SHOP DRAWING COMMENTS

OWNER:	**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
PROJECT:	**SILVER CLEANER'S CONSTRUCTION PROJECT**
	SITE NO. 828186
	CONTRACT NO. D009804-29 (ARCADIS) / C100607 (GES)
CONTRACTOR:	**GROUNDWATER AND ENVIRONMENTAL SERVICES, INC.**
	6780 NORTHERN BLVD., SUITE 100
	EAST SYRACUSE, NY 13047

Submittal No.: **31 23 05-001C**

Item: **Remediation Work Plan**

Specification Section: **31 23 05**

Shop Drawing Status: As noted below

Engineer's Response:

- ☐ Approved
- ☒ Approved as Corrected
- ☐ Approved as Corrected – Resubmit
- ☐ Revise and Resubmit
- ☐ Not Approved
- ☐ Not Reviewed
- ☐ For Information Only

Approval is only for conformance with design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication process or to techniques of construction; and for coordination of the work of all trades.

Date: 6/30/2023 By: Todd A. Minehardt
Arcadis of New York, Inc.

Comments:

1. Comments on the revised final remediation work plan.
2. Shoring Design was submitted and prepared by a NYS PE as a delegated design. Added to Work Plan.
3. Provide shoring PE quals added to Work Plan.
4. Section 2.3.2: Please ensure the final survey meets the requirements for an Environmental Easement: https://www.dec.ny.gov/chemical/65118.html
5. Section 2.5.6: On-Site Response and Off-Site Response - on-site engineer and NYSDEC will be notified ASAP of any spill.

LETTER OF TRANSMITTAL

Transmittal No. 31-23-05-001C

Sessler Environmental Services, LLC	To:	**Groundwater and Environmental Services, Inc.**
1330 Research Forest		**6780 Northern Blvd, Suite 100**
Macedon, NY 14502		**East Syracuse, NY 13057**
Phone (585) 617-5710 Fax (585) 617-5749		**Phone (607) 765.7271 Fax**

Date:	6/28/2023	**Attention:**	Scott McDonald
PO No.	**1126354**	**RE:**	**Former Silver Cleaners (245 Andrews Street)**

WE ARE SENDING YOU: [X] Attached [ ] Under a separate cover via_first class mail_The following items:

[ ] Shop Drawings [ ] Change Order [ ] Prints [ ] Plans [ ] Specifications

[ ] Copy of Letter [ ] Samples [ ] Contract [X] Other

COPIES	DATE	NUMBER	DESCRIPTION
1	**6/28/2023**	**025141 1.3 A**	**Remediation Work Plan**
		025140 3.4 C,1	
		312305 1.4 A, 1, 2	
		312305 1.5 A2, B2	
		312305 3.3	

THESE ARE TRANSMITTED as checked below:

[ ] For Approval [ ] Resubmit_____Copies for Approval [ ] Approved as Submitted

[X] For Your Use [ ] Resubmit _____Copies for distribution [ ] Approved as Noted

[X] As Requested [ ] Return ____ Corrected Prints [ ] Returned for Corrections

[ ] For Review and Comment [ ] _____ [ ] FOR BIDS DUE:

Remarks:

Scott:
Please find attached the revised remediation work plan
the Former Silver Cleaners Project.

Please direct any questions to my attention.

Engineers Response

Signed: _____
Eric Hoban

CC: _____

SILVER CLEANERS - REMEDIATION WORK PLAN

PROJECT
SILVER CLEANERS
245 ANDREWS STREET
ROCHESTER, NY

Prepared for:
Groundwater & Environmental Services, Inc (GES)
6780 Northern Blvd., suite 100
East Syracuse, NY 13057

Prepared By:
Sessler Environmental Services, LLC
1330 Research Forest
Macedon, NY 14502

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Attachments

1.0 PROJECT MANAGEMENT

1.1 ORGANIZATION CHART

SES has chosen the members of the proposed project team based on their existing skill sets and experience performing similar projects. We intend to staff this project with the following personnel:

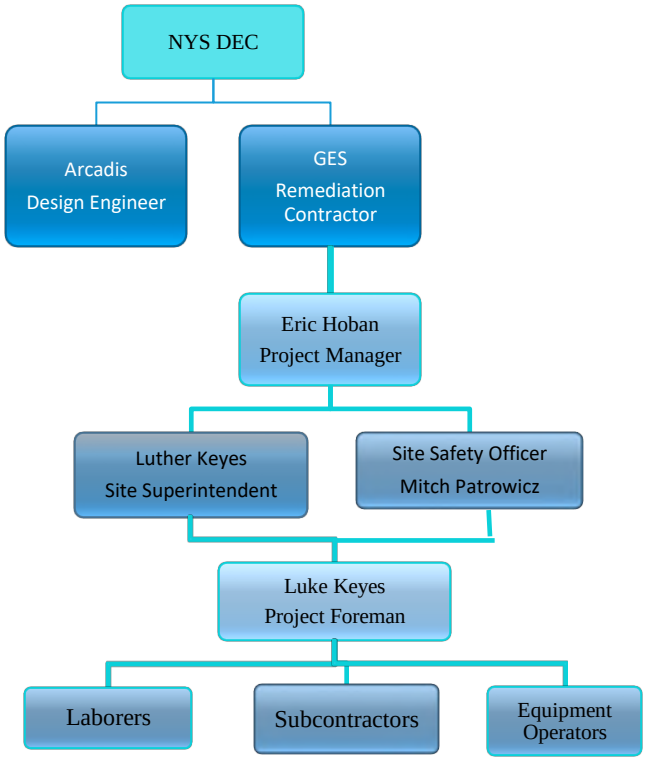

TABLE 1: PROJECT TEAM

Position	Firm	Name	Mobil Number	Email
Project Manager	NYS DEC	James Kruegler	518.646.2735	James.Kruegler@dec.ny.gov
Project Engineer	Arcadis	Todd Minehardt	581.744.8687	todd.minehardt@arcadis.com
Project Inspector	Arcadis	Chandler Allen	585.747.8923	chandler.allen@arcadis.com
Project Manager	GES	Scott McDonald	607.765.7271	smcdonald@gesonline.com
Field Supervisor	GES	Allison Jordan	716.912.4604	AJordan@gesonline.com
CAMP Operator	GES	Owen Ogiony	716.796.3827	oogiony@gesonline.com
Project Manager	SES	Eric Hoban	585.721.5797	ehoban@sesslerenv.com
Site Superintendent	SES	Luther Keyes	585.261.4264	lutherk@sesslerenv.com
Site Safety Tech	SES	Mitch Patrowicz	585.690.2499	mpatrowicz@sesslerenv.com
Foreman	SES	Luke Keyes	585.465.3644	lkeyes@sesslerenv.com

SES's staff will work cohesively with GES through SES's Project team. Any challenges will be identified through real-time communication, daily site meetings, weekly progress meetings, and project resources.

SES will work collaboratively with GES to produce operational documents which will serve as the plan for all aspects of the project, thereby reducing the potential for confusion and duplication.

1.2 ROLES OF KEY SES PROJECT PERSONNEL

Each SES team member has specific, well-defined duties for the project which will promote successful interaction with corresponding members of GES team. The following outlines the major roles and responsibilities of the project team.

Corporate Sponsor – Brian Sessler
As Corporate Sponsor, Mr. Sessler will support the entire Project Team and provides the project direct executive leadership to ensure that the project exceeds the expectations of GES. Mr. Sessler's primary focus will be the safe execution of the project and the complete satisfaction of GES.

Project Manager - Eric Hoban
Mr. Hoban will have primary responsibility for centralized leadership of all activities of the project and serve as the primary point of contact for the GES team. In this role, Mr. Hoban will interpret, plan, and monitor the work effort, identify and provide the personnel equipment and supplies necessary to complete the work, provide direct supervision to the Site Superintendent, attend meetings, procure and monitor subcontractors, establish and maintain the work schedule and budget, negotiate change orders, submit pay applications, and maintain the overall quality and safety of the project.

Site Superintendent – Luther Keyes
Mr. Keyes will have primary responsibility for the staffing, management, scheduling, and performance of day-to-day site activities. He will participate in all planning associated with the project and will provide the SES Project Manager with daily reports of activities planned and completed.

Mr. Keyes will have the responsibility and authority for decisions related to the day-to-day operations of the project. In addition to managing SES activities and personnel, he will coordinate with subcontractors on-site to assure that their performance meets the requirements of the specifications and work plans. He will have the authority to communicate directly with GES on-site Engineers as required and will attend all meetings.

Site Health & Safety Officer – Mitch Patrowicz
Mr. Patrowicz will have the primary responsibility for assuring and verifying that all site activities are performed in compliance with the SSHASP and the project specifications. He will evaluate and document the requirements and status of training, experience, and medical surveillance for all workers at the site including subcontractor personnel. He will also be responsible for approving personnel protective equipment, overseeing maintenance and use of monitoring equipment, developing and implementing site specific safety training for SES personnel, SES subcontractor personnel and visitors, developing and conducting daily and weekly health and safety meetings, inspection and monitoring of site activities, review of subcontractor safety compliance, coordinating incident reports and investigations, and preparation of health and safety related daily, weekly and final reports, and ensuring the field execution is in compliance with the project goals and specification.

2.0 PROJECT REMEDIATION WORK PLAN

SES's execution of the excavation, shoring and soil management activities will be performed in strict accordance with the contract documents. The scope of work outline in the contract documents include:

- Mobilization/Demobilization
- Site work area isolation

- Traffic Control
- Field Surveying
- Building Structural Vibration and Optical Monitoring
- Community Air Monitoring
- Site preparation and erosion controls
- Demolition of Slabs and Footers
- Protection and deenergizing of site utilities
- Installation of shoring systems
- Removal, management, loading, transportation, and disposal of impacted soils.
- Dust, Vapor and Odor Management
- Management of excavation groundwater.
- Import and placement of backfill.
- Restoration of the site fence, drainage and asphalt cover system.

2.1 PROJECT SEQUENCING

SES proposes to complete the remedial objective in the following general sequence:

- Premobilization Activities
  - Project submittals
  - Permit acquisition
  - 811 Dig Safe
- Mobilization and site preparation by phase including.
  - Temporary facilities,
    - Trailers and Temporary Power (if required)
    - First aid station and sanitary facilities
  - Erosion and sedimentation control structures,
  - Contaminant reduction zones,
  - Staging areas and decontamination facilities.
  - Water treatment system mobilization and construction
  - Structural monitoring equipment installation and baseline surveys.
  - Existing conditions topographic survey.
  - Existing fence removal and temporary fence installation
- Task-1 Slab and Footer Demolition
  - Sawcut and segregate hazardous and nonhazardous concrete and footers.
    - Site traffic control
    - vibrations and optical monitoring
    - Water management
    - Dust suppression
    - Staging concrete for waste characterization
- Task-2 Concrete and Soil Waste Characterization Sampling
  - Geoprobe subsurface soil sampling
    - Site traffic control
    - Vibration and optical monitoring
    - Odor and vapor suppression
    - Sample collection and management via COC procedures
  - Hazardous and nonhazardous concrete sampling
    - Site traffic control
    - Vibration and optical monitoring
    - dust suppression

        - Sample collection and management via COC procedures
- Task-3 Excavation and backfill of Cell-1
    - Excavation of Cell-1
        - Site traffic control
        - Vibration and optical monitoring
        - Water management and transfer to treatment plant
        - Excavation shoring use.
        - Odor, dust and vapor suppression
        - Live load soil to the extent possible for transport off-site.
        - Stage saturated soil inside the excavation for decanting.
    - Transport and disposal soils generated from Cell 1 based on hazardous and nonhazardous designation.
        - Base of excavation survey
    - Backfilling of Area Cell-1
        - Site traffic control
        - Water management and transfer to treatment plant
        - Installation of demarcation fabric
        - Installation of PVC injection piping and riser.
        - Import and placement of off-site soil.
        - Excavation shoring removal.
        - Top of excavation survey.
- Task-4 Excavation and backfill of Cell-2
    - Excavation of Cell-2
        - Site traffic control
        - Vibration and optical monitoring
        - Water management and transfer to treatment plant
        - Excavation shoring use.
        - Odor, dust and vapor suppression
        - Live load soil to the extent possible for transport off-site.
        - Stage saturated soil inside the excavation for decanting.
    - Transport and disposal soils generated from Cell 2 based on hazardous and nonhazardous designation.
        - Base of excavation survey
    - Backfilling of Area Cell-2
        - Site traffic control
        - Water management and transfer to treatment plant
        - Installation of demarcation fabric
        - Installation of PVC injection piping and riser.
        - Import and placement of off-site soil.
        - Excavation shoring removal.
        - Top of excavation survey.
- Task-5 Excavation and backfill of Cell-3
    - Excavation of Cell-3
        - Site traffic control
        - Vibration and optical monitoring
        - Water management and transfer to treatment plant
        - Excavation shoring use.
        - Odor, dust and vapor suppression
        - Live load soil to the extent possible for transport off-site.

        - Stage saturated soil inside the excavation for decanting.
    - Transport and disposal soils generated from Cell 3 based on hazardous and nonhazardous designation.
        - Base of excavation survey
    - Backfilling of Area Cell-3
        - Site traffic control
        - Water management and transfer to treatment plant
        - Installation of demarcation fabric
        - Installation of PVC injection piping and riser.
        - Import and placement of off-site soil.
        - Excavation shoring removal.
        - Top of excavation survey.
- Task-6 Excavation and backfill of Cell-4
    - Excavation of Cell-4
        - Site traffic control
        - Vibration and optical monitoring
        - Water management and transfer to treatment plant
        - Excavation shoring use.
        - Odor, dust and vapor suppression
        - Live load soil to the extent possible for transport off-site.
        - Stage saturated soil inside the excavation for decanting.
    - Transport and disposal soils generated from Cell 4 based on hazardous and nonhazardous designation.
        - Base of excavation survey
    - Backfilling of Area Cell-4
        - Site traffic control
        - Water management and transfer to treatment plant
        - Installation of demarcation fabric
        - Installation of PVC injection piping and riser.
        - Import and placement of off-site soil.
        - Excavation shoring removal.
        - Top of excavation survey.
- Task-7 Site Restoration
    - Strip asphalt across the site
        - Transport off-site for disposal
    - Installation of new drainage structure
        - Subcontractor for storm connection
        - Survey for final elevations
    - Cap and grade Site with crushed stone
        - Final topographic survey of the site subgrade
        - Compaction testing
    - Restoration of Site with Asphalt
        - Final topographic survey of the restored Area
    - Restoration of site permanent fence
        - Final topographic survey of the restored Area
    - Demobilization
        - Removal of staging and decontamination pads
        - Removal of fencing and erosion controls
        - Post project structural survey

- Remove monitoring points
- Remove equipment
- Remove temporary facilities

2.2 Mobilization and Site Preparation

2.2.1 Permits and Approvals

- Power Drop (Electrician)
- Demolition Permit (Covered under demolition plan)
- Catch Basin Installation (Plumber)
- Water Discharge Permit (Monroe County)
- Temporary hydrant permit (Monroe County)

2.2.2 Project Submittals

Prior to mobilization and during the course of the project, SES will provide all required submittals to the GES team for review in accordance with the project specifications. Submittals will be provided in a timely manner to avoid delays. SES will not order any materials or start any phase of the work unless the required submittals have been provided to the GES team and corresponding approvals have been received. SES will start the submittal process immediately after receiving the Notice to Proceed and expects the process to continue throughout most of the project. SES will ensure submittals for products with long lead times, or those likely to require longer time for review, are submitted in a timely manner.

The initial submittals that will be prepared and submitted to GES for review and approval prior to mobilization include but are not limited to:

- Construction Schedule and Narrative Sequence of Construction
- Site Specific Health and Safety Plan
- Project Remediation Work Plan
- Demolition and Asbestos Work Plan
- Vibration and Optical Monitoring Plan
- Daily Construction Progress Reports
- Daily Safety Reports
- Proposed layout of temporary facilities
- Proposed off-site receiving facilities.
- Proposed imported fill sites
- Manufacturer's specifications and cut sheets for materials
- Existing Conditions As-Built Drawings

2.2.3 Mobilization

Upon approval of the initial submittals, SES will mobilize to the site. All site personnel will be trained on site specific hazards as part of this task. All mobilization efforts will be closely coordinated with GES's site representatives. Mobilization activities include:

- Notification to necessary parties including underground utilities
- Mobilization of labor, equipment, and materials to the site
- Photo and video documentation of existing site conditions
- Establishment of staging, parking, and decontamination areas
- Establishment of exclusion zones

Beginning on the first day of mobilization and at the completion of each day's activities for every stage of the project, SES will provide a Daily Construction Report to GES which will include:

- A summary of the day's activities
- Copies of delivery tickets
- Bills of lading for materials removed from the site
- Manifests for materials removed from the site
- Challenges encountered and resolution
- Schedule status
- Evidence of daily "tailgate" safety meetings
- Other relevant information

Daily reports will be submitted no later than 10:00 AM the following working day.

