ionization detection (PID) meter,

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[6] *Remedial Investigation Work Plan for the Former Camillus Cutlery Company Site – Brownfield Cleanup Program Site No. C734142*, dated July 5, 2013.

[7] *Pontarolo Engineering – Cupolex Building Systems USA LLC.*

collection of confirmation soil and groundwater samples and addressing any identified source areas, as/if needed and in consultation with the DEC.

Refer to Section 12 for detailed descriptions of various tasks associated with installation of the SVE system, including evaluation of sub-slab conditions.

7.3 Institutional Controls

Institutional Controls (ICs) will be implemented through the establishment of an environmental easement. The IC's will include the following:

- An allowance of use and development of the Site for Restricted-Residential (RR) or Commercial occupancy, subject to local zoning laws.
- Restriction of the use of groundwater as a source of potable or process water.
- Requirement of compliance with the Site Management Plan (SMP).

The remedial party or owner will be required to submit a periodic certification that ICs and Engineering Controls (ECs) are in place.

7.4 Site Management Plan

A Site Management Plan (SMP) will be prepared for review and approval by the DEC and New York State Department of Health (DOH). The SMP will include the following elements:

- Institutional Controls (ICs) described above.
- Engineering Controls (ECs), which include the site cover and sub-slab depressurization system.
- An Excavation Plan, describing provisions for management of potentially contaminated media within future Site disturbance areas.
- Provisions for further investigation and remediation of subsurface media within future site development areas, as necessary.
- Provisions for evaluation of potential soil vapor intrusion within future buildings on the Site, including implementation of corrective actions as/if warranted.
- Periodic inspections of ECs and certification program.
- Maintaining site access controls and Department notification.

- The steps necessary for periodic reviews and certification of the institutional and/or engineering controls.
- A Monitoring Plan to assess the performance and effectiveness of the remedy.
- An Operation and Maintenance Plan to ensure continued operation, maintenance, inspection and reporting of any mechanical or physical components of the active vapor mitigation system(s).

8.0 PREMOBILIZATION

8.1 Notifications

- A minimum 30 days advance notification of the field work schedule shall be provided to the DEC and DOH.
- Dig-Safely, NY (DSNY-811) shall be contacted for mark-out of buried utilities in the proposed work areas. The contractor shall coordinate the marking of private, on-site utilities which are not marked by member companies with Camillus Mills.

8.2 Submittals

At least three (3) weeks prior to mobilization, the contractor(s) shall submit the following information to Camillus Mills and the Project Engineer for review and approval:

- Proposed disposal facility(s), including regulatory permit number(s)[8].
- Proposed waste transporter(s), including DEC Part 364 permit number(s)[9].
- A Site-specific Health and Safety Plan (HASP), prepared in accordance with the requirements of Section 1.9(c) of the DEC's *DER-10/ Technical Guidance for Site Investigation and Remediation*, dated May 2010.
- Acceptable backfill materials:
  - Identification of New York Department of Transportation (DOT) permitted mine or quarry, and/or DEC registered construction and demolition (C&D) debris processing facility.
  - Identification of other source site, including any state or local approvals and/or historical occupancy and use information.

[8] 6 NYCRR Part 360: *Solid Waste Management Facilities*.
[9] 6 NYCRR Part 364: *Waste Transporter Permits*.

- Sieve results and analytical data, as applicable.

- Erosion and Sediment Control (ESC) and Site Restoration Materials:
  - Turf-Reinforcement Mat
  - Silt Fence
  - Seed and mulch

9.0 MOBILIZATION

9.1 Construction of Soil Staging Areas

- Contaminated and potentially contaminated soil staging areas shall be constructed at the approximate locations shown on the *Remedial Action Plan* [*Figure RA-1,* Appendix 1].

- Debris shall be removed from the staging area footprints, followed by lining the areas with a minimum two layers of 6 mil polyethylene (poly) sheeting, or approved alternate impermeable material having a thickness equal to or greater than 12 mil. Containment berms (~2-feet high) consisting of imported soil or hay bales will be installed along the down-slope perimeters of the staging areas. The berms shall be overlain by the poly sheeting.

9.2 Construction of Decontamination Pad

- An equipment decontamination (decon) pad shall be constructed at the approximate location shown on the *Remedial Action Plan* [*Figure RA-1,* Appendix 1].

- The pad shall be constructed similarly to the soil staging areas, however the berm shall extend around the entire perimeter of the pad.

- The dimension of the pad shall be sufficient to allow for decontamination of heavy equipment components which contact contaminated media (e.g., excavator buckets) and containment of decon water.

9.3 Erosion and Sediment Control

- The contractor shall install and maintain silt fence along the Nine Mile Creek embankment, at the location shown and in accordance with the detail on *Figure RA-2,* Appendix 1.

9.4 Clearing

- Brush and small trees (i.e., less than approximately 4-inch diameter) shall be cleared from AOC-1 and AOC-2.1. Mature trees shall remain.

- The trees/brush shall be cut approximately 6 to 12 inches above the ground surface and removed. The root structures and surrounding soils shall not be disturbed.

- The removed trees/brush shall be disposed of off-site at a permitted facility.

10.0 EXCAVATION PROGRAM (AOCS-1, 2.1 AND 2.2)

10.1 Excavation and Stockpiling Procedures (AOCs-110, 2.1 & 2.2)

- Soils shall be excavated and removed to the horizontal limits shown on the *Remedial Action Plan* [*Figure RA-1,* Appendix 1] and to the depths required to provide a minimum 2-feet of soil cover within lawn areas, based on the currently proposed Site development plan[10].

- The projected areas of the AOCs and volumes of soil to be removed are summarized on Figure RA-1. The limits shown are approximate and subject to modification.

- Soil from the three AOCs shall be stockpiled separately. The proposed stockpile areas are shown on Figure RA-1.

- As indicated in the previously referenced RI report, analytical data for shallow (i.e., less than 2 feet deep) soils from AOCs 2.1 and 2.2 indicated constituents exceeding RR SCOs. Accordingly, these stockpiles will be characterized for off-site disposal [Refer to Section 14 – Remedial Waste Management Program].

- No analytical data is available for shallow soils within AOC-1.0. Therefore soils removed from this AOC will be sampled for evaluation as "Potentially Contaminated Soils". Depending on the analytical results, the soil will either be utilized on-site as fill material or alternatively, characterized for off-site disposal. Refer to Section 10.3 for additional information.

- Soil shall be removed from each AOC using standard excavating equipment (e.g., backhoes), loaded on to dump trucks and transported to the staging areas.

- Soil shall be placed in the staging areas in order to allow gravity drainage of free liquids. Free liquids from the soils shall be collected at the low (down-slope) end of the staging area and pumped out into a temporary storage tank(s), drums or vacuum (vac) truck for subsequent off-site disposal. Refer to Section 14 for additional information.

[10] *Grading Plan – Camillus Mills*, Sheet L200, prepared by Keplinger Freeman Associates, dated 6/7/16.

- The soil stockpiles shall be covered at the end of each day using minimum 6 mil poly sheeting. The sheeting will be secured using sand bags, tires or other equivalent means.
- Any excavations left open overnight shall be surrounded using orange construction fence.
- Dust control procedures (i.e., spraying from water truck), will be implemented as/if needed, based on the results of the air monitoring program during intrusive activities. Refer to Section 17 - *Community Air Monitoring Program* for additional information.
- AOCs-1.0 & 2.1:
    - Soils located immediately adjacent to the mature trees shall be removed to shallower depths, as needed to protect the root structures.
    - The excavation shall not extend down the Nine Mile Creek embankment slope or into the creek.
    - Prior to excavation, monitoring wells MW-5 and MW-7 shall be decommissioned in accordance with the procedures in Section 13.
- The excavating equipment will be decontaminated between use at AOC as described in the *Decontamination Program* [Appendix 6]. Solid and liquid wastes generated during decontamination operations shall be transferred to the contaminated soil stockpile (solids) and storage tanks, drums or vac trucks (liquids).
- Water accumulating in the excavations, stockpile or decontamination areas that requires removal and off-site disposal, if any, shall be pumped out and disposed of off-site. Refer to Section 14 for additional information.

10.2 Confirmation/Documentation Soil Samples

Following advancement of the excavations to the target limits, confirmation/documentation samples will be obtained in accordance with the procedures specified within the *Surface Soil Methodology* section of the *Quality Assurance Project Plan* (QAPP) [Appendix 2].

The samples will be obtained at the approximate intervals indicated below, consistent with DEC's *DER-10* document. Note that the sampling frequency may be modified, pending field observations (e.g., localized source) and/or physical constraints (e.g., foundation walls).

Sidewalls: Every 30 lineal feet.

Bottoms: Every 900 square feet.

A summary of anticipated sample locations and analytical parameters is provided on *Figure RI-1A*. The samples will be submitted to the designated laboratory for the following analysis:

Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's) and PCBs:

- Full target compound list (TCL) per Environmental Protection Agency (EPA) *Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Multi-Media, Multi Concentration*, in effect as of the date the analysis is performed (Ref: DEC *DER-10*).

- Thirty (30) highest concentration tentatively identified compounds (TICs), consisting of 10 VOCs and 20 SVOCs (Ref: DEC *DER-10*).

Metals:

- Full target analytical list (TAL) per EPA *CLP Statement of Work for Inorganic Analysis, Multi-Media, Multi Concentration*, in effect as of the date the analysis is performed.

Refer to the QAPP in Appendix 2 for a summary of quality assurance/quality control (QA/QC), reporting and data validation considerations.

10.3 Evaluation of Potentially Contaminated Soils (AOC-1.0)

Soil samples shall be obtained from the potentially contaminated stockpile in accordance with the procedures in the *Potentially Contaminated Soil Evaluation Methodology* described in the QAPP [Appendix 2].

- The number of samples shall be based on the DEC's *DER-10 Table 5.4(e)10 – Recommended Number of Soil Samples for Soil Imported to or Exported from a Site*.

- Analytical results will be compared to the DEC's Subpart 375-6 Soil Cleanup Objectives (SCOs) for Restricted-Residential (RR) Use.

- If SCOs for RR Use are met, the soil shall be re-used on-site as backfill within the AOC(s) [Refer to Section 11.0] or re-graded elsewhere on-site.

- If SCOs for RR Use are exceeded, the soil shall be transported and disposed of at a permitted landfill [Refer to Section 14.0].

- Refer to the QAPP in Appendix 2 for a summary of quality assurance/quality control (QA/QC), reporting and data validation considerations.

11.0 COVER SYSTEM

The Site cover areas are indicated on the *Cover System Plan* [*Figure RA-3*, Appendix 1]. Typical lawn, sidewalk and pavement area sections are provided on the *Remedial Action Details* sheet [*Figure RA-2,* Appendix 1].

11.1 Lawn Areas (AOCs-1.0, 2.1 & 2.2)

Acceptable materials and placement procedures for backfilling within lawn areas are summarized in the following sections.

Materials

Backfill materials shall consist of any one, or combination of the following materials, depending on location and depth of placement. The proposed materials will be evaluated in accordance with *DER-10 – Section 5.4(e) – Compliance for soil which exists at or is imported to a site* and the DEC's *Request to Import/Reuse Fill or Soil* form.

- Gravel, rock or stone from a New York Department of Transportation (DOT) permitted mine or quarry:
  - Material conforming to *DER-10 – Section 5.4(e)(5)* or;
  - DOT Item 304.12 or 304.14 crushed stone (i.e., Types 2 or 4 Sub-base) or;
  - DOT No. 1 or 1A stone (DOT Specification Section 703-02, Size Designations 1 or 1A).
- Recycled brick or concrete, conforming to *DER-10 – Section 5.4(e)(5)* from a DEC registered construction and demolition (C&D) debris processing facility.
- Stockpiled soils from AOC-1.0, subject to evaluation through the sampling and analysis program described in Section 10.3.
- Imported soils, subject to evaluation through the sampling and analysis program described below, unless from a source that has previously been approved by the DEC.

Sampling and Analysis Program (Soils from off-site source)

- Soil from an off-site source(s) shall be sampled for analysis in accordance with *DER-10 Table 5.4(e)10 – Recommended Number of Soil Samples for Soil Imported to or Exported from a Site*.

- The samples shall be collected at the borrow site by the Project Engineer and/or a representative of a New York State Department of Health (DOH) ELAP[11]-approved laboratory.
- The contractor shall assist with collection of the samples (i.e., provide backhoe or excavator with operator).
- The samples shall be submitted to the laboratory for analysis.
- Analytical results will be compared to the applicable Soil Cleanup Objectives (SCOs) in (DER-10) *Appendix 5 – Allowable Constituent Levels for Imported Fill or Soil* and must be reviewed and approved by the Project Engineer and DEC prior to importation of the material to the Site.
- If deemed necessary, a sample(s) shall be collected by the Project Engineer for sieve analysis.
- Refer to the QAPP in Appendix 2 for a summary of quality assurance/quality control (QA/QC), reporting and data validation considerations.

Backfill Placement

- Prior to placement of backfill materials, the excavation limits shall be lined with a demarcation layer such as orange construction fence or (orange) drainage geotextile (e.g., Mirafi 160N).
- The backfill materials shall be placed to the horizontal limits and depths indicated on *Figures RA-1* and *RA-2*. A minimum 2 feet of soil cover shall be provided in lawn areas.

Restoration

Restoration of the disturbed area shall be completed as follows:

- Installation of a minimum of 4inches of topsoil conforming to DOT Specification Section 713-01, or approved alternate material.
- Approval of imported topsoil is contingent upon analytical testing program results.
- Installation of Turf Reinforcement Mat (e.g., Tensar C350, or equal), at the locations indicated on *Figure RA-1*.

[11] ELAP – DOH Environmental Laboratory Approval Program.

- Seed and mulch per specifications on *Figure RA-2.*

11.2 Other Lawn Areas

The final ground surface elevations within proposed lawn areas other than the AOCs, will be evaluated against existing elevations and the analytical data with respect to whether a minimum of 2 feet of acceptable cover is present. If lawn areas with less than 2 feet of cover meeting the required criteria are present, subsurface conditions will be further evaluated in accordance with the Site Management Plan (SMP) and replacement soils/fill specified as/if needed.

11.3 Paved Parking Lot and Concrete Sidewalks

The cover system within the paved parking lot and drive lanes will consist of 4½ inches of asphalt pavement overlying 12 inches of crushed stone sub-base. Sidewalks will be comprised of 5 inches of reinforced concrete overlying 6 inches of crushed stone sub-base. Refer to the details on *Figure RA-2* for additional information concerning remedial excavation considerations.

11.4 Concrete Slab - Former East Building Pad

The cover system within the former East Building will consist of the existing concrete slab, to the limits shown on *Figure RA-3* and following completion of the following:

- Floor drain cleaning program. Refer to the previously referenced Remedial Investigation Work Plan (RIWP) for additional information.
- Modification of drains as needed to maintain positive drainage and avoid trapping of rainwater and surface runoff on top of the slab.
- Filling of drains using flowable fill material (i.e., low strength concrete, or "K-Crete").
- In order to allow for drainage of the slab that is to remain, the floor drains located adjacent to the east building wall will be filled with No. 2 crushed stone. Cuts will be made through the adjacent wall as needed to allow for the construction of overflow provisions on to the embankment (i.e., rip-rap outfall protection).
- Refer to *Figure RA-1* for additional information.

12.0 INSTALLATION OF SUB-SLAB DEPRESSURIZATION SYSTEM (AOC-3.1)

Installation of the sub-slab depressurization system will include the following sequential tasks:

- Demolition and removal of existing floor slab
- Evaluation of subsurface conditions below the slab

- Installation of sub-slab depressurization system
- Initial monitoring/testing

These tasks are described in the following sections:

12.1 Demolition and Removal of Existing Slab

The existing slab will be demolished using a backhoe(s), mini-excavator(s) and/or bobcat equipped with a "hoe-ram" attachment. The material will be loaded into backhoe or excavator buckets and visually inspected for the presence of significant visual staining which would suggest contact with contamination. Depending on the visual observations, the concrete will be relocated to one of two on-site locations:

- Crushing area [*Figure RA-1*], pending crushing and re-use on-Site as fill material consistent with the DEC's *DER-31/Green Remediation* Program Policy.
- Contaminated concrete stockpile area [*Figure RA-1*], for subsequent characterization and disposal off-site.

12.2 Subsurface Investigation

Once the slab is removed, evaluation of proposed subsurface conditions will consist of the following tasks:

Visual Walkover / PID Screening Program

- The exposed ground surface will be visually observed for indicators of potential volatile organic compound (VOC) sources. These may include, but are not necessarily limited to, access covers or vents which would suggest a possible existing or former buried storage tank or vault, non-aqueous phase liquid (NAPL) or "grossly contaminated media" as defined by the DEC[12].
- Photoionization Detection (PID) screening will be performed in a general "grid" pattern, with readings obtained from soil samples taken every approximately 400 square feet (i.e., 20 feet by 20 feet). A tentative grid layout is shown on the *West Building Subsurface* Investigation Plan [Figure RA-4, Appendix 1].
- Note that if the initial visual walkover survey indicates any obvious source(s) or gross contamination, the proposed grid may be modified, accordingly.
- A shallow, "shovel" test pit will be excavated at each sample location to depth of

[12] 6 NYCRR Subpart 375-1: *General Remedial Program Requirements*.

approximately 12 inches below the exposed ground surface. A soil sample from the bottom of the shovel test pit will be collected in a baggie. The head space within the baggie will be screened for the presence of VOC's using a calibrated PID meter.

- The PID meter will be equipped with an 11.7 electron volt (eV) lamp, if available. Otherwise, the meter will be equipped with a 10.6 eV lamp. Note that the primary VOC of concern, trichloroethene (TCE), has an ionization energy of 9.47 eV, which is within the detection range of either lamp.

Subsurface Soil and Groundwater Sampling and Analysis

- Two soil borings will be advanced within the West Building footprint. A temporary groundwater monitoring well will be installed within each soil boring. Locations of the borings/wells (SB-19/MW-10 and SB-20/MW-11) are shown on *Figure RA-4*. The final locations are subject to modification, depending on field screening results.

- A minimum of one soil and one groundwater sample will be obtained from each boring/well for VOC analysis.

- Procedures for advancement of the soil borings and construction of the groundwater monitoring wells are summarized in the *Deep Soil Boring Program (Below West Building)* [Appendix 3].

- Procedures for collection of soil and groundwater samples are provided in the *Quality Assurance Project Plan* [QAPP, Appendix 2].

12.3 Source Removal

Should any obvious source(s) of contamination be encountered, an environmental contractor shall be mobilized to the site and the sources addressed according to the following procedures:

12.3.1 Management of Contaminated Media

- Localized contaminated soils will be excavated, removed from the building and stockpiled on-site within a designated area, consistent with the procedures described in Section 10.1.

- Following removal of soils deemed to be contaminated, the area will be assessed consistent with the DEC's *DER-10 - Section 5.4 – Remediation Action Implementation Compliance*.

- The stockpiled soil shall be characterized and disposed of off-site. Refer to Section 14 – *Remedial Waste Management Program* for additional information.

- Groundwater exhibiting "free product", or non-aqueous phase liquid (NAPL), if encountered, shall be characterized and pumped out into a temporary storage tank or vacuum (vac) truck for subsequent off-site disposal [Section 14].

12.3.2 Buried Tanks or Vaults

Notifications / Permits

- Any tank(s) that are encountered beneath the former slab shall be registered for closure in accordance with the DEC's Petroleum Bulk Storage (PBS) or Chemical Bulk Storage (CBS) programs, as applicable.

Closure Program

- Any tanks or vaults that are encountered will be appropriately closed and the area assessed consistent with the DEC's *DER-10 - Section 5.5 – Underground Storage Tank Closure*, as applicable.

12.3.3 Backfilling

- The source removal areas shall be backfilled with gravel, rock or stone from a DOT-permitted quarry, placed and compacted in accordance with the requirements of the project geotechnical engineer.

- All proposed backfill material below the building slab is subject to approval by CM's geotechnical and/or structural engineer(s).

12.4 Installation of Cupolex System

A proprietary (i.e., "Cupolex") structural dome sub-slab depressurization (i.e., soil vapor extraction – SVE) and concrete flooring system will be installed. Pertinent features are described below. Refer to Appendix 4 for additional information.

- The system is designed to be "pre-emptive-adaptive", or with built-in flexibility for conversion to active ventilation if needed based on indoor air sampling results.

- The proposed structural dome elements are the Cupolex H.26(10"), or as otherwise specified by the Cupolex design engineer (Pontarolo Engineering). The elements will be placed on prepared sub-grade or structural fill, depending on the condition of the sub-grade from a geotechnical perspective.

- The floor slab design will be based on the following:
  - Uniform distributed loads of 150 pounds per square feet (psf) and 50 psf for the

commercial (retail) and residential areas of the building, respectively.

- A sub-grade modulus of 100 pounds per cubic inch.

- A minimum of two riser (vent) pipes will be provided for subsequent connection to fans (i.e., conversion to active system), if required. The vent pipes will be routed through the building roof.

12.5 Cupolex System Start-Up and Testing

- Following pouring of the concrete floor, the system will be tested by temporary application of a vacuum at one or more of the riser pipes, along with checking for signs of leakage at accessible construction joints and floor penetrations.

- Following completion of building construction but prior to occupancy, an initial air testing program will be performed to determine the need for conversion of the system to active operation. A minimum of two indoor and one outdoor (background) air samples will be obtained for VOC analysis per EPA Method TO-15[13].

- The samples will be collected using low flow-rate pumps (i.e., less than 0.2 liters per minute).

- Analysis and reporting will incorporate a detection limit of 0.25 mcg/m^3 for trichloroethene (TCE), tetrachloroethene, vinyl chloride and carbon tetrachloride (indoor and ambient/outdoor air).

- Refer to the QAPP [Appendix 2] for additional sampling and quality assurance/quality control (QA/QC) considerations.

- If indoor air sampling results indicate VOC detections that exceed DOH guidelines, an in-line fan/blower(s) used for vapor recovery will be installed on the building roof, for active operation of the system.

13.0 MONITORING WELL DECOMMISSIONING

As groundwater monitoring is not required, the nine existing monitoring wells and the two future wells [Section 12.2] will be decommissioned, based on the procedures in the DEC's *CP-43* guidance document. The specific procedure for each well will depend on the location of the well relative to the remedial excavation and planned site development areas. The anticipated procedures for the currently existing wells are summarized below:

---

[13] *Determination of Volatile Organic Compounds (VOCs) In Air Collected in Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).*

MW-1 – 4, & 6:

- Fill well with grout mixture to top elevation of bentonite seal.
- Remove flush mount casing and demolish and remove concrete pad.
- Over-drill annulus space to top of bentonite seal.
- Fill void spaces created by flush mount casing/pad removal and annulus over-drill, in addition to remaining upper riser with grout mixture.

MW- 5 & 7:

- Fill well with grout mixture to top elevation of bentonite seal.
- Remove flush mount casing and demolish and remove concrete pad.
- Mark well location using stake.
- During remedial excavation program, cut PVC riser pipe as close as practicable to bottom of excavation (approximately 2 feet) and fill to top with grout.

MW-8 & 9:

- Fill well with grout mixture to top elevation of bentonite seal.
- Over-drill annulus space to top of bentonite seal.
- Excavate soils around well (approximately 2 ft diameter) to approximately 1 ft below ground surface, cut riser pipe and remove.
- Fill void spaces created by annulus over-drill and excavation, in addition to remaining upper riser with grout mixture.

The grout mixture shall consist of the following:

- One 94-pound bag of Type 1 Portland cement
- 3.9 pounds powdered bentonite
- 7.8 gallons potable water

14.0 REMEDIAL WASTE MANAGEMENT PROGRAM

The Remedial Action is anticipated to generate the following wastes:

- Contaminated soils from remedial excavations within AOCs.

- Drill cuttings from soil borings and construction of monitoring wells below the West Building.
- Contaminated liquids, including water pumped from AOCs, monitoring well development and purge waters and equipment decontamination water.
- Used personal protective equipment (PPE) and sampling equipment.

Procedures to be utilized for management of the wastes are summarized in Appendix 5.

15.0 DECONTAMINATION PROGRAM

Decontamination procedures for heavy equipment and small equipment / hand tools are provided in Appendix 6. Personnel decontamination procedures are provided in TDK's (Draft) HASP [Appendix 7]. Decontamination procedures pertaining to contractor personnel, shall be performed in accordance with the contractor's site-specific HASP, as applicable.

16.0 HEALTH AND SAFETY PLAN (HASP) CONSIDERATIONS

The contractor(s) shall provide their own site-specific HASP, based on the information that is available to-date. All work shall be performed in accordance with applicable Occupational Safety and Health Administration (OSHA) regulations. A copy of TDK's (Draft) HASP, pertaining to TDK employees is provided in Appendix 7.