2.2.4 Equipment List

SES will inspect all equipment prior to delivery to the site. Upon arrival, SES will stage the equipment in designated areas. At a minimum, SES will mobilize the following equipment (or equivalent) to the site for the project:

- Cat 435 excavator
- Cat 225 excavator with breaker as needed.
- Smooth drum vibrator roller
- Cat D4 Dozer
- Skid steer
- Loader 3cy
- 2,000-gallon water truck
- Slide rail shoring system
- Water treatment system
  - One 18,000-gallon weir tank
  - One 21,000 storage tank
  - Treatment system components (GES)
- Pick-up trucks
- 3" submersible pump
- One 4-inch dry prime pump
- Transfer pumps and hoses
- Hand tools
- Remote drum roller
- Storage trailers
- Generators
- Sanitary facilities
- Tote of Pink Water

2.2.5 Site Preparation

Upon mobilization, SES will work together with GES on-site personnel to establish contractor staging area and soil staging area at the designated location of the site. Temporary site facilities including sanitary facilities, materials, support equipment, and parking will be located in the contractor staging area. SES will install construction fencing and barricades to delineate work zones as well as truck loading and decontamination areas.

SES will coordinate with GES and site operators to establish a secure location for material storage and will maintain its security throughout the duration of the project. Upon demobilization from the site, all

equipment and temporary facilities will be decontaminated and removed from the site. SES will restore the site to its existing conditions where appropriate.

2.2.6 Site Isolation

At a minimum, six-foot chain-link fencing with a privacy screen will be installed around the site, where identified on the drawings. Excavations greater than 3-foot depth will be surrounded by four-foot-high orange construction fence, secured to steel T posts with a ten foot spacing.

2.2.7 Utility Location, and Protection

SES will notify UDig NY and obtain clearances for all known, public utilities in the work area at least three days prior to intrusive activities.

SES will coordinate all intrusive activities with GES during the project. SES will locate and identify utilities around the perimeter and within the boundaries of the site. A UDig NY request will be submitted, and member confirmations will be managed by SES and submitted to GES. SES will protect utilities and other important structures prior to commencing intrusive site activities. Any site features that are damaged during site work will be replaced with like materials.

2.2.8 Temporary Facilities

As part of the site preparation task, SES will establish the following temporary facilities for use during the life of the project:

- Temporary water service: SES will utilize the water service from the fire hydrant and will be responsible for the restoration to it, maintenance throughout the project and its discontinuation after the project is complete.
- Electric service via electric hook-up and/or portable generators
- SES will supply high speed internet with phone service.
    - A mobile hot spot will be supplied if cable connections are not available
- SES will maintain cellular telephone service at the site capable of teleconferencing during weekly progress meetings, if cable telephone service is not available
- Potable water service for all site employees
- Trash dumpster of at least 4 CY capacity which will be serviced weekly in conjunction with SES' weekly cleaning program
- Portable sanitary facilities
- First aid and Health and Safety support facilities
- Temporary fencing and traffic control devices
- Erosion and sedimentation control devices
- Storm water control devices

2.2.9 Erosion and Sedimentation Controls

Prior to the start of any land disturbance, SES will install all erosion and sedimentation (E&S) control devices as identified on the contract drawings. SES will install one stabilized construction entrance for site and one exit that will include a decontamination pad.

With regard to erosion controls, silt fence and straw coir logs (wattles), shall be installed around the active work area and will be anchored in place with hardwood stakes or sandbags depending on the surface materials. Throughout the course of the project, SES will monitor the performance of the wattles and silt fence daily and immediately correct any deficiencies.

The construction entrances shall be improved with geotextile fabric and a coarse aggregate layer of 6-12 inches as detailed in drawing.

2.2.9.1 Provision and Maintenance of Temporary Controls

SES will provide controls for dust, precipitation runoff, and erosion and sedimentation controls as required by the New York Standards and Specifications for Erosion and Sediment Control. Erosion and sedimentation controls will be in accordance with the project specifications. Catch basin inlets will be protected as required. SES staff will inspect the erosion and control measured on a regular basis in accordance with the project requirements.

SES will provide controls for odor and vapor controls as required by the specifications. A Biosolve sprayer will be mobilized to the site and will be deployed as needed.

2.2.10 Decontamination Pad

SES will construct one decontamination pad measuring approximately 16' by 20' at the site exit. The base of the decontamination pad will be underlain by sand, then geotextile fabric, covered by a 40-mil sheet of HDPE, then geotextile fabric, then rumble mats measuring 16' by 14'. The sides of the area will have a 1-foot-high berm comprised of ¾" crushed stone. A sump will be installed at the lowest corner for the removal of waters that are generated during the decontamination process, and splash guard panels will be installed (as needed) along the perimeter of the pad. All equipment that comes into contact with impacted material will be decontaminated in the pad using a 3,000 psi pressure washer prior to leaving the site.

2.2.11 QAQC Services

SES utilize a Quality Assurance / Quality Control (QA/QC) procedures on the project to ensure compliance with the specifications. One week prior to each phase of the project, the Project Manager will review the required components of the task, ensure that the QA/QC components of that task are understood by all involved and will be in place prior to the start of the work. The Project Manager will conduct follow up inspection of the various tasks to ensure the execution of the work is in compliance with the specifications and drawings of the project. Deficiencies will be documented and reported to the SES Superintendent, and GES project team.

A daily report will be prepared and submitted to the GES team by 10:00am the following morning. The report will include SES staff on-site, their task(s), hours for the day, subcontractors and their task(s) on-site, and hours for the day, site visitors, material deliveries, equipment on-site, equipment downtime and QA/QC inspections.

2.2.12 Traffic Control

The Silver Cleaners Site is bordered on two sides by a sidewalk and is adjacent to a school, it will be critical to minimize the impact of the remedial activities on the school and pedestrian traffic. SES has submitted a ROW sidewalk closure permit to close the sidewalk along the Andrews Street side of the site. Signage will be installed in accordance with the City of Rochester permit requirements and the DOT regulations. SES will utilize flaggers as need to direct haul and deliver truck entering and exiting the site.

2.3 REMEDIAL SUPPORT ACTIVITIES

2.3.1 Structural Monitoring

SES will retain the services of a New York licensed structural engineering firm to perform structural vibration and optical monitoring prior to demolition activities, for the duration of the excavation and backfilling activities, and post construction inspection at the completion of the intrusive activities. A report

of the structural vibration and optical monitoring will be provided on a weekly basis for the duration of the work, and a final report will be prepared when the intrusive activities are completed. The system is designed to send an e-mail notification for ta vibration levels above the established baseline. The structural inspections and monitoring plan will be provided under a separate submittal.

2.3.2 Topographic Survey Services

SES will retain the services of a New York licensed surveyor to perform all of the project related surveying in accordance with specifications and project goals. The surveying will include but not be limited to existing conditions, base of excavation elevations, imported materials placement, restored surfaces, optical monitoring points and final as-builts. The surveyor will be on-site as needed to support the construction activities.

2.3.3 Dust, Vapor and Odor Suppression

Dust Suppression

SES will provide a water mitigation system on-site for the duration of the project activities and operate under a zero-visible dust goa and to maintain particulate concentration below the action levels detailed in the project CAMP plan. This means, that if dust is visible in the air, dust suppression measures will be initiated. Water will be the primary dust suppression agent. The site will be equipped with sprayers and a hose nozzle for watering site soil and stockpiles in the event fugitive dust emissions become a problem. It will be deployed as a mist to wet down the areas generating the dust. SES will be prepared to implement additional dust mitigation controls such as covering stockpiles with tarps if conditions warrant alternate controls. Care will be taken not to saturate the soil and create a muddy/slippery environment.

Vapor & Odor Suppression

SES will provide equipment and materials for the dispersion of pink water on-site for the duration of the project activities and operate under a zero-vapor and odor goal, and to maintain a total VOC concentration below the CAMP plan action levels. Should the odors or vapors from the soils reach a nuisance level or exceed the action levels in the CAMP plan; vapor-suppressing measures will be initiated. Bio-solve will be the primary odor and vapor suppression agent. It will be deployed as a mist to the excavation sidewalls and active soils as a vapor-suppressing agent. Soil stockpiles or excavations will be covered with tarps or 6-mil poly sheeting to limit the vapors generated from them. Should the odors or vapors persist after the above engineering controls have been initiated, work will stop until the vapors subside and additional engineering controls can be identified and implemented in close coordination with the GES staff.

2.3.4 Community Air Monitoring

SES recognizes the importance of controlling odor emissions on the site for the safety of the workers on-site and for the safety of the surrounding community. Care must be taken to prohibit project related dust and/or odors from impacting adjacent properties. During the various project activities, the air quality within the work area will be monitored for both fugitive dust and organic vapors emissions by SES. The project remediation Engineer will provide and manage perimeter air monitoring equipment for dust and VOC's, and SES will support the remediation Engineer with corrective measures as needed to maintain the project CAMP/CEPP project action levels and goals.

2.4 Remedial Activities

2.4.1 Demolition of Existing Site Features

SES will demolish the asphalt paved areas as needed throughout the various phases of the project. The materials generated during the asphalt removal activities will be transported from the site based on clean or impacted designation. That designation will likely be determined by the engineer based on an inspection

for visible staining. Clean materials will be removed as unregulated materials and impacted materials will be transported off-site as nonhazardous waste.

2.4.1.1 Asphalt Stripping

SES will sawcut the perimeter of the excavation area (as needed), remove the asphalt, and transport it off-site for recycling.

2.4.1.2 Fence Removal

The chain link fence located on the east side of the building (owned by the school) will be removed in areas needed to facilitate the remedial objectives.

2.4.1.3 Concrete Management

The former building slab and footers removal have been addressed under a separate cover (demolition work plan.)

2.4.2 Utility Installation and Capping

The project involves the installation and capping of several active utilities over the course of the project. These utilities include the building sewer and storm sewer drainage pipe. The management of these utilities will be conducted as detailed below:

- Sewer service – SES will use soft dig methods to locate the sewer pipe prior to it exiting the property. SES will install a 90-degree elbow and a riser pipe to the sewer so it can be used as a discharge point for the treated construction water. When the discharge activities are complete, the elbow and riser will be removed, and the sewer line will be capped.
- Drain structure and pipe – The catch basin will be installed as noted on the plans and the drainpipe will be connected to the existing storm drain structure on-site.
- Soft dig vacuum excavation will be utilized to locate the utilities that require protection, or that are located within 5' of an active excavation area. This will ensure that utilities are not inadvertently damaged during the intrusive activities. SES will utilize the findings from the private utility locate and GPR subsurface survey conducted by GES for the project to locate the utilities.

2.4.3 Impacted Materials Waste Characterization

Prior to any waste being transported off-site, SES needs to secure approval from the receiving facility to accept the waste. Most receiving facilities have an operating permit that includes a list of chemical and concentration thresholds for the waste that can be accepted. As such, for a facility to accept any waste material, chemical analysis of the material must be provided to the facility for review and acceptance based on their individual facilities permit requirements.

2.4.3.1 Concrete and Block Characterization

As soon as the building demolition and asbestos abatement activities at the site have concluded, SES will begin the sampling activities for the block, concrete slab and footers requiring disposal off-site. The samples will be collected utilizing a hammer drill to core the material and generate concrete dust that will be collected and placed into laboratory-supplied glassware. The hammer drill bit will be decontaminated between sample points using alconox and water. The samples will be placed in a cooler on ice and transported via chain of custody (COC) procedures to a NYS licensed laboratory for analysis in accordance with the landfills permit requirements.

2.4.3.2 Soil Waste Characterization

As soon as the building demolition and asbestos abatement activities at the site have concluded, SES will begin the sampling activities for the subsurface soil requiring disposal off-site. The samples will be collected utilizing a geo-probe to collect samples of the subsurface soils to as depth of 20' below grade. Soil samples will be collected and placed into laboratory-supplied glassware. The drilling equipment that comes in contact with subsurface soils will be decontaminated between sample points using alconox and water. The soil samples will be placed in a cooler on ice and transported via chain of custody (COC) procedures to a NYS licensed laboratory for analysis in accordance with the landfills permit requirements.

2.4.4 Excavation, Management and Loading of Impacted Materials

In general terms, the contaminated soil excavation will be performed in a consistent manner across the site, however there are multiple excavation areas that will require the use of shoring and groundwater management. SES will excavate to the prescribed depth utilizing shoring as needed. Those depths will be verified by the surveyor.

2.4.4.1 Remedial Excavation with Shoring

SES will utilize a slide rail storing system or trench boxes for the excavation activities in these areas. SES has assumed the perimeter soils around the excavation area will be benched by 1-ft. SES will strip the top three feet of soil from the area and load it directly into trucks for transport off-site. The shoring box will be constructed, and the posts will be driven into place. Impacted soils will be excavated utilizing a hydraulic excavator and loaded into trucks for transport directly off-site. The sides of the shoring system will be advanced into the ground as the excavation progresses. Once the excavation reached its required depth, the survey will record the limits of the excavation. Once the engineer approves the placement of backfill in the area, it will be immediately lined with a demarcation fabric and backfilled in a 2-ft lift with self-compacting stone. SES will then install a PVC injection pipe around the inside perimeter of the shoring system with a riser pipe to the original grade. This excavation and backfilling sequence will be repeated until the excavation has been completed. SES has retained shoring wall panels and corner posts to ensure that clean soils and impacted soils are always separated.

Should groundwater be encountered during the excavation activity, it will be removed utilizing submersible pumps and transferred to the groundwater treatment system.

The excavated materials will be segregated into two categories, Nonhazardous and Hazardous material. The soil will be directly loaded into trucks and transported off-site via a nonhazardous of hazardous waste manifest to the extent possible. SES is estimating that approximately 300 tons of soil will be transported off-site per day which is approximately 8 to 12 loads per day depending on the capacity of the haul truck.

Impacted soils that are visibly wet will be allowed to drain and will be stabilized as needed by blending the saturated soils with cement kiln dust (CKD). Soils that are stockpiled for draining or stabilized on-site with CKD will be run through a paint filter test on-site to ensure the material is suitable for transport. Once the materials suitable for transportation off-site (passing paint filter), they will be loaded into trucks for transportation off-site via a waste manifest based on the nonhazardous and hazardous classification for disposal/treatment at an approved receiving facility.

2.4.4.2 Remedial Excavation Soil Stockpile

SES intends to load excavated soil directly into trucks for the immediate transportation off-site. SES is aware that most projects encounter soils or material that would require stockpiling for additional investigation (waste characterization) or decanting of moisture from saturated soils. This site has a small

footprint and the available room to stockpile is limited. To the extent possible, soil that requires draining or stabilization prior to loading will be kept in the excavation on a soil bench or shelf. In some cases, if the soil in the adjacent cell is the same contamination level as the soil being removed, the soil may be placed in the adjacent cell. If a stockpile is required, SES will construct one out of 45 mil EPDM membrane material. The liner will be sandwiched between 8-oz geotextile fabric and the perimeter sidewalls will be 1' tall constructed using clean stone. Sandbags will be used to anchor the liner on the outside of the soil berm. Ant soil stockpiled will be covered with 6-mil poly sheeting.

2.4.5 Water Management

Implementation of an effective water management system is of critical importance for maintaining safe working conditions within the excavation by removing and managing free standing water within the excavation areas and directing surface flow water away from the active excavation areas. In addition, maintaining a dry excavation area will limit the amount of water being transported and processed in the waste staging area.

2.4.5.1 Remedial Excavation Water Management

The water in Remedial Excavation will be managed utilizing 2-in and 3-in submersible pumps with floats and appropriately sized discharge hose and pipe. The pumps will be installed into a sump comprised of a slotted section of ADS pipe placed in the corner of each excavation area and transfer the liquid to the treatment system. In some cases, a vacuum truck may be used to transport water on the site to the treatment system.

SES will mobilize one 18,000-gallon weir tanks, one 21,000-gallon storage tanks to the site to support a treatment system provided and operated by GES. The water will be treated through the system sampled as required by the approved discharge permit and will be discharged to the local sanitary sewer in accordance with the permit requirements. A detailed description of the system with pump capacity and discharge flow rates will be submitted under a separate document by GES.

2.4.5.2 Surface Water Management

SES will control all storm water from accumulating by way of berms, ditches, pumps and infiltration as required by site conditions. SES also understands that the site is primarily a low-lying area, therefore storm water could accumulate on-site. Surface water will be diverted away for open excavation and be pumped to non-active excavation areas or flow off-site.

2.5 Waste Transportation and Disposal

The project will generate several waste streams including impacted soil, water, construction debris, asphalt, and municipal waste. All waste will be sent to a GES approved receiving facility, and no waste will leave the site with our GES or the Remediation Engineers approval.

2.5.1 Nonhazardous impacted Materials

Nonhazardous soils will be removed from the shored excavation area and will be loaded into permitted trucks for transportation off-site via a nonhazardous waste manifest for disposal and or reuse at either the Mill Seat landfill located in Bergen, NY, or the High Acres Landfill located in Fairport, NY.