17.0 COMMUNITY AIR MONITORING PLAN (CAMP)

- Adherence to a Community Air Monitoring Plan (CAMP) is required for intrusive activities, including excavation of soils, demolition and removal of the West Building slab and loading of contaminated soils on to transport vehicles.
- A copy of the CAMP is provided in Appendix 8.

18.0 REPORTING

Upon completion of the Remedial Action program, a Final Engineering Report (FER) will be prepared, consistent with the requirements of DER-10. The FER will include the following elements:

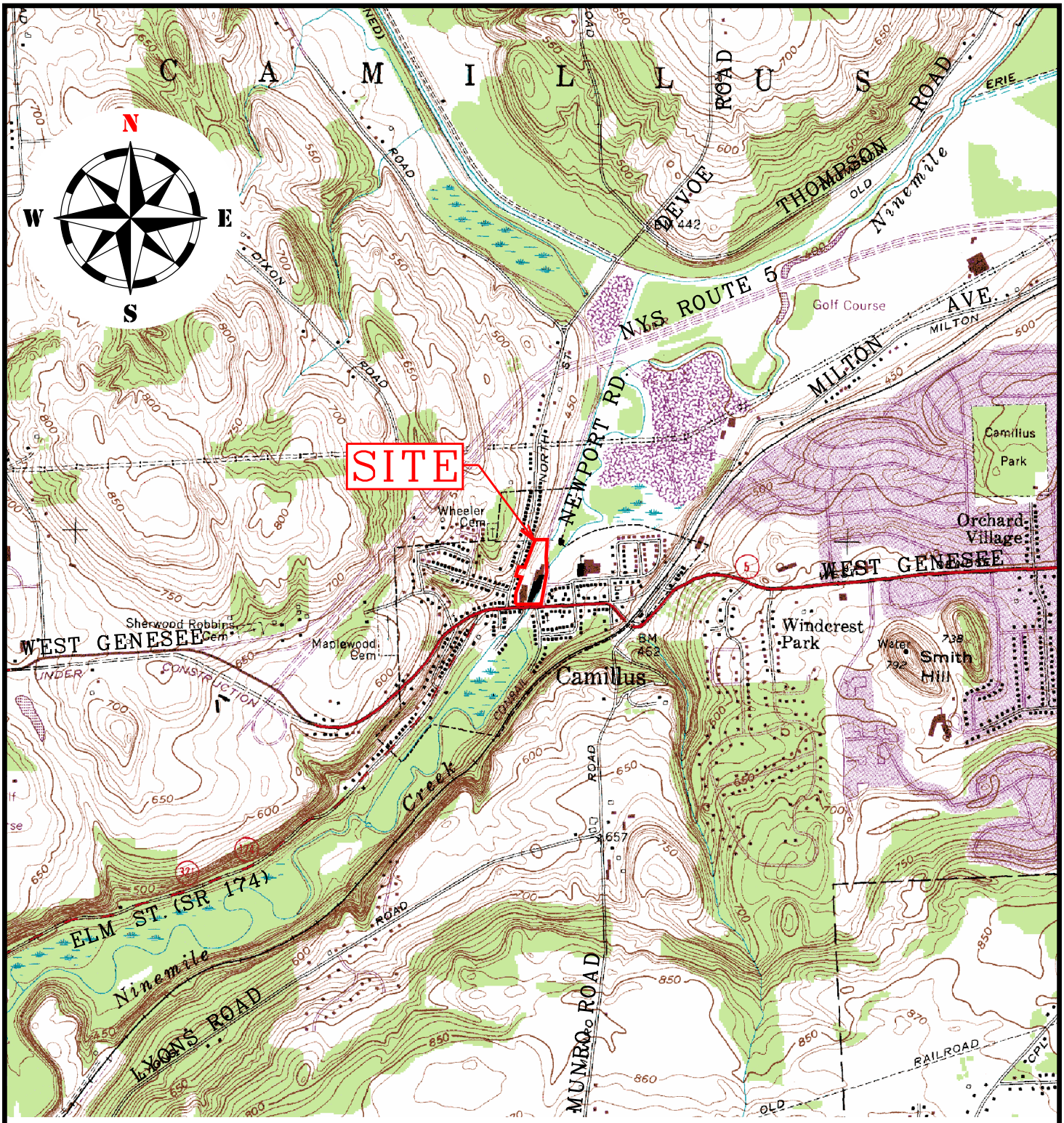
- A summary of all remedial actions completed.
- Disposal documentation (e.g., manifests, bill of ladings and weight tickets), and a summary of quantities of contaminated media removed from the Site.
- Summary of analytical results for confirmation/documentation samples, including identification of any potential remaining contamination to be addressed through the SMP.

- Boundary of environmental easement and descriptions of institutional and engineering controls.
- Record drawings.

19.0 SCHEDULE

The projected schedule for the Remedial Action (RA) phase of the project is provided in Appendix 9.

APPENDIX 1
Report Figures



REF: U.S.G.S. CAMILLUS, NY DATE: 1955 PHOTOREVISED 1978, 7.5 MIN., 1" = 2000'±

TDK Engineering Associates, PC

19 Genesee Street
Camillus, New York 13031
PH: (315) 672-8726 • FX: (315) 672-8732
www.tdkengineering.com

DRAWING TITLE:

SITE LOCATION MAP

PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE

CLIENT:

CAMILLUS MILLS, LLC

LOCATION:

VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

PROJECT No.:	2009040
SCALE:	1"= 2000'
DATE:	07-12-16
ENG'D BY:	TDK
DRAWN BY:	DKC
CHECKED BY:	JED

SHEET NO.

LM–1

INSTALLATION OF SUB-SLAB DEPRESSURIZATION SYSTEM
- DEMOLISH AND REMOVE EXISTING CONCRETE FLOOR SLAB
- EVALUATE SUBSURFACE CONDITIONS PER REMEDIAL ACTION WORK PLAN
- INSTALL SUB-SLAB DEPRESSURIZATION (CUPOLEX) SYSTEM

AOC-3.1: SVI AREA - WEST PARCEL

EXCAVATE AND STOCKPILE SOIL. BACKFILL AND RESTORE TO APPROXIMATE LEVELS SHOWN. REFER TO SEEDED LAWN SECTION (REMEDIAL EXCAVATION AREAS) ON FIGURE RA-2.

AOC-2.2: SURFACE SOILS - LAWN AREAS

AOC-3.2: SVI AREA - EAST PARCEL

BCP SITE LIMITS (4.30 ACRES)

AOC-2.1: SURFACE SOILS - EAST EMBANKMENT

PROPERTY LIMITS (4.42 ACRES)

AOC-1: WASTEWATER COLLECTION CHAMBER AREA

WEST BUILDING
FINISHED FLOOR ELEV. 416.7±

EAST PARCEL
FORMER EAST BUILDING
(DESTROYED BY FIRE FEB. 11, 2013)
FINISHED FLOOR ELEV. 406.6±

WEST PARCEL

MONITORING WELL TO BE DECOMMISSIONED (TYP.) REFER TO REMEDIAL ACTION WORK PLAN AND TYPICAL MONITORING WELL ABANDONMENT DETAIL FOR ADDITIONAL INFORMATION

CONTAMINATED SOIL STAGING AREA (AOC-2.1)

CONTAMINATED SOIL STAGING AREA (AOC-2.2)

POTENTIALLY CONTAMINATED SOIL STAGING AREA (AOC-1)

CONTAMINATED CONCRETE STAGING AREA (TENTATIVE)

2 FOOT HIGH BERM (TYP.) FIELD-ADJUST LIMITS AS REQUIRED

CONSTRUCT STAGING AREAS AND DECONTAMINATION PAD

21,000 GALLON FRAC TANK LOCATIONS

CONCRETE CRUSHING AREA (TENTATIVE)

EQUIPMENT DECONTAMINATION PAD

FOLLOWING CLEANING, CATCH BASINS, FIRE BRICK OVEN PITS, UTILITY TRENCHES AND FLOOR DRAINS TO BE FILLED WITH FLOWABLE FILL MATERIAL (E.G., LOW STRENGTH CONCRETE, OR "K-CRETE") UNLESS NOTED OTHERWISE

FOLLOWING CLEANING, FLOOR DRAINS FD-2 AND FD-3 AND WASTEWATER COLLECTION CHAMBER TO BE FILLED WITH No. 2 STONE (DOT SPECIFICATION SECTION 703-02, SIZE DESIGNATION 2).

PROVIDE FLOW PATH CONNECTION FROM FD-2 AND FD-3 TO WASTEWATER COLLECTION CHAMBER USING No. 2 STONE (TYP.)

DEMOLISH AND REMOVE 4 FT WIDE BY 1 FT DEEP SECTION OF FOUNDATION WALL (BOTTOM ELEV. 405.51). PROVIDE DOT ITEM 620.03 LIGHT STONE FILL (RIP-RAP) SPILLWAY.

CLEAR BRUSH AND SMALL TREES. EXCAVATE AND STOCKPILE SOILS. BACKFILL AND RESTORE TO APPROXIMATE LIMITS SHOWN. REFER TO SEEDED LAWN SECTION (REMEDIAL EXCAVATION AREAS) ON FIGURE RA-2.

INSTALL TURF REINFORCEMENT MAT ALONG EASTERN 5 TO 10 FEET OF EXCAVATION AREAS AOC-1 AND 2.1

SILT FENCE

PROPOSED SANITARY SEWER REPLACEMENT LIMITS (CONTINGENCY PLAN - CP)

APPROX. LOCATION OF STORM SEWER PER CNY LAND SURVEYING MAP

CONSTRUCTION VEHICLE ENTRANCE

KEY

- SVP-1 — SOIL VAPOR PROBE LOCATION (FEB. 2016)
- SSP-1 — SUB-SLAB VAPOR PROBE LOCATION (FEB. 2016)
- IA, OA — INDOOR, OUTDOOR AIR SAMPLE LOCATIONS (FEB. 2016)
- SB-2 — SOIL BORING / TEMPORARY MONITORING WELL LOCATION REFERENCE: ASE SCREENING - LEVEL SITE INVESTIGATION FORMER CAMILLUS CUTLERY SITE, OCTOBER 2008.
- SB-5 / MW-5 — SOIL BORING / MONITORING WELL LOCATION (SEPT. 2013)
- SB-12 — SOIL BORING LOCATION (SEPT. 2013)
- SS-1 — SURFACE SOIL SAMPLE LOCATION (SEPT. 2013)
- CP-1 — CONTINGENCY PLAN SOIL SAMPLE LOCATION (PROPOSED)
- OIL HOUSE (1911) — FORMER CUTLERY PROCESS / STORAGE AREA (BASE MAP REFERENCE NO. 2)
- AREA OF CONCERN (UPDATED)

UTILITY KEY

CB-4	CATCH BASIN
	FLOOR DRAIN
	UTILITY TRENCH
R.E.	RIM ELEVATION
I.E.	INVERT ELEVATION
W	WATER LINE
SAN	SANITARY SEWER
ST	STORM SEWER
E	UNDERGROUND ELECTRIC

LEGEND

	PAVEMENT EDGE
IRF	IRON ROD FOUND
IPF	IRON PIN FOUND
	SIGN - SINGLE POST
UP	UTILITY POLE
UP	UTILITY POLE WITH LIGHT
	GUY WIRE & ANCHOR
CB	CATCH BASINS
MH	MANHOLE
HYD	HYDRANT
WV	WATER VALVE
GV	GAS VALVE
24"	DECIDUOUS TREE, DIAMETER AT BREAST HEIGHT

ABBREVIATIONS

Asp.	ASPHALT
Bot.	BOTTOM
CC	CURB CUT
Conc.	CONCRETE
FF	FIRST FLOOR ELEVATION
Inv.	INVERT
N / F	NOW OR FORMERLY
Pvmt.	PAVEMENT
STY.	STORY

1" = 20' SCALE — 20 0 20 40 FEET

BASE MAP REFERENCES:

1. ASE SCREENING - LEVEL SITE INVESTIGATION, FORMER CAMILLUS CUTLERY SITE, OCTOBER 2008.
2. HISTORIC SANBORN FIRE INSURANCE MAPS, DATED 1911, 1927 AND 1940.
3. FIELD MAPPING COMPLETED BY TDK ENGINEERING ASSOCIATES P.C., ON JULY 11, 2012, JULY-SEPTEMBER 2013 AND FEBRUARY 2016.
4. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY CNY LAND SURVEYING, FILE NO. 11.128, DATED 03-09-12.
5. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY EXTERIOR UNDERWRITERS INSPECTION BUREAU, DATED NOV. 19, 1940.
6. MAP OF PART OF F.L. 80 TOWN OF CAMILLUS, VILLAGE OF CAMILLUS, ONONDAGA CO., NY, CAMILLUS CUTLERY COMPANY, NEW YORK, PREPARED BY RICHARD ZOGG, DATED JANUARY 22, 1974.
7. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY BROWN CROSBY & CO., INC. INSURANCE, DATED JUNE 1928.
8. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY ISO NEW YORK, DATED OCTOBER 24, 1972.
9. "PRELIMINARY" VILLAGE OF CAMILLUS (PLAN), DATED OCTOBER 1967.
10. CAMILLUS CUTLERY COMPANY RELOCATION OF STORM & SANITARY SEWER PLAN & PROFILE, PREPARED BY O'BRIEN & GERE ENGINEERS, INC., DATED MAY 3, 1972.
11. SURVEY MAP BUILDINGS AND PROPERTY OF CAMILLUS CUTLERY CO., PREPARED BY A.R. HOLMES (LIC. NO. 42671, DATED JANUARY 5, 1945.
12. NORTH STREET/MAIN STREET DRAINAGE IMPROVEMENTS PLAN & PROFILE, PREPARED BY BARTON & LOGUIDICE, P.C., DATED APRIL 1993.
13. PROPOSED NEW BUILDING ROUTING - CAMILLUS CUTLERY COMPANY (PLAN - DATE NOT LEGIBLE).
14. VILLAGE OF CAMILLUS FIRST STREET SEWER REPLACEMENT : GENERAL SEWER PLAN, PREPARED BY BARTON & LOGUIDICE, DATED MARCH 11, 1987.
15. ALTERATIONS TO THE CAMILLUS CUTLERY COMPANY BUILDING NO. 5 FIRST FLOOR - FLOOR PLAN, PREPARED BY DAN LEARY, ARCHITECT AIA, DATED APRIL 10, 1969.
16. CLOSED-CIRCUIT TELEVISION (CCTV) INSPECTION OF SANITARY SEWER CONDUCTED IN MAY 2012 BY ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION (WEP).
17. EXPANDED REMEDIAL INVESTIGATION PARTIAL PLAN, PREPARED BY TDK, DATED JUNE 8, 2016.
18. BOUNDARY SURVEY - PART OF LOT 80, VILLAGE OF CAMILLUS, COUNTY OF ONONDAGA, STATE OF NEW YORK, PREPARED BY CNY LAND SURVEYING, FILE No. 15.116, DATED JULY 5, 2016.

NOTES:

1. LIMITS OF AREAS OF CONCERN (AOC's) ARE APPROXIMATE.
2. THE LOCATIONS OF THE FOLLOWING ARE BASED ON AVAILABLE HISTORIC SOURCES AND ARE APPROXIMATE:
   - WATER SERVICE LINES
   - INTERIOR BUILDING WALLS
   - FORMER SANITARY FORCE MAIN
3. INTERIOR BUILDING WALLS REFLECT LOWER FLOORS.
4. BCP/SITE BOUNDARY MODIFICATION ADJACENT TO SOUTH WALL OF WEST BUILDING APPROVED THROUGH VILLAGE OF CAMILLUS BOARD RESOLUTION ON JULY 8, 2016, SUBJECT TO MODIFICATION BY VILLAGE ATTORNEY.
5. LOCATIONS AND DIMENSIONS OF CONTAMINATED SOIL STAGING AREAS AND EQUIPMENT DECONTAMINATION PAD ARE TENTATIVE AND SUBJECT TO MODIFICATION.

FIGURE RA-1 – REMEDIAL ACTION PLAN

7-12-16

PROJECT No.: 2009040
SCALE: 1" = 20'
DATE: 04-05-13
ENG'D BY: JCH
DRAWN BY: DKC
CHECKED BY: JED

DRAWING TITLE: REMEDIAL ACTION PLAN
SHEET: RA-1

PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE
CLIENT: CAMILLUS MILLS, LLC
LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

TDK Engineering Associates, PC
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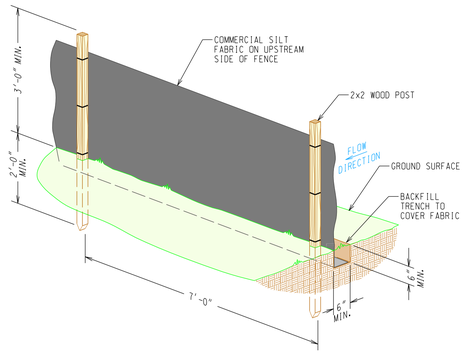
REVISIONS:
1. UPDATED 02/2016 PER REMEDIAL INVESTIGATION
   UPDATED 09-16-13 PER FIELD MAPPING AND HISTORIC MAPS/PLANS
   REVISED 07-05-13 PER DEC COMMENTS

NOTE: NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

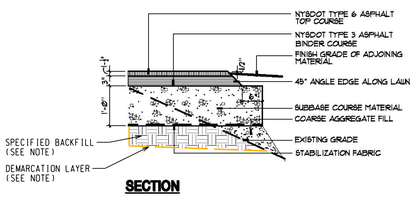


NOTES:

1. FILTER CLOTH SHALL BE MIRAFI 100X, "STABLELINK T140N". IF A PREFABRICATED UNIT IS UTILIZED USE ENVIROFENCE.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL

NOT TO SCALE



SECTION

ASPHALT PAVEMENT - PARKING

NOT TO SCALE **32-1215-02**

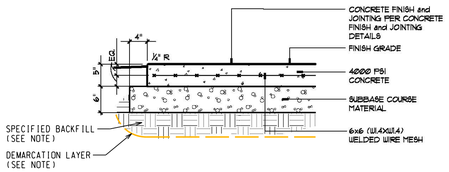
(REMEDIAL EXCAVATION PER SITE MANAGEMENT PLAN, IF NECESSARY)

NOTES:

1. BACKFILL SHALL CONSIST OF ANY ONE, OR COMBINATION OF THE FOLLOWING:
   - GRAVEL, ROCK OR STONE FROM A NYSDOT PERMITTED MINE OR QUARRY:
     - MATERIAL CONFORMING TO DER-10-SECTION 5.4(e)(5) OR:
     - DOT ITEM 304.12 OR 304.14 CRUSHED STONE (TYPE 2 OR 4 SUBBASE) OR:
     - DOT No. 1 OR 1A CRUSHED STONE (DOT SPECIFICATION SECTION 703-02, SIZE DESIGNATION 1 OR 1A).
   - RECYCLED BRICK OR CONCRETE, CONFORMING TO DER-10-SECTION 5.4(e)(5) FROM A DEC-REGISTERED CONSTRUCTION AND DEMOLITION PROCESSING FACILITY
   - STOCKPILED SOILS FROM AOC-1.0 AND/OR SOIL FROM AN OFF-SITE SOURCE (E.G., TOPSOIL), SUBJECT TO EVALUATION THROUGH A SAMPLING AND ANALYSIS PROGRAM. REFER TO REMEDIAL ACTION WORK PLAN FOR ADDITIONAL INFORMATION.
2. DEMARCATION LAYER SHALL CONSIST OF ORANGE CONSTRUCTION FENCE OR (ORANGE) DRAINAGE GEOTEXTILE (E.G., MIRAFI 160N).

REFERENCE:

CAMILLUS MILLS - DETAIL SHEET L400, PREPARED BY KEPLINGER FREEMAN ASSOCIATES, DATED JUNE 7, 2016.



SECTION

CONCRETE PAVEMENT

NOT TO SCALE **32-1215-01**

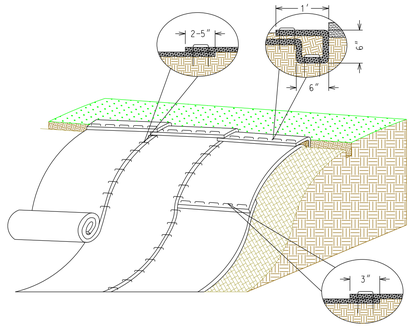
(REMEDIAL EXCAVATION PER SITE MANAGEMENT PLAN, IF NECESSARY)

NOTES:

1. BACKFILL SHALL CONSIST OF ANY ONE, OR COMBINATION OF THE FOLLOWING:
   - GRAVEL, ROCK OR STONE FROM A NYSDOT PERMITTED MINE OR QUARRY:
     - MATERIAL CONFORMING TO DER-10-SECTION 5.4(e)(5) OR:
     - DOT ITEM 304.12 OR 304.14 CRUSHED STONE (TYPE 2 OR 4 SUBBASE) OR:
     - DOT No. 1 OR 1A CRUSHED STONE (DOT SPECIFICATION SECTION 703-02, SIZE DESIGNATION 1 OR 1A).
   - RECYCLED BRICK OR CONCRETE, CONFORMING TO DER-10-SECTION 5.4(e)(5) FROM A DEC-REGISTERED CONSTRUCTION AND DEMOLITION PROCESSING FACILITY
   - STOCKPILED SOILS FROM AOC-1.0 AND/OR SOIL FROM AN OFF-SITE SOURCE (E.G., TOPSOIL), SUBJECT TO EVALUATION THROUGH A SAMPLING AND ANALYSIS PROGRAM. REFER TO REMEDIAL ACTION WORK PLAN FOR ADDITIONAL INFORMATION.
2. DEMARCATION LAYER SHALL CONSIST OF ORANGE CONSTRUCTION FENCE OR (ORANGE) DRAINAGE GEOTEXTILE (E.G., MIRAFI 160N).

REFERENCE:

CAMILLUS MILLS - DETAIL SHEET L400, PREPARED BY KEPLINGER FREEMAN ASSOCIATES, DATED JUNE 7, 2016.



CONSTRUCTION SPECIFICATIONS

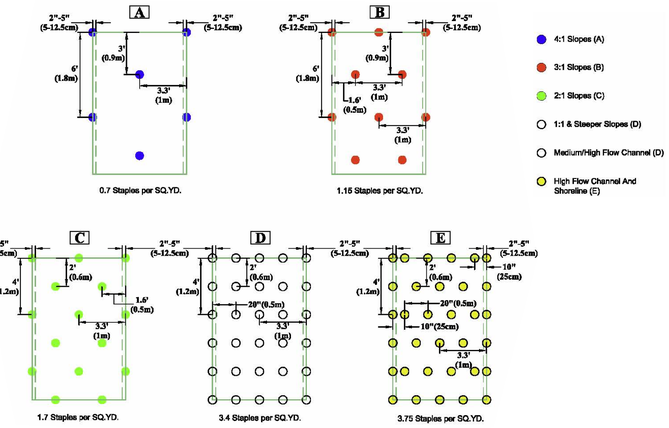
1. A MINIMUM OF 4 INCHES OF TOPSOIL AND SPECIFIED SEED TO BE PLACED PRIOR TO INSTALLATION OF ROLLED EROSION CONTROL PRODUCTS.
2. TURF REINFORCEMENT MAT SHALL BE "V-MAX C350" MANUFACTURED BY TENSAR, OR APPROVED EQUAL.
3. TURF REINFORCEMENT MATS TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND GUIDELINES.
4. TURF REINFORCEMENT MATS SHALL BE FASTENED ACCORDING TO STAPLE PATTERN GUIDE.
5. GEOTECHNICAL ENGINEER TO CONFIRM THAT WIRE STAPLES ARE ADEQUATE FOR SOIL CONDITIONS. ALTERNATE ANCHORING DEVICE MAY BE REQUIRED.

ROLLED EROSION CONTROL SLOPE INSTALLATION (TURF REINFORCEMENT MAT)

NOT TO SCALE

REFERENCE:

"TENSAR NORTH AMERICAN GREEN, SLOPE INSTALLATION DETAIL", DRAWN ON 03-16-11.

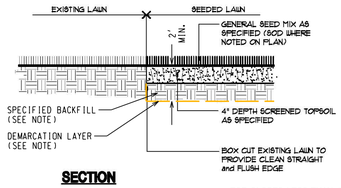


ROLLED EROSION CONTROL STAPLE PATTERN GUIDE

NOT TO SCALE

REFERENCE:

"TENSAR NORTH AMERICAN GREEN, STAPLE PATTERN GUIDE", DRAWN ON 03-16-11.