2.5.2 Hazardous Waste Soil

Hazardous soil will be removed from the shored excavation area and will be loaded into permitted trucks for transportation off-site via a waste manifest for disposal and or treatment at US Ecology located in Belville, Michigan or EAS Inc. Montreal Canada.

2.5.3 Hazardous Waste Concrete and Debris

Hazardous blocks and concrete will be loaded into permitted trucks for transportation off-site via a waste manifest for disposal and or treatment at US Ecology located in Belville, Michigan.

2.5.4 Clean Construction Debris (Hard Fill)

Clean construction debris (asphalt) will be removed from the site via a bill of lading for disposal as an unregulated waste at approved construction debris (C&D) facility.

2.5.5 Impacted Construction Debris

Impacted construction debris will be removed from the site in permitted trucks for transportation off-site via a nonhazardous waste manifest for disposal at the Mill Seat landfill located in Bergen, NY, or the High Acres Landfill located in Fairport, NY.

2.5.6 Emergency Response

Emergency response reporting is addressed in the separate submittal Site Specific Health and Safety Plan. The sections below will address how SES will manage emergency spill response events on and off-site during the project.

2.5.6.1 On-Site Response

SES will have a spill kit located in several locations on the site that will be clearly marked. Each spill kit will include speedy dry absorbance materials, oil sorbent pads and boom. The SES staff will all be OSHA 40-hour Hazwoper trained and will be capable of cleaning up on-site releases of lubricants or fuel products. In the event of a release or spill, SES will immediately notify GES who will in turn notify Arcadis and the NYSDEC. Waste materials generated during a spill release will be consolidated into a DOT approved steel drum, properly labeled, and removed from the site via a manifest when facility acceptance is received.

2.5.6.2 Off-Site Response

SES has retained professional trucking companies for the off-site transportation of the project's impacted materials. Oil, gas or diesel leaks, or breakdowns of the haul trucks will be managed by the trucking company hauling the materials. Accidents that result in the waste being hauled to be spilled prior to reaching its destination in New York will be cleaned up by SES. SES will notify the GES who will in turn notify Arcadis, the NYS DEC and the NYS DOT and then SES will mobilize a supervisor to assess the situation, and a roll off container and skid steer will be dispatched to clean up the spilled materials.

Accidents involving trucks transporting waste to facilities outside of New York State will be managed by the spill response firm that the transporter has on retainer through their insurance provider.

2.5.6.3 Haul Route

The project will generate waste materials that will be transported to various locations in and outside of New York State. All waste will exit the project site onto North Clinton Ave headed North. The trucks will cross over Andrews Street and proceed North on N. Clinton Ave. to Cumberland Street where the trucks will turn left. The trucks will proceed west on Cumberland Street and merge onto the inner loop towards I-490. Once the trucks are on 490, they will proceed to their destination.

2.6 Backfilling Activities

Once the excavation depth is achieved by survey, a demarcation fabric will be placed along the bottom of the excavation and approved clean fill will be imported and placed into the excavations. The final three

feet of backfill placement require compaction and third-party compaction testing. SES will submit the geotechnical laboratory testing results 10 days prior to use on the site.

2.6.1. Imported Backfill Placement

Once the impacted soils have been excavated from an area, SES will place a demarcation fabric along the bottom and sidewalls of the excavation. Clean fill will be imported and placed into the open excavation in lifts compacted with the excavator bucket. Tri axle dump trucks that import the soil will not be allowed to travel on the impacted fill. Each lift will be placed with an excavator, skid steer or dozer, and the final 3-ft will be compacted with a plate tamper or vibratory roller. SES will retain a third-party firm to conduct compaction testing of each of the final 3-ft of material lifts. The shoring system will be removed as the backfilling activities progress. The shoring system will be removed in its entirety when the excavation depth is less than 4-ft below grade.

2.6.2. Installation of Injection Piping

SES will install a 2-ft lift of self-leveling stone over the demarcation fabric at the bottom of the excavation. SES will then install slotted 4-in schedule 40 PVC piping around the inside perimeter of the shoring box, with 90-degree elbows at the corners and a tee connected to a solid riser pipe extending to existing grade. Piping will be welded using low VOC gorilla glue.

2.7 Site Restoration

The site has a variety of components that require restoration, including subsurface utilities and surface improvements such as asphalt paving, and fencing. The sequence of the restoration activities will be based on the completion of the phased remedial activities.

2.7.1 Permanent Fencing and Gates

SES will replace the excavating fence with a new fence prior to the paving in the area and before school resumes for the year. The fence and gate will match what was installed prior to the remediation activities.

2.7.2 Asphalt Road and Parking lot

SES will retain a subcontractor to install the asphalt in accordance with the project specifications and plans. SES will perform all the excavation, subbase materials installation and compaction verification.

2.8 Decontamination and Demobilization

SES will decontaminate all equipment before it leaves the site. SES will remove the decontamination area as it is no longer needed. SES will remove all sanitary facilities and temporary utilities. SES will work with the surveyors and GES to submit the final as-built drawings in a timely manner.

2.8.1 Decontamination of Site Equipment

The equipment that comes in contact with impacted soils will be cleaned on the decontamination pad using an industrial detergent and a hot water pressure washer (Hotsi). The frac tanks will be entered under confined space entry procedures and properly cleaned. Upon completion of the site restoration activities, heavy equipment will be decontaminated. All equipment will be inspected prior to demobilization.

2.8.2 Removal of Decontamination Facilities

The decontamination pad and stockpile pads will be loaded out with the impacted soils for disposal as non-hazardous waste. The equipment, fencing, trash, solid waste, and project related materials will be removed from the site prior to demobilization. The site will be cleaned, and work areas will be left in a clean and

stable condition. Upon acceptance by Remediation Engineer, all remaining equipment, material, and personnel will be demobilized from the site.

2.8.3 Project Closeout

A final site and structural inspection will be done to ensure the site has been restored and is in satisfactory condition to GES representatives. All required deliverables and final record documents (including all excavation, transportation, disposal, backfill, as-built surveys, structural inspections and monitoring reports and documentation) will be completed and submitted in accordance with the submittal register and applicable specification.

Attachment-1
SES Project Sequence Plan

Erosion and Sediment Control

ANDREWS STREET

Site Entrance Drive Mat

Temporary Fence

Groundwater Treatment System

Sanitary Toilet

Extra Panels and 1 corner Post

Riser Pipe

PVC Injection Piping

SES Combo Trailer

Truck exit and Decon Pad

0-10' NonHaz (365 cy) 605 tons

10'-22' Haz (435 cy) 720 tons

0-22' Haz (865 cy) 1430 tons

0-22' Nonhaz (2,100 CY) 3470 tons

Lined Temporary Stockpile Area

ENTRANCE

INGRESS/EGRESS

POSSIBLE BELOW GRADE TELEPHONE/COMMUNICATIONS/CATV

SIDEWALK

ELEC

TRAFF

CONCRETE

VENT W/ STEEL COVER

GATE

55'

INJECTION SYSTEM RISER

245 ANDREWS STREET (AKA "SILVER CLEANERS" 4-STORY BUILDING TO BE R BY OTHERS PRIOR TO WOF

237-241 ANDREWS STREET (3-STORY BUILDING WITH BASEMENT)

Cell-1

Cell-2

Cell-3

Cell-4

FORMER BUILDING EXTENTS

DRY CLEANING SIGN

FORMER UST AREA EXCAVATION CONDUCTED

N/F - CITY OF ROCHESTER

PAD MOUNTED ELEC TRANS

CATV

527.04

527.54

527.98'

528.57'

529.93 (FF)

530.93 (FF)

+528.85 (FF)

A/C PADS

84'

ASPHALT UNDERLAID WITH CONCRETE

530.00

ASSUMED HAZARDOUS WASTE - 10 FT BGS TO BOTTOM OF EXCAVATION (ASSUMED NON-HAZARDOUS EXISTING GROUND SURFACE TO 10 FT BGS)

ASSUMED HAZARDOUS WASTE - GROUND SURFACE TO BOTTOM OF EXCAVATION (ASSUMED SLAB IN THE AREA WILL ALSO BE MANAGED AS HAZARDOUS WASTE)

PCE SOURCE AREA EXCAVATION EXTENTS (SEE NOTE 2)

1 / C-07

111 NORTH CLINTON AVENUE

INGRESS/EGRESS (PERSONNEL ONLY)

529.68

APPROXIMATE EXTENTS OF SLAB-ON-GRADE

ASPHALT

113 NORTH CLINTON AVENUE

(AKA "ELK PLACE", 5-STORY BUILDING WITH BASEMENT)

+531.69 (FF)

+531.71 (FF)

CONCRETE

BRICK

NORTH CLINTON AVENUE

INGRESS/EGRESS

ENTRANCE

1"=10'

10' 0 10' 20'

LEGEND

- PROPOSED PCE SOURCE AREA EXCAVATION LIMITS
- PROPOSED CHEMICAL CONVEYANCE PIPING
- PROPOSED CHEMICAL INJECTION PIPING
- SITE BOUNDARY LINE/LIMITS OF WORK
- APPROXIMATE PROPERTY LINE
- TEMPORARY CHAIN LINK FENCING WITH PRIVACY SCREEN
- FENCE LINE
- PIEZOMETER (SCHEDULED TO BE ABANDONED)
- OBSERVATION WELL
- OBSERVATION WELL (SCHEDULED TO BE ABANDONED)
- INJECTION WELL (SCHEDULED TO BE ABANDONED)
- SOIL BORING
- GEOTECHNICAL BORING
- 527' CONTOUR LINE
- SOIL BORING
- GEOTECHNICAL BORING

ARCADIS

LEGAL ENTITY:
ARCADIS OF NEW YORK, INC.

CONSULTANTS

SEALS

REMEDIAL DESIGN FOR CALL OUT IMPLEMENTATION

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Division of Environmental Remediation

FORMER SILVER CLEANERS REMEDIAL CONSTRUCTION PROJECT

FORMER SILVER CLEANERS
SITE NO. 828186
245 ANDREWS STREET
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

NO.	DATE	ISSUED FOR	BY

DATE:	DECEMBER 2022
PROJECT NO.:	30085744
FILE NAME:	IRM-DESIGN-DR-C04
DESIGNED BY:	T. MINEHARDT
DRAWN BY:	A. AMAYA
CHECKED BY:	D. LOEWENSTEIN

SHEET TITLE

CIVIL

Remediation Site Layout

SCALE: AS SHOWN

C-04

SHEET 5 OF 9

User:AAMAYA Spec:AUS-NCSM00 File:C:\USERS\AAMAYA\ARCADIS\PF-81697616 - MARKS NYSDEC PROJECTS - SILVER CLEANERS\REMEDIAL DESIGN\REMEDIAL CONSTRUCTION CALL OUT\CALL OUT DRAWINGS\CADD\IRM_DESIGN\IRM-DESIGN-DR-C04.DWG Scale:1:1/2 SavedDate:12/5/2022 Time:13:08 Plot Date: Amoyo, Andrew, 12/9/2022, 10:03 : Layout:C-04

Attachment-2
Surveyor Qualifications

Mark Gregoire, L.S.

LAND SURVEYOR

mgregoire@costich.com
585-458-3020

COSTICH

Mark has been employed by Costich since 1996. His responsibilities have varied between performing field work and post-processing/mapping. His field responsibilities are reconnaissance and location of boundary evidence, location of features for topographical surveys, instrument location surveys, field measurements for photo control, establishing survey control with GPS, and property line, building, column line and construction stakeouts. Recently Mark has undertaken surveys using new drone technology. Office duties include calculations for construction stakeout, processing and analyzing data obtained via GPS (static and RTK), compile and adjust field data, check stakeout coordinates and complete monument and satellite availability research for our GPS equipment. His experience is evident on commercial/retail, facilities/medical, offices, residential, educational, industrial, recreational, watermain and sewer route surveys, wetlands and ALTA/ACSM Land Title Survey projects.

Relevant Experience:

Mark has been involved in the extensive surveys on multiple project, most notably on the campus of Hobart and William Smith Colleges. Information obtained has been instrumental in the design of numerous new buildings and utilities. He also served as a one-man survey crew, utilizing GPS and a total robotic station on the Rochester Regional Health Critical Care Center in Irondequoit as well as the Rochester VA Clinic in Henrietta.

Drone Surveys

With a small UAS Certificate of Registration, we fly a DJI Inspire 2 with an Olympus M.Zuiko 45mm/1.8 lens which allows for the highest level of detail and a DJI M300 RTK with Livox LiDAR scanner for 2 cm LiDAR survey accuracy. We provide a wide range of drone services and often customize our drone flights based on specific client needs.

- Clarkson Meadows residential
- City of Poughkeepsie sewer rehabilitation
- Delta Sonic/Mile Strip Road - Hamburg
- Town of Hermon watermain replacement
- The Estate pavement replacement

Boundary and Topographical Surveys

Mark currently performs field work and maps boundary and topographical surveys for various municipal, industrial, commercial, residential, solar farm and educational type projects. This would entail surveys at one foot interval contours, record map research, utility locations and Town lot line locations and right-of-way. He also reviews all title documents, deeds, abstracts, and plots location of access easements.

- Solar Farm for Hobart and William Smith Colleges
- Wegmans Egg Farm
- Numerous school districts around New York state
- Wegmans Food Markets, Inc.

Complex Utility and Landfill Surveys

Utility and landfill surveys for clients such as Barton and Loguidice, the Town of Webster, the Town of Penfield, Wegmans Food Markets, Inc., and the Rochester Institute of Technology are performed under Mark's direction. These customers have relied on Costich Engineering for many years as their main land surveyor on numerous projects. For landfill surveys, Mark provide mapping of existing features of the areas shot in the field for quantity purposes.

Education:

- Bachelor of Technology in Surveying Technology
  State University of New York at Alfred (1994)
- Associate of Applied Science in Forestry and Surveying
  Paul Smith's College (1982)
- OSHA courses:
  - 10-Hour Occupational Safety and Health Course- Construction Safety and Health
  - 30-Hour Outreach Training Program- Construction
  - Hazwoper 40-Hour Initial and 8-Hour Refresher Courses

Professional Registration:

New York Registered Professional Land Surveyor

Professional Affiliations:

New York State Association of Professional Land Surveyors
Genesee Valley Land Surveyors Association

License:

UAS F.A.A. Remote Drone Pilot (#4632892)

Kaylee LaManna
LAND SURVEYOR & GIS SPECIALIST
klamanna@costich.com
585-458-3020, ext. 155

COSTICH

Ms. LaManna has been employed at Costich since 2020. Her responsibilities include field data collection as well as post processing/mapping in the office. In the field her duties include GPS and instrument operation for boundary and topographic surveys, instrument location maps, and construction stakeout. Recently Kaylee became a Certified UAS Remote Drone Pilot and has been working with field crews on obtaining high level LiDAR data. Her office duties include calculations and mapping across many platforms such as Autocad for boundary and topographic surveys, construction stakeouts, and instrument location maps. She is also adept in database management in Geographic Information Systems (GIS).

Prior to working at Costich, Kaylee gained 5 years of experience working in South Florida. There, her duties included a combination of field work and office work, including neighborhood improvement projects, F.D.O.T. roadway mapping, GIS utility inventories and topographic surveys.

Relevant Experience:

Drone Surveys:
With a small UAS Certificate of Registration, we fly a DJI Inspire 2 with an Olympus M.Zuiko 45mm/1.8 lens which allows for the highest level of detail and a DJI M300 RTK with Livox LiDAR scanner for 2 cm LiDAR survey accuracy. We provide a wide range of drone services and often customize our drone flights based on specific client needs.

- Clarkson Meadows Residential
- Tunison Laboratory of Aquatic Science
- City of Poughkeepsie Sewer Rehabilitation
- Delta Sonic/Mile Strip Road - Hamburg
- Town of Hermon Watermain Replacement
- The Estate Pavement Replacement

Route Surveys:
Field work for route surveys includes location of all existing structures and improvements within a 100' corridor centered on the proposed utility and/or road, such as gas, electric, telephone,cable, water, storm and sewer, all existing structures, driveways, curb, sidewalks, retaining walls and steam crossings.

- Northshore Sewer District (Constantia, NY)
- Town of Pamelia Water Project (Pamelia, NY)

Highway Surveys:
Kaylee has completed multiple highway surveys with previous employers. Her duties included field data collection as well as office processing using programs such as MicroStation and Autocad.

- N. Federal Highway (Oakland Park, FL)
  Mapping of 12,000± L.F. of roadway and utilities for future F.D.O.T. improvements*
- PGA Boulevard (Palm Beach Gardens, FL)
  Mapping of 5000± L.F. of roadway and utilities for future F.D.O.T. improvements*

GIS Projects:
- Town of Gates Comprehensive Watershed and Drainage System Database
  GIS database/inventory for 5,000± town-maintained drainage structures
- Town of Gates Zoning Map

Education:
- Bachelor of Science in Geomatics Engineering
  Florida Atlantic University (2016)
- Certification in Geographic Information Systems
  Florida Atlantic University (2016)
- *Courses of study: Land Surveying Field Practices, Geodesy, Land Subdivision and Platting, Photogrammetry, Construction Surveying, Computer Aided Design, Laser Scanning and Aerial LiDAR Processing. Spatial Data Analysis*

Professional Registration:
- NCEES Land Surveyor in Training (LSIT)

License:
- UAS F.A.A. Remote Drone Pilot (#4638154)

**Denotes work prior to Costich Engineering*

Jim Lloyd

GIS/IT SPECIALIST & FAA LICENSED DRONE PILOT

jlloyd@costich.com
585-458-3020 ext. 103

COSTICH

Jim has been a key Costich team member for over 20 years. His expertise in our firm revolves around technology. He jump started our use of drones and became an F.A.A. Drone Pilot several years ago, supporting our survey and design initiatives related to traffic studies, site topography, viewsheds, photo simulations, marketing images and video, and much more. Jim's daily responsibilities include GIS research for hundreds of jobs: site mapping and analysis, custom shapefiles and database development and viewshed analysis. Jim also works with our survey department to develop data collection standards and has written import and export conversion routines for survey data to be used with various software applications.

His expertise offers virtually limitless analysis capabilities for prioritizing sites for green infrastructure development. As an avid fisherman, Jim understands and values the protection and health of our local and regional waterways as it pertains to wildlife habitat.

Relevant Experience:

Town of Gates GIS Database (Gates, NY)
- Created a Town GIS mapping database to record locations of all storm conveyance features (catch basins, storm sewers, manholes, swales/ditches, etc.) within the watershed per NYSDEC Water Quality Improvement Project Program.

Drone/Visual Analysis (Photo Sims):
- Verizon Wireless - Amsdell (Hamburg, NY)
- Verizon Wireless - Clinton Street/Kirkland (West Seneca, NY)
- Big Tree Road (Orchard Park, NY)

Viewshed Analysis:
- Johnson Creek (Ridgeway, NY)

Drone Imagery:
- Hobart and William Smith Colleges - Campuswide Projects (Geneva, NY)
- McQuaid Jesuit High School - Campuswide Projects (Brighton, NY)
- Shadow Pines - Marketing Imagery
- Town of Irondequoit Local Waterfront Revitalization Program Update - Marketing Imagery

Aerial Landfill Topography:
- Madison County Landfill (Canastota, NY)
- Ontario County Landfill (Ontario, NY)

SWPPP Inspections:
- Route 332 Self Storage (Farmington, NY)
- Creekstone

Education:

Associate of Applied Science in Computer Science
Finger Lakes Community College (1997)

Surveying and Landscape Design Courses
Alfred State College (1984)

License:

United States of America F.A.A. Remote Drone Pilot (#3967411)

Professional Affiliations:

NYS GIS Association

GIS Certification Institute
In pursuit of GISP certification

Daniel Hickok, L.S.

PRINCIPAL/LAND SURVEYOR

dhickok@costich.com
585-458-3020, ext. 126

COSTICH

Dan joined the survey team of Costich Engineering in 1997 and has recently been promoted to head of the land surveying department. Dan's responsibilities include being a liaison between clients and project managers and scheduling of survey crews, project oversight, job costing, preparation of proposals and overall management of the survey department.

Responsibilities include office calculations and mapping for topographic and boundary surveys, ALTA/ACSM Land Title surveys, construction stakeouts, instrument location maps and all other aspects of field work. Additional duties include the checking and manipulation of field data using up-to-date AutoCad to complete client requested maps and plans, quality control and survey checklist.

Relevant Experience:

Route Surveys

- Route survey work includes research and mapping of all improvements within a 100' corridor centered on the proposed utility and/or road, such as gas, electric, telephone, cable, water, storm and sewer; mapping of existing features such as high and low points, all existing structures, driveways, curb, sidewalks, retaining walls and steam crossings; mapping of soil boring locations; preparation of easement maps and legal descriptions.

Boundary, Topographic and ALTA/ACSM Surveys

- Dan's work responsibilities are varied. He currently maps boundary and topographical surveys for various industrial, commercial, residential and educational type projects. This would entail surveys at one foot interval contours, record map research, utility locations and Town lot line locations and right-of-way. He also has vast experience the creation of ALTA/ACSM Land Title Surveys. Mapping is done per ALTA/ACSM Standards and Specifications. Dan also reviews all title documents, deeds, abstracts, and plots location of access easements.

Highway Surveys

- Mr. Hickok is responsible for research of utilities, maps and deeds, title and abstract review and rights-of-way and easements. Dan directs the operations of the field crews and is responsible for maintaining crew schedules.

Complex Utility and Landfill Surveys

- Utility and landfill surveys for clients such as Barton and Loguidice, the Town of Webster, the Town of Penfield, Wegmans Food Markets, Inc., Rochester Institute of Technology and Hobart and William Smith Colleges are performed under Dan's direction. These customers have relied on Costich Engineering for many years as their main land surveyor on numerous projects. For landfill surveys, Dan provides mapping of existing features of the areas shot in the field for quantity purposes.

- Town of Webster Sanitary Sewer Projects (Webster, NY)
  - » 1038-1079 Klem Road Sanitary Sewer
  - » 491-537 Backus Road Sanitary Sewer
  - » Gravel Road Sanitary Sewer
  - » Webster Road Sanitary Sewer
  - » Whiting Road Sanitary Sewers
  - » Summit Beach Sanitary Sewer

- Town of Pamelia Water Project (Pamelia, NY)

- Richland/Sandy Creek Joint Water Project (Richland & Sandy Creek, NY)

- Route 11 North/Fuller Road Water District (Hastings, NY)

Education:

Associate of Applied Science in Natural Resources and Conservation
State University of New York at Morrisville (1988)

Professional Registrations:

Professional Land Surveyor, State of New York

Professional Affiliations:

New York State Association of Professional Land Surveyors, Genesee Valley Land Surveyors Association

SURVEY

The Costich Survey Department is responsible for all phases of survey and construction stakeout for commercial, residential, educational, industrial, wireless telecommunications and municipal projects. We utilize multiple approaches and have the flexibility of 1, 2 and 3-man survey crews depending on site-specific needs. Our surveyors utilize Leica TS06 plus 3" total station packages with R500 reflectorless EDM. These fully robotic LEICA Geosytem instruments are used in conjunction with Surveyor 2 data collector running on the latest Carlson SurvCE software. In addition each crew has GPS capability using Carlson BRx5 Base and Rover Systems with fully integrated 270 channel GNSS receiver, UHF radio and GSM cell modem. Each receiver can be configured as Base, Rover or Network Rover allowing two rovers to run simultaneously.

SERVICES

- ALTA/NSPS Land Title Surveys
- Topographic and Boundary Surveys
- Survey for Highway Design
- Ground Control Survey for Photogrammetry
- Hydrology Surveys and Bathymetrics
- Acquisition and Right-of-Way Mapping
- Drainage and Utility Surveys
- Highway Surveying and Mapping
- Construction Stakeout
- As-builts and Certifications
- Quantities and Volumes
- Aerial Drone Photography
- Existing Site Survey
- Underground Utility Location
- Easement Descriptions & Mapping
- Tax Mapping/Record Drawings
- Soil Boring Locations
- Boring Observation and Monitoring
- Legal Desciptions
- Title and Deed Review
- Topographical and Boundary Surveys
- Subdivision of Land
- Landfills and Brownfield
- Machine Control
- FEMA Flood Certifications
- Land Trust/Greenspace
- Conveyance and Mortgage Redates for Refinancing
- Survey Control Plan

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Mark Gregoire, L.S.

LAND SURVEYOR

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585-458-3020

COSTICH

Mark has been employed by Costich since 1996. His responsibilities have varied between performing field work and post-processing/mapping. His field responsibilities are reconnaissance and location of boundary evidence, location of features for topographical surveys, instrument location surveys, field measurements for photo control, establishing survey control with GPS, and property line, building, column line and construction stakeouts. Recently Mark has undertaken surveys using new drone technology. Office duties include calculations for construction stakeout, processing and analyzing data obtained via GPS (static and RTK), compile and adjust field data, check stakeout coordinates and complete monument and satellite availability research for our GPS equipment. His experience is evident on commercial/retail, facilities/medical, offices, residential, educational, industrial, recreational, watermain and sewer route surveys, wetlands and ALTA/ACSM Land Title Survey projects.

Relevant Experience:

Mark has been involved in the extensive surveys on multiple project, most notably on the campus of Hobart and William Smith Colleges. Information obtained has been instrumental in the design of numerous new buildings and utilities. He also served as a one-man survey crew, utilizing GPS and a total robotic station on the Rochester Regional Health Critical Care Center in Irondequoit as well as the Rochester VA Clinic in Henrietta.

Drone Surveys

With a small UAS Certificate of Registration, we fly a DJI Inspire 2 with an Olympus M.Zuiko 45mm/1.8 lens which allows for the highest level of detail and a DJI M300 RTK with Livox LiDAR scanner for 2 cm LiDAR survey accuracy. We provide a wide range of drone services and often customize our drone flights based on specific client needs.

- Clarkson Meadows residential
- City of Poughkeepsie sewer rehabilitation
- Delta Sonic/Mile Strip Road - Hamburg
- Town of Hermon watermain replacement
- The Estate pavement replacement

Boundary and Topographical Surveys

Mark currently performs field work and maps boundary and topographical surveys for various municipal, industrial, commercial, residential, solar farm and educational type projects. This would entail surveys at one foot interval contours, record map research, utility locations and Town lot line locations and right-of-way. He also reviews all title documents, deeds, abstracts, and plots location of access easements.

- Solar Farm for Hobart and William Smith Colleges
- Wegmans Egg Farm
- Numerous school districts around New York state
- Wegmans Food Markets, Inc.

Complex Utility and Landfill Surveys

Utility and landfill surveys for clients such as Barton and Loguidice, the Town of Webster, the Town of Penfield, Wegmans Food Markets, Inc., and the Rochester Institute of Technology are performed under Mark's direction. These customers have relied on Costich Engineering for many years as their main land surveyor on numerous projects. For landfill surveys, Mark provide mapping of existing features of the areas shot in the field for quantity purposes.

Education:

- Bachelor of Technology in Surveying Technology
  State University of New York at Alfred (1994)
- Associate of Applied Science in Forestry and Surveying
  Paul Smith's College (1982)
- OSHA courses:
  - 10-Hour Occupational Safety and Health Course- Construction Safety and Health
  - 30-Hour Outreach Training Program- Construction
  - Hazwoper 40-Hour Initial and 8-Hour Refresher Courses

Professional Registration:

New York Registered Professional Land Surveyor

Professional Affiliations:

New York State Association of Professional Land Surveyors
Genesee Valley Land Surveyors Association

License:

UAS F.A.A. Remote Drone Pilot (#4632892)

Kaylee LaManna
LAND SURVEYOR & GIS SPECIALIST
klamanna@costich.com
585-458-3020, ext. 155

COSTICH

Ms. LaManna has been employed at Costich since 2020. Her responsibilities include field data collection as well as post processing/mapping in the office. In the field her duties include GPS and instrument operation for boundary and topographic surveys, instrument location maps, and construction stakeout. Recently Kaylee became a Certified UAS Remote Drone Pilot and has been working with field crews on obtaining high level LiDAR data. Her office duties include calculations and mapping across many platforms such as Autocad for boundary and topographic surveys, construction stakeouts, and instrument location maps. She is also adept in database management in Geographic Information Systems (GIS).

Prior to working at Costich, Kaylee gained 5 years of experience working in South Florida. There, her duties included a combination of field work and office work, including neighborhood improvement projects, F.D.O.T. roadway mapping, GIS utility inventories and topographic surveys.

Relevant Experience:

Drone Surveys:
With a small UAS Certificate of Registration, we fly a DJI Inspire 2 with an Olympus M.Zuiko 45mm/1.8 lens which allows for the highest level of detail and a DJI M300 RTK with Livox LiDAR scanner for 2 cm LiDAR survey accuracy. We provide a wide range of drone services and often customize our drone flights based on specific client needs.

- Clarkson Meadows Residential
- Tunison Laboratory of Aquatic Science
- City of Poughkeepsie Sewer Rehabilitation
- Delta Sonic/Mile Strip Road - Hamburg
- Town of Hermon Watermain Replacement
- The Estate Pavement Replacement

Route Surveys:
Field work for route surveys includes location of all existing structures and improvements within a 100' corridor centered on the proposed utility and/or road, such as gas, electric, telephone,cable, water, storm and sewer, all existing structures, driveways, curb, sidewalks, retaining walls and steam crossings.

- Northshore Sewer District (Constantia, NY)
- Town of Pamelia Water Project (Pamelia, NY)

Highway Surveys:
Kaylee has completed multiple highway surveys with previous employers. Her duties included field data collection as well as office processing using programs such as MicroStation and Autocad.

- N. Federal Highway (Oakland Park, FL)
  Mapping of 12,000± L.F. of roadway and utilities for future F.D.O.T. improvements*
- PGA Boulevard (Palm Beach Gardens, FL)
  Mapping of 5000± L.F. of roadway and utilities for future F.D.O.T. improvements*

GIS Projects:
- Town of Gates Comprehensive Watershed and Drainage System Database
  GIS database/inventory for 5,000± town-maintained drainage structures
- Town of Gates Zoning Map

Education:
- Bachelor of Science in Geomatics Engineering
  Florida Atlantic University (2016)
- Certification in Geographic Information Systems
  Florida Atlantic University (2016)
- *Courses of study: Land Surveying Field Practices, Geodesy, Land Subdivision and Platting, Photogrammetry, Construction Surveying, Computer Aided Design, Laser Scanning and Aerial LiDAR Processing. Spatial Data Analysis*

Professional Registration:
- NCEES Land Surveyor in Training (LSIT)

License:
- UAS F.A.A. Remote Drone Pilot (#4638154)

**Denotes work prior to Costich Engineering*

Jim Lloyd

GIS/IT SPECIALIST & FAA LICENSED DRONE PILOT

jlloyd@costich.com
585-458-3020 ext. 103

COSTICH

Jim has been a key Costich team member for over 20 years. His expertise in our firm revolves around technology. He jump started our use of drones and became an F.A.A. Drone Pilot several years ago, supporting our survey and design initiatives related to traffic studies, site topography, viewsheds, photo simulations, marketing images and video, and much more. Jim's daily responsibilities include GIS research for hundreds of jobs: site mapping and analysis, custom shapefiles and database development and viewshed analysis. Jim also works with our survey department to develop data collection standards and has written import and export conversion routines for survey data to be used with various software applications.

His expertise offers virtually limitless analysis capabilities for prioritizing sites for green infrastructure development. As an avid fisherman, Jim understands and values the protection and health of our local and regional waterways as it pertains to wildlife habitat.

Relevant Experience:

Town of Gates GIS Database (Gates, NY)
- Created a Town GIS mapping database to record locations of all storm conveyance features (catch basins, storm sewers, manholes, swales/ditches, etc.) within the watershed per NYSDEC Water Quality Improvement Project Program.

Drone/Visual Analysis (Photo Sims):
- Verizon Wireless - Amsdell (Hamburg, NY)
- Verizon Wireless - Clinton Street/Kirkland (West Seneca, NY)
- Big Tree Road (Orchard Park, NY)

Viewshed Analysis:
- Johnson Creek (Ridgeway, NY)

Drone Imagery:
- Hobart and William Smith Colleges - Campuswide Projects (Geneva, NY)
- McQuaid Jesuit High School - Campuswide Projects (Brighton, NY)
- Shadow Pines - Marketing Imagery
- Town of Irondequoit Local Waterfront Revitalization Program Update - Marketing Imagery

Aerial Landfill Topography:
- Madison County Landfill (Canastota, NY)
- Ontario County Landfill (Ontario, NY)

SWPPP Inspections:
- Route 332 Self Storage (Farmington, NY)
- Creekstone

Education:

Associate of Applied Science in Computer Science
Finger Lakes Community College (1997)

Surveying and Landscape Design Courses
Alfred State College (1984)

License:

United States of America F.A.A. Remote Drone Pilot (#3967411)

Professional Affiliations:

NYS GIS Association

GIS Certification Institute
In pursuit of GISP certification

Daniel Hickok, L.S.

PRINCIPAL/LAND SURVEYOR

dhickok@costich.com
585-458-3020, ext. 126

COSTICH

Dan joined the survey team of Costich Engineering in 1997 and has recently been promoted to head of the land surveying department. Dan's responsibilities include being a liaison between clients and project managers and scheduling of survey crews, project oversight, job costing, preparation of proposals and overall management of the survey department.

Responsibilities include office calculations and mapping for topographic and boundary surveys, ALTA/ACSM Land Title surveys, construction stakeouts, instrument location maps and all other aspects of field work. Additional duties include the checking and manipulation of field data using up-to-date AutoCad to complete client requested maps and plans, quality control and survey checklist.