SECTION

SEEDED LAWN FOR SLOPES LESS THAN 1V:4H AS INDICATED ON PLANS

NOT TO SCALE **32-9200-01A**

(REMEDIAL EXCAVATION AREAS)

NOTES:

1. BACKFILL SHALL CONSIST OF ANY ONE, OR COMBINATION OF THE FOLLOWING:
   - GRAVEL, ROCK OR STONE FROM A NYSDOT PERMITTED MINE OR QUARRY:
     - MATERIAL CONFORMING TO DER-10-SECTION 5.4(e)(5) OR:
     - DOT ITEM 304.12 OR 304.14 CRUSHED STONE (TYPE 2 OR 4 SUBBASE) OR:
     - DOT No. 1 OR 1A CRUSHED STONE (DOT SPECIFICATION SECTION 703-02, SIZE DESIGNATION 1 OR 1A).
   - RECYCLED BRICK OR CONCRETE, CONFORMING TO DER-10-SECTION 5.4(e)(5) FROM A DEC-REGISTERED CONSTRUCTION AND DEMOLITION PROCESSING FACILITY
   - STOCKPILED SOILS FROM AOC-1.0 AND/OR SOIL FROM AN OFF-SITE SOURCE (E.G., TOPSOIL), SUBJECT TO EVALUATION THROUGH A SAMPLING AND ANALYSIS PROGRAM. REFER TO REMEDIAL ACTION WORK PLAN FOR ADDITIONAL INFORMATION.
2. DEMARCATION LAYER SHALL CONSIST OF ORANGE CONSTRUCTION FENCE OR (ORANGE) DRAINAGE GEOTEXTILE (E.G., MIRAFI 160N).

REFERENCE:

CAMILLUS MILLS - DETAIL SHEET L400, PREPARED BY KEPLINGER FREEMAN ASSOCIATES, DATED JUNE 7, 2016.

LANDSCAPE SPECIFICATIONS

TOPSOIL

TOPSOIL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF NYSDOT SPECIFICATION SECTION 713-01, OR AS SPECIFIED BY PROJECT (SITE WORK) ENGINEER.

MINIMUM THICKNESS OF 4-INCHES.

AREAS RECEIVING TOPSOIL SHALL BE LEFT NEATLY GRADED AND READY TO RECEIVE SEEDING.

SEEDING

WORK FOR SEEDING SHALL CONSIST OF PREPARING GROUND SURFACES, FURNISHING AND APPLYING FERTILIZER, SEED, AND MULCH TO THE AREAS INDICATED BY THE PLANS, STANDARD DETAILS AND OTHER AREAS AS DIRECTED BY THE PROJECT (SITE WORK) ENGINEER.

MATERIALS FOR SEED, FERTILIZER AND MULCH SHALL CONFORM TO THE REQUIREMENTS OF NYSDOT SPECIFICATION SECTION 713, OR SHALL BE APPROVED BY THE PROJECT (SITE WORK) ENGINEER.

THE AREAS TO BE SEEDED SHALL BE THOROUGHLY PREPARED PRIOR TO SEEDING. SEED, FERTILIZER AND MULCH SHALL BE EVENLY DISTRIBUTED. MULCH SHALL BE APPLIED IN THE AMOUNTS SPECIFIED BELOW.

SUGGESTED SEED MIX (OR AS SPECIFIED BY PROJECT (SITE WORK) ENGINEER):

DISTURBED AREAS

NAME	PLS lbs/ACRE	PLS lbs/1,000 SQ. FT.
65% KENTUCKY BLUEGRASS	85-114	2.0-2.6
20% PERENNIAL RYEGRASS	26-35	0.6-0.8
15% FINE FESCUE	19-26	0.4-0.6
TOTAL	130-175	3.0-4.0

PLS-PURE LIVE SEED

MULCH (HAY OR STRAW) SHALL CONSIST OF BALED WHEAT, OAT, RYE OR OTHER GRASSES AND BE APPLIED AT THE RATE OF 2 TONS PER ACRE. THE MULCH SHALL BE ANCHORED WITH A COMMERCIALLY AVAILABLE MULCH ANCHORAGE PRODUCT.

ANCHORING: BIODEGRADABLE EROSION CONTROL BLANKET

HYDROMULCH SHALL BE COMPOSED OF WOOD CELLULOSE FIBER HAVING THE FOLLOWING CHARACTERISTICS:
- HYDROMULCH SHALL BE COLORED GREEN. HYDROSEED / HYDROMULCH SHALL BE APPLIED AT THE RATE OF 2,500 POUNDS PER ACRE.
- PERCENT MOISTURE CONTENT: 9.0% (+3.0%)
- PERCENT ORGANIC MATTER: 99.2%(+0.08%)
- PERCENT ASH CONTENT: 0.8%(+0.2%)
- PH: 4.8(+0.5)
- WATER HOLDING CAPACITY: MIN. 1,150 GRAMS WATER / 100 GRAMS FIBER

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DATE:

REVISIONS:

PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE

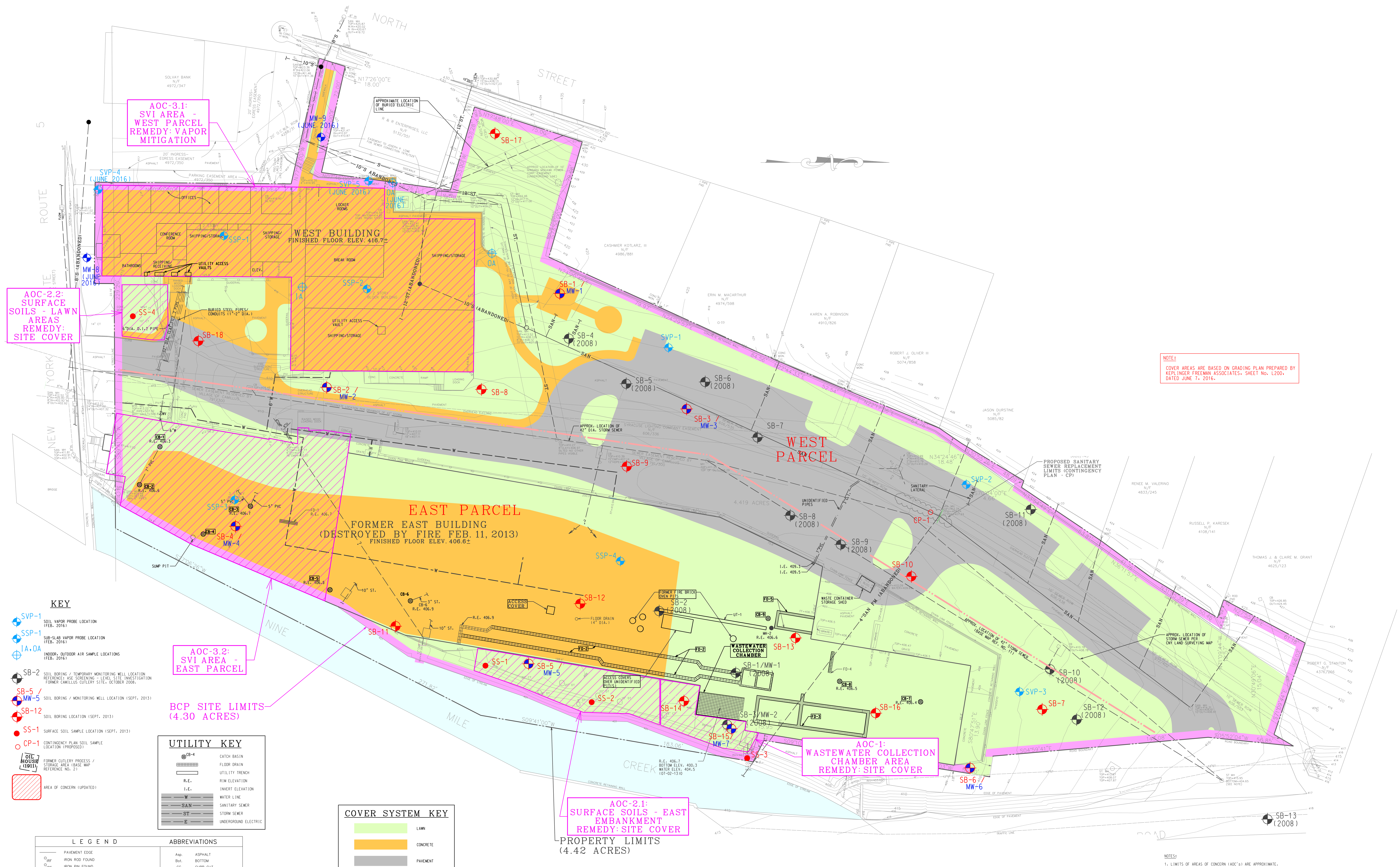
CLIENT: CAMILLUS MILLS, LLC

LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

DRAWING TITLE:
REMEDIAL ACTION DETAILS

PROJECT No.: 2009040
SCALE: AS NOTED
DATE: 07-12-16
ENG'D BY: JCH
DRAWN BY: DKC
CHECKED BY: JED

SHEET NO.
RA-2



AOC-3.1: SVI AREA - WEST PARCEL REMEDY: VAPOR MITIGATION
AOC-2.2: SURFACE SOILS - LAWN AREAS REMEDY: SITE COVER
AOC-3.2: SVI AREA - EAST PARCEL
BCP SITE LIMITS (4.30 ACRES)
AOC-2.1: SURFACE SOILS - EAST EMBANKMENT REMEDY: SITE COVER
PROPERTY LIMITS (4.42 ACRES)
AOC-1: WASTEWATER COLLECTION CHAMBER AREA REMEDY: SITE COVER
WEST BUILDING FINISHED FLOOR ELEV. 416.7±
WEST PARCEL
EAST PARCEL
FORMER EAST BUILDING (DESTROYED BY FIRE FEB. 11, 2013) FINISHED FLOOR ELEV. 406.6±
NORTH STREET
ROUTE 5
NEW YORK
NINE MILE CREEK
NOTE: COVER AREAS ARE BASED ON GRADING PLAN PREPARED BY KEPLINGER FREEMAN ASSOCIATES, SHEET No. L200, DATED JUNE 7, 2016.
PROPOSED SANITARY SEWER REPLACEMENT LIMITS (CONTINGENCY PLAN - CP)
KEY
SVP-1 SOIL VAPOR PROBE LOCATION (FEB. 2016)
SSP-1 SUB-SLAB VAPOR PROBE LOCATION (FEB. 2016)
IA, OA INDOOR, OUTDOOR AIR SAMPLE LOCATIONS (FEB. 2016)
SB-2 SOIL BORING / TEMPORARY MONITORING WELL LOCATION REFERENCE: ASE SCREENING - LEVEL SITE INVESTIGATION FORMER CAMILLUS CUTLERY SITE, OCTOBER 2008.
SB-5 / MW-5 SOIL BORING / MONITORING WELL LOCATION (SEPT. 2013)
SB-12 SOIL BORING LOCATION (SEPT. 2013)
SS-1 SURFACE SOIL SAMPLE LOCATION (SEPT. 2013)
CP-1 CONTINGENCY PLAN SOIL SAMPLE LOCATION (PROPOSED)
OIL HOUSE (1911) FORMER CUTLERY PROCESS / STORAGE AREA (BASE MAP REFERENCE NO. 2)
AREA OF CONCERN (UPDATED)
UTILITY KEY
CATCH BASIN
FLOOR DRAIN
UTILITY TRENCH
RIM ELEVATION
INVERT ELEVATION
WATER LINE
SANITARY SEWER
STORM SEWER
UNDERGROUND ELECTRIC
COVER SYSTEM KEY
LAWN
CONCRETE
PAVEMENT
LEGEND
PAVEMENT EDGE
IRON ROD FOUND
IRON PIN FOUND
SIGN - SINGLE POST
UTILITY POLE
UTILITY POLE WITH LIGHT
GUY WIRE & ANCHOR
CATCH BASINS
MANHOLE
HYDRANT
WATER VALVE
GAS VALVE
DECIDUOUS TREE, DIAMETER AT BREAST HEIGHT
ABBREVIATIONS
Asp. ASPHALT
Bot. BOTTOM
CC CURB CUT
Conc. CONCRETE
FF FIRST FLOOR ELEVATION
Inv. INVERT
N / F NOW OR FORMERLY
Pvmt. PAVEMENT
STY. STORY
1" = 20'
SCALE
FEET

BASE MAP REFERENCES:

1. ASE SCREENING - LEVEL SITE INVESTIGATION, FORMER CAMILLUS CUTLERY SITE, OCTOBER 2008.
2. HISTORIC SANBORN FIRE INSURANCE MAPS, DATED 1911, 1927 AND 1940.
3. FIELD MAPPING COMPLETED BY TDK ENGINEERING ASSOCIATES P.C., ON JULY 11, 2012, JULY-SEPTEMBER 2013 AND FEBRUARY 2016.
4. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY CNY LAND SURVEYING, FILE NO. 11.128, DATED 03-09-12.
5. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY EXTERIOR UNDERWRITERS INSPECTION BUREAU, DATED NOV. 19, 1940.
6. MAP OF PART OF F.L. 80 TOWN OF CAMILLUS, VILLAGE OF CAMILLUS, ONONDAGA CO., NY, CAMILLUS CUTLERY COMPANY, NEW YORK, PREPARED BY RICHARD ZOGG, DATED JANUARY 22, 1974.
7. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY BROWN CROSBY & CO., INC. INSURANCE, DATED JUNE 1928.
8. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY ISO NEW YORK, DATED OCTOBER 24, 1972.
9. "PRELIMINARY" VILLAGE OF CAMILLUS (PLAN), DATED OCTOBER 1967.
10. CAMILLUS CUTLERY COMPANY RELOCATION OF STORM & SANITARY SEWER PLAN & PROFILE, PREPARED BY O'BRIEN & GERE ENGINEERS, INC., DATED MAY 3, 1972.
11. SURVEY MAP BUILDINGS AND PROPERTY OF CAMILLUS CUTLERY CO., PREPARED BY A.R. HOLMES (LIC. NO. 4267), DATED JANUARY 5, 1945.
12. NORTH STREET/MAIN STREET DRAINAGE IMPROVEMENTS PLAN & PROFILE, PREPARED BY BARTON & LOGUIDICE, P.C., DATED APRIL 1993.
13. PROPOSED NEW BUILDING ROUTING - CAMILLUS CUTLERY COMPANY (PLAN - DATE NOT LEGIBLE).
14. VILLAGE OF CAMILLUS FIRST STREET SEWER REPLACEMENT : GENERAL SEWER PLAN, PREPARED BY BARTON & LOGUIDICE, DATED MARCH 11, 1987.
15. ALTERATIONS TO THE CAMILLUS CUTLERY COMPANY BUILDING NO. 5 FIRST FLOOR - FLOOR PLAN, PREPARED BY DAN LEARY, ARCHITECT AIA, DATED APRIL 10, 1969.
16. CLOSED-CIRCUIT TELEVISION (CCTV) INSPECTION OF SANITARY SEWER CONDUCTED IN MAY 2012 BY ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION (WEP).
17. EXPANDED REMEDIAL INVESTIGATION PARTIAL PLAN, PREPARED BY TDK, DATED JUNE 8, 2016.
18. BOUNDARY SURVEY - PART OF LOT 80, VILLAGE OF CAMILLUS, COUNTY OF ONONDAGA, STATE OF NEW YORK, PREPARED BY CNY LAND SURVEYING, FILE No. 15.116, DATED JULY 5, 2016.

NOTES:

1. LIMITS OF AREAS OF CONCERN (AOC's) ARE APPROXIMATE.
2. THE LOCATIONS OF THE FOLLOWING ARE BASED ON AVAILABLE HISTORIC SOURCES AND ARE APPROXIMATE:
   - WATER SERVICE LINES
   - INTERIOR BUILDING WALLS
   - FORMER SANITARY FORCE MAIN
3. INTERIOR BUILDING WALLS REFLECT LOWER FLOORS.
4. BCP/SITE BOUNDARY MODIFICATION ADJACENT TO SOUTH WALL OF WEST BUILDING APPROVED THROUGH VILLAGE OF CAMILLUS BOARD RESOLUTION ON JULY 8, 2016, SUBJECT TO MODIFICATION BY VILLAGE ATTORNEY.

FIGURE RA-3 – COVER SYSTEM PLAN

7-12-16

PROJECT No.: 2009040
SCALE: 1" = 20'
DATE: 04-05-13
ENG'D BY: JCH
DRAWN BY: CIE
CHECKED BY: JED

DRAWING TITLE: COVER SYSTEM PLAN
SHEET: RA-3

PROJECT: BROWNFIELD CLEANUP PROGRAM FORMER CAMILLUS CUTLERY COMPANY SITE
CLIENT: CAMILLUS MILLS, LLC
LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

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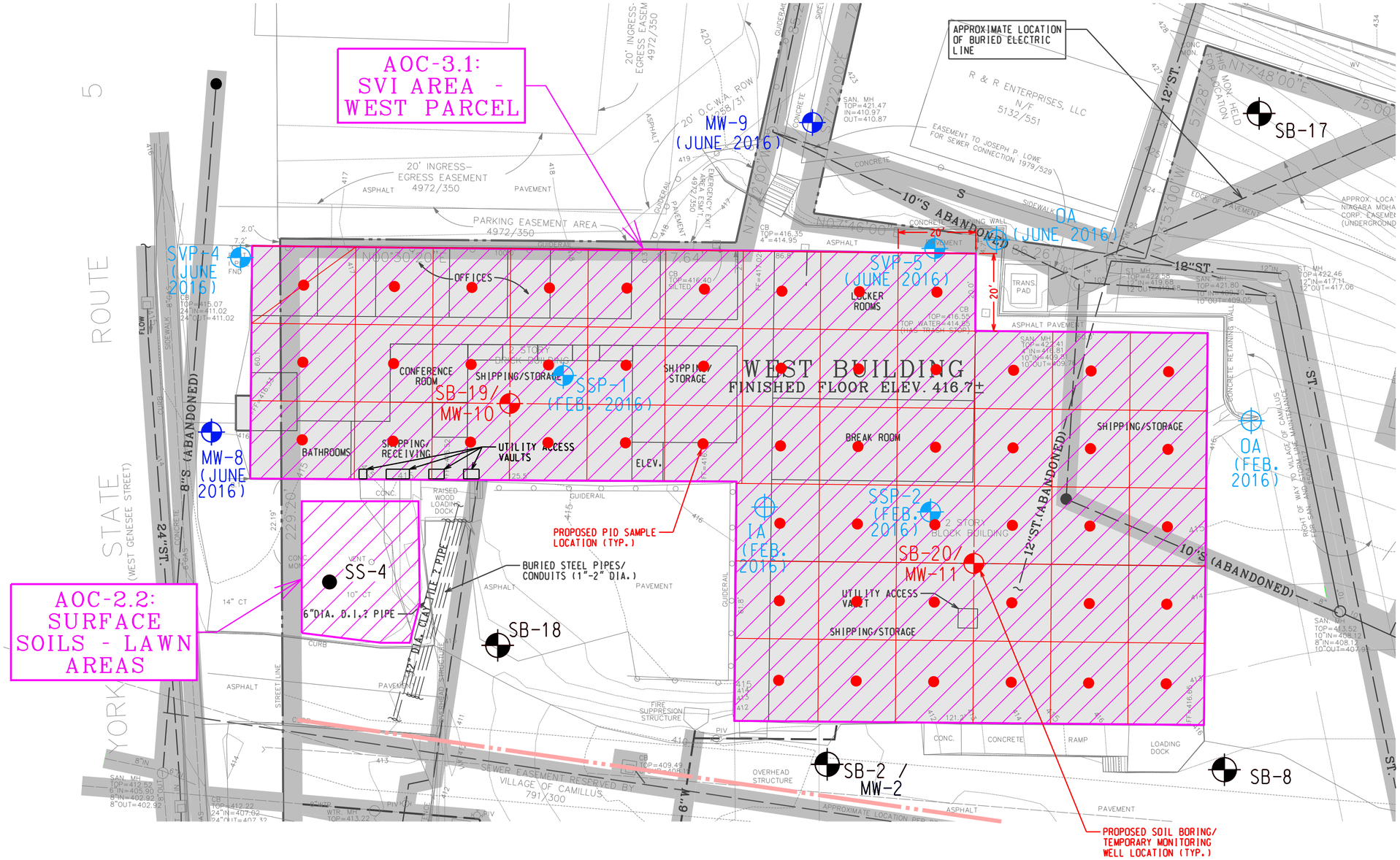
REVISIONS:
UPDATED 02/2016 PER REMEDIAL INVESTIGATION
UPDATED 09-16-13 PER FIELD MAPPING AND HISTORIC MAPS/PLANS
REVISED 07-05-13 PER DEC COMMENTS



KEY

- SVP-1 — SOIL VAPOR PROBE LOCATION (FEB. & JUNE 2016)
- SSP-1 — SUB-SLAB VAPOR PROBE LOCATION (FEB. 2016)
- IA, OA — INDOOR, OUTDOOR AIR SAMPLE LOCATIONS (FEB. & JUNE 2016)
- MW-8 — MONITORING WELL (JUNE 2016)
- ● — PROPOSED PID SAMPLE LOCATION
- SB-19/ MW-10 — PROPOSED SOIL BORING/TEMPORARY MONITORING WELL LOCATION

NOTE:

PROPOSED SOIL BORING/TEMPORARY MONITORING WELL LOCATIONS ARE TENTATIVE AND SUBJECT TO MODIFICATIONS, BASED ON FIELD OBSERVATIONS AND/OR PHYSICAL SITE CONSTRAINTS.

WEST BUILDING SUBSURFACE INVESTIGATION PLAN

1" = 20'

20 0 20 40

SCALE FEET

BASE MAP REFERENCE:

EXPANDED REMEDIAL INVESTIGATION PARTIAL PLAN: PREPARFED BY TDK ENGINEERING, SHEET RI-1D, DATED JUNE 8, 2016.