Relevant Experience:

Route Surveys

- Route survey work includes research and mapping of all improvements within a 100' corridor centered on the proposed utility and/or road, such as gas, electric, telephone, cable, water, storm and sewer; mapping of existing features such as high and low points, all existing structures, driveways, curb, sidewalks, retaining walls and steam crossings; mapping of soil boring locations; preparation of easement maps and legal descriptions.

Boundary, Topographic and ALTA/ACSM Surveys

- Dan's work responsibilities are varied. He currently maps boundary and topographical surveys for various industrial, commercial, residential and educational type projects. This would entail surveys at one foot interval contours, record map research, utility locations and Town lot line locations and right-of-way. He also has vast experience the creation of ALTA/ACSM Land Title Surveys. Mapping is done per ALTA/ACSM Standards and Specifications. Dan also reviews all title documents, deeds, abstracts, and plots location of access easements.

Highway Surveys

- Mr. Hickok is responsible for research of utilities, maps and deeds, title and abstract review and rights-of-way and easements. Dan directs the operations of the field crews and is responsible for maintaining crew schedules.

Complex Utility and Landfill Surveys

- Utility and landfill surveys for clients such as Barton and Loguidice, the Town of Webster, the Town of Penfield, Wegmans Food Markets, Inc., Rochester Institute of Technology and Hobart and William Smith Colleges are performed under Dan's direction. These customers have relied on Costich Engineering for many years as their main land surveyor on numerous projects. For landfill surveys, Dan provides mapping of existing features of the areas shot in the field for quantity purposes.

- Town of Webster Sanitary Sewer Projects (Webster, NY)
  - » 1038-1079 Klem Road Sanitary Sewer
  - » 491-537 Backus Road Sanitary Sewer
  - » Gravel Road Sanitary Sewer
  - » Webster Road Sanitary Sewer
  - » Whiting Road Sanitary Sewers
  - » Summit Beach Sanitary Sewer

- Town of Pamelia Water Project (Pamelia, NY)

- Richland/Sandy Creek Joint Water Project (Richland & Sandy Creek, NY)

- Route 11 North/Fuller Road Water District (Hastings, NY)

Education:

Associate of Applied Science in Natural Resources and Conservation
State University of New York at Morrisville (1988)

Professional Registrations:

Professional Land Surveyor, State of New York

Professional Affiliations:

New York State Association of Professional Land Surveyors, Genesee Valley Land Surveyors Association

Attachment-3
Shoring Design Plan

SUPPORT ENGINEERING GROUP, LLC
Texas Registered Firm F-20390

June 20, 2023

John Kerrigan
Shielding & Shoring Specialist
TrenchTech, Inc.
1979 Old Bristol Pike
Morrisville, Pennsylvania 19067

RE: Former Silver Cleaners Project
Rochester, New York

Dear John,

We are in receipt of the site locations and the equipment information for the trench excavation protection system that may be used multiple times at the above referenced project. The project drawings and the location of the need for the protective system that were forwarded by TrenchTech, Inc. have been reviewed, and calculations have been prepared and completed by Support Engineering Group, LLC to determine the adequacy of the structural components. We understand that TrenchTech, Inc. will provide the structural components necessary for the protective system to the designated contractor, which has previously provided the site and soils information. This information has been included in the preparation of this document.

Soils information was provided, so a review of the borings conducted by Arcadis on August 21, 2015 and again January 14, 2016 indicates that layered dense fine sand with silt to dense silty fine sand overlaying partially weathered to hard rock exists at the project. A unit weight of 75.09-130.0 PCF has been assumed for the soil and other material above the groundwater level, with a ϕ angle approximating 30-35.0 degrees. These parameters were used in the calculations to determine the feasibility of the separate components of the protective system to be used multiple times, including the use of the "Efficiency" 8'X26', 4'X26', 8'X24', 4'X24', 8'X18' and 4'X18' steel Slide Rail panels, and the double linear and corner posts, parallel rails and 8" diameter Schedule 80 steel pipe struts. This office must be notified immediately if these parameters cannot be met, so that remedial measures can be implemented and applied. It will be necessary to confirm the soil properties listed and included with this document.

The total maximum depth of the proposed excavations are not to exceed 24'-0", for each use of the protective system multiple times. The particular Slide Rail units will be connected upon and to one another in a stacked arrangement. Not more than 6" of space can exist between the outside faces of the installed stacked and secured "Efficiency" 8'X26', 4'X26', 8'X24', 4'X24', 8'X18' and 4'X18' steel Slide Rail panels, and the double linear and corner posts, parallel rails and 8" diameter Schedule 80 steel pipe struts type of protective system, and the excavated soil face. Loose soil backfill material must be placed if a wider gap is present in order to fill any void and pin the stacked Slide Rail type of protective system together.

The installation procedures and application requirements must follow the sketches and the manufacturer's "tabulated data" as provided by "Efficiency Production" that are enclosed in Appendix 'A' by the "competent person" employed by the designated contractor for this document to remain valid. To comply with the OSHA Standards, a "competent person", one who has had specific training in, and is knowledgeable about, soils analysis, the use of protective systems, and in the requirements of the Standards" and has the authority to take prompt corrective

12400 Hwy 71 W. Ste 350-120 Austin, Texas 78738 pthompsonpe@gmail.com
512-497-1147

measures" shall be available at the project. Further, OSHA Standard 1926.652 (c)(2) states, "Design of support systems, shield systems, or other protective systems that are drawn from manufacturer's tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer. Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall only be allowed after the manufacturer issues specific written approval. Manufacturer's specifications, recommendations, and limitations, and manufacturer's approval to deviate from the specifications, recommendations, and limitations shall be in written form at the jobsite during construction of the protective system."

The proposed stacked and secured Slide Rail protective system will be adequate to provide the support of the anticipated lateral earth pressures at the particular excavation at multiple times when installed as indicated by the enclosed sketches and the appropriate manufacturer's "tabulated data". This document is valid for the particular excavation as indicated by the designated contractor to utilize these methods at this project only, and to a maximum depth of 24.0 feet in the soil.

Ultimately, the responsibility and integrity of these protective systems lies with the designated contractor using proper installation steps common to the industry. Support Engineering Group, LLC assumes no responsibility for any construction activity, including maintaining groundwater elevations within and outside of the trench excavations. All parameters used in determining the suitability of the individual members of the protective system shall be confirmed by on-site personnel.

In the event that methods of application to be used are different from those stated above, please notify this office immediately so that another review can be conducted. We look forward to assisting you in ensuring that a safe work environment exists at Former Silver Cleaners project. Do not hesitate to call if we can be of any further assistance. We will be available for any pre-construction meetings or discussions that may be necessary. Thank you.

Best regards,

Support Engineering Group, LLC

6/20/23

Phillip E. Thompson, P.E.
TX Reg. 58548

Dan Sheffer, P.E.
NY Reg. 095798-1
6/20/23

Enclosures

SUPPORT ENGINEERING GROUP, LLC
Texas Registered Firm F-20390

Former Silver Cleaners Project
Rochester, New York
TrenchTech, Inc.

APPENDIX 'A'

June 20, 2023

6/20/23

12400 Hwy 71 W, Ste 350-120 Austin, Texas 78738 pthompsonpe@gmail.com
512-497-1147

SUPPORT ENGINEERING GROUP, LLC
Texas Registered Firm F-20390

ENGINEER'S REPORT NOTES

A. General Conditions

1. **Design Parameters** - This report has used information provided to Support Engineering Group, LLC by the User to complete the design, including construction techniques, site plans and profiles, soil borings, etc. Support Engineering Group, LLC does not assume any responsibility for that information being complete or exact, and all verification shall be made by the User.

2. **Basis of Design** - This report contains designs which are in accordance with the current OSHA Standards with regard to Subpart P, sections 1926.650-1926.652, and to any design requirements. Users of this report are reminded that this design does not relieve their responsibility to meet all current OSHA Standards with regard to the construction industry, as well as any contract, state or local regulations that may apply. Dewatering of the excavation must be completed and maintained because hydrostatic water conditions have not been included in the calculations. If this condition is present, this design is null and void.

3. **Limitations** - This design is for a particular type of protective system with a maximum depth of 24.00' with surcharge applied due to small equipment, material storage, and sloped earth material. The only soils information was gathered by examination of existing site and soil conditions by User and verification of this information to Support Engineering Group, LLC.

4. **Inspections** - Daily observations by the User of this report shall be made at the jobsite to note any variations in soil conditions or protective systems. Any variation shall be reported to Support Engineering Group, LLC for remediation or redesign.

5. **"Competent Persons"** - The User of this report shall have a "competent person" on the jobsite on a daily basis. According to the OSHA Standards, this person must be knowledgeable of the current Standards, and have specific training in soils analysis and the use of protective systems. This person must also have the authority to stop any work if a hazard is noted, and direct any corrective measures.

6. **Unknown Site Conditions** - While site conditions should not differ from what the designs were based, if any condition appears to be outside of the design, Support Engineering Group, LLC must be immediately notified. Hazards such as but not limited to boulders, trees and tree roots, building foundations, underground utilities or structures, and water are cases which shall be reported to the Engineer.

7. **General Construction Requirements**
   a. Excavated Material - Shall be placed no closer than two (2.0) feet from top edge of excavation, and shall be limited to four (4.0) feet high. Shall be in a stockpile with a slope no steeper than 1V:1H to prevent any loose rock or soil from rolling into the excavation.

   b. Water Accumulation - Excavations or trenches shall be kept free from accumulation of surface water or groundwater at all times. Dewatering operations shall be constantly maintained during construction and monitored by a "competent person". Soil berms or such other means shall be constructed around the top of the excavation to prevent surface water from entering, and trench walls shall be inspected for signs of distress due to water.

   c. Means of Exit from Excavation - A ladder or soil ramp shall be used to provide a safe means of exit. Ladders shall be placed within the protected area and located to require no more than 25.0 feet of lateral travel to reach one. Ladders must extend to a height of three (3.0) feet above a level area and may not rest on any support member of a protective system. Soil ramps must be sloped so that any employee can walk upright to leave excavation.

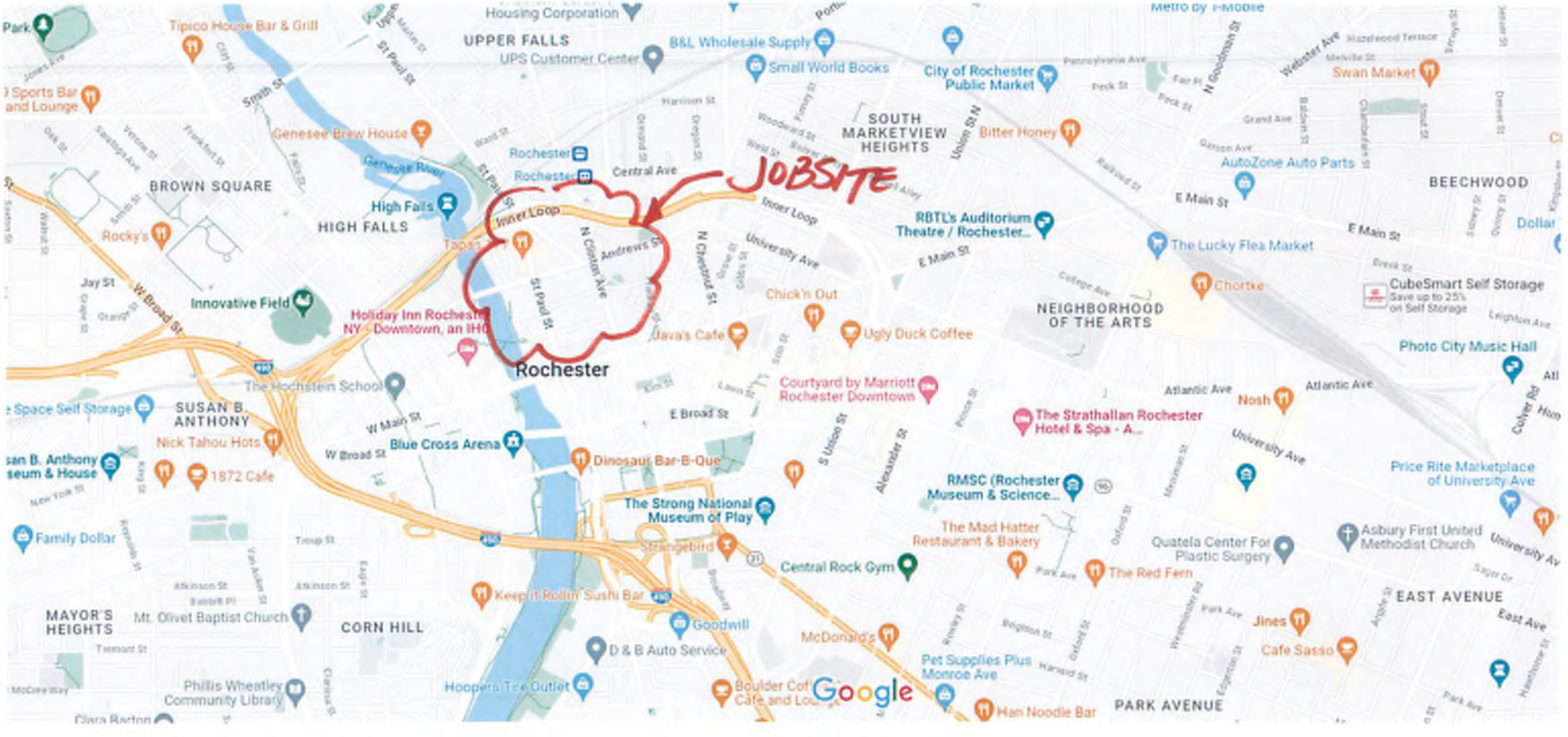
B. **Selected Protective System**

1. **Requirement** - A protective system must be provided for all trenches over 4.0 feet in depth into which employees must work, and may be required for any excavation if an evaluation by the "competent person" indicates a potential for a cave-in, or as contract requirements dictate.

2. **Structural Steel Shoring** - Soils analysis is to be conducted, and the design prepared using AISC Standards and Specifications. Reference must be made to the enclosed calculations and designs.

Google Maps Current Map

A
3



Map data ©2023 Google 1000 ft


Site View
6
4
Legend
Google Earth
300 ft
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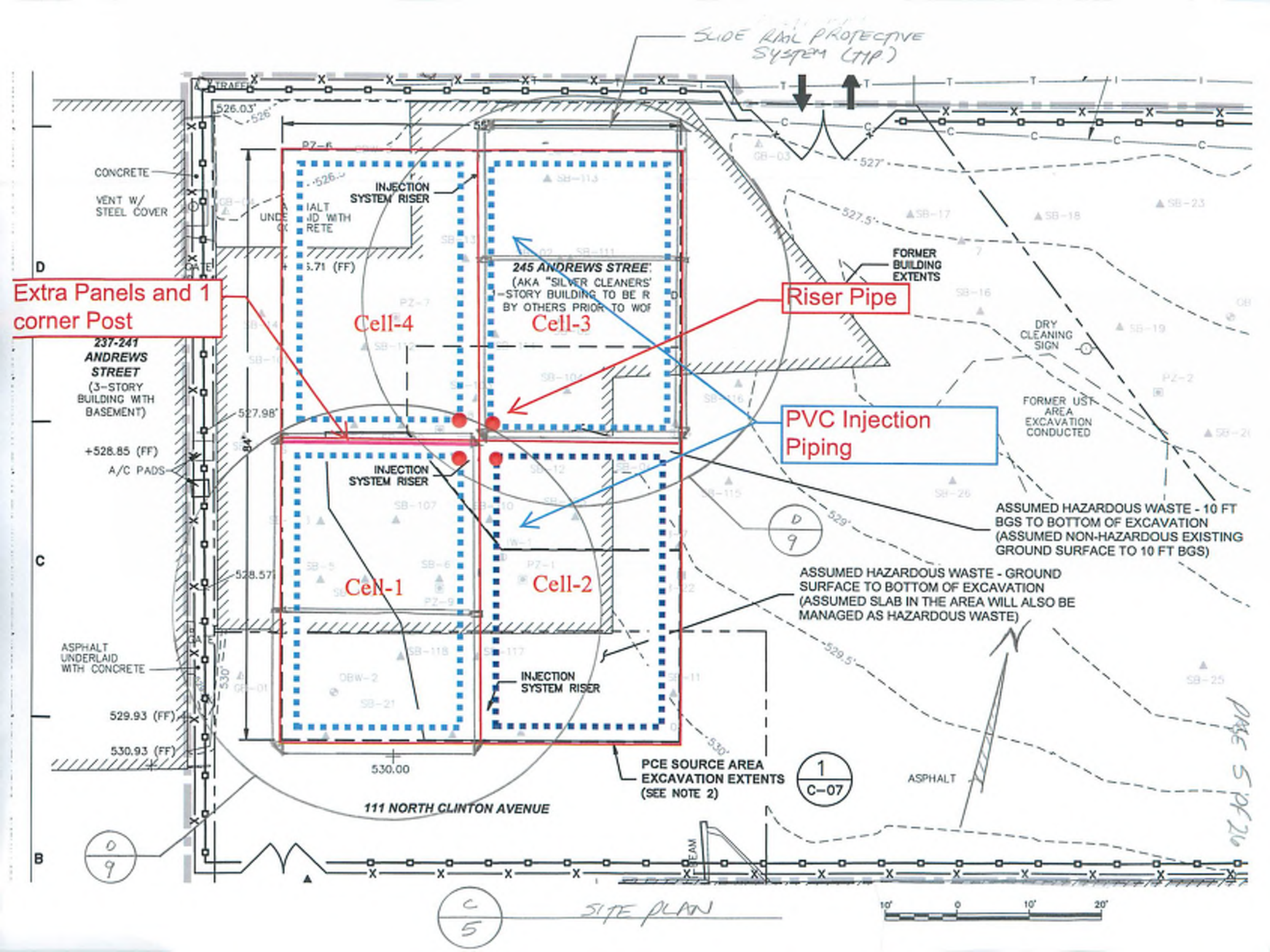