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PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE

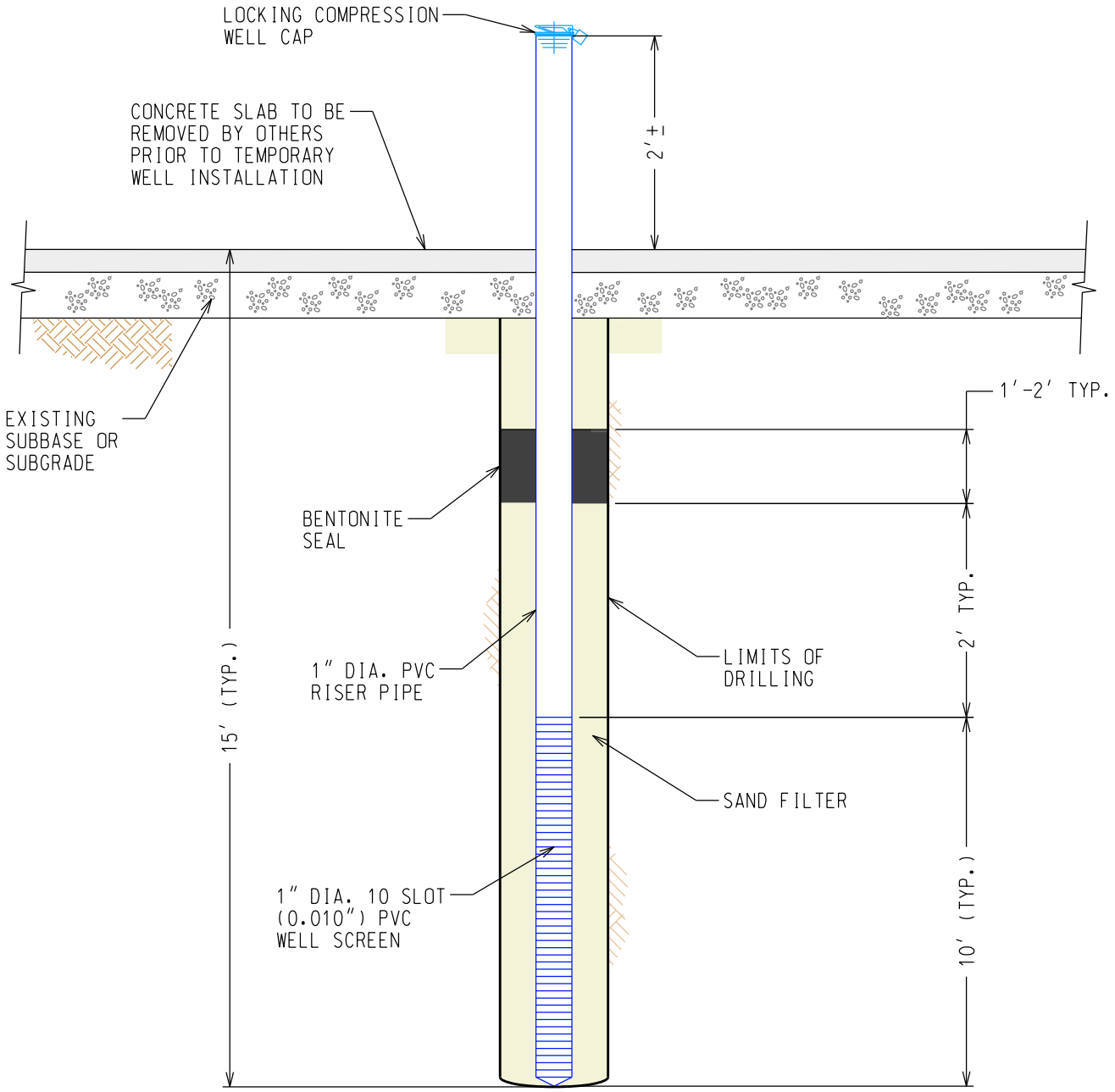
CLIENT: CAMILLUS MILLS, LLC

LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

DRAWING TITLE:
WEST BUILDING SUBSURFACE INVESTIGATION PLAN

PROJECT No.:	2009040
SCALE:	1" = 20'
DATE:	07-12-16
ENG'D BY:	JCH
DRAWN BY:	DKC
CHECKED BY:	JED

SHEET NO.
RA-4



TEMPORARY MONITORING WELL CONSTRUCTION DETAIL

NOT TO SCALE

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DRAWING TITLE:
TEMPORARY MONITORING WELL DETAIL

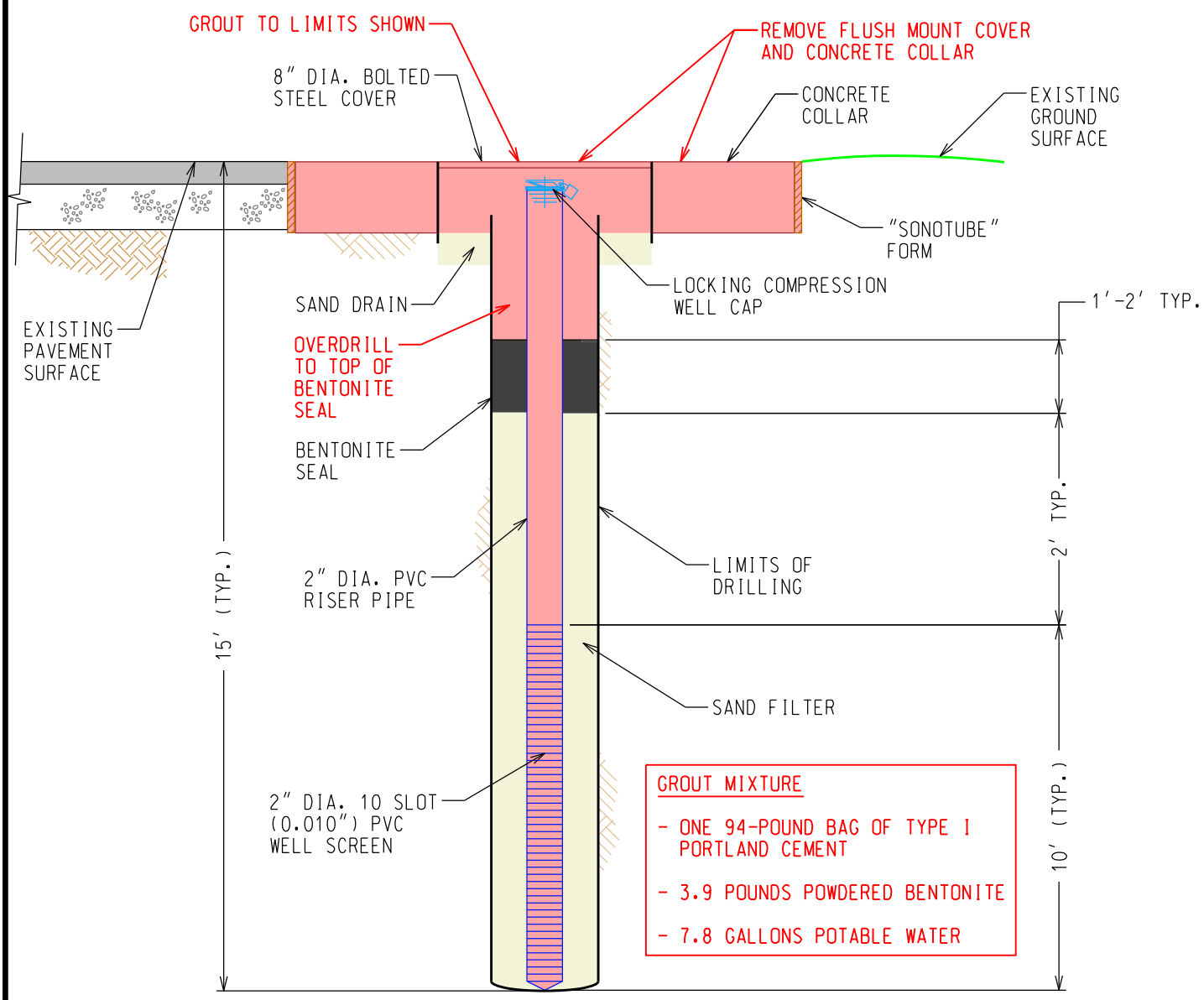
PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE

CLIENT:
CAMILLUS MILLS, LLC

LOCATION:
VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

PROJECT No.: 2009040
SCALE: AS NOTED
DATE: 07-12-16
ENG'D BY: JCH
DRAWN BY: DKC
CHECKED BY: JED

SHEET NO.
RA-5



TYPICAL MONITORING WELL ABANDONMENT DETAIL

NOT TO SCALE

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DRAWING TITLE: TYPICAL MONITORING WELL DETAIL

PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE

CLIENT: CAMILLUS MILLS, LLC

LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

PROJECT No.:	2009040
SCALE:	AS NOTED
DATE:	07-12-16
ENG'D BY:	JCH
DRAWN BY:	DKC
CHECKED BY:	JED

SHEET NO. RA-6

TABLE RI-1
Summary of Sample Locations, Parameters and Rationale

Sample Location	Matrix	Type	Depth	Parameters	Rationale
SB-2	Soil	Grab	8' – 10'	PCBs	1
SB-3	Soil	Grab	6' - 8'	VOCs	1, 2
SB-4	Soil	Grab	6' - 8'	VOCs, SVOCs, Metals	1, 3
SB-7	Soil	Grab	12' – 14'	VOCs, SVOCs, Metals, PCBs	1, 3
SB-8	Soil	Grab	6' - 8'	VOCs, SVOCs, Metals, PCBs	1
SB-9	Soil	Grab	10' – 12'	VOCs, SVOCs, Metals, PCBs	1, 2
SB-10	Soil	Grab	10' – 12'	VOCs, SVOCs, Metals, PCBs	1, 2
SB-11	Soil	Grab	6' – 8'	VOCs	1
SB-12	Soil	Grab	8' – 10'	VOCs, Metals	1
SB-13	Soil	Grab	8' – 10'	VOCs, SVOCs	1
SB-14	Soil	Grab	6' - 8'	SVOCs, Metals	1
SB-15	Soil	Grab	7' – 9'	VOCs	1, 3
SB-16	Soil	Grab	7' – 9'	VOCs, SVOCs, Metals, PCBs	1
SB-17	Soil	Grab	6' - 8'	VOCs, SVOCs, Metals, PCBs	6
SB-18	Soil	Grab	2' – 4'	VOCs, SVOCs, Metals, PCBs	2
SS-1	Soil	Grab	0 – 2"	VOCs, SVOCs, Metals	1, 2, 3
SS-2	Soil	Grab	0 – 2"	VOCs, SVOCs, Metals	1, 2, 3
SS-3	Soil	Grab	0 – 2"	VOCs, SVOCs, Metals, PCBs	1, 2, 3
SS-4	Soil	Grab	0 – 2"	VOCs, SVOCs, Metals, PCBs	1, 2, 3
CP-1	Soil	Grab	6' – 8'	VOCs, SVOCs, Metals, PCBs	5
MS (2)	Soil	Grab	NA	VOCs, SVOCs, Metals, PCBs	4
MSD (2)	Soil	Grab	NA	VOCs, SVOCs, Metals, PCBs	4
Field Duplicate (2)	Soil	Grab	NA	VOCs, SVOCs, Metals, PCBs	4
MW-1	GW	Grab	WBZ	VOCs, SVOCs, Metals, PCBs	1
MW-2	GW	Grab	WBZ	VOCs	1, 2
MW-3	GW	Grab	WBZ	VOCs, SVOCs, Metals, PCBs	1
MW-4	GW	Grab	WBZ	VOCs, SVOCs, Metals	1, 3
MW-5	GW	Grab	WBZ	VOCs, SVOCs, Metals, PCBs	1, 3
MW-6	GW	Grab	WBZ	VOCs, SVOCs, Metals	1, 3
MW-7	GW	Grab	WBZ	VOCs, SVOCs, Metals, PCBs	1, 3
MS	GW	Grab	WBZ	VOCs, SVOCs, Metals, PCBs	4

TABLE RI-1
Summary of Sample Locations, Parameters and Rationale

MSD	GW	Grab	WBZ	VOCs, SVOCs, Metals, PCBs	4
Field Duplicate	GW	Grab	WBZ	VOCs, SVOCs, Metals, PCBs	4
Trip Blank	GW	Grab	WBZ	VOCs	4

Key:

SB – Soil Boring
SS – Surface Soil
GW – Groundwater
SW – Surface Water
WBZ – Water Bearing Zone

MS – Matrix Spike
MSD – Matrix Spike Duplicate
VOCs – Volatile Organic Compounds
SVOCs – Semi-Volatile Organic Compounds
PCBs – Polychlorinated Biphenyls
CP – Contingency Plan

Rationale:

1. Define Nature and Extent of Contamination
2. Assess Human Exposures
3. Assess Environmental Impacts
4. Quality Control Sample
5. CP Sample (Sanitary Sewer Replacement)
6. Background Sample

Notes:

1. Sampling depths may be modified based on field indications of contamination such as elevated PID readings, non-aqueous phase liquid (NAPL), etc., or observations of distinct fill zones.
2. Locations of MS /MSD and Field Duplicate samples to be determined.
3. Horizontal and vertical locations of samples may be modified, depending on field observations.

GROUNDWATER ELEVATION DATA

WELL	RIM PVC ELEVATION	GROUND ELEVATION	TOP OF SCREEN ELEVATION	BOTTOM OF WELL ELEVATION	WATER SURFACE ELEVATION	
					9/30/2013	1/20/2016
MW-1	415.25	415.60	412.90	405.90	408.43	408.90
MW-2	409.35	410.10	408.10	394.10	402.17	402.33
MW-3	411.30	411.90	408.90	398.90	407.68	407.97
MW-4	405.97	406.60	402.70	389.70	400.48	400.87
MW-5	405.32	406.20	403.20	388.20	400.11	395.77 (see note)
MW-6	409.28	409.90	406.90	391.90	399.90	400.22
MW-7	406.04	406.40	403.40	391.40	399.93	400.22

Note: January 20, 2016 water level in MW-5 believed to be in error - not used for groundwater contours.

TABLE RI-2
Summary of Sample Methods, Container, Preservation and Holding Time Requirements
Former Camillus Cutlery Company Site
Brownfield Cleanup Program
Site No. C734142

Analysis	Method	Holding Time (Days)		Containers		Preservative
		To Extraction	To Analyze	Number	Type	
Soil Samples						
Volatile Organic Compounds	SW-846 8260B		14	2	L	None
Semivolatile Organic Compounds	SW-846 8270C	14	40	2*	J	None
PCBs	SW-846 8082	14	365		J	None
Metals	SW-846 6010B/7470A		180 (28 for Hg)		J	None
Aqueous Samples						
Volatile Organic Compounds	SW-846 8260B		14	3	V	HCL
Semivolatile Organic Compounds	SW-846 8270C	7	40	1	G	None
PCBs	SW-846 8082	7	365	1	G	None
Metals	SW-846 6010B/7470A	7	180 (28 for Hg)	1	P	HNO3

Key:

Container Types

V - 40 ml glass vial, Teflon septum cap liner, HCL
G - 1L glass, Teflon cap liner
P - 250 ml, polyethylene, Teflon cap liner
L – 2 oz. wide mouth glass, Teflon cap liner
J - 8 oz. wide mouth glass, Teflon cap liner

Preservatives

HNO3 - Nitric Acid to <2 pH
HCL - Hydrochloric acid to pH<2
* Samples for Semi-volatiles, PCBs and metals analyses can be collected in two 8 ounce glass widemouth jars with teflon cap liners.

Notes:

1. All samples to be maintained at a temperature of approximately 4 deg-C following collection until transfer of custody to laboratory.

AOC-3.1: SVI AREA - WEST PARCEL

AOC-2.2: SURFACE SOILS - LAWN AREAS

AOC-3.2: SVI AREA - EAST PARCEL

AOC-2.1: SURFACE SOILS - EAST EMBANKMENT

AOC-1: WASTEWATER COLLECTION CHAMBER AREA

BCP SITE LIMITS (4.30 ACRES)

PROPERTY LIMITS (4.42 ACRES)

WEST BUILDING
FINISHED FLOOR ELEV. 416.7±

EAST PARCEL
FORMER EAST BUILDING
ENGINE (DESTROYED BY FIRE FEB. 11, 2013)
FINISHED FLOOR ELEV. 406.6±

WEST PARCEL

MW-8
(GROUNDWATER) NO EXCEEDANCES

SS-4
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(B)FLOURANTHENE - 1.2 PPM (1)*
* DETECTED BELOW POL (ESTIMATED CONCENTRATION)
METALS - NO EXCEEDANCES
PCB'S - NO EXCEEDANCES

SB-18
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES
PCB'S - NO EXCEEDANCES

MW-4
09-30-13
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(A)PYRENE - 1.5 PPB (ND)
METALS
CHROMIUM - 140 PPB (50)*
LEAD - 76 PPB (25)
+ OTHERS
* HEXAVALENT CHROMIUM - ND
01-20-16
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES *
* WITH RESPECT TO CONSTITUENTS OF CONCERN - SEE NOTES

SB-4
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES
PCB'S - NO EXCEEDANCES

SB-11
VOC'S - NO EXCEEDANCES

SB-2
PCB'S - NO EXCEEDANCES

MW-2
VOC'S - NO EXCEEDANCES
01-20-16
VOC'S - NO EXCEEDANCES

SB-8
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS
MERCURY - 1.8 PPM (0.81)
PCB'S - NO EXCEEDANCES

MW-5
09-30-13
VOC'S
BENZENE - 1.52 PPB (1)
SVOC'S
BENZO(A)PYRENE - 1.6 PPB (ND)
METALS
MERCURY - 3.8 PPB (0.7)
CHROMIUM - 1,300 PPB (50)*
LEAD - 570 PPB (25)
COPPER - 1,200 PPB (200)
+ OTHERS
* HEXAVALENT CHROMIUM - ND
PCB'S - NO EXCEEDANCES
01-20-16
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES *
PCB'S - NO EXCEEDANCES
* WITH RESPECT TO CONSTITUENTS OF CONCERN - SEE NOTES

SB-12
VOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES

SB-14
SVOC'S - NO EXCEEDANCES
METALS
ARSENIC - 30 PPM (16)
CHROMIUM - 790 PPM (30.1)*
COPPER - 550 PPM (270)
* HEXAVALENT CHROMIUM - ND

SS-1
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(B)FLOURANTHENE - 2.3 PPM (1)
+ OTHERS BELOW POL
METALS
COPPER - 450 PPM (50)
PCB'S - NO EXCEEDANCES

SS-2
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(A)ANTHRACENE - 2.2 PPM (1)
BENZO(B)FLOURANTHENE - 2.8 PPM (1)
+ OTHERS BELOW POL
METALS
ARSENIC - 38 PPM (16)
CHROMIUM - 2,100 PPM (180,110)*
COPPER - 710 PPM (270)
+ OTHERS BELOW POL
* HEXAVALENT CHROMIUM - ND

MW-1
09-30-13
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(A)PYRENE - 1.9 PPB (ND)*
* ANALYTE DETECTED BELOW POL
METALS
CHROMIUM - 200 PPB (50)**
LEAD - 190 PPB (25)
+ OTHERS
** HEXAVALENT CHROMIUM - ND
PCB'S - NO EXCEEDANCES
01-20-16
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES *
PCB'S - NO EXCEEDANCES
* WITH RESPECT TO CONSTITUENTS OF CONCERN - SEE NOTES

MW-3
09-30-13
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(A)PYRENE - 0.62 PPB (ND)
METALS
ARSENIC - 130 PPB (25)
CHROMIUM - 670 PPB (50)*
LEAD - 1,200 PPB (25)
COPPER - 14,000 PPB (200)
MERCURY - 27 PPB (0.7)
+ OTHERS
* HEXAVALENT CHROMIUM - ND
PCB'S - NO EXCEEDANCES
01-20-16
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES *
PCB'S - NO EXCEEDANCES
* WITH RESPECT TO CONSTITUENTS OF CONCERN - SEE NOTES

SB-17
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES
PCB'S - NO EXCEEDANCES

SB-3
VOC'S - NO EXCEEDANCES

SB-9
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES
PCB'S - NO EXCEEDANCES

SB-10
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES
PCB'S - NO EXCEEDANCES

SB-13
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES

SB-15
VOC'S - NO EXCEEDANCES

SB-16
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS
CADMIUM 4.7 PPM (4.3)
PCB'S - NO EXCEEDANCES

SS-3
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(A)ANTHRACENE - 4.4 PPM (1)
BENZO(A)PYRENE - 4.4 PPM (1)
BENZO(B)FLOURANTHENE - 7.8 PPM (1)
CHRYSENE - 4.9 PPM (1)
+ OTHERS BELOW POL
METALS
CHROMIUM - 1,700 PPM (180,110)*
COPPER - 790 PPM (270)
* HEXAVALENT CHROMIUM - ND

MW-7
09-30-13
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(A)PYRENE - 0.46 PPM (ND)
METALS
CHROMIUM - 610 PPB (50)*
COPPER - 330 PPB (200)
LEAD - 130 PPB (25)
ARSENIC - 61 PPB (25)
+ OTHERS
* HEXAVALENT CHROMIUM - ND
PCB'S - 0.317 PPB (0.09)**
AROCLOR 1254
** ESTIMATED BELOW POL
01-20-16
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES *
PCB'S - NO EXCEEDANCES
* WITH RESPECT TO CONSTITUENTS OF CONCERN - SEE NOTES

MW-6
09-30-13
VOC'S - NO EXCEEDANCES
SVOC'S
BENZO(A)PYRENE - 1.2 PPB (ND)
METALS
CHROMIUM - 590 PPB (50)*
LEAD - 610 PPB (25)
MERCURY - 1.4 PPB (0.7)
+ OTHERS
* HEXAVALENT CHROMIUM - ND
PCB'S - NO EXCEEDANCES
01-20-16
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES *
* WITH RESPECT TO CONSTITUENTS OF CONCERN - SEE NOTES

SB-7
VOC'S - NO EXCEEDANCES
SVOC'S - NO EXCEEDANCES
METALS - NO EXCEEDANCES
PCB'S - NO EXCEEDANCES

MW-9 (JUNE 2016)
(SOIL) NO EXCEEDANCES
(GROUNDWATER) NO EXCEEDANCES

SVP-4 (JUNE 2016)
SVP-5 (JUNE 2016)
OA (JUNE 2016)
MW-8 (JUNE 2016)
OA (FEBRUARY 2016)
SVP-1
SVP-2
SVP-3
SB-1/MW-1 (2008)
SB-2/MW-2 (2008)
SB-4 (2008)
SB-5 (2008)
SB-6 (2008)
SB-8 (2008)
SB-9 (2008)
SB-10 (2008)
SB-11 (2008)
SB-12 (2008)
SB-13 (2008)
SB-3/MW-3
SB-6/MW-6
SB-7/MW-7
CP-1

APPROXIMATE LOCATION OF BURIED ELECTRIC LINE

APPROX. LOCATION OF 42" DIA. STORM SEWER

APPROX. LOCATION OF SYRACUSE LIGHTING COMPANY EASEMENT

PROPOSED SANITARY SEWER REPLACEMENT LIMITS (CONTINGENCY PLAN - CP)

SANITARY LATERAL

UNIDENTIFIED PIPES

SUSPECTED FORMER LAGOON AREA (AOC)

INVESTIGATION - DERIVED WASTES (DRUM) STAGING AREA

APPROX. LOCATION OF STORM SEWER PER CNY LAND SURVEYING MAP

ACCESS COVERS OVER UNIDENTIFIED PIPES

BURIED WATER/ STEAM LINES

FORMER FIRE BRICK OVEN (1?)

WASTE CONTAINER STORAGE SHED

WASTEWATER COLLECTION CHAMBER

MACHINE SHOP (1940)

CELLULOID CLEANING (1940)

OIL HOUSE (1928)

WATER TANK (1940)

BOILER ROOM

BLACK SMITH

STOCK ROOMS / OFFICES (1940, 1927)

ENGINE (1911)

SOLVAY BANK
4972/347

ERIN M. MACARTHUR
N/F
4974/598

KAREN A. ROBINSON
N/F
4910/826

ROBERT J. OLIVER III
N/F
5074/858

JASON DURSTINE
N/F
5085/82

RENEE M. VALERINO
N/F
4833/245

RUSSELL P. KARESEK
N/F
4108/141

THOMAS J. & CLAIRE M. GRANT
N/F
4625/123

ROBERT G. STANTON
N/F
4376?/966

KEY

RED – SOIL EXCEEDING SCO's
BLUE – GROUNDWATER EXCEEDING PART 703 STANDARDS
GREEN – NO EXCEEDANCES (SOIL AND GROUNDWATER)
401 – GROUNDWATER CONTOUR (01-20-16)
SVP-1 – SOIL VAPOR PROBE LOCATION (FEB. 2016)
SSP-1 – SUB-SLAB VAPOR PROBE LOCATION (FEB. 2016)
IA/OA – INDOOR, OUTDOOR AIR SAMPLE LOCATIONS (FEB. 2016)
SB-2 – SOIL BORING / TEMPORARY MONITORING WELL LOCATION REFERENCE: ASE SCREENING - LEVEL SITE INVESTIGATION FORMER CAMILLUS CUTLERY SITE. OCTOBER 2008.
SB-5 / MW-5 – SOIL BORING / MONITORING WELL LOCATION (SEPT. 2013)
SB-12 – SOIL BORING LOCATION (SEPT. 2013)
SS-1 – SURFACE SOIL SAMPLE LOCATION (SEPT. 2013)
CP-1 – CONTINGENCY PLAN SOIL SAMPLE LOCATION (PROPOSED)
OIL HOUSE (1911) – FORMER CUTLERY PROCESS / STORAGE AREA (BASE MAP REFERENCE NO. 2)
AREA OF CONCERN (UPDATED)

UTILITY KEY

CB-4 – CATCH BASIN
FD-2 – FLOOR DRAIN
UT-1 – UTILITY TRENCH
R.E. – RIM ELEVATION
I.E. – INVERT ELEVATION
W – WATER LINE
SAN – SANITARY SEWER
ST – STORM SEWER
E – UNDERGROUND ELECTRIC

LEGEND

PAVEMENT EDGE
IRF – IRON ROD FOUND
IPF – IRON PIN FOUND
SIGN – SINGLE POST
UP – UTILITY POLE
UP LIGHT – UTILITY POLE WITH LIGHT
GUY WIRE & ANCHOR
CB – CATCH BASINS
MH – MANHOLE
HYD – HYDRANT
WV – WATER VALVE
GV – GAS VALVE
24" – DECIDUOUS TREE, DIAMETER AT BREAST HEIGHT

ABBREVIATIONS

Asp. – ASPHALT
Bot. – BOTTOM
CC – CURB CUT
Conc. – CONCRETE
FF – FIRST FLOOR ELEVATION
Inv. – INVERT
N / F – NOW OR FORMERLY
Pvmt. – PAVEMENT
STY. – STORY

1" = 20' SCALE
20 0 20 40 FEET

BASE MAP REFERENCES:

1. ASE SCREENING – LEVEL SITE INVESTIGATION. FORMER CAMILLUS CUTLERY SITE. OCTOBER 2008.
2. HISTORIC SANBORN FIRE INSURANCE MAPS. DATED 1911, 1927 AND 1940.
3. FIELD MAPPING COMPLETED BY TDK ENGINEERING ASSOCIATES P.C.. ON JULY 11, 2012, JULY-SEPTEMBER 2013 AND FEBRUARY 2016.
4. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY CNY LAND SURVEYING. FILE NO. 15.128. DATED 03-09-17.
5. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO.. PREPARED BY EXTERIOR UNDERWRITERS INSPECTION BUREAU. DATED NOV. 19, 1940.
6. MAP OF PART OF F.L./ 80 TOWN OF CAMILLUS, VILLAGE OF CAMILLUS, ONONDAGA CO., NY. CAMILLUS CUTLERY COMPANY. NEW YORK. PREPARED BY RICHARD ZOGG. DATED JANUARY 22, 1974.
7. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO.. PREPARED BY BROWN CROSBY & CO., INC. INSURANCE. DATED JUNE 1928.
8. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO.. PREPARED BY ISO NEW YORK. DATED OCTOBER 24, 1912.
9. "PRELIMINARY" VILLAGE OF CAMILLUS (PLAN). DATED OCTOBER 1967.
10. CAMILLUS CUTLERY COMPANY RELOCATION OF STORM & SANITARY SEWER PLAN & PROFILE. PREPARED BY O'BRIEN & GERE ENGINEERS. INC.,. DATED MAY 3. 1972.
11. SURVEY MAP. BUILDINGS AND PROPERTY OF CAMILLUS CUTLERY CO., PREPARED BY A.R. HOLMES (LIC. NO. 4267). DATED JANUARY 5, 1945.
12. NORTH STREET/MAIN STREET DRAINAGE IMPROVEMENTS. PLAN & PROFILE. PREPARED BY BARTON & LOGUIDICE. P.C.,. DATED APRIL 1993.
13. PROPOSED NEW BUILDING ROUTING – CAMILLUS CUTLERY COMPANY (PLAN – DATE NOT LEGIBLE).
14. VILLAGE OF CAMILLUS FIRST STREET SEWER REPLACEMENT : GENERAL SEWER PLAN. PREPARED BY BARTON & LOGUIDICE. DATED MARCH 11, 1987.
15. ALTERATIONS TO THE CAMILLUS CUTLERY COMPANY. BUILDING NO. 5 FIRST FLOOR – FLOOR PLAN. PREPARED BY DAN LEARY. ARCHITECT AIA. DATED APRIL 10, 1969.
16. CLOSED-CIRCUIT TELEVISION (CCTV) INSPECTION OF SANITARY SEWER CONDUCTED IN MAY 2012 BY ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION (WEP).
17. EXPANDED REMEDIAL INVESTIGATION PARTIAL PLAN. PREPARED BY TDK. DATED JUNE 8, 2016.
18. BOUNDARY SURVEY – PART OF LOT 80, VILLAGE OF CAMILLUS, COUNTY OF ONONDAGA, STATE OF NEW YORK. PREPARED BY CNY LAND SURVEYING. FILE No. 15.116. DATED JULY 5, 2016.

NOTES:

1. METALS EXCEEDING GROUNDWATER STANDARDS FOR THE JANUARY 20, 2016 SAMPLING EVENT INCLUDED ANTIMONY, IRON, MANGANESE AND SODIUM. NO EXCEEDANCES REPORTED FOR CONSTITUENTS OF CONCERN (E.G., CHROMIUM, COPPER, LEAD).
2. NOT ALL EXCEEDANCES OF STANDARDS, CRITERIA AND GUIDANCE (SCG) ARE LISTED.
3. THE LOCATIONS OF THE FOLLOWING ARE BASED ON AVAILABLE HISTORIC SOURCES AND ARE APPROXIMATE:
   - FORMER CUTLERY PROCESS AND STORAGE AREAS
   - WATER SERVICE LINES
   - INTERIOR BUILDING WALLS
   - FORMER SANITARY FORCE MAIN
4. INTERIOR BUILDING WALLS REFLECT LOWER FLOORS.
5. BCP/SITE BOUNDARY MODIFICATION ADJACENT TO SOUTH WALL OF WEST BUILDING APPROVED THROUGH VILLAGE OF CAMILLUS BOARD RESOLUTION ON JULY 8, 2016, SUBJECT TO MODIFICATION BY VILLAGE ATTORNEY.

FIGURE RI–1A – ANALYTICAL DATA SUMMARY (SOIL AND GROUNDWATER)

BCP SITE No. C734142

NOTE: SOIL RESULTS REFLECT CONVERSION TO RESTRICTED-RESIDENTIAL SCO's.

7–12–16

PROJECT No.: 2009040
SCALE: 1" = 20'
DATE: 04-05-13
ENG'D BY: JCH
DRAWN BY: DKC
CHECKED BY: JED

DRAWING TITLE: REMEDIAL INVESTIGATION PLAN
SHEET: RI–1A

PROJECT: BROWNFIELD CLEANUP PROGRAM FORMER CAMILLUS CUTLERY COMPANY SITE
CLIENT: CAMILLUS MILLS, LLC
LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

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19 Genesee Street - Camillus, New York 13031 - PH: (315) 672-9728 - FX: (315) 672-8732
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REVISIONS:
1. UPDATED 02/2016 PER REMEDIAL INVESTIGATION
UPDATED 09-16-13 PER FIELD MAPPING AND HISTORIC MAPS/PLANS
REVISED 07-05-13 PER DEC COMMENTS

NORTH

SVP-4
TRICHLOROETHENE - <0.81 MCG/M³
TETRACHLOROETHYLENE - <1.0 MCG/M³
METHYLENE CHLORIDE - 3.4 MCG/M³

AOC-3.1: SVI AREA - WEST PARCEL

SVP-5
TRICHLOROETHENE - 1.1 MCG/M³
TETRACHLOROETHYLENE - 2.1 MCG/M³
METHYLENE CHLORIDE - 1.9 MCG/M³

OUTSIDE AIR
TRICHLOROETHENE - 0.32 MCG/M³
TETRACHLOROETHYLENE - 1.0 MCG/M³
METHYLENE CHLORIDE - 2.3 MCG/M³

SSP-1
TRICHLOROETHENE - 25 MCG/M³
TETRACHLOROETHYLENE - 58 MCG/M³
METHYLENE CHLORIDE - 0.97 MCG/M³

OUTSIDE AIR
TRICHLOROETHENE - <0.21 MCG/M³
TETRACHLOROETHYLENE - <1.0 MCG/M³
METHYLENE CHLORIDE - 8.7 MCG/M³

INDOOR AIR
TRICHLOROETHENE - 3 MCG/M³
TETRACHLOROETHYLENE - <1.0 MCG/M³
METHYLENE CHLORIDE - 0.73 MCG/M³

SSP-2
TRICHLOROETHENE - 12 MCG/M³
TETRACHLOROETHYLENE - 52 MCG/M³
METHYLENE CHLORIDE - 1.4 MCG/M³

SVP-1
TRICHLOROETHENE - <0.81 MCG/M³
TETRACHLOROETHYLENE - 140 MCG/M³
METHYLENE CHLORIDE - 2.9 MCG/M³

AOC-2.2: SURFACE SOILS - LAWN AREAS

SSP-3
TRICHLOROETHENE - 400 MCG/M³
TETRACHLOROETHYLENE - 8.1 MCG/M³
METHYLENE CHLORIDE - 1.4 MCG/M³

SVP-2
NOT SAMPLED DUE TO WATER INTRUSION

WEST BUILDING
FINISHED FLOOR ELEV. 416.7±

EAST / PARCEL
FORMER EAST BUILDING
(DESTROYED BY FIRE FEB. 11, 2013)
FINISHED FLOOR ELEV. 406.6±

WEST PARCEL

SSP-4
TRICHLOROETHENE - 4 MCG/M³
TETRACHLOROETHYLENE - 52 MCG/M³
METHYLENE CHLORIDE - 1.6 MCG/M³

AOC-3.2: SVI AREA - EAST PARCEL

SVP-3
TRICHLOROETHENE - 1.0 MCG/M³
TETRACHLOROETHYLENE - 6.2 MCG/M³
METHYLENE CHLORIDE - 0.73 MCG/M³

AOC-1: WASTEWATER COLLECTION CHAMBER AREA

AOC-2.1: SURFACE SOILS - EAST EMBANKMENT

BCP SITE LIMITS (4.28 ACRES)

PROPERTY LIMITS (4.42 ACRES)

PROPOSED SANITARY SEWER REPLACEMENT LIMITS (CONTINGENCY PLAN - CP)

INVESTIGATION - DERIVED WASTES (DRUM) STAGING AREA

SUSPECTED FORMER LAGOON AREA (AOC)

KEY

MCG/M³ MICROGRAMS PER CUBIC METER
SVP-1 SOIL VAPOR PROBE LOCATION (FEB. 2016)
SSP-1 SUB-SLAB VAPOR PROBE LOCATION (FEB. 2016)
IA·OA INDOOR, OUTDOOR AIR SAMPLE LOCATIONS (FEB. 2016)
SB-2 (2008) SOIL BORING / TEMPORARY MONITORING WELL LOCATION REFERENCE: ASE SCREENING - LEVEL SITE INVESTIGATION FORMER CAMILLUS CUTLERY SITE, OCTOBER 2008.
SB-5 / MW-5 SOIL BORING / MONITORING WELL LOCATION (SEPT. 2013)
SB-12 SOIL BORING LOCATION (SEPT. 2013)
SS-1 SURFACE SOIL SAMPLE LOCATION (SEPT. 2013)
CP-1 CONTINGENCY PLAN SOIL SAMPLE LOCATION (PROPOSED)
OIL HOUSE (1911) FORMER CUTLERY PROCESS / STORAGE AREA (BASE MAP REFERENCE NO. 2)
AREA OF CONCERN (UPDATED)

UTILITY KEY

CB-4 CATCH BASIN
FLOOR DRAIN
UTILITY TRENCH
R.E. RIM ELEVATION
I.E. INVERT ELEVATION
W WATER LINE
SAN SANITARY SEWER
ST STORM SEWER
E UNDERGROUND ELECTRIC

LEGEND

PAVEMENT EDGE
IRF IRON ROD FOUND
IPF IRON PIN FOUND
SIGN - SINGLE POST
UP UTILITY POLE
UP UTILITY POLE WITH LIGHT
GUY WIRE & ANCHOR
CB CATCH BASINS
MH MANHOLE
HYD HYDRANT
WV WATER VALVE
GV GAS VALVE
24" DECIDUOUS TREE, DIAMETER AT BREAST HEIGHT

ABBREVIATIONS

Asp. ASPHALT
Bot. BOTTOM
CC CURB CUT
Conc. CONCRETE
FF FIRST FLOOR ELEVATION
Inv. INVERT
N / F NOW OR FORMERLY
Pvmt. PAVEMENT
STY. STORY

1" = 40' SCALE
40 0 40 80 FEET

BASE MAP REFERENCE:

1. ALTERNATIVES ANALYSIS PLAN. PREPARED BY TDK. DATED 3-31-16 (UPDATED 5-13-16)
2. EXPANDED REMEDIAL INVESTIGATION PARTIAL PLAN. PREPARED BY TDK. DATED JUNE 8, 2016.
3. BOUNDARY SURVEY - PART OF LOT 80, VILLAGE OF CAMILLUS, COUNTY OF ONONDAGA, STATE OF NEW YORK. PREPARED BY CNY LAND SURVEYING. FILE No. 15.116. DATED JULY 5, 2016.

NOTES:

1. REFERENCES: NYSDOH "GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK." OCTOBER 2006 AND "TRICHLOROETHENE (TCE) INDOOR AND OUTDOOR AIR." AUGUST 2015 FACT SHEET.
2. ANALYTICAL DATA FOR SOIL AND GROUND WATER NOT SHOWN, UNLESS NOTED OTHERWISE.
3. REFER TO LABORATORY REPORT AND ANALYTICAL DATA SUMMARY TABLES FOR ADDITIONAL INFORMATION.
4. BCP/SITE BOUNDARY MODIFICATION ADJACENT TO SOUTH WALL OF WEST BUILDING APPROVED THROUGH VILLAGE OF CAMILLUS BOARD RESOLUTION ON JULY 8, 2016. SUBJECT TO MODIFICATION BY VILLAGE ATTORNEY.

FIGURE RI-1B – ANALYTICAL DATA SUMMARY (SOIL VAPOR)

BCP SITE No. C734142
7-12-16

PROJECT No.: 2009040
SCALE: 1" = 40'
DATE: 06-06-16
ENG'D BY: JCH
DRAWN BY: DKC
CHECKED BY: JED

DRAWING TITLE: EXPANDED REMEDIAL INVESTIGATION PLAN
SHEET: RI-1B

PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE
CLIENT: CAMILLUS MILLS, LLC
LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

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REVISIONS:

NOTE: NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

APPENDIX 2
QAPP

APPENDIX 2

QUALITY ASSURANCE PROJECT PLAN

for the

REMEDIAL ACTION PROGRAM
at the

FORMER CAMILLUS CUTLERY COMPANY SITE
52 & 54 Genesee Street
Village of Camillus
Onondaga County, New York

Brownfield Cleanup Program
Site No. C734142

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation – Region 7
615 Erie Boulevard West
Syracuse, New York 13204

Prepared by:

TDK Engineering Associates, PC
19 Genesee Street
Camillus, New York 13031
PH: (315) 672-8726

TDK Project No. 2009040

July 13, 2016

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This Quality Assurance Protection Plan (QAPP) has been developed in conjunction with the Remedial Action Work Plan (RAWP) for the former Camillus Cutlery Company property, (Site), BCP Site No. C734142. The Site is located at 52 & 54 Genesee Street in the Village of Camillus (Village), Onondaga County, New York. References to Appendices herein refer to Appendices within the RAWP.

1.2 Project Goals and Objectives

The overall objective of the remedial action analytical program is to document subsurface conditions with respect to the Soil Cleanup Objectives (SCOs) following localized excavation operations. Specific Data Quality Objectives (DQOs) are summarized in Section 2.0.

1.3 Organization and Responsibilities

The following are the key individuals relative to the QA portion of the project, along with a brief description of their responsibilities.

- Christopher F. Mannes, III, P.E., Project Manager, New York State Department of Environmental Conservation (DEC): Responsible for regulatory oversight.
- Richard Jones, Project Manager, New York State Department of Health (DOH): Responsible for regulatory oversight.
- John C. Herrmann, P.E., Project Engineer, TDK: Responsible for coordination and field observation of remedial activities, selection of sampling locations and methods, review of analytical data and report preparation.
- The designated laboratories are as follows (to be verified):

SOIL AND GROUNDWATER
Pace Analytical Services, Inc.
575 Broad Hollow Road
Melville, NY 11747
ELAP No. 10478

INDOOR AIR
Centek Laboratories, LLC.
143 Midler Park Drive
Syracuse, New York 13206
ELAP No. 11830

- Third party review of the analytical data and generation of a Data Usability Summary Report (DUSR) will be completed by the following (tentative):

  Environmental Standards, Inc.
  1140 Valley Forge Road, P.O. Box 810
  Valley Forge, PA 19482

1.4 Summary of Work

Tasks to be completed during the RI that are pertinent to this QAPP include the following:

1. Collection of confirmation/documentation soil samples from remedial excavations.
2. West Building:
   - Drilling of soil borings and obtaining of subsurface soil samples.
   - Construction and sampling of groundwater monitoring wells.
   - Sampling of indoor air following installation of sub-slab depressurization (Cupolex) system.
3. Laboratory analysis of soil, groundwater and indoor air samples and reporting of results in accordance with the NYSDEC Analytical Services Protocol (ASP) Category B deliverables package.

Descriptions of drilling and monitoring well construction procedures are provided in Appendix 3. This QAPP outlines field sampling and analytical laboratory quality assurance and quality control (QA/QC) procedures relative to achieving the DQO's.

2.0 DATA QUALITY OBJECTIVES

The Data Quality Objectives (DQOs) for the RI are as follows:

- To collect samples which are representative of the locations sampled, by minimizing the potential for cross-contamination.
- To provide analytical data of a sufficient quality to allow for independent third party evaluation.

Tools of measurement that are used to evaluate the DQOs include the following:

- Precision: Precision is a measure of the variability of multiple analyses of a given sample. Precision is assessed by replicate analyses utilizing matrix spike (MS) /matrix spike duplicate (MSD) and field duplicate samples.

- Accuracy: Accuracy is the degree of agreement between a measured value and reference value. Sampling accuracy is measured through analysis of trip blanks. Laboratory accuracy is assessed through the analysis of MS/MSDs.

- Representativeness: Representativeness refers to the degree with which the sample data is indicative of a population. A method may be highly accurate, but if the sample does not represent the population, the data are not useful. Representativeness of a sample is best assessed by analysis of a number of soil samples from the same location (i.e., field duplicates), or for groundwater, purging a given number of well volumes to provide groundwater that is representative of local conditions.

- Comparability: Comparability is the degree of the confidence with which one data set can be compared to another and is evaluated through a review of the analytical methods and reporting procedures for consistency.

- Completeness: Completeness is a measure of the percentage of valid data obtained from a measurement system. A third party validator will assess the completeness and validity of laboratory data deliverables.

Specific field sampling methodologies and field/laboratory quality assurance/quality control (QA/QC) procedures are included in this QAPP in an effort to achieve the DQOs. These are described in Sections 3.0 through 6.0.

3.0 SUBSURFACE SOIL SAMPLING METHODOLOGY (SOIL BORINGS – WEST BUILDING)

Grab soil samples will be obtained from the geo-probe split-spoons for volatile organic compound (VOC) analysis. The proposed sample locations, depths and target analytical parameters are summarized on *Figure RA-1* [Appendix 1].

Geoprobe sampling procedures are as follows:

1. For each split-spoon, the length of the soil sample retrieved will be measured and recorded on the soil boring log. In general, the top 2 to 3 inches will be discarded, as this is usually comprised of loose, disturbed material which is not representative of the sample depth.

2. Each sample will be split along its longitudinal axis to expose the center of the soil core, as practicable. The entire length of the sample will be screened using a calibrated PID meter equipped with a 10.6 or 11.7 electron volt (eV) lamp. Results of the PID screening will be recorded on a soil boring log.

3. A pre-cleaned, 2-ounce sample container (with Teflon-lined cap) will be filled with soil from the segment of the sample which exhibits the highest PID reading, for possible VOC analysis, and immediately capped and stored in a dedicated cooler (non-analytical samples).

4. The sample with the highest PID reading and most visual contamination (if any) from the entire boring will be sent to the laboratory for analysis.

5. If field observations (visual & PID) do not indicate the presence of contamination, a sample will be collected at the approximate depths indicated on *Figure RA-1* [Appendix 1], or at the soil/groundwater interface.

6. Samples which are submitted for analysis will be recorded on the soil boring log.

4.0 GROUNDWATER SAMPLING METHODOLOGY (WEST BUILDING)

Groundwater samples will be obtained from the temporary monitoring wells in accordance with the following procedures.

4.1 Vapor (Head Space) Readings and Static Water Levels

1. The compression cap shall be removed.

2. A PID reading will be obtained from the head space of the monitoring well, immediately upon removal of the compression cap, and recorded on the groundwater sampling field log.

3. The depth to groundwater (D_{GW}) shall be measured to the nearest 0.01-foot from the mark on the PVC well rim. The measurements shall be obtained using an electronic water level indicator (i.e. Solonist, or equal) and recorded on a field sampling log.

4. The total depth (D_{TOT}) shall be measured to the nearest 0.1-foot from the PVC well rim.

5. The water level meter probe and tape shall be decontaminated following use at each well in accordance with the *Decontamination Program* [Appendix 6].

4.2 Free Product Checks

1. Prior to evacuation/purging, a free product check shall be made in each well using a disposable polyethylene bailer. A partial bail (~1/3 bail volume) shall be skimmed off the top of the groundwater and visually inspected for the presence of a floating non-aqueous phase liquid (NAPL) layer. Free product observations, including thickness, shall be reported on the field sampling log.

2. The monitoring well water will also be visually inspected during purging operations (below) for the presence of an obvious discoloration (i.e., "sheen") or dense NAPL.

3. Monitoring wells with measurable free product present will not be sampled.

4.3 Well Evacuation/Purging and Field Measurements

The wells shall be evacuated/purged according to the procedure below:

1. Sampling activities should progress from the least suspected contaminated area to the most contaminated area, unless dedicated sampling devices are used.

2. The wells shall be developed using low flow techniques (e.g., peristaltic pumps).

3. Measurements of following parameters will be made during the purging effort and recorded on the field sampling log:

    - pH
    - Temperature
    - Specific Conductivity
    - Turbidity
    - Dissolved oxygen

The measurements shall be taken prior to removal of the first volume of water and following each subsequent volume of water.

4. Three (3) well water volumes shall be evacuated in order to remove standing water and facilitate sampling of groundwater that is representative of surrounding conditions. The purging should progress until stabilization of the following water quality parameters occurs, or a maximum of five (5) well water volumes is removed:

    - pH (+/- 0.5 units)
    - Temperature (+/- 0.5 deg-F)
    - Specific Conductivity (+/- 10%)
    - Turbidity (<50 NTU)

5. Alternatively, if the well recharges slowly (i.e., well is pumped/bailed dry), purging shall be discontinued and recovery allowed until the water level recharges to within 95% of the pre-purge level, or a maximum of two hours, whichever occurs first. If the water level does not reach the pre-purge level within two hours, samples can be obtained as soon as a sufficient quantity of water recharges into the well.

6. The removed water shall be temporarily contained in a 5-gallon bucket (during purging) and subsequently transferred to a 55-gallon drum(s) or storage tank(s) pending off-site disposal [Appendix 5].

7. Any observations of odor or visible turbidity shall be recorded on the field sampling log, along with any indications of well damage or tampering. The color of the purge water shall also be recorded.

4.4 Sample Collection

1. Groundwater samples shall be collected using low flow (e.g., peristaltic) pumps with disposal polyethylene tubing. New tubing shall be used at each sampling location, and the intake point of the tube should be placed at approximately the midpoint of the well.
2. Low-flow sampling techniques shall be used for collection of the samples.
3. The VOC vials shall be slowly filled until a convex meniscus is formed, capped and inverted and visually inspected for air pockets/bubbles.
4. The samples will be managed/handled and submitted for analysis in accordance with the procedures in Sections 7.1 and 7.2.

5.0 EXCAVATION SOIL SAMPLING METHODOLOGY (AOCS – 1.0, 2.1 & 2.2)

Soil samples will be collected from a depth of approximately 6 to 12 inches below the exposed excavation surface.

The sample locations are summarized on the *Remedial Action Plan* [*Figure RA-1,* Appendix 1 of RAWP]. The samples will be collected using the backhoe bucket and/or trowel/shovel. VOC samples will be containerized in accordance with the procedures described in Section 3.0. SVOC, metal and PCB samples will be contained in 8 oz jars.

6.0 POTENTIALLY CONTAMINATED SOIL SAMPLING METHODOLOGY

Soil samples will be collected from the potentially contaminated soil pile (i.e., from AOC-1.0) at various locations throughout the pile at a minimum depth of approximately 12 inches below the exposed surface.

The samples will be collected using the backhoe bucket and/or trowel/shovel. VOC samples will be containerized in accordance with the procedures described in Section 3.0. SVOC, metal and PCB samples will be contained in 8 oz jars.

7.0 QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The following field sampling and analytical laboratory quality assurance (QA) and quality control (QC) procedures will be adhered to during the Remedial Action program:

7.1 Field Sampling (Soil and Groundwater)

- Documenting field observations/measurements and daily field instrument calibrations on soil boring logs and groundwater field sampling logs, as applicable.
- Use of new pair of disposable glove between sampling at each boring, well, or surface soil sampling location.
- Use of sampling containers conforming to the requirements of Environmental Protection Agency (EPA) Specifications and Guidance for Contaminant-Free Sampling Containers.
- Providing sufficient sample volume and the appropriate preservatives in the sample bottles, and adherence to required holding times. The sample container, volume, preservative and holding time requirements are listed on *Figure RA-1* [Appendix 1].
- Calibration of field instruments in accordance with the manufacturer's recommended procedures (e.g., PID meter using isobutylene).
- Collection of a minimum of one field duplicate sample for every 20 samples of similar matrix, for full analysis. If fewer than 20 samples are submitted, a minimum one field duplicate sample per batch of samples of similar matrix shall be submitted for analysis. For soils, a single sample is divided into "sample" and "duplicate" jars. Aqueous samples are two samples collected from the same location, at the same time and in the same manner, and placed in separate containers.
- Collection of a minimum of one MS/MSD samples for every 20 samples of similar matrix, for full analysis. If fewer than 20 samples are submitted, a minimum one MS/MSD sample per batch of samples of similar matrix shall be submitted for analysis. MS/MSD samples are collected in the same manner as field duplicates and spiked with known quantities of target analytes at the laboratory.
- Preparation and analysis of trip blanks for aqueous samples (VOC analysis) to evaluate the potential for contamination to occur during transport. Trip blanks will be prepared and submitted at a rate of one per groundwater sampling event.
- Decontamination of field sampling equipment, portable mixing pans, spoons, etc., in accordance with the procedures included in Appendix 6.
- Management of investigation-derived waste (IDW) such as spent equipment rinse water and monitoring well purge water, and used personal protective equipment (PPE) and bailers in accordance with the procedures described in the *Remedial Waste Management Program* [Appendix 5].