SLIDE RAIL PROTECTIVE SYSTEM (TYP.)
Extra Panels and 1 corner Post
Riser Pipe
PVC Injection Piping
Cell-4
Cell-3
Cell-1
Cell-2
INJECTION SYSTEM RISER
INJECTION SYSTEM RISER
INJECTION SYSTEM RISER
245 ANDREWS STREET
(AKA "SILVER CLEANERS'
-STORY BUILDING TO BE R
BY OTHERS PRIOR TO WOF
237-241 ANDREWS STREET
(3-STORY BUILDING WITH BASEMENT)
FORMER BUILDING EXTENTS
DRY CLEANING SIGN
FORMER UST AREA EXCAVATION CONDUCTED
ASSUMED HAZARDOUS WASTE - 10 FT BGS TO BOTTOM OF EXCAVATION (ASSUMED NON-HAZARDOUS EXISTING GROUND SURFACE TO 10 FT BGS)
ASSUMED HAZARDOUS WASTE - GROUND SURFACE TO BOTTOM OF EXCAVATION (ASSUMED SLAB IN THE AREA WILL ALSO BE MANAGED AS HAZARDOUS WASTE)
PCE SOURCE AREA EXCAVATION EXTENTS (SEE NOTE 2)
111 NORTH CLINTON AVENUE
CONCRETE
VENT W/ STEEL COVER
ASPHALT UNDERLAID WITH CONCRETE
A/C PADS
+528.85 (FF)
529.93 (FF)
530.93 (FF)
527.98'
528.57'
530.00
526.03'
527'
527.5'
529'
529.5'
530'
ASPHALT
STEAM
SITE PLAN
PAGE 5 OF 20

Date Start/Finish:	1/14/2016	**Northing:**	1152817.48	**Well/Boring ID:**	PZ-7
Drilling Company:	Nothnagle Drilling Inc.	**Easting:**	1408471.48	**Client:**	NYSDEC
Driller's Name:	Neal Short	**Surface Elevation:**	526.62' AMSL	**Location:**	Former Silver Cleaners Site #828186 245 Andrews Street, Rochester, NY
Drilling Method:	Direct Push	**Casing Elevation:**	526.33' ASML		
Sampling Method:	Macro-Core	**Borehole Depth:**	14' bgs		
Rig Type:	Diedrich D-25	**Descriptions By:**	Quinn Carnahan		

Depth (feet bgs) / Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0								4" Flush-mounted Well Box
525	1	0-4	NA	5.7 2.3			Concrete. Brown very fine to medium SAND; little Brick and Slag fragments; trace Silt; dry to moist, dense.	Concrete Pad (0'-1' bgs)
5	2	4-8	2.0	122 31.4			Brown very fine to fine SAND; little Silt, trace fine to medium Gravel, angular to subround; trace fractured Cobbles; moist, dense.	Hydrated Granular Bentonite (1'-8' bgs) 1" Dia. SCH40 PVC Blank Casing (0'-9' bgs)
520	3	8-12	2.6	87.6 109 57.4			Brownish grey very fine to fine SAND; little Silt, trace fine to medium Gravel, angular to subround; trace fractured Cobbles; moist, dense. Wet at 11' to 13' bgs.	#00 Sand Pack (8'-14' bgs)
10	4	12-14	1.3	162				1" Dia., 0.010" slot SCH40 PVC Well Screen (9'-14' bgs)
515							End of Boring. Refusal at 14' bgs.	
15								

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ASML = Above Mean Sea Level.
Soil samples PZ-7 (5.0) and PZ-7 (9-11) analyzed for TCL VOCs.

ARCADIS Design & Consultancy for natural and built assets

Project: 00266426.0000
Data File: PZ-7.dat

Created/Edited by: Ryan Clare
Template: C:\Users\rclare\Desktop\Silver Cleaners\Log Plots

Date: 7/29/2019
Page: 1 of 1

Date Start/Finish:	8/21/2015	**Northing:**	1152778.61	**Well/Boring ID:**	**SB-5**
Drilling Company:	Nature's Way Environmental	**Easting:**	1408473.12	**Client:**	NYSDEC
Driller's Name:	Nathan Gingrich	**Surface Elevation:**	526.80' AMSL	**Location:**	Former Silver Cleaners Site #828186 245 Andrews Street, Rochester, NY
Drilling Method:	Direct Push	**Borehole Depth:**	5.5' bgs		
Sampling Method:	Macro-Core	**Descriptions By:**	Ryan Clare		
Rig Type:	Skid-Steer Mounted Geoprobe				

Depth (feet bgs) / Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0								
525	1	0-4	NA	14.1			Concrete.	Concrete Surface Completion (0-0.5' bgs)
							Brown fine to medium SAND and Brick/Slag fragments; moist, loose.	
							Brown very fine to fine SAND; little Silt; trace Gravel, subangular to subround; moist, dense.	Hydrated Bentonite Chips (0.5'-5.5' bgs)
5	2	4-5.5	1.5	89.2				
							End of Boring. Refusal at 5.5' bgs.	
520								
10								
515								
15								

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.
Soil sample SB-5 (4-5.5) analyzed for TCL VOCs.

Boring was abandoned with hydrated bentonite chips.

ARCADIS Design & Consultancy for natural and built assets

Project: 00266426.0000
Data File: SB-5.dat

Created/Edited by: Ryan Clare
Template: C:\Users\rclare\Desktop\Silver Cleaners\Log Plots

Date: 7/26/2019
Page: 1 of 1

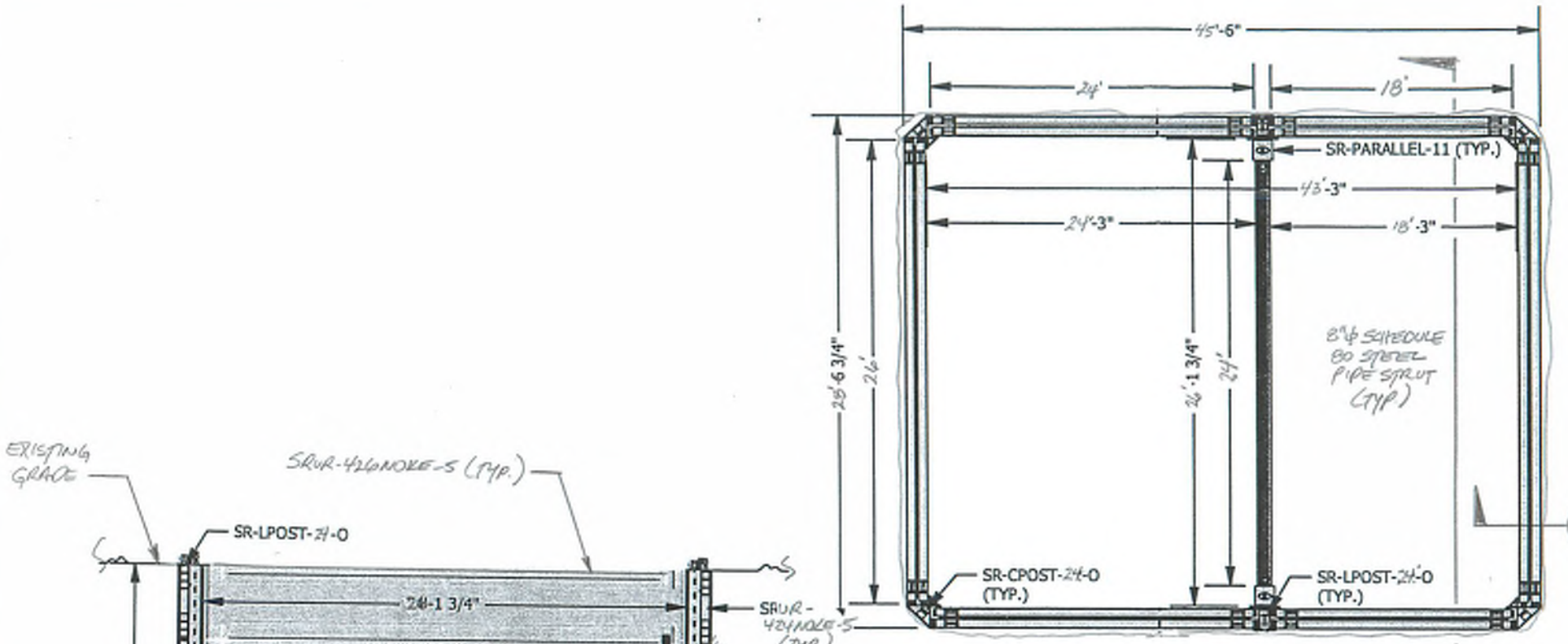
Date Start/Finish: 8/21/2015	**Northing:** 1152783.74	**Well/Boring ID:** SB-6	
Drilling Company: Nature's Way Environmental	**Easting:** 1408488.67	**Client:** NYSDEC	
Driller's Name: Nathan Gingrich	**Surface Elevation:** 526.61' AMSL	**Location:** Former Silver Cleaners Site #828186 245 Andrews Street, Rochester, NY	
Drilling Method: Direct Push	**Borehole Depth:** 9.5' bgs		
Sampling Method: Macro-Core	**Descriptions By:** Ryan Clare		
Rig Type: Skid-Steer Mounted Geoprobe			

Depth (feet bgs) / Elevation (feet AMSL)	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0							Asphalt.	Asphalt Surface Completion (0-0.5' bgs)
							BRICK and SLAG; some fine to coarse Gravel; little Cobbles; little fine to coarse Sand; moist, loose.	
525	1	0-4	NA	630			Brown very fine to fine SAND; little Silt; trace fine to medium Gravel, subangular to subround; moist, medium dense. Layer of medium to coarse SAND; some fine Gravel at 7.8' to 8' bgs.	
5	2	4-8	2.8	513 423				Hydrated Bentonite Chips (0.5'-9.5' bgs)
520	3	8-9.5	1.0	1353				
10							End of Boring. Refusal at 9.5' bgs.	
515								
15								

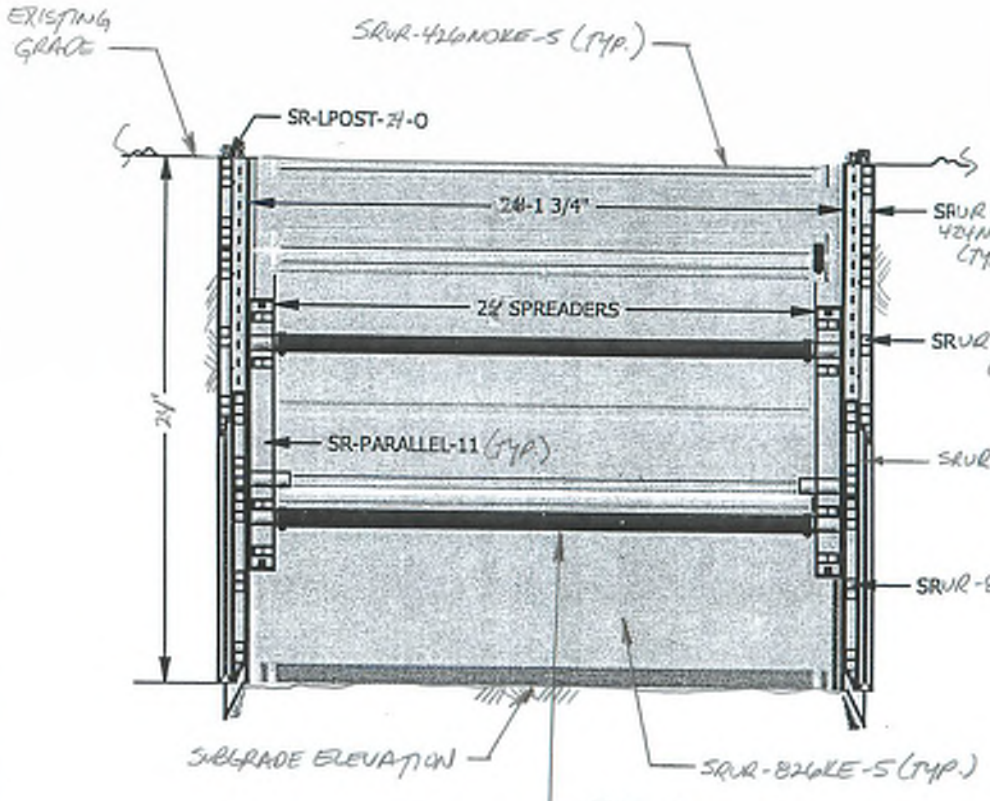
ARCADIS Design & Consultancy for natural and built assets

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.
Soil samples SB-6 (2-4), SB-6 (6-8), and SB-6 (8-9.5) analyzed for TCL VOCs.

Boring was abandoned with hydrated bentonite chips.



PROTECTIVE SYSTEM PLAN VIEW
NTS



D/9

E/9 CROSS-SECTION
NTS

SUPPORT ENGINEERING GROUP, LLC
12400 Highway 71W, Suite 350-B
Austin, Texas 78738
(713) 306-5050