- Labeling each sample to be submitted for analysis to indicate the following information:
  - Site name
  - DEC Brownfield Site Identification Number.
  - Sample location/identification (e.g., soil boring designation, depth).
  - Date and time of sample collection.
  - Identification of sample as grab or composite.
  - Sample matrix & preservative.
  - Analysis to be performed.
- Maintaining chain-of-custody documentation throughout the duration of the field effort, until receipt of the samples by the laboratory. Each chain of custody form will include the following information.
  - Above information for each sample as required for labels.
  - Signatures and dates/times of field sampler, transport carrier (if applicable) and laboratory personnel upon transfer of custody of the samples.
  - Transporter bill number (if applicable).
- Adhering to the following sample storage and shipping procedures:
  - Placement of the samples in a cooler, along with ice which is contained in heavy duty polyethylene bags, or synthetic ice packs in order to maintain the temperature inside the cooler at approximately 4 degrees centigrade (39 degrees Fahrenheit).
  - Placement of the chain of custody in sealed plastic (e.g., Ziploc) bag, taped to the inside of the cooler lid.
  - Application of a field custody seal (tape) to the lid of the cooler, and a label containing the name and address of the shipper to the outside of the cooler.

7.2 Field Sampling (Indoor Air)

Collection of samples consistent with the DOH's guidelines for Soil Vapor Intrusion (SVI)[1], including the following:

[1] DOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, October 2006.

- Conducting an inventory of pertinent building features, including but not limited to chemical storage areas, garages, doorways, sumps, floor drains and HVAC systems.
- Use of low flow-rate pumps for collection of samples in "summa" canisters over a 24-hour period.
- Operation of heating system for a minimum of 24 hours prior to sampling, to maintain normal indoor air temperatures (65 to 75 degrees Fahrenheit) if collecting samples during colder months.

7.3 Laboratory Procedures

- Upon receipt of a shipment/delivery of samples, an inventory will be conducted for consistency with the chain of custody, in addition to inspection for any discrepancies such as broken samples bottles, inappropriate preservatives, headspace in VOC vials, etc.
- Calibration of laboratory instruments and evaluation of analytical procedures using calibration and laboratory control standard solutions.
- Processing and analysis of quality control check samples:
  - Evaluation of sample preparation and laboratory procedures by spiking samples with surrogate standards and comparing the percent recovery to appropriate ranges.
  - Analyzing field duplicate samples to evaluate the impact of the variability of the sample matrix, with regard to precision of the analytical data.
  - Analysis of method (laboratory reagent) blanks to evaluate laboratory background contamination.
  - Analysis of matrix spike (MS) and matrix spike duplicate (MSD) samples.
  - Reporting of analytical data in accordance with NYSDEC Analytical Services Protocol (ASP), Category B deliverables, including the EQuIS electronics data deliverables (EDD) format.

7.4 Data Validation and Usability

- Data validation will be performed by a third party, data validation subcontractor, and will include a review of instrument logs, calibration data, and performance indicators such as blanks, surrogate recoveries, duplicate analyses, matrix spike analyses, etc. The validation results will be summarized in a data usability summary report (DUSR).

APPENDIX 3
Deep Soil Boring Program

APPENDIX 3

DEEP SOIL BORING PROGRAM
(BELOW WEST BUILDING)

BROWNFIELD CLEANUP PROGRAM (BCP)
SITE NO. C734142
Village of Camillus, Onondaga County

July 13, 2016

SOIL BORING PROGRAM:

The soil boring program will consist of the following elements:

- A mobile drill rig will be utilized to advance the soil borings. The rig shall be equipped with a percussion soil sampler (i.e., Geoprobe) and will also have the capability of drilling with augers, if necessary.

- The soil borings will be advanced to a minimum depth of 15 feet, or until refusal is encountered (e.g., bedrock or dense "glacial till"), whichever is shallower. If obvious visual evidence of contamination is encountered, the borings will be advanced to a depth sufficient to define the vertical limits of contamination (based on field observations), or until refusal is encountered, whichever is shallower.

- A field engineer with environmental/geotechnical experience will be on-site to observe the drilling program, collect representative soil samples and document the subsurface profile and water table information. Visual or olfactory suggestions of contamination, such as obvious odors, discoloration and/or presence of Non-Aqueous Phase Liquid (NAPL) will also be documented.

- Soil samples will be obtained during drilling at continuous intervals. Representative soil samples shall be collected as described in the *Quality Assurance Project Plan* (QAPP) [Appendix 2] and sample depths will be indicated on the soil boring logs.

- The drilling rods and/or augers will be decontaminated during drilling operations as described

in the *Decontamination Program* [Appendix 6].

- Drill cuttings and decontamination wastes shall be transferred to the contaminated soil stockpile (e.g., drill cuttings) and storage tanks or vac trucks (e.g., decon liquids), for subsequent off-site disposal.

TEMPORARY GROUNDWATER MONITORING WELL CONSTRUCTION

- The anticipated average temporary monitoring well depth is approximately 15 feet below ground surface (bgs), based on previous Site investigation information.

- The wells will be 1-inch diameter (PVC), with 10-slot (0.010-inch aperture opening) screened sections extending above and below the groundwater surface. The screens will be surrounded by filter sand compatible with the screen size (e.g., Morie #1), and bentonite (clay) seals will be provided over the sand packs.

- Note that if dense non-aqueous phase liquid (DNAPL) is identified or suspected on top of an aquitard during drilling, a relatively short screened section (i.e., 5 feet or less) will be installed directly on top of the aquitard.

- Upon completion of the monitoring well installations, the PVC rims of the wells will be surveyed relative to the Site topographic survey datum, such that a groundwater contour map (i.e., flow direction) can be generated based on "static" water levels. Refer to *Groundwater Sampling Methodology* [QAPP, Appendix 6] for additional information.

- All monitoring wells will be provided with "stickup" risers. Compression caps will be provided for the tops of the monitoring well riser pipes.

- Refer to the *Temporary Groundwater Monitoring Well Construction Detail* [*Figure RA-5*, Appendix 1] for additional information.

Well Development

- Each well will be developed using a submersible or peristaltic pump operating at a "low flow" condition, and/or manual bailing and will be pumped/bailed until the discharge is "clear" (visible fines are minimized).

- Well development water will be transferred to storage tanks or drums pending off-site disposal.

APPENDIX 4
Sub-Slab Depressurization (Cupolax) System

CUPOLEX®

THE STRUCTURAL DOME FLOORING SYSTEM

With millions of square meters installed in Europe, Eastern Canada, Africa, Russia and Australia, the CUPOLEX® System is now available for use in Canada and the United States of America. Using approximately 20% less concrete and reinforcing than a raft slab, this cost effective system uses welded wire mesh placed within the topping thickness to create a concrete floor slab, without the environmental issues associated with polystyrene.

Each CUPOLEX® floor is specifically designed to suit site conditions. Specific FEM design calculations, engineered drawings and Design Certificate are provided for each design by a Registered Professional Engineer in your State or Province. Approved Registered CUPOLEX® Contractors are used for the construction of each floor to ensure quality and workmanship is of the highest standard.

CUPOLEX® is available in a range of sizes from 50 mm (2") to 70 mm (28") high and can be designed for residential, commercial, industrial and institutional uses up to a live load of 10 Kpa or higher.

The CUPOLEX® system also consists of an ancillary product called PONTEX® to create grade beams. Moreover, in order to prevent any voids BETON STOP® provides continuous closures. For a more detail description of the construction method employed and the use of PONTEX® and BETON STOP® with the CUPOLEX® flooring system to achieve these results, please visit www.pontarolo.com.

ACCESSORIES TO CUPOLEX®

Lateral closures for CUPOLEX®

Creates Beams so that CUPOLEX® Floors Become Self-Bearing

CERTIFIED BY THE MINISTRY OF THE ENVIRONMENT

As building requirements continue to be focused on long-term sustainability with the adoption of numerous programs such as the LEED rating system, or the redevelopment of Brownfields, CUPOLEX® provide economic solutions with its innovative technology that is designed to enhance structures that are environmentally friendly and healthier to live and work in.

Many development sites are underlain with reclaimed or natural deposits where the decomposition of minor amounts of organic matter has produced of harmful gases e.g. methane, radon or carbon dioxide. The distinctive dome shape of the modular elements provides an internal orthogonal mesh allowing for air-circulation ducts that can be fully ventilated.

The CUPOLEX® System has been certified by the Ministry of Environment and has been granted the NETE Certificate of Technology Assessment. The Ministry concludes that the CUPOLEX® System can be a viable technology allowing for the control of vapour emissions from contaminated soil and ground water. Suitable applications of the CUPOLEX® System include Level 2 Risk Management approach in Brownfields redevelopment.

In summary, this "Green Product" provides a superior finished product with measurable labour and cost savings as well as providing other distinct advantages.

PONTAROLO ENGINEERING CUPOLEX® APPLICATIONS:

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www.pontarolo.com info@pontarolo.com

Available Through

CUPOLEX®

THE STRUCTURAL DOME FLOORING SYSTEM

ADVANCED, INNOVATIVE, MODULAR, SUSTAINABLE, ENERGY EFFICIENT

CUPOLEX, for Concrete Floor Slabs That Stand Above the Rest

PATENTED

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PONTAROLO® ENGINEERING

Research/Know-How/Patents/Sustainable Building Technologies

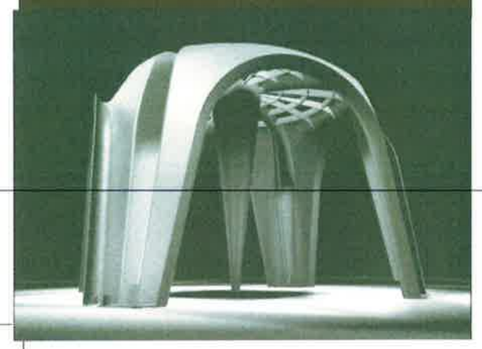
CUPOLEX®

THE STRUCTURAL DOME FLOORING SYSTEM

CUPOLEX® is a patented structural dome flooring system made from recycled non-toxic plastic modular elements. Each element easily inter-connects to create a self supporting structure which acts as a permanent form work, replacing gravel, hard fill and provides under slab voids for ventilating.

Main Benefits:

- Up to 20% reduction in concrete consumption
- Up to 20% reduction in reinforcing steel
- Up to 80% reduction in interior box forming for grade beams, footings, and foundations
- Ease of transportation of components 110 m² (1200sq.ft.)/pallet
- Reduced labour costs, 150 m2 (1600 sq.ft) laid in 2 man hours, fast assembly with minimal site work requirements
- One trade used to construct entire foundation and slab.
- Replaces gravel, engineered fill or hard fill and associated compaction costs. 3 truck loads of gravel to 1 Pallet of CUPOLEX*
- Reduced plant and machinery requirements
- Minimal construction traffic damage on site
- Substantially reduces dampness, mould & mildew by controlling moisture wicking through slabs, eradicating resultant problems with tiles or carpets lifting
- Reduces Slab curling and shrinkage cracks
- Provides space for running services such as cables, conduit, ductwork, chases, etc.;
- Eliminate the need for expensive mechanical piping systems on contaminated soils
- Can be fully ventilated to disperse Radon, Methane and other harmful gases.
- High standard of workmanship through the use of Approved Registered CUPOLEX® Installers.
- Considerable cost savings in poor load-bearing soils especially in expansive soils.



STANDARD FLOOR SLABS

Typically a 150mm (6") or a 300mm (12") thick CUPOLEX® floor slab is used for a standard floor such as residential or light commercial using CUPOLEX® and the corresponding accessory BETON STOP®. Where allowable bearing pressures are less than 100 kPa, additional reinforcements are used and a specific design is applied to reduce the imposed bearing pressures.

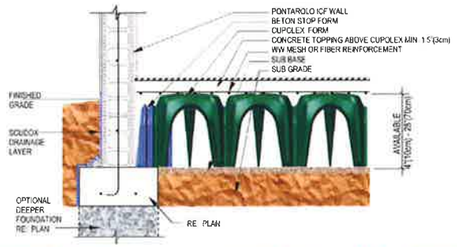
6x6 W4.0/4.0 (152x152 MW25.8/25.8) welded wire mesh with saw cuts or 152 x 152 MW34.9/34.9 (6x6 W5.4/5.4) mesh without saw cuts are used in the topping throughout the slab. Additional reinforcing is used where increased load capacity is required such as garage areas or heavy loaded floors.

A common criticism of wire mesh is that it settles in the fresh concrete and ends up lying on the granular base, rendering it completely useless. The wire mesh when placed on the CUPOLEX® elements is positioned exactly at the elevation required with no need to be lifted up into place.

Where top soil layers are thick, higher CUPOLEX® can be used to create a deeper slab. This replaces the hard fill that typically is required to bring the slab to level and eliminate the costs associated with importing, compacting and certifying engineered fill.

Each slab is specifically designed and includes; Stamped construction drawings with schedule indicating the number of CUPOLEX® and BETON STOP® required, the total concrete volume required and the reinforcements for the entire floor, an inspection and certificates from a Registered Professional Engineer on completion of each slab.

When the slab is ready for construction simply phone your Registered Approved Contractor and quote the reference number of your design to arrange delivery. The exact quantity of CUPOLEX® and BETON STOP® will be delivered to the project site. No cutting, wastage or disposal of the CUPOLEX® components is required reducing time and costs.



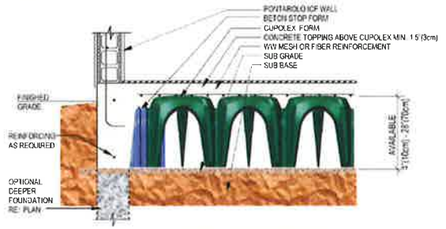
CONVENTIONAL FLOOR SLAB: HARDFILL REPLACEMENT, FLOATING SLABS OR CRAWLSPACES

Where conventional block base construction or concrete wall foundations are used, the CUPOLEX® domes can be placed between foundation walls to replace the compacted hard fill or clear gravel.

Advantages of the CUPOLEX® system include a reduction in:

- Labour / Subcontractors
- Hard fill or gravel and associated compaction and plant costs
- Concrete consumption
- Exterior footing size associated with retaining compacted engineered fill
- Minimal construction traffic damage
- Mould and mildew associated with conventional crawl spaces.

The CUPOLEX® units can be installed flush against the foundation wall without using BETON STOP®. On sloping sites various height CUPOLEX® units from 26cm (10") to 70cm(28") high can be used, stepping down the site to form a level upper surface. The CUPOLEX® slabs can also be stacked if finished floor elevations are required to be higher.



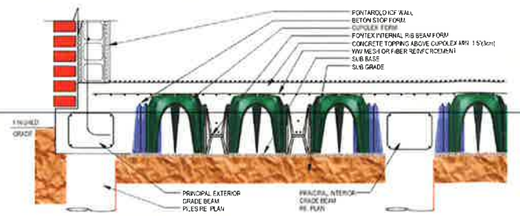
FULLY SUSPENDED STRUCTURAL FLOOR SLAB

Reasons for suspending a floor slab may include:

- Unsuitable ground conditions (very low bearing pressures) and expansive soils
- Bridging over public storm water and sewer lines
- Slope stability issues

The CUPOLEX® floor slab can be fully suspended on reinforced concrete piles. Additional reinforced internal ribs are then used in the slab by introducing PONTEX®, the structural CUPOLEX® accessory to provide a structure capable of spanning between pile locations.

Very little additional work or material is required to provide a suspended floor slab system and in many cases exterior footing reinforcement remains unchanged. As with all slabs, each suspended CUPOLEX® floor is specifically designed to suit site conditions, pile numbers are optimized to limit additional costs. Specific design calculations, engineered drawings and Design Certificates are provided for each design by an Approved Registered Professional Engineer.



INDUSTRIAL/COMMERCIAL FLOORS

CUPOLEX® Dome Forming System can be specifically designed for use on industrial floors. Loads of more than 10 kPa can be accommodated with topping thicknesses ranging from 50mm (2") to 120mm (5") over the CUPOLEX® elements.

In industrial applications, the reinforcing cages, pad foundations and other load bearing wall lines can be fixed into place first. The CUPOLEX® elements can then be used between load bearing lines to act as hard fill replacement and to bring the slab up to the required elevation. The footings, tie beams and the floor slab can be poured in one operation.

Advantages of the CUPOLEX® industrial floor slab system include:

- Footings, grade and tie beams, load bearing wall lines cast monolithically with the floor slab
- Elimination of interior box forming without wasting concrete
- Reduced concrete consumption
- Reduced reinforcement usage
- Eliminate or reduce engineered or hard fill and compaction requirements beneath the slab controlling slab thickness
- Ease of transportaion of components 1.2m (4') x 1.2m (4') x 1.9m (7') = 110 m2 (1200sq.ft.)
- Reduced labour costs, 150 m2 (1600 sq.ft) laid in 2 man hours, fast assembly with minimal site work requirements and construction traffic damage on site.

APPENDIX 5
Remedial Waste Management Program

APPENDIX 5

REMEDIAL WASTE MANAGEMENT PROGRAM

BROWNFIELD CLEANUP PROGRAM (BCP)
SITE NO. C734142
Village of Camillus, Onondaga County

July 13, 2016

1.0 INTRODUCTION

This Remedial Waste Management Program has been developed in conjunction with the Remedial Action Work Plan (RAWP) for the former Camillus Cutlery Company property (Site), BCP Site No. C734142. References to Appendices herein refer to Appendices within the RAWP.

The waste management program pertains to the following remedial and investigation-derived wastes:

- Contaminated soils from remedial excavations within Areas of Concern (AOCs).
- Drill cuttings from soil borings and temporary monitoring well construction below the West Building (AOC - 3.1).
- Contaminated liquids, including water pumped from AOCs, monitoring well development and purge waters and equipment decontamination water.
- Used personal protective equipment (PPE) and sampling equipment.

Procedures to be utilized for management of the wastes are summarized below.

2.0 CONTAMINATED SOILS

Off-site disposal of contaminated soils (remedial excavations and drill cuttings):

- A representative, composite soil sample(s) will be collected from each stockpile for waste characterization analysis in accordance with the requirements of the designated disposal

facility(s). The analysis will be performed by a New York State Department of Health (DOH) ELAP[1] approved laboratory and may potentially include any or all of the following[2]:

- Volatiles, semi-volatiles, metals and pesticides/herbicides by toxicity characteristic leaching procedure (TCLP).
- PCBs
- Paint filter, reactivity, corrosivity and ignitability/flashpoint.

- Depending on the analytical results and site history, a waste profile will be prepared and the soils will be characterized as either hazardous, or non-hazardous industrial waste.
- The soil will be transported to a permitted disposal facility(s)[3] by DEC Part 364-permitted haulers[4].
- Disposal documentation including manifests, bill of ladings and/or weight tickets, shall be provided for inclusion within the Final Engineering Report (FER).

3.0 CONTAMINATED LIQUIDS

Based on the relatively minor quantity of contaminated water which is expected to be encountered/generated, it is anticipated that off-site disposal, rather than on-site treatment will be performed. The primary elements of the off-site disposal program are summarized below.

- Liquids will be contained in a storage tank(s) or 55-gallon drums and characterized in accordance with the designated disposal facility(s) requirements. If required, a representative sample(s) shall be obtained and submitted to the designated laboratory for analysis in accordance with the criteria of the disposal facility.
- Depending on the analytical results and/or Site history, a waste profile will be prepared and the water will be characterized as either hazardous, or non-hazardous waste.
- The water shall be pumped out of the storage tank(s) or drums and transported to a permitted disposal facility(s) by a DEC Part 364-permitted hauler.

[1] ELAP – DOH Environmental Laboratory Approval Program

[2] Ref: 40 CFR Part 261: *Identification and Listing of Hazardous Wastes*.

[3] Ref: 6NYCRR Part 360: *Solid Waste Management Facilities*.

[4] Ref: 6NYCRR Part 364: *Waste Transporter Permits*.

- Transport shall be documented using manifests or bill of ladings, as applicable. Copies shall be provided for inclusion within the FER.

- If a portable storage tank(s) is utilized, the tank(s) shall be pressure-washed and cleaned, with rinse waters and residues disposed of at a permitted disposal facility. Non-pumpable solids, if any, shall be removed and consolidated with the stockpiled soils for subsequent off-site disposal [Section 2.0].

- Any demobilization-related sampling and analysis (e.g., PCB wipe tests) required by the tank supplier shall be performed and results provided for inclusion within the FER.

4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SAMPLING EQUIPMENT

Used sampling and personal protective equipment (PPE) such as disposable bailers, nitrile gloves, etc., will be containerized in DOT 1A2 (i.e., open-top) drums. The drums will be transported off site by a DEC Part 364-permitted hauler to a permitted disposal facility.

APPENDIX 6
Decontamination Program

APPENDIX 6

DECONTAMINATION PROGRAM

BROWNFIELD CLEANUP PROGRAM (BCP)
SITE NO. C734142
Village of Camillus, Onondaga County

July 13, 2016

1.0 INTRODUCTION

The following are descriptions of decontamination procedures to be utilized for heavy equipment, hand tools/ small equipment, and personnel during Remedial Action (RA) operations at the Site.

2.0 HEAVY EQUIPMENT

Heavy equipment such as backhoe buckets and drilling augers shall be decontaminated at the decontamination (decon) pad, between use at each Area of Concern (AOC) and as needed in accordance with the following procedures:

- Removal of loose soil debris (i.e., using a brush, broom, shovel or spade). Transfer of removed soils to the contaminated soil stockpile(s).
- Rinsing using a high-pressure water or water/hydrocarbon emulsifier (e.g., Biosolve) solution.
- Rinse waters shall be contained at the decon pad and transferred to storage tanks or drums, or removed by vac truck for subsequent off-site disposal.

3.0 SMALL EQUIPMENT / HAND TOOLS

Small equipment and hand tools such as shovels, spades and drilling "split-spoons" shall be decontaminated in accordance with the following procedures:

- Remove gross contaminants from equipment with a sorbent pad or towel.
- Wipe down monitoring equipment with a disposable paper wipe.

- Scrub hand tools in water/industrial detergent (e.g., "Alkanox") solution, followed by rinsing with water.

- Spent cleaning solution to be consolidated in storage tank(s) or drums, with decon liquids for subsequent off-site disposal.

- Towels, wipes and groundwater sampling equipment (used bailers, gloves, etc) shall be placed in open top drums or consolidated with bulk contaminated soils for subsequent off-site disposal.

4.0 PERSONNEL

The following decontamination procedures shall be followed by Site personnel:

- Disposable personal protective equipment (PPE - e.g., nitrile gloves) shall be removed before meal breaks and at the conclusion of the workday and replaced with new PPE before commencing work. Spent disposal PPE will be placed in designated containers (e.g. 55-gallon drum) or consolidated with bulk soils for off-site disposal.

- Should upgrade to Level C PPE be necessary, the following decontamination procedure will be used:
  - Deposit equipment on plastic drop cloths or in designated containers.
  - Scrub over boots and outer gloves with decontamination solution (soap/detergent).
  - Rinse off decontamination solution with clean water.
  - Remove over boots and outer gloves and deposit in designated containers.
  - Remove coveralls (Tyveks) and dispose.
  - Remove inner glove and deposit in disposal container.
  - Remove respirator.

- Respiratory and other non-disposable PPE will be fully decontaminated as described in *Section 3.0: Small Equipment/Hand Tools* and placed in a clean storage area.

- Decontamination procedures for higher levels of protection will be provided if required.

APPENDIX 7
HASP

APPENDIX 7

DRAFT

SITE-SPECIFIC HEALTH AND SAFETY PLAN (HASP)

for the

Former Camillus Cutlery Property
52 & 54 Genesee Street
Village of Camillus
Onondaga County, New York

Prepared for:

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TDK Project No. 2009040

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Site-Specific Health and Safety Plan (HASP) is to provide guidelines and establish procedures for the protection of TDK Engineering & Associates, P.C. (TDK) personnel performing work in connection with the Remedial Action (RA) phase of the Brownfield Cleanup Program (BCP) at the former Camillus Cutlery Company Site, located at 52 and 54 Genesee Street in the Village of Camillus, NY (Site). This HASP provides a description of the potential chemical and physical hazards that may occur in connection with this project and establishes procedures for counteracting these hazards.

TDK personnel that are performing work on-site in connection with this RA will be required to comply with the applicable rules and regulations defined in this Site-Specific HASP. A copy of the HASP shall be maintained on-site. Any conflicts that exist between the HASP and the actual policies and procedures utilized should be brought to the attention of the Project Manager.

1.2 Applicability

This HASP will apply to the activities of TDK personnel. Other personnel that may be engaged in Site activities are responsible for providing and adhering to their own HASP's, as/if applicable.

1.3 Scope of Work

Field work to be completed by TDK personnel during the RA includes the following:

- Direction of contractors engaged in excavation, drilling or sampling operations.
- Sampling of excavation soils.
- Development of groundwater monitoring wells.
- Site mapping.

1.4 Description of Site

For the purposes of this HASP, the "Site" is defined as the 4.28-acre BCP Site, the limits of which are indicated on the *Remedial Action Plan* [*Figure RA-1*, Exhibit 1].

1.5 References

This HASP references the following documents:

- Code of Federal Regulations (CFR) Title 29, Parts 1910 & 1926 – *Occupational Safety & Health Standards and Safety and Health Regulations for Construction*, U.S. Department of Labor – Occupational Safety and Health Administration (OSHA).

2.0 ORGANIZATION/RESPONSIBILITIES

2.1 Site Safety and Health Officer

The Site Safety and Health Officer (SSHO) shall be responsible for the implementation and enforcement of the Site-Specific Health and Safety Plan (HASP). Specific responsibilities of the SSHO include, but are not necessarily limited to:

- Verifying compliance with all aspects of the Site-Specific HASP, including directing the employees of TDK, to stop work, leave the Site or implement corrective measures, as necessary with regard to site-specific safety and health issues.
- Coordinate the air monitoring program.
- Conducting accident investigations and preparing accident reports.
- Implementing emergency response procedures, if necessary.

The SSHO for this project is John C. Herrmann, P.E. of TDK.

2.2 Project Manager

The project manager is responsible for providing upper level management support for health and safety, and will provide sufficient resources and authority to the SSHO to satisfy health and safety requirements. The project manager is Joseph E. Durand, P.E. of TDK.

3.0 EMPLOYEE TRAINING

3.1 General OSHA

All TDK employees working on-site during the RA must have received a minimum of 40 hours of Hazardous Waste Operations and Emergency Response training, pursuant to U.S. Department of Labor – Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. Additionally, 8 hours of refresher training is required annually for all TDK employees.

3.2 Site-Specific

3.2.1 Periodic ("Tool Box") Meetings

The Site Safety and Health Officer (SSHO) shall conduct brief, "tool-box" safety meetings at a minimum frequency of one meeting per week. At that time, TDK employees shall be instructed on the content and implementation of the Site-Specific Health and Safety Plan (HASP), including the following:

- Anticipated Site hazards and control measures, including hazardous procedures specific to the project scope of work (i.e., drilling, etc.).

- Employee and supervisor responsibilities.
- Procedures for reporting and correcting unsafe conditions or work practices.
- Procedures for reporting all accidents, obtaining medical treatment or emergency assistance.
- Personal protective equipment (PPE) requirements, including action levels for upgrading PPE.

During the meetings, safety and health issues that may have arisen in connection with the work that has previously been performed will be discussed, including any modifications to the safety and health procedures, work practices or Site-Specific HASP. The SSHO shall be responsible for keeping a record of all toolbox meetings.

4.0 MEDICAL SURVEILLANCE

Some TDK employees working on this project may receive medical surveillance as required by 29 CFR 1926.65(f), depending on the employees, duties and duration of potential exposure to hazardous substances. This Site Specific Health and Safety Plan (HASP) contains no project-specific medical surveillance requirements above OSHA's requirements. Contractor personnel are responsible for completing their own surveillance per OSHA requirements.

5.0 SITE CHARACTERIZATION/HAZARD ASSESSMENT

5.1 Background Information (Historical Records)

The following historical records were reviewed to determine the anticipated chemical and physical hazards specific to this Site:

- Environmental Records Vendor Report, Environmental Data Resources (EDR) No. 2479432.2s, dated April 28, 2009.
- Local DEC Records (FOIL[1] No. 8212).
- Sanborn Fire Insurance Maps.
- Historic Aerial Photographs and Regional Topographic Maps.
- Abstract of Title.
- Screening Level Site Investigation conducted by Acquisition-Support Environmental (ASE), October 2008.

[1] FOIL – Freedom of Information Law.

- *Remedial Investigation Report for the Former Camillus Cutlery Company Site – Brownfield Cleanup Program Site No. C734142*, prepared by TDK Engineering, dated March 30, 2016.

- *Remedial Investigation Supplemental Report for the Former Camillus Cutlery Company Site – Brownfield Cleanup Program Site No. C734142*, prepared by TDK Engineering, dated June 7, 2016.

5.2 Chemical Hazards

5.2.1 Identification

Chemical hazards at the Site include potential exposure to heavy metals, solvents, polynuclear aromatic hydrocarbons (PNAs), Volatile Organic Compounds (VOCs) and Polychlorinated Biphenyls (PCBs). The potential adverse health effects associated with these substances may include, but are not necessarily limited to, the following:

Heavy Metals

Eye, skin and respiratory system irritation and/or damage; weakness, facial pallor, abdominal pain, tremors and insomnia; gastrointestinal (GI) tract, central nervous system (CNS), kidney and blood damage.

Solvents/VOCs

Adverse impacts to CNS; kidney and liver damage; carcinogens

PNAs

Phototoxic skin reactions; eye irritation; bronchitis; cancer of lungs, skin, bladder and kidneys.

PCBs

Potential carcinogens.

Exposure to contaminants may be expected primarily during excavation, contaminated soil loading, drilling, monitoring well development/purging and sampling activities. Based on the anticipated site activities and assuming that prudent safety and hygiene practices are adhered to, ingestion of Site contaminants is unlikely. The more likely routes of exposure are therefore inhalation and/or contact with the skin.

5.2.2 Control Measures

The following procedures will be utilized to control potential exposure to the identified chemical hazards:

- Personal protective equipment (PPE) will be worn when contact with contaminated water or soil is likely.

- Implementation of air monitoring program.

Refer to Sections 6.0 and 7.0 for additional information.

5.3 Physical Hazards - General

Physical hazards which are typical to most construction projects may be encountered during Site activities. The following sections outline potential physical hazards to be encountered and procedures to control each hazard.

5.3.1 Slip / Trip / Fall Injuries

Slip, trip and fall hazards can be reduced by avoiding work on slippery surfaces or steep slopes, wearing slip resistant footwear, working with a low center of gravity and making slow and deliberate movements. Personnel must be aware that PPE may limit dexterity and visibility and may increase the difficulty of performing some tasks.

5.3.2 Overhead work

Falling objects (e.g. from drill rig masts and potentially loose ceiling components inside buildings) can cause serious, debilitating head injuries. The use of head protection (hard hats) is required at all times when working on-Site.

5.3.3 Weather

Heat Stress

Based on the current project schedule, heat stress is a potential hazard for Site personnel, and is compounded by wearing personal protective equipment (PPE). Due to its impervious nature, PPE can trap body heat and therefore magnify the effects of warm temperatures. The risk of developing heat stress can be reduced by:

- Adjusting work schedules.
- Provided air conditioned or shaded rest areas.
- Sufficient intake of fluids.
- Acclimatizing workers to site conditions.
- Reviewing recognition and treatment of heat stress with all personnel.

Inclement Weather

Severe rain, snow or electrical storms can also pose risks to Site personnel. Work may need to be stopped under such conditions. Outside work should be suspended, including the lowering of drill rig masts, during electrical storms.

5.3.4 Power and Hand tools

Only power tools with grounded three wire plugs should be used. GFIs must be used at all times when using power tools. Tools must be checked frequently for defects and maintained properly. All power tools must be unplugged before making adjustments or repairs.

The following will also reduce the hazard associated with working with power and hand tools:

- Site personnel should only operate tools for which they are familiar with and have been properly trained.
- Maintain all equipment guards and never remove or block.
- Make frequent inspections for defective blades, wheels, cords and plugs.
- Air hoses on pneumatic tools should not be disconnected until pressure is relieved.
- Compressed oxygen must never be used to power pneumatic equipment.
- Hand tools must be kept in good repair, and tools should only be used for the purpose they were designed.
- Tools should never be left on ladders, scaffolds or areas where they will create a trip or fall hazard.

5.3.5 Lifting

Back injuries are the most common injury in the construction industry and are usually caused by improper lifting techniques. The following techniques will help reduce the potential of sustaining a lifting injury:

- Inspect the work area before lifting for trip hazards.
- Set feet solidly and well apart, with one foot slightly ahead of the other.
- Crouch as close to the load as possible, with the legs bent.
- Keep back as straight as possible.
- Do not twist or turn during lifting.
- "Lift with your brain - then lift with your back."

5.3.6 Noise

Adverse impact from noise can be minimized by wearing hearing protection as needed. U.S. Department of Labor – Occupational Safety and Health Administration (OSHA)'s occupational action level is an 8-hour time-weighted average of 85 decibels as measured on the A scale (slow response).

5.3.7 Vehicular Traffic

The Site's parking lot and drive lanes are readily accessible by Genesee Street and Newport Road. Therefore, vehicular traffic is a potential hazard while working on the Site. Any Site personnel who are potentially exposed to vehicular traffic shall wear reflectorized or orange material. At a minimum, American National Standards Institute Class 2 vests shall be worn. The work areas shall be clearly delineated using New York State Department of Transportation (NYSDOT) approved orange traffic cones or barrels.

5.3.8 Manhole / Tank / Vault Covers

If manual tools (i.e., manhole hooks, crowbars, etc.) are utilized to open manhole, tank or vault covers, the following control measures shall apply:

- Never place hands or feet underneath a partially removed cover.
- Follow lifting techniques described in Section 5.3.5.

Any unattended openings shall be clearly identified using traffic cones and/or construction fence. No cover shall be left open overnight or if authorized personnel temporarily leave the Site.

If entry into the manhole, vault or tank is required, confined space entry procedures [Section 5.4.1] shall be followed.

5.4 Physical Hazards - Specific

A description of physical hazards specific to work on this Site and applicable control measures are described in the following paragraphs:

5.4.1 Confined Space Entry

Should entry into a confined space (i.e., catch basin, pit or manhole) be necessary, it will be performed in accordance with 29 CFR 1910.146, *Permit-Required Confined Spaces*. Specific procedures are provided in Exhibit 2.

Note that the confined space entry procedures defined within this Site-Specific Health and Safety Plan (HASP) applies to TDK employees only. If unknown conditions are encountered which require confined space entry by contractor personnel (e.g., buried tank), the contractor shall provide their own site-specific HASP and perform all work in accordance with applicable OSHA requirements.

5.4.2 Drum Handling

Handling of drums and containers, if required, shall be performed in accordance with 29 CFR 1910.120(j), and the procedures summarized below:

- Drums shall be New York State Department of Transportation (DOT)-approved 1A1 or 1A2 (closed or open top, respectively) and shall be staged within the designated area shown on the *Remedial Action Plan* [*Figure RA-1*, Appendix 1 of Remedial Action Work Plan (RAWP)].
- The drums shall be labeled immediately after filling. Each label shall indicate the Brownfield Cleanup Program (BCP) Site Name and number, contents of the drum and the process which generated contents (e.g., drill cuttings, equipment decontamination, etc.).
- Drum staging area shall be provided with adequate ingress/egress routes.
- The drums should only be moved using mechanical or hand equipment specifically designed for that purpose (e.g., drum forklift or hand drum cart). No drums should be lifted overhead and Site personnel shall not stand under or adjacent to a drum that is being moved.

5.5 Site Control

Site control measures will be utilized to minimize exposure of on-Site personnel to contaminants, impede the tracking of contaminants off-site and discourage unauthorized entry to specific work areas. A three-zone system will be utilized to control the flow of personnel, materials, and equipment. These three zones are the exclusion zone, contamination reduction zone and support zone and are described in the following paragraphs:

5.5.1 Exclusion Zone (EZ)

The exclusion zone (EZ) the area of known or suspected contamination. Only personnel directly involved in work activities and who are wearing the prescribed level of personal protective equipment (PPE) will be allowed in the EZ.

5.5.2 Contamination Reduction Zone (CRZ)

The contamination reduction zone (CRZ) serves as a point of decontamination for equipment and personnel leaving an EZ. Removal of PPE and decontamination of small tools/equipment will be performed in the CRZ.

5.5.3 Support Zone (Clean Zone)

The support zone includes all areas not defined by CRZ or EZ. Administrative or support services, material and equipment storage and personal vehicle parking will be located in this zone. The support zone should have negligible potential for exposure to contaminants on site.

The limits of the EZ, CRZ and support zone will be as defined in the applicable contractor's HASP.

6.0 PERSONAL PROTECTIVE EQUIPMENT

The purpose of Personal Protective Equipment (PPE) is to shield or insulate individuals from the chemical and physical hazards that may be encountered during various work activities. The components of the PPE ensembles for each level of protection will be selected and/or modified based on site-specific conditions, including heat and cold stress potential and safety hazards.

6.1 Initial Level of PPE Required

The initial level of protection anticipated for this project is Level D. The requirements for Level D PPE are summarized below:

Level D PPE:

- Hard hat
- Safety glasses / goggles
- Hearing protection (as needed)
- Steel toe/shank work boots
- Over boots (optional)
- Work gloves (optional)

6.2 PPE Upgrade (if Required)

PPE may be upgraded to Modified Level D, at the discretion of the SSHO, to further minimize contact with potential contaminants. Modified Level D PPE consists of Level D, with the addition of a Tyvek suit and chemical-resistant gloves and boots, as summarized below.

Modified Level D PPE:

- Hard hat
- Safety glasses / goggles
- Hearing protection (as needed)
- Steel toe/shank work boots
- Over boots
- Chemical resistant gloves (e.g., nitrile)
- Tyvek QC coverall

In the event that air monitoring indicates organic vapors above the action level (e.g., entry into a catch basin, manhole or wastewater pit), an upgrade to Level C PPE may be

required. Level C consists of Modified Level D with the addition of non-powered respiratory protection. Level C requirements are summarized below:

Level C PPE:

- Hard hat
- Safety glasses / goggles
- Hearing protection (as needed)
- Steel toe/shank work boots
- Over boots
- Chemical resistant gloves (e.g., nitrile)
- Tyvek QC coverall
- Air purifying respirator with HEPA/Organic Vapor Cartridge

7.0 AIR MONITORING

Excavation, contaminated soil loading, and drilling operations may result in the release of Volatile Organic Compounds (VOCs) to the breathing zone of Site personnel. Therefore, the following air monitoring procedures will be utilized to determine the appropriate level of respiratory protection.

7.1 Equipment

Air monitoring shall be performed using a photoionization detection (PID) meter. The PID meter will be calibrated daily and maintained according to the manufacturer's instructions.

7.2 Procedure

Work area monitoring will be performed during intrusive (e.g., soil disturbance) activities. For the purposes of this Health and Safety Plan (HASP), the work area is defined as the Exclusion Zone (EZ) or within 25 to 50-feet of each excavation, soil pile or boring while soil disturbance operations are in progress. PID readings will be taken by the Site Safety and Health Officer (SSHO), or an individual designated by the SSHO, and recorded on the *Air Monitoring Log* [Exhibit 3] at approximately ½-hour intervals.

7.3 Action Levels

Action levels are work area concentrations of organic vapor which, if exceeded, require an upgrade in Personal Protective Equipment (PPE) and/or implementation of an engineering control to reduce the concentrations to below the action level. The upgrade of PPE and engineering control must continue until air monitoring results taken by the SSHO indicate that concentrations are below the action level(s).

Table 7.3.1 summarizes organic vapor action levels that will be used for this RA.

Table 7.3.1 - Action Levels

Contaminant	*Monitoring Location*	*Action Level*	*Control Action*
Organic Vapors	Work Area (EZ)	10 ppm	Increase monitoring frequency to every 15 min.
		20 ppm	Upgrade to Level C PPE

Air monitoring results must be sustained concentrations (minimum 10 minutes) to initiate upgrade to Level C PPE.

7.4 Community Air Monitoring Program

Note that additional air monitoring requirements, including particulate monitoring, have been established relative to the Community Air Monitoring Plan (CAMP). Refer to Appendix 8 of the RAWP for additional information.

8.0 DECONTAMINATION

Decontamination procedures are utilized to minimize the potential for the tracking of contamination off-site by employees and/or equipment. Adherence to proper decontamination practices also facilitates protection of support zone personnel from exposure to hazardous materials.

8.1 General

The following are general contamination prevention techniques and should be followed while working on the Site:

- Avoid walking through areas of obvious or known contamination unless working directly in that area.
- Do not touch soil, water or sludge unless necessary and wearing appropriate Personal Protective Equipment (PPE).
- Avoid contact with unidentified materials.
- Fasten all closures on PPE, covering with tape if necessary.
- Wash hands and face upon leaving the work area and before eating, drinking or other activities.
- Do not touch soil, water or sludge unless necessary and wearing appropriate PPE.

8.2 Decontamination Procedures

8.2.1 Personnel

The following decontamination procedures shall be followed by Site personnel:

- Disposable personal protective equipment PPE (e.g., nitrile gloves) shall be removed before meal breaks and at the conclusion of the workday and replaced with new PPE before commencing work. Spent disposal PPE will be placed in designated containers (e.g. 55 gallon drums).
- Should upgrade to Level C PPE be necessary, the following decontamination procedure will be used:
  - Deposit equipment on plastic drop cloths or in designated containers.
  - Scrub over boots and outer gloves with decontamination solution (soap/detergent).
  - Rinse off decontamination solution with clean water.
  - Remove over boots and outer gloves and deposit in designated containers.
  - Remove coveralls (Tyveks) and deposit in disposal container (i.e. place in 55-gallon drum).
  - Remove inner glove and deposit in disposal container.
  - Remove respirator.
- Respiratory and other non-disposable PPE will be fully decontaminated as described in Section 8.2.3: *Small Equipment/Hand Tools* and placed in a clean storage area.
- Decontamination procedures for higher levels of protection will be provided if required.

8.2.2 Heavy Equipment

Heavy equipment such as drilling augers and rods shall be decontaminated in accordance with the procedures summarized in *Decontamination Program* [Appendix 6 of RAWP]:

8.2.3 Small Equipment / Hand Tools

Small equipment and hand tools such as shovels, spades and drilling "split-spoons" shall be decontaminated in accordance with the following procedures:

- Remove gross contaminants from equipment with sorbent pad or towel.
- Wipe down monitoring equipment with a disposable paper wipe.

- Scrub hand tools in water/industrial detergent (e.g.., "Alkanox) solution and rinse with water.

- Waste PPE, sorbent pads, wipes and used groundwater sampling equipment (bailers, etc.) and decontamination/equipment rinse waters shall be contained in DOT-approved 55 gallon drums. The drums shall be labeled in accordance with their contents. Off-site disposal of all solid and liquid waste materials shall be performed in accordance with the *Remedial Waste Management Program* [Appendix 5 of RAWP].

9.0 ACCIDENT PREVENTION GUIDELINES

The following general guidelines should be followed by Site personnel in order to minimize the potential for accidents:

- Immediately bring to the attention of the Site Safety and Health Officer (SSHO) any potentially unsafe condition or work practice.

- Suspend work and reevaluate the hazard and level of personal protective equipment (PPE) required upon the discovery of any unknown or unanticipated situation.

- Do not eat, drink, chew gum or tobacco, take medication or smoke in any contaminate reduction or exclusion zone.

- Do not attempt to work onsite if under the influence of illegal drugs or alcohol.

- Inform your doctor of the possibility of contact with toxic material before allowing them to write you any new prescriptions.

- If taking over-the-counter drugs within a day before working on-site, inform the SSHO of any warnings on the drug's label.

10.0 EMERGENCY RESPONSE

In the event of an accident or emergency situation, immediate action must be taken by the first person to recognize the emergency. TDK personnel will use the emergency procedures described in the following paragraphs. The Site Safety and Health Officer (SSHO) shall be notified of any onsite emergency and be responsible for ensuring that the appropriate procedures are followed. In cases involving serious personal injury, fire or explosion, the SSHO shall notify the proper authorities (see Table 10.1 for emergency phone numbers).

During an emergency the SSHO will assume command of the situation, with all employees reporting to him.

If the cause of the injury, or absence of the injured person, does not affect the performance of Site personnel, operations may continue. Activities shall not resume until the risk is evaluated and removed.

Table 10.1- Emergency Phone Numbers

Emergency/Medical Resource	*Phone Number*
Emergency Services	911
Community General Hospital	(315) 492-5791
NYSDEC Spill Hotline	518-457-7362

10.1 Emergency Equipment

In order to provide emergency assistance to sick or injured workers, the following supplies and equipment will be available at each work site:

- Portable emergency eyewash.
- Potable water or Gatorade
- First Aid kit containing supplies for initial treatment of minor cuts and abrasions, chemical/acid burns, snake and insect bites, and for immobilization of fractures. To prevent exposure to bloodborne pathogens, the First Aid kit will also include disposable gloves, aprons/gowns, and eyeshields and face masks to shield eyes, nose and mouth from splashes,
- A minimum of one ABC-type dry chemical fire extinguisher,
- Radio or telephone, and
- A copy of this Site-Specific Health and Safety Plan (HASP).

All emergency equipment will be located at the Contaminate Reduction Zone(CRZ).

10.2 Evacuation Plan

In the event that a site emergency necessitates evacuation from the Site, the following procedures shall be followed:

- Upon notification, all personnel shall evacuate the Site in an orderly fashion and regroup at the pedestrian access to the site off North Street, or alternatively, the Site entrances off Genesee Street or Newport Road. The route of evacuation and meeting point will depend on the severity of the accident, wind direction (as visually determined) and proximity to the accident. Each employee shall find the safest route to the designated meeting area.

- All personnel shall wait at the designated regrouping area for further instruction. No employee shall leave the site until the emergency is under control and approval to leave is given by the Site Safety and Health Officer (SSHO).

Personnel shall not re-enter the Site until:

- The condition resulting in the emergency has been corrected.
- The hazards have been reassessed, and the Site-Specific Health and Safety Plan (HASP) has been reviewed.
- Site personnel have been briefed on any changes to the HASP.

10.3 Equipment Failure

In the event of equipment failure, the SSHO shall be notified and shall determine the effect of this failure on continuing operations at the Site. If the failure affects the safety of personnel or prevents completion of the work plan tasks, all personnel shall leave the work area until the situation is evaluated and appropriate actions are taken.

10.4 Spill Control Plan

10.4.1 Materials

The following equipment and supplies will be provided in close proximity to the work area for rapid access and/or deployment in case of spills:

- Sand, clean fill, or other non-combustible absorbent.
- Shovels
- Wash water / Soap for decontaminating tools & equipment
- 55 gal drums (DOT-approved).

10.4.2 Containment Procedures

Solid Spills

Remove and place contaminated materials into 55-gallon drums (DOT 1A2) and cover. Label drums to indicate contents. Coordinate disposal in accordance with local, state and federal regulations.

Liquid Spills

Absorb with sand, clean fill, or noncombustible absorbent material. Remove and place absorbent/spill mixture into 55-gallon drums (DOT 1A2) and cover. Label drums to indicate contents. Dispose of drums in accordance with local, state, and federal regulations.

Notification Procedure

If the spill or discharge is reportable, the SSHO or designated representative shall notify the New York State Department of Environmental Conservation (DEC)'s Spill Control Hotline listed below.

EMERGENCY SPILL NOTIFICATION CONTACTS

New York State
Department of Environmental Conservation
SPILL CONTROL HOTLINE
1-800-457-7362

10.5 Route to Hospital

A map indicating the route to the nearest hospital is attached [Exhibit 4].

10.6 Emergency Routing Requirements

All accidents, injuries and overexposure to contaminants regardless of how minor, will be reported to the SSHO, who will report the incident in a field logbook. Additionally, the SSHO will conduct an on-site safety meeting to review the incident and applicable safety precautions.

Finally, the SSHO will complete an incident report. The report will include:

- Name, organization, telephone number, and location of the applicable company(s).
- Name and title of person completing report.
- Date and time of incident.
- Location of incident.
- Brief summary of incident.
- Cause of the incident, if known.
- Casualties, if any.
- Details of any existing chemical hazard or contamination.
- Estimated property damage, if applicable.
- Nature of damage and effect on the project schedule.
- Actions taken to ensure safety and security.