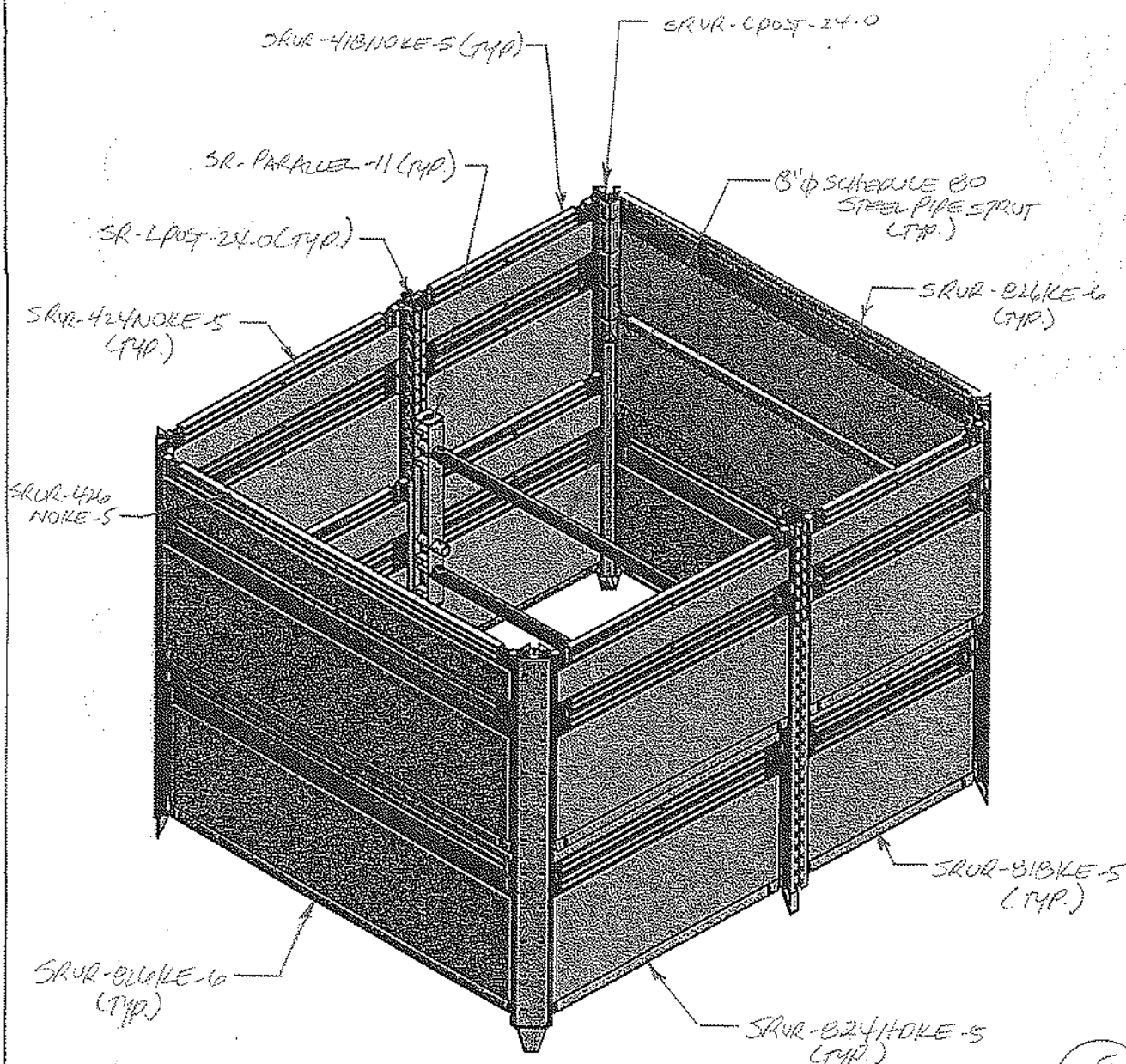
PROTECTIVE SYSTEM FOR TRENCHTECH

SCALE: AS NOTED
ENGINEER: D.B.S.
DRAWN: D.B.S.
DATE: 6/19/23

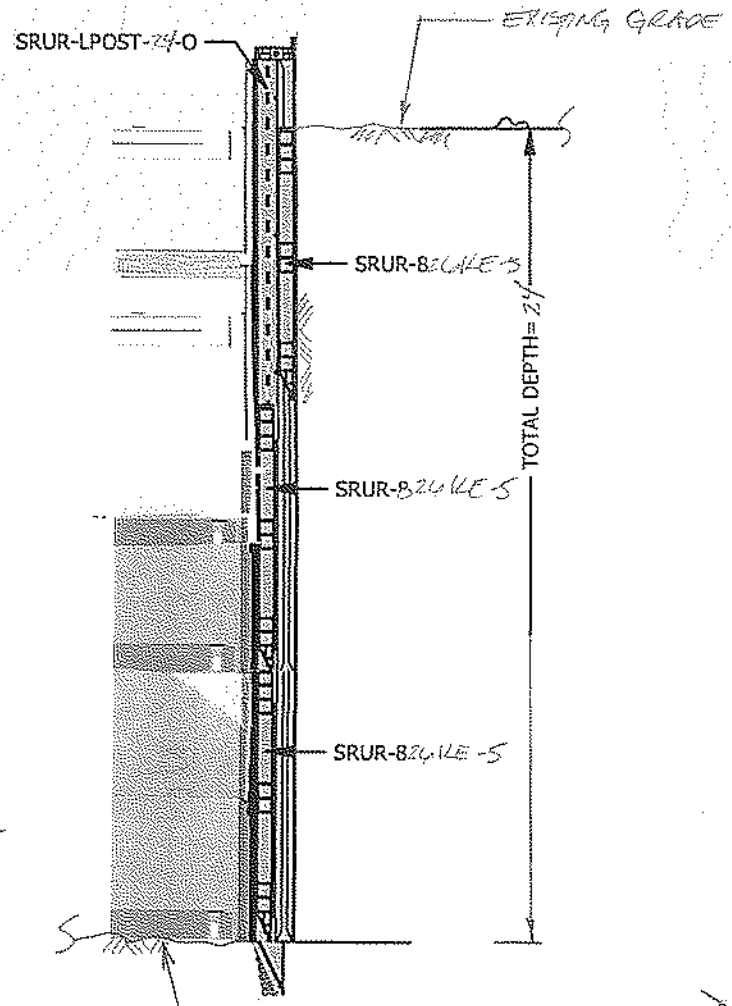
NO. | DATE | DRAWN | CHECKED | DESCRIPTION | APP.

FILE

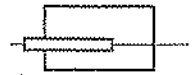
PAGE 9 OF 10



9/10 ISOMETRIC VIEW



F/10 SECTION



SUPPORT ENGINEERING GROUP, LLC
12400 Highway 71W, Suite 350-120
Austin, Texas 78738
(713) 356-8035

PROTECTIVE SYSTEM FOR TRENCH FEET

SCALE: AS NOTED
ENGINEER: D.B.S.
DRAWN: D.B.S.
CHECKED: D.B.S.

PAGE 10 OF 20

SUPPORT ENGINEERING GROUP, LLC
Texas Registered Firm F-20390

Calculations

Project: Former Silver Cleaners – Rochester, NY **For:** TrenchTech, Inc. **Date:** June 19, 2023

Job will involve the excavation of unsuitable material and replacement with properly backfilled soil near the site of an existing building, other surface features and possible underground utilities at the above referenced project. It is desired to install a multi-bay Slide Rail system multiple times in the same area with corner and linear posts and panels for the anticipated maximum vertical 24'-0" deep excavation to be conducted, to allow for employees to safely perform tasks within the confines of the multiple installations of the Slide Rail type of protective system. The project is located just to the northeast of downtown Rochester, in Monroe County, New York.

Soils information was made available of the area, so a review of the borings conducted by Arcadis on August 21, 2015 and again January 14, 2016 indicates that layered dense fine sand with silt to dense silty fine sand overlaying partially weathered to hard rock exists at the project. According to the default soil parameters listed in the "SupportIT" computer program for the dense silty fine sand that may be encountered, the following parameter is listed:

$\phi = 29°$, $\gamma = 117.0$ #/ FT³, $C = 0$ #/ FT², $K_a = 0.31$, and, $K_p = 4.26$

Groundwater will be lowered to below the anticipated subgrade elevations by on-site personnel of the designated contractor, so no hydrostatic pressure will be added to these calculations. Construction equipment will use the areas above the locations of the protective systems, so a 650#/FT² surcharge loading will be considered. According to the site information provided, the maximum vertical depth, $H_v = 24.0$ FT high against the installed Slide Rail panels of the protective system.

The Slide Rail panels to be used have been manufactured by "Efficiency Production" previously. According to the available manufacturer's "tabulated data", the following panels have been determined by an engineer who has signed, stamped and dated information to indicate a rated shield capacity (SC) of:

"Efficiency" SRUR-826KE-5, SC = 1440 PSF; SRUR-426NOKE-5, SC = 1200 PSF;
SRUR-824HDKE-5, SC = 1800 PSF; SRUR-424NOKE-5, SC = 1500 PSF;
SRUR-818KE-5, SC = 1800 PSF; SRUR-418NOKE-5, SC = 1920 PSF

The "Efficiency Production" Double Linear and Corner Slide Rail sections to be provided are a composite member consisting of structural steel tubes and plates secured by stiffener plates. Extensions are used for adjustments to the depth of the excavation, and are configured to be connected with friction and mechanical means. The following properties have been determined for each section:

Linear		Corner	
$A = 63.2576$ in²	$S_x = 139.17$ in³	$A = 51.41$ in²	$S_x = 68.5$ in³
$I_x = 1156.8541$ in^4	$S_y = 214.298$ in³	$I_x = 411.0$ in^4	$S_y = 68.5.0$ in³
$I_y = 1928.6789$ in^4	$r_y = 5.5217$ in	$I_y = 411.0$ in^4	$r_y = 2.83$ in
$r_x = 4.2764$ in	$F_y = 55{,}000$ PSI	$r_x = 2.83$ in	$F_y = 55{,}000$ PSI

A pre-manufactured parallel rail spreader device will be used, with 8" diameter Schedule 80 steel pipe used as the internal struts. According to the AISC Steel Construction Manual, 9th Edition, the following structural properties are listed for the steel pipe: $A = 12.8$ in² $F_y = 46{,}000$ PSI $I = 106$ in^4
$r = 2.88$ in $S = 24.5$ in³

The "SupportIT" computer program and hand calculations have been used to determine the suitability of the structural members that comprise this type of protective system. Please refer to the next pages for results.

designcalcsefficiencysliderail15a.doclaptop

Client: TrenchTech, Inc.
Site: Morrisville, Pennsylvania
Attn: John Kerrigan
Tel: 800-443-8832
Fax: 215-547-3855

Title: Former Silver Cleaners Project - Rochester, New York
Ref: URTS-F
Date: 6.19.23

Pile: Slide Rail Double Linear Post
Lagging: 5" SR Panels
Works: Temporary
Pressure: Coulomb
Toe: No Earth Support

For Structural Stability only.

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Calculations (cont'd.)

Determine Suitability of Structural Members (cont'd.)

24'-0" Depth Excavation - For use at CELLS 1-4

Input Data

Depth Of Excavation = 24.00ft
Surcharge = 650.0psf
Depth Of Active Water = 25.00ft
Depth Of Passive Water = 25.00ft
Water Density = 62.43pcf
Minimum Fluid Density = 31.82pcf

Soil Profile

Depth (ft)	Soil Name	γ (pcf)	γ' (pcf)	C (psf)	C_a (psf)	φ (°)	δ (°)	K_a	K_{ec}	K_p	K_{pc}
0.00	Loose Slag Fill	75.09	56.00	0.0	0.0	30.0	0.0	0.33	0.00	3.00	0.00
0.50	Dense Fine Sand W/ Silt	118.37	68.73	0.0	0.0	35.0	17.5	0.24	0.00	5.69	0.00
3.80	Dense Silty Fine Sand	117.00	68.50	0.0	0.0	29.0	14.5	0.31	0.00	4.26	0.00
10.50	Dense Fine Sand W/ Silt	118.37	68.73	0.0	0.0	35.0	17.5	0.24	0.00	5.69	0.00
14.00	Glacial Till	130.00	65.00	0.0	0.0	34.0	17.0	0.25	0.00	5.48	0.00
22.00	Glacial Till	130.00	65.00	0.0	0.0	34.0	17.0	0.25	0.00	5.48	0.00

Solution

Wall

Description	E (psi)	I (in⁴)	f (psi)	Z (in³)	Allowed M_{max} (filb)	b (ft)	t (ft)	w (ft)	s (ft)	Arching	Upstand (ft)	Toe (ft)	Length (ft)
Slide Rail Double Linear Post	3.04E+07	1926.68	36300.0	214.30	648257.6	1.499	1.266	2.416	21.75	2.24	0.00	0.00	24.00
5" SR Panels	3.04E+07	157.00	33000.0	57.00	156750.0	1.000	0.417	----	----	----	----	----	----

Load Model: Area Distribution (Hinge Method used for Shear Force, Bending Moment and Deflection)

Supports

d (ft)	Type	Load (lb)	Length (ft)	Angle (°)
8.79	Tieback	103612.7		0.0
16.00	Tieback	177022.7		0.0

$d_1 = (24.75 + 18.75)\,ft/2 = 21.75\,ft$
$d_{2\,max} = (24.75 + 26.75)\,ft/2 = 25.75\,ft$
$P_{Array} =$

Maxima

	Maximum	Depth (ft)
Pressure	893.4 psf	24.00

For the Slide Rail Panels to be used, according to the manufacturer's "tabulated data" provided by "Efficiency Production", the following shield capacities (SC) apply:

SRUR-826KE-5, SC = 1440 PSF > 893.4 PSF O.K. ✓
SRUR-426 NOKE-5, SC = 1200 PSF > 893.4 PSF O.K. ✓
SRUR-824HOKE-5, SC = 1800 PSF > 893.4 PSF O.K. ✓
SRUR-424NOKE-5, SC = 1500 PSF > 893.4 PSF O.K. ✓
SRUR-818KE-5, SC = 1800 PSF > 893.4 PSF O.K. ✓
SRUR-418NOKE-5, SC = 1920 PSF > 893.4 PSF O.K. ✓

Page 12 of 26

Client: TrenchTech, Inc.
Site: Morrisville, Pennsylvania
Attn: John Kerrigan
Tel: 800-443-8832
Fax: 215-547-3855

Title: Former Silver Cleaners Project - Rochester, New York
Ref: URTS-F
Date: 6.19.23

Pile: Slide Rail Double Linear Post
Lagging: 5" SR Panels
Works: Temporary
Pressure: Coulomb
Toe: No Earth Support

For Structural Stability only.

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Calculations (cont'd.)

Determine Suitability of Structural Members (cont'd.)

24'-0" Depth Excavation - For use at CELLS 1-4

Input Data

Depth Of Excavation = 24.00ft
Surcharge = 650.0psf

Depth Of Active Water = 25.00ft
Depth Of Passive Water = 25.00ft

Water Density = 62.43pcf
Minimum Fluid Density = 31.82pcf

Soil Profile

Depth (ft)	Soil Name	γ (pcf)	γ' (pcf)	C (psf)	C_a (psf)	ϕ (°)	δ (°)	K_a	K_{ac}	K_p	K_{pc}
0.00	Loose Slag Fill	75.09	56.00	0.0	0.0	30.0	0.0	0.33	0.00	3.00	0.00
0.50	Dense Fine Sand W/ Silt	118.37	68.73	0.0	0.0	35.0	17.5	0.24	0.00	5.69	0.00
3.80	Dense Silty Fine Sand	117.00	68.50	0.0	0.0	29.0	14.5	0.31	0.00	4.26	0.00
10.50	Dense Fine Sand W/ Silt	118.37	68.73	0.0	0.0	35.0	17.5	0.24	0.00	5.69	0.00
14.00	Glacial Till	130.00	65.00	0.0	0.0	34.0	17.0	0.25	0.00	5.48	0.00
22.00	Glacial Till	130.00	65.00	0.0	0.0	34.0	17.0	0.25	0.00	5.48	0.00

Solution

Wall

Description	E (psi)	I (in⁴)	f (psi)	Z (in³)	Allowed M_{max} (ftlb)	b (ft)	t (ft)	w (ft)	s (ft)	Arching	Upstand (ft)	Toe (ft)	Length (ft)
Slide Rail Double Linear Post	3.04E+07	1926.68	36300.0	214.30	648257.6	1.499	1.266	2.416	21.75	2.24	0.00	0.00	24.00
5" SR Panels	3.04E+07	157.00	33000.0	57.00	156750.0	1.000	0.417	----	----	----	----	----	----

Load Model: Area Distribution (Hinge Method used for Shear Force, Bending Moment and Deflection)

Supports

d (ft)	Type	Load (lb)	Length (ft)	Angle (°)
8.79	Tieback	103612.7		0.0
16.00	Tieback	177022.7		0.0

d_s = 21.75ft
d_{max} = 25.75ft
= P_T
= P_B

Maxima

	Maximum	Depth (ft)
Pressure	893.4 psf	24.00

P_{max} =

For the Double Linear Slide Rail Posts, maximum cantilever, $l_{c\,max}$ = (24 − 16 − 1.5)ft = 6.5ft

$M_{max} = F_a S = 0.66(55^k/in^2)(214.298\,in^3)(1ft/12in) = 648.25\,k\text{-}ft$

$w_{max} = P_{max}\, d_s = 893.4\,\#/ft^2\,(1k/1000\#)(21.75ft) = 19.44\,k/ft$

$l_c = \sqrt{2M_{max}/w} = \sqrt{2(648.75\,k\text{-}ft)/19.44\,k/ft} = 8.17ft > 7.5ft$ O.K. ✓
use Double Linear SR Posts

For the Double Corner Slide Rail Posts, DURING INITIAL INSTALLATION PHASE ONLY, $l_{c\,max}$ = 4.0ft

$M_{max} = 0.66(55^k/in^2)(68.5\,in^3)(1ft/12in) = 207.21\,k\text{-}ft$

$w_{max} = P_{max}\, d_{c\,max} = 893.4\,\#/ft^2\,(1k/1000\#)(25.75ft) = 23.01\,k/ft$

$l_c = \sqrt{2(207.21\,k\text{-}ft)/23.01\,k/ft} = 4.24ft > 4.0ft$ O.K. ✓
use Double Corner SR Posts

Client: TrenchTech, Inc.
Site: Morrisville, Pennsylvania
Attn: John Kerrigan
Tel: 800-443-8832
Fax: 215-547-3855

Title: Former Silver Cleaners Project - Rochester, New York
Ref: URTS-F
Date: 6.19.23

Pile: Slide Rail Double Linear Post
Lagging: 5" SR Panels
Works: Temporary
Pressure: Coulomb
Toe: No Earth Support

For Structural Stability only.

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Calculations (cont'd.)

Determine Suitability of Structural Members (cont'd.)