- Other damage or injuries, public or private.
- Logs, Reports, and Record Keeping

The following information will be maintained in a dedicated three-ring binder by the SSHO, along with the HASP:

- Employee training records (TDK employees)
- Employee medical surveillance records (TDK employees)
- Safety meeting records
- Accident report
- Air Monitoring Results

EXHIBIT 1

REMEDIAL ACTION PLAN [FIGURE RA-1]

TABLE RA-1
Remedial Excavation Summary

Area of Concern (AOC)	Surface Area	Volume of Soil to be Removed
AOC-1.0	1,600 SF	120 CY
AOC-2.1	3,520 SF	260 CY
AOC-2.2	1,080 SF	80 CY
AOC-3.1	21,000 SF	TBD

Key:

SF – Square Feet
CY – Cubic Yard
TBD – To Be Determined

Notes:

1. Horizontal and vertical limits of excavations may be modified, depending on field observations.

TABLE RA-2
Summary of Sample Locations and Parameters

Area of Concern (AOC)	No. of Samples	Location	Matrix	Type	Depth	Parameters
AOC-1.0	2	Bottom	Soil	Grab	2 ft	VOCs, SVOCs, Metals, PCBs
	4	Sidewalls	Soil	Grab	1 ft	VOCs, SVOCs, Metals, PCBs
AOC-2.1	4	Bottom	Soil	Grab	2 ft	VOCs, SVOCs, Metals, PCBs
	5	Sidewalls	Soil	Grab	1 ft	VOCs, SVOCs, Metals, PCBs
AOC-2.2	2	Bottom	Soil	Grab	2 ft	VOCs, SVOCs, Metals, PCBs
	4	Sidewalls	Soil	Grab	1 ft	VOCs, SVOCs, Metals, PCBs
AOC-3.1	1	MW-10	Soil	Grab	6' – 8'	VOCs
	1	MW-11	Soil	Grab	6' – 8'	VOCs
	1	MW-10	GW	Grab	WBZ	VOCs
	1	MW-11	GW	Grab	WBZ	VOCs
MS	2	TBD	Soil	Grab	TBD	VOCs, SVOCs, Metals, PCBs
MSD	2	TBD	Soil	Grab	TBD	VOCs, SVOCs, Metals, PCBs
Field Duplicate	2	TBD	Soil	Grab	TBD	VOCs, SVOCs, Metals, PCBs
MS	1	TBD	GW	Grab	WBZ	VOCs
MSD	1	TBD	GW	Grab	WBZ	VOCs
Field Duplicate	1	TBD	GW	Grab	WBZ	VOCs
Trip Blank	1	TBD	GW	Grab	WBZ	VOCs

Key:

VOCs – Volatile Organic Compounds
SVOCs – Semi-Volatile Organic Compounds
PCBs – Polychlorinated Biphenyls
GW – Groundwater
WBZ – Water Bearing Zone
MS – Matrix Spike
MSD – Matrix Spike Duplicate
TBD – To Be Determined

Notes:

1. Horizontal and vertical locations of samples may be modified, depending on field observations.

TABLE RA-3
Summary of Sample Methods, Container, Preservation and Holding Time Requirements
Former Camillus Cutlery Company Site
Brownfield Cleanup Program
Site No. 6734142

Analysis	Method	Holding Time (Days)		Containers		Preservative
		To Extraction	To Analyze	Number	Type	
Soil Samples						
Volatile Organic Compounds	SW-846 826OB		14	2	L	None
Semivolatile Organic Compounds	SW-846 8270C	14	40	2*	J	None
PCBs	SW-846 8082	14	365		J	None
Metals	SW-846 6010B/7470A		180 (28 for Hg)		J	None
Aqueous Samples						
Volatile Organic Compounds	SW-846 826OB		14	3	V	HCL

Key:

Container Types

V - 40 ml glass vial, Teflon septum cap liner, HCL
L – 2 oz. wide mouth glass, Teflon cap liner
J - 8 oz. wide mouth glass, Teflon cap liner

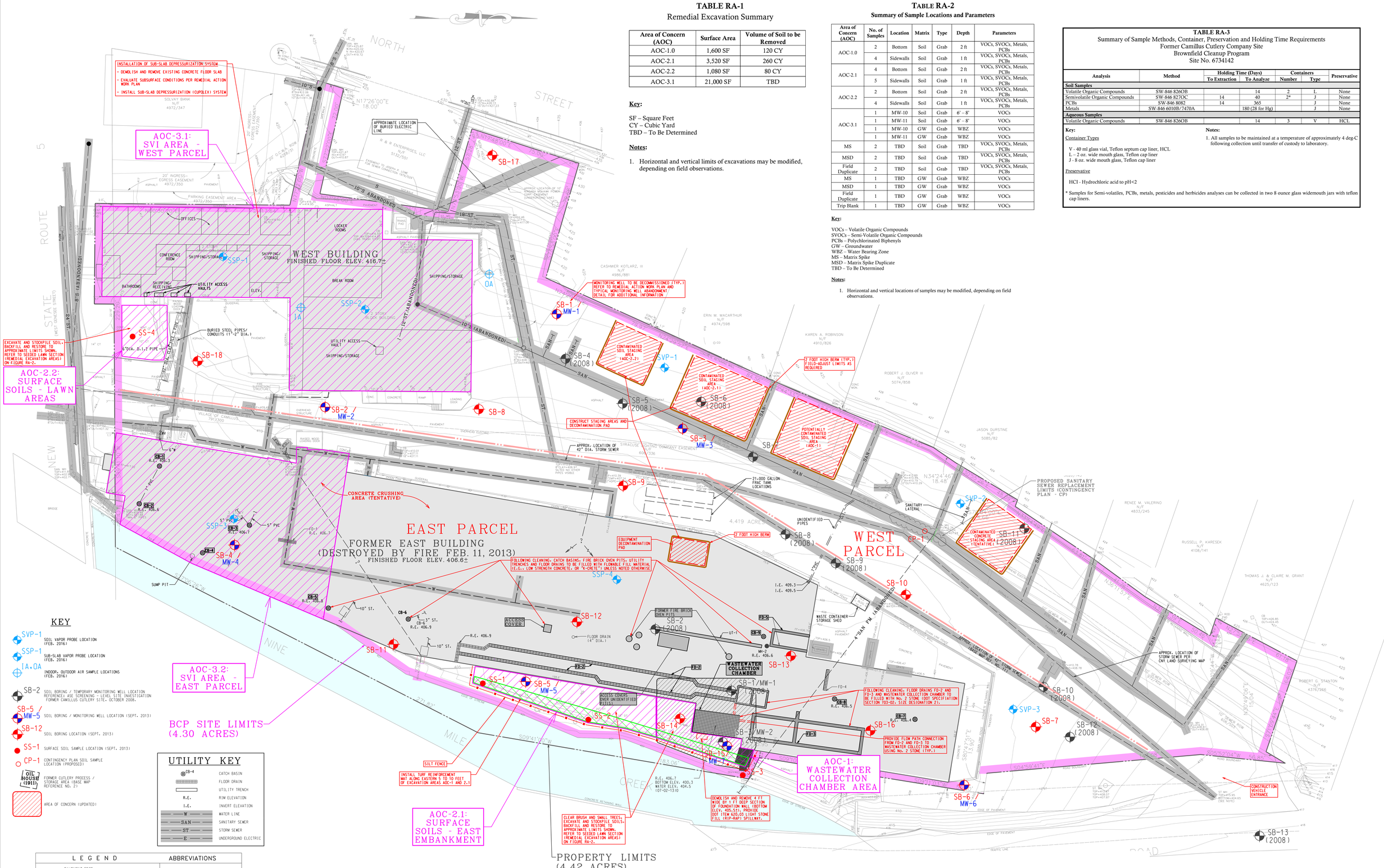
Preservative

HCl - Hydrochloric acid to pH<2

* Samples for Semi-volatiles, PCBs, metals, pesticides and herbicides analyses can be collected in two 8 ounce glass widemouth jars with teflon cap liners.

Notes:

1. All samples to be maintained at a temperature of approximately 4 deg-C following collection until transfer of custody to laboratory.



BASE MAP REFERENCES:

1. ASE SCREENING - LEVEL SITE INVESTIGATION, FORMER CAMILLUS CUTLERY SITE, OCTOBER 2008.
2. HISTORIC SANBORN FIRE INSURANCE MAPS, DATED 1911, 1927 AND 1940.
3. FIELD MAPPING COMPLETED BY TDK ENGINEERING ASSOCIATES P.C., ON JULY 11, 2012, JULY-SEPTEMBER 2013 AND FEBRUARY 2016.
4. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY CNY LAND SURVEYING, FILE NO. 11.128, DATED 03-09-12.
5. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY EXTERIOR UNDERWRITERS INSPECTION BUREAU, DATED NOV. 19, 1940.
6. MAP OF PART OF F.L. 80 TOWN OF CAMILLUS, VILLAGE OF CAMILLUS, ONONDAGA CO., NY, CAMILLUS CUTLERY COMPANY, NEW YORK, PREPARED BY RICHARD ZOGG, DATED JANUARY 22, 1974.
7. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY BROWN CROSBY & CO., INC. INSURANCE, DATED JUNE 1928.
8. FIRE INSURANCE MAP OF CAMILLUS CUTLERY CO., PREPARED BY ISO NEW YORK, DATED OCTOBER 24, 1972.
9. "PRELIMINARY" VILLAGE OF CAMILLUS (PLAN), DATED OCTOBER 1967.
10. CAMILLUS CUTLERY COMPANY RELOCATION OF STORM & SANITARY SEWER PLAN & PROFILE, PREPARED BY O'BRIEN & GERE ENGINEERS, INC., DATED MAY 3, 1972.
11. SURVEY MAP BUILDINGS AND PROPERTY OF CAMILLUS CUTLERY CO., PREPARED BY A.R. HOLMES (LIC. NO. 42671, DATED JANUARY 5, 1945.
12. NORTH STREET/MAIN STREET DRAINAGE IMPROVEMENTS PLAN & PROFILE, PREPARED BY BARTON & LOGUIDICE, P.C., DATED APRIL 1993.
13. PROPOSED NEW BUILDING ROUTING - CAMILLUS CUTLERY COMPANY (PLAN - DATE NOT LEGIBLE).
14. VILLAGE OF CAMILLUS FIRST STREET SEWER REPLACEMENT : GENERAL SEWER PLAN, PREPARED BY BARTON & LOGUIDICE, DATED MARCH 11, 1987.
15. ALTERATIONS TO THE CAMILLUS CUTLERY COMPANY BUILDING NO. 5 FIRST FLOOR - FLOOR PLAN, PREPARED BY DAN LEARY, ARCHITECT AIA, DATED APRIL 10, 1969.
16. CLOSED-CIRCUIT TELEVISION (CCTV) INSPECTION OF SANITARY SEWER CONDUCTED IN MAY 2012 BY ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION (WEP).
17. EXPANDED REMEDIAL INVESTIGATION PARTIAL PLAN, PREPARED BY TDK, DATED JUNE 8, 2016.
18. BOUNDARY SURVEY - PART OF LOT 80, VILLAGE OF CAMILLUS, COUNTY OF ONONDAGA, STATE OF NEW YORK, PREPARED BY CNY LAND SURVEYING, FILE No. 15.116, DATED JULY 5, 2016.

NOTES:

1. LIMITS OF AREAS OF CONCERN (AOC's) ARE APPROXIMATE.
2. THE LOCATIONS OF THE FOLLOWING ARE BASED ON AVAILABLE HISTORIC SOURCES AND ARE APPROXIMATE:
   - WATER SERVICE LINES
   - INTERIOR BUILDING WALLS
   - FORMER SANITARY FORCE MAIN
3. INTERIOR BUILDING WALLS REFLECT LOWER FLOORS.
4. BCP/SITE BOUNDARY MODIFICATION ADJACENT TO SOUTH WALL OF WEST BUILDING APPROVED THROUGH VILLAGE OF CAMILLUS BOARD RESOLUTION ON JULY 8, 2016, SUBJECT TO MODIFICATION BY VILLAGE ATTORNEY.
5. LOCATIONS AND DIMENSIONS OF CONTAMINATED SOIL STAGING AREAS AND EQUIPMENT DECONTAMINATION PAD ARE TENTATIVE AND SUBJECT TO MODIFICATION.

FIGURE RA-1 – REMEDIAL ACTION PLAN

7-12-16

DRAFT

PROJECT No.: 2009040
SCALE: 1" = 20'
DATE: 04-05-13
ENG'D BY: JCH
DRAWN BY: DKC
CHECKED BY: JED

DRAWING TITLE: REMEDIAL ACTION PLAN
SHEET: RA–1

PROJECT: BROWNFIELD CLEANUP PROGRAM
FORMER CAMILLUS CUTLERY COMPANY SITE
CLIENT: CAMILLUS MILLS, LLC
LOCATION: VILLAGE OF CAMILLUS, ONONDAGA COUNTY, NEW YORK

TDK Engineering Associates, PC
19 Genesee Street - Camillus, New York 13031 - PH: (315) 672-8726 - FX: (315) 672-8732
www.tdkengineering.com
Civil • Marine • Site Development • Geotechnical • Structural • Environmental • Industrial • Lighting

REVISIONS:
1. UPDATED 02/2016 PER REMEDIAL INVESTIGATION
2. UPDATED 09-16-13 PER FIELD MAPPING AND HISTORIC MAPS/PLANS
3. REVISED 07-05-13 PER DEC COMMENTS

EXHIBIT 2

CONFINED SPACE ENTRY PROCEDURES

EXHIBIT 2

CONFINED SPACE ENTRY PROCEDURES

BROWNFIELD CLEANUP PROGRAM (BCP)
SITE NO. C734142

Village of Camillus, Onondaga County

July 13, 2016

INTRODUCTION:

The following is a summary of procedures to be followed by employees of TDK should entry into a confined space be required. The confined space program is based on Occupational Safety and Health Administration (OSHA) standards documented in Code of Federal Regulations (CFR) Title 29, Part 1910.146: *Permit-required confined spaces*.

OSHA defines a "confined space" as a space meeting the following criteria:

- Is large enough for an employee to bodily enter and perform assigned work
- Has limited means for entry and exit
- Is not designed for continuous occupancy

Examples of confined spaces that are most likely to be entered, by employees of TDK in connection with this Site are drainage system-related manholes or catch basins, or the former wastewater pit.

HAZARD DETERMINATION

Each confined space shall be evaluated with respect to potential hazards associated with the space. These hazards may include, but are not necessarily limited to, engulfment or entrapment, oxygen-rich or oxygen-deficient atmosphere and flammable or toxic vapors. The procedures to protect entry personnel from these hazards are summarized below:

- Once an access cover is removed, the opening shall be surrounded by traffic cones or equivalent warning devices and temporarily covered to safeguard against anyone from falling into the space accidentally.

- If the space to be entered is a manhole, any force mains discharging to the manhole shall be deactivated through lock-out and/or tag-out of the applicable pump controls. No active force mains are known to exist on this Site.

- The atmosphere within the space shall be tested for oxygen content, percent of lower explosive limit (LEL), hydrogen sulfide and organic vapors.

- The oxygen content, LEL and hydrogen sulfide readings are typically made using a multi-gas monitor (e.g., RKI GX-2003, or equivalent). If individual meters are used, the atmosphere shall be tested for oxygen first, because most LEL meters will not provide accurate readings in oxygen-deficient atmospheres. Testing for organic vapors, if applicable, shall be performed using photoionization detection (PID) meter.

- Atmospheric conditions that are acceptable for entry into the confined space are as follows:
  - Oxygen content greater than 19.5% and less than or equal to 21%
  - LEL less than 10%
  - Hydrogen Sulfide less than 22 parts per million (ppm)
  - Organic vapors below 10 ppm

PERSONAL PROTECTIVE EQUIPMENT

Based on the physical and atmospheric hazards, the level of personal protective equipment (PPE) shall be selected. The PPE ensemble may include, but is not necessarily limited to, tyvek suit and chemical resistant gloves/boots, air-purifying respirator with organic vapor or HEPA cartridges or supplied air. When selecting the appropriate level of PPE, note that the PPE components can also pose a hazard (i.e., entanglement in supplied air hoses, heat stress from tyvek suits, etc.).

Each entrant is required to wear a chest or full body harness, with a retrieval line attached at the center of the entrant's back near the shoulder level. The other end of the line shall be attached to a mechanical retrieval device or fixed point outside of the permit space.

PERSONAL PROTECTIVE EQUIPMENT

Based on the physical and atmospheric hazards, the level of personal protective equipment (PPE) shall be selected. The PPE ensemble may include, but is not necessarily limited to, tyvek suit and chemical resistant gloves/boots, air-purifying respirator with organic vapor or HEPA cartridges or

supplied air. When selecting the appropriate level of PPE, note that the PPE components can also pose a hazard (i.e., entanglement in supplied air hoses, heat stress from tyvek suits, etc.).

Each entrant is required to wear a chest or full body harness, with a retrieval line attached at the center of the entrant's back near the shoulder level. The other end of the line shall be attached to a mechanical retrieval device or fixed point outside of the permit space. Note that a mechanical retrieval device is required to be available for retrieval of personnel from vertical type permit spaces that are more than 5 feet deep (see engineering controls)

ENGINEERING CONTROLS

Engineering controls may be required, based on the characteristic of the confined space. These controls may include any or all of the following:

- Forced air ventilation (portable blowers, opening of additional manholes)
- Mechanical retrieval device (e.g., tripod & winch)

CONFINED SPACE ENTRY PERMIT

Entry into the confined space shall not be completed until a confined space entry permit has been completed and signed by the entry supervisor. The permit shall include the following information:

- Permit Space to be Entered
- Purpose of Entry
- Date of Entry
- Authorized Duration of Permit (may not exceed the time required to complete the assigned task or job defined under "Purpose of Entry")
- Names of Entrant(s), Attendant(s) and Entry Supervisor(s)
- Initials of supervisor who authorized entry
- Listing of Hazards associated with the permit space (i.e., oxygen deficient, combustible vapors, chemical contact, etc.)
- Listing of Control Measures (i.e., ventilation, lock-out/tag-out, etc.)
- Air monitoring results

- Rescue/Emergency Services Agency and Contact Number
- Communication procedures (verbal, hand signals, etc.)
- Listing of Equipment (gas monitor name, model & serial number, ventilation equipment, tripod & winch)
- Description of PPE used by Entrant and Attendant
- Cancellation of permit - Entry Permit's Signature, with date and time.

EXHIBIT 3

AIR MONITORING LOG

Air Monitoring Log
Organic Vapors & Dust (Work Area)

Date:		Temperature	
PID Make/Model		Serial #	
Dust Monitor		Serial #	

PID Calibration Date		By	
Dust Calibration Date		By	

Technician	
Work Activities	

Time	Location	Dust (mg/m^3)	PID (ppm)

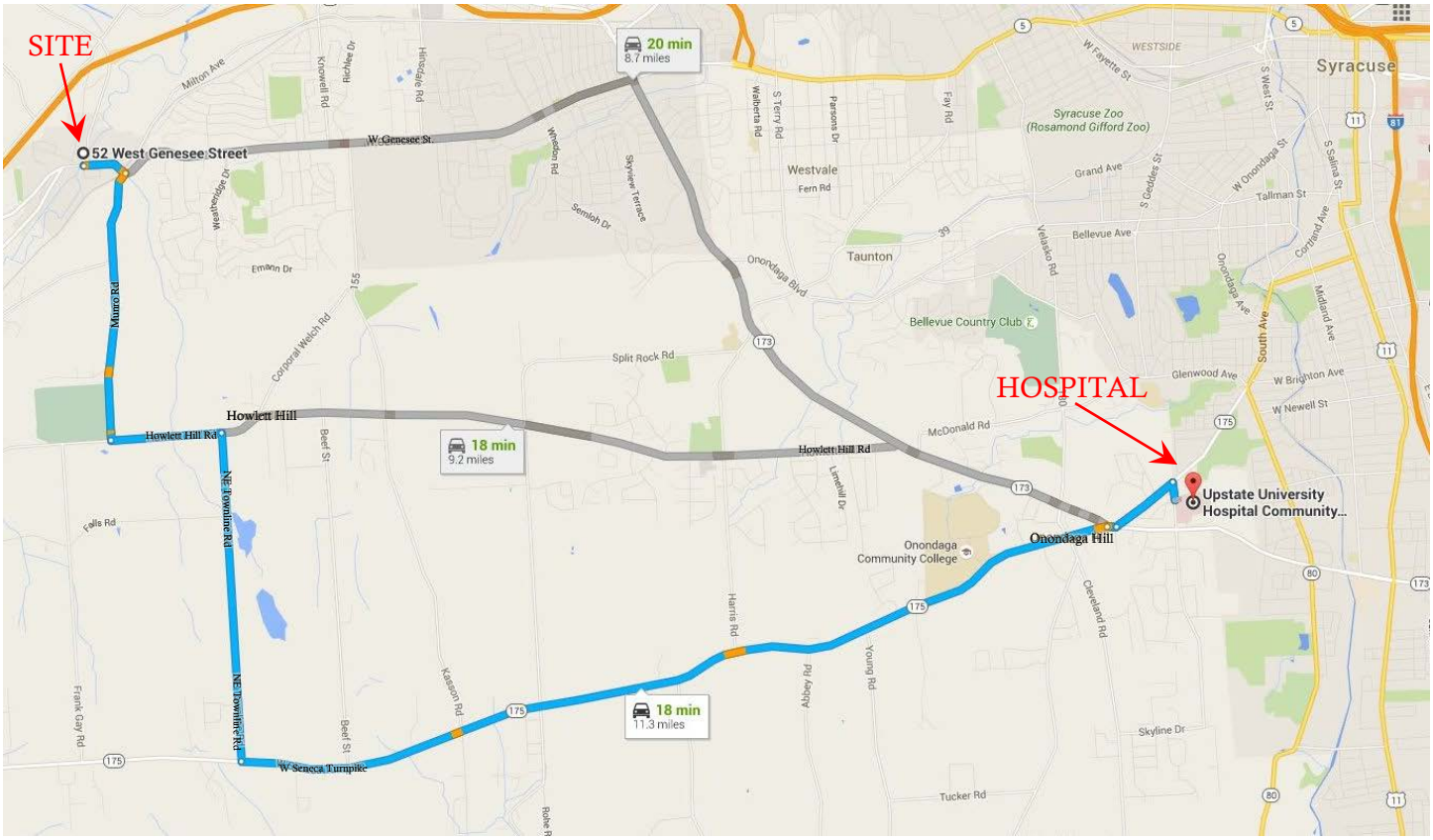
ppm – Parts per Million

EXHIBIT 4

ROUTE TO HOSPITAL

TDK Engineering Associates, PC

Route to Hospital



APPENDIX 8
CAMP

CHURCHILL ENVIRONMENTAL, INC

Environmental, Health & Safety Consultants

639 N. Salina St; Syracuse, NY 13208
Phone: 315-428-1959 Fax: 315-428-0432
www.churchillenvironmental.com

April 4, 2013

TDK Engineering
19 Genesee St;
Camillus, NY 13031
Attn. John Herrmann

Re: Camillus Cutlery C.A.M.P.

Churchill Environmental Inc will perform the following Community Air Monitoring Plan for the former Camillus Cutlery Plant located at 52 & 54 Main St; Camillus, NY for the Test Soil Boring Investigation throughout the property. The closest home or business is approximately 30' from the nearest test location; most of them are greater than 50' away.

Although there is no "Intrusive Digging" taking place at the time of these Soil Tests is taking place, the following measures will be implemented in addition to NYSDOH's DER-10 during all Test Bores to protect the workers and public living and working in the area of the site.

- Two Field Enclosures on a Tri-pod 5' above ground level each containing a DusTrak Meter (Particulate) and a PID Meter (VOC's) that will record levels every 60 seconds and manually recorded by the Air Monitoring Technician every 15 minutes. The technician will also record Wind and Weather Conditions in the Daily Log. These Enclosures will be located downwind from the location of each test Bore.
- The technician will also have a handheld PID Meter and take measurements before, during and after each test bore is completed and take periodic readings until it has been capped or filled with clean soil.

The same Response and Action levels used in the NYSDOH Generic CAMP DER-10 will be used at this site and are:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

- All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

- All readings must be recorded and be available for State (DEC and DOH) personnel to review.

If you have any questions please feel free to call our office.

Sincerely,

Raymond J. Churchill

Churchill Environmental Inc

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is 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 and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

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Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

P:\Bureau\Common\CommunityAirMonitoringPlan (CAMP)\GCAMPR1.DOC

APPENDIX 9
Schedule

PROJECTED REMEDIAL ACTION SCHEDULE

BROWNFIELD CLEANUP PROGRAM (BCP)
SITE NO. C734142
Village of Camillus, Onondaga County

September 26, 2016

Contract Executed – Sub-Slab Depressurization [SSD] Contractor ..... July 1, 2016

Draft SMP to DEC ..... August 1, 2016

Contract Executed – Remedial Excavation Contractor ..... August 5, 2016

Premobilization Submittals to DEC ..... August 8, 2016

- **SSD System Design Plans and Specifications**

Materials Procurement (SSD System) ..... August 23 to Sept. 29, 2016

Sub-Surface Investigation (SSI) Program (West Building) ..... August 29 – 31, 2016

Mobilization (Remedial Excavation Contractor) ..... September 28, 2016

Mobilization (SSD Contractor) ..... September 28, 2016

Remedial Excavation Program ..... Sept. 28 – Oct. 5, 2016

SSD Construction ..... Sept. 28 – Oct. 5, 2016

Monitoring Well Decommissioning Program ..... Sept. 28 – Oct. 5, 2016

Execute Environmental Easement ..... October 1, 2016

Draft Final Engineering Report (FER) Submission to DEC ..... October 7, 2016

Final SMP to DEC ..... October 7, 2016

Record Environmental Easement ..... October 15, 2016

Submit Final FER to DEC ..... November 15, 2016

Issuance of Certificate of Completion ..... December 30, 2016

19 Genesee Street • Camillus, New York 13031 • **PH:** (315) 672-8726 • **FX:** (315) 672-8732 • **tdkengineering.com**