24'-0" Depth Excavation - For use at CELLS 1-4

Input Data

Depth Of Excavation = 24.00ft
Surcharge = 650.0psf

Depth Of Active Water = 25.00ft
Depth Of Passive Water = 25.00ft

Water Density = 62.43pcf
Minimum Fluid Density = 31.82pcf

Soil Profile

Depth (ft)	Soil Name	γ (pcf)	γ' (pcf)	C (psf)	C_a (psf)	ϕ (°)	δ (°)	K_a	K_{ac}	K_p	K_{pc}
0.00	Loose Slag Fill	75.09	56.00	0.0	0.0	30.0	0.0	0.33	0.00	3.00	0.00
0.50	Dense Fine Sand W/ Silt	118.37	68.73	0.0	0.0	35.0	17.5	0.24	0.00	5.69	0.00
3.80	Dense Silty Fine Sand	117.00	68.50	0.0	0.0	29.0	14.5	0.31	0.00	4.26	0.00
10.50	Dense Fine Sand W/ Silt	118.37	68.73	0.0	0.0	35.0	17.5	0.24	0.00	5.69	0.00
14.00	Glacial Till	130.00	65.00	0.0	0.0	34.0	17.0	0.25	0.00	5.48	0.00
22.00	Glacial Till	130.00	65.00	0.0	0.0	34.0	17.0	0.25	0.00	5.48	0.00

Solution

Wall

Description	E (psi)	I (in^4)	f (psi)	Z (in^3)	Allowed M_{max} (ftlb)	b (ft)	t (ft)	w (ft)	s (ft)	Arching	Upstand (ft)	Toe (ft)	Length (ft)
Slide Rail Double Linear Post	3.04E+07	1926.68	36300.0	214.30	648257.6	1.499	1.266	2.416	21.75	2.24	0.00	0.00	24.00
5" SR Panels	3.04E+07	157.00	33000.0	57.00	156750.0	1.000	0.417	----	----	----	----	----	----

Load Model: Area Distribution (Hinge Method used for Shear Force, Bending Moment and Deflection)

Supports

d (ft)	Type	Load (lb)	Length (ft)	Angle (°)
8.79	Tieback	103612.7		0.0
16.00	Tieback	177022.7		0.0

$= P_T$
$= P_B = P_{max}$

Maxima

	Maximum	Depth (ft)
Pressure	893.4 psf	24.00

$P_{Arrow} =$

For the struts to be used between the Parallel Rails, 8"ϕ Schedule 80 steel pipe will be used, $l_{max} = 24.0ft$, and will be pinned at each end, so $k = 1.0$

$Kl/r = 1.0(24.0ft)(12"/ft)/2.88in = 100$, so according to Table 1-45, AISC Manual of Steel Construction, 13th ed., $F_a = 14.28 K/in^2$

$f_c = P_{max}/A = 177,022.7 \pm (14/1000\#)/12.8in^2 = 13.83 K/in^2 < 14.28 K/in^2$ O.K. ✓

Use 8"ϕ Schedule 80 as struts.

Page 14 of 20

Client: TrenchTech, Inc.
Site: Morrisville, Pennsylvania
Attn: John Kerrigan
Tel: 800-443-8832
Fax: 215-547-3855

Title: Former Silver Cleaners Project - Rochester, New York
Ref: URTS-F
Date: 6.19.23

Pile: Slide Rail Double Linear Post
Lagging: 5" SR Panels
Works: Temporary
Pressure: Coulomb
Toe: No Earth Support

For Structural Stability only.

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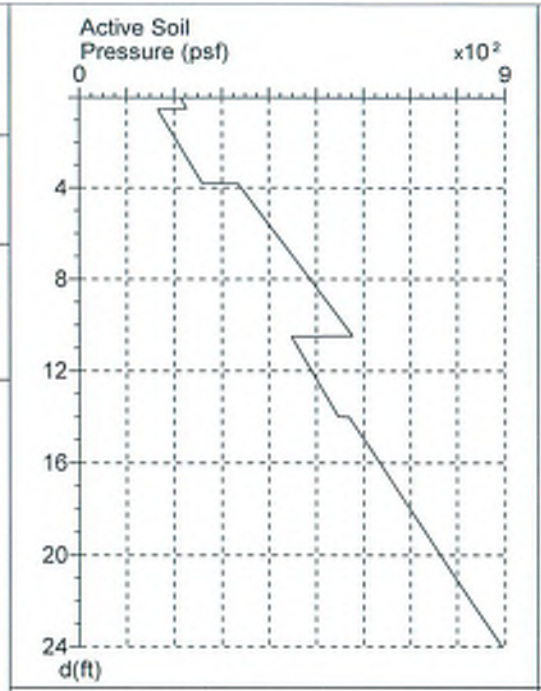
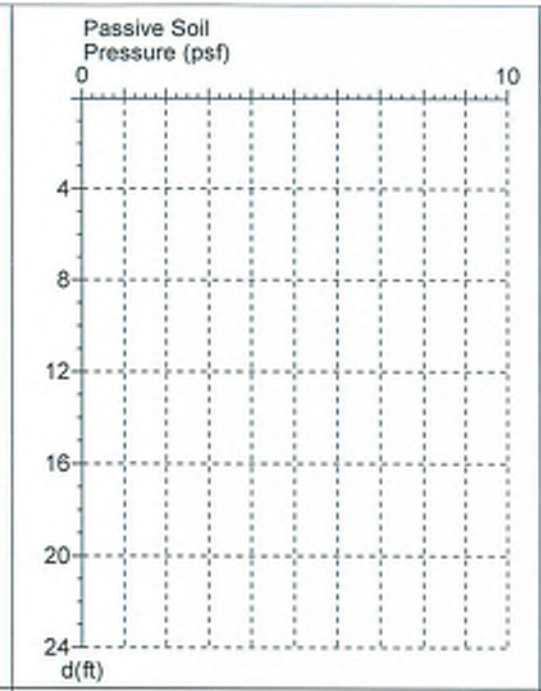
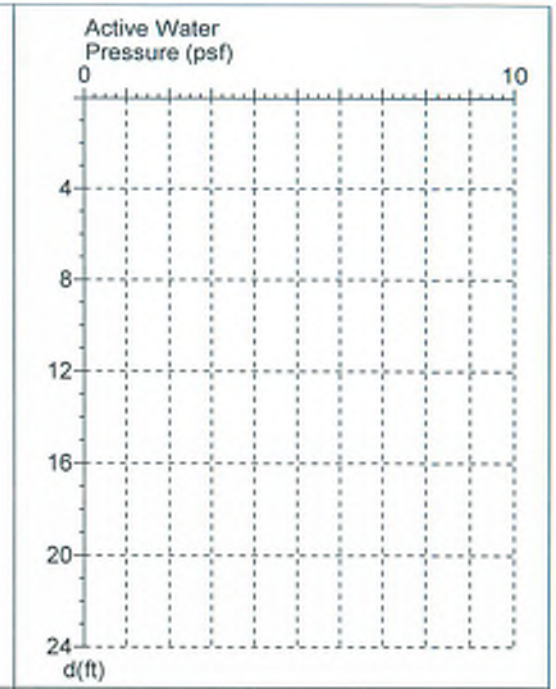
Calculations (cont'd.)

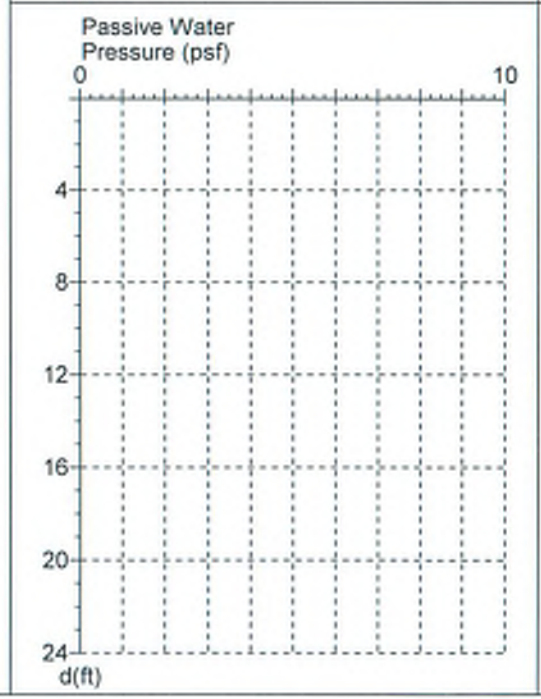
Determine Suitability of Structural Members (cont'd.)

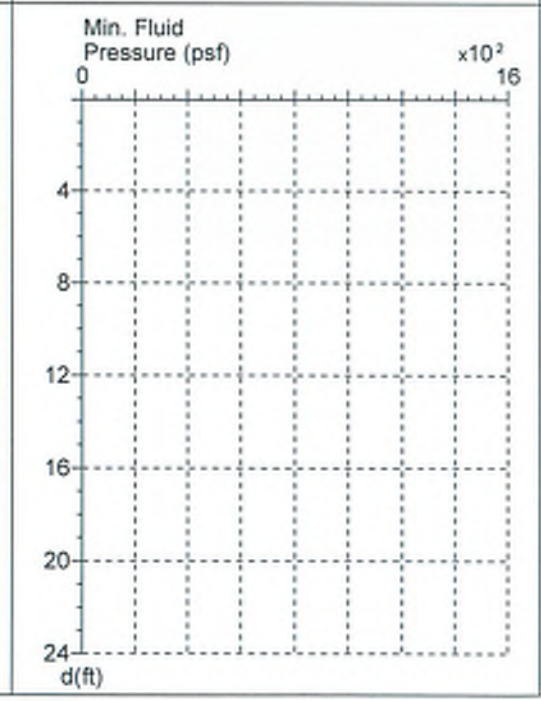
24'-0" Depth Excavation - For use at CELLS 1-4

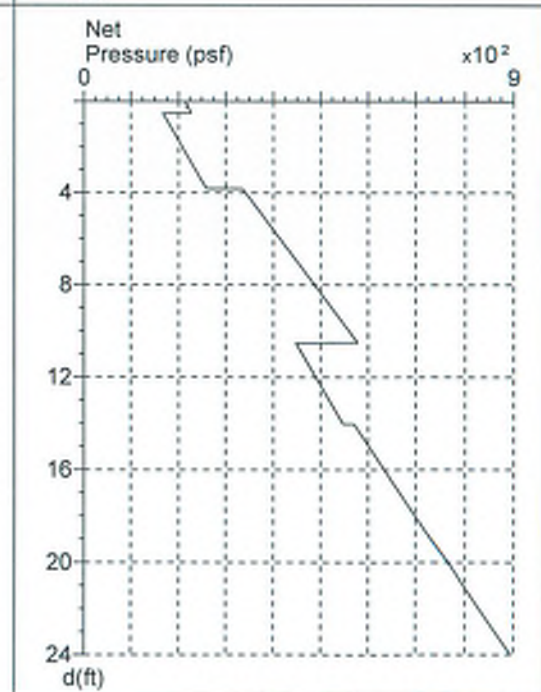












Support Engineering Group, LLC
12400 Highway 71W, Suite 350-120
Austin, Texas 78738
Tel: 770-306-5050
EMail: shefferengineer@mindspring.com

Client: TrenchTech, Inc.
Site: Morrisville, Pennsylvania
Attn: John Kerrigan
Tel: 800-443-8832
Fax: 215-547-3855

Title: Former Silver Cleaners Project - Rochester, New York
Ref: URTS-F
Date: 6.19.23

Pile: Slide Rail Double Linear Post
Lagging: 5" SR Panels
Works: Temporary
Pressure: Coulomb
Toe: No Earth Support

For Structural Stability only.

efficiencyES11.spt laptop

Calculations (cont'd.)

Determine Suitability of Structural Members (cont'd.)

24'-0" Depth Excavation - For use at CELLS 1-4

depth (ft)	P (psf)	M (ftlb)	D (in)	F (lb/ft)
0.00	214.5	0.0	2.5	0.0
0.17	218.5	1142.3	2.5	755.3
0.34	222.9	5583.1	2.4	1618.8
0.50	226.9	12387.2	2.3	2403.5
0.67	170.1	22996.6	2.3	3088.0
0.84	174.7	34622.2	2.2	3689.8
1.01	179.2	48359.9	2.2	4307.5
1.17	184.3	66407.5	2.1	5021.3
1.34	188.9	84815.7	2.0	5672.6
1.51	194.0	108258.5	2.0	6424.3
1.68	198.5	131588.2	1.9	7109.3
1.85	203.1	157320.4	1.8	7810.1
2.01	208.2	189203.4	1.8	8617.4
2.18	212.7	220216.4	1.7	9351.9
2.35	217.3	253803.4	1.7	10102.2
2.52	222.4	294732.2	1.6	10965.3
2.69	226.9	333968.8	1.5	11749.3
2.85	232.1	381392.3	1.5	12650.2
3.02	236.6	426525.0	1.4	13467.8
3.19	241.1	474522.0	1.3	14301.3
3.36	246.3	532006.2	1.3	15257.7
3.52	250.8	586263.4	1.2	16124.8
3.69	255.9	650931.3	1.2	17119.3
3.86	336.4	711712.8	1.1	18085.7
4.03	342.2	776265.2	1.0	19269.5
4.20	348.7	853835.5	1.0	20625.4
4.36	354.5	927263.5	0.9	21852.2
4.53	361.1	1014999.3	0.9	23256.5
4.70	366.9	1097623.1	0.8	24526.2
4.87	372.7	1184681.9	0.8	25816.2
5.03	379.2	1288015.2	0.7	27291.6
5.20	385.0	1384737.4	0.7	28624.5
5.37	391.5	1499120.4	0.6	30148.3
5.54	397.3	1605820.8	0.6	31524.2
5.71	403.1	1717326.4	0.5	32920.3
5.87	409.7	1848600.4	0.5	34515.2
6.04	415.5	1970549.8	0.4	35954.3
6.21	421.3	2097524.7	0.4	37413.7
6.38	427.8	2246464.3	0.3	39079.6
6.55	433.6	2384349.1	0.3	40581.9
6.71	440.1	2545740.8	0.3	42296.2
6.88	445.9	2694852.6	0.2	43841.6
7.05	451.7	2849357.6	0.2	45407.1
7.22	458.3	3029708.9	0.2	47192.5
7.38	464.1	3195907.5	0.1	48801.0
7.55	470.6	3389592.9	0.1	50634.8
7.72	476.4	3567800.5	0.1	52286.2
7.89	482.2	3751770.3	0.1	53958.0
8.06	488.7	3965710.2	0.0	55862.8
8.22	494.5	4162155.9	0.0	57577.5
8.39	501.1	4390310.4	0.0	59530.7
8.56	506.9	4599549.3	0.0	61288.4
8.73	512.7	4814918.4	0.0	63066.3
8.90	519.2	4938345.2	0.0	6864.5
9.06	525.0	4964920.4	0.1	8682.7
9.23	531.5	5002398.5	0.1	10752.3
9.40	537.3	5042529.5	0.2	12613.4
9.57	543.1	5089148.2	0.2	14494.7
9.73	549.7	5149440.4	0.3	16635.3
9.90	555.5	5210081.9	0.3	18559.6
10.07	561.3	5277431.6	0.3	20504.0
10.24	567.8	5361304.6	0.3	22715.6
10.41	573.6	5443141.0	0.3	24703.0
10.57	449.2	5543415.8	0.4	26791.6
10.74	453.7	5638767.1	0.4	28363.6
10.91	458.3	5739598.1	0.4	29951.4
11.08	463.4	5859648.6	0.4	31756.6
11.24	467.9	5972304.2	0.4	33378.0
11.41	473.0	6105798.7	0.4	35221.1
11.58	477.6	6230526.9	0.3	36876.1
11.75	482.1	6361022.6	0.3	38547.0
11.92	487.2	6514791.5	0.3	40445.6
12.08	491.8	6657725.4	0.3	42150.1
12.25	496.9	6825625.5	0.3	44086.5
12.42	501.4	6981243.6	0.3	45824.6
12.59	506.0	7142917.5	0.2	47578.6
12.76	511.1	7332106.8	0.2	49570.6
12.92	515.6	7506830.9	0.2	51358.2
13.09	520.8	7710841.0	0.2	53388.0
13.26	525.3	7898861.0	0.1	55209.1
13.43	529.8	8093226.1	0.1	57046.1
13.59	535.0	8319537.1	0.1	59131.6
13.76	539.5	8527564.2	0.1	61002.2
13.93	544.6	8769384.2	0.0	63125.5
14.10	572.3	8991346.3	0.0	65069.2
14.27	577.5	9220175.9	0.0	67071.1
14.43	583.4	9485948.1	0.0	69344.9
14.60	588.6	9729673.1	0.0	71385.3
14.77	593.8	9980506.9	0.0	73443.8
14.94	599.6	10271267.1	0.0	75781.2
15.10	604.8	10537411.5	0.0	77878.1
15.27	610.7	10845559.3	0.0	80258.8
15.44	615.9	11127300.5	0.0	82394.2
15.61	621.1	11416478.9	0.0	84547.6
15.78	626.9	11750773.5	0.0	86991.9
15.94	632.1	12055965.7	0.0	89183.9
16.11	638.0	11828179.9	0.0	-130957.8
16.28	643.2	11375837.9	0.0	-128727.4
16.45	648.4	10931284.2	0.0	-126479.0
16.62	654.2	10440550.2	0.1	-123927.8
16.78	659.4	10012758.2	0.1	-121640.9
16.95	665.3	9541041.2	0.2	-119046.4
17.12	670.5	9130295.3	0.2	-116721.0
17.29	675.7	8727667.8	0.3	-114377.5
17.45	681.5	8284496.8	0.3	-111719.5
17.62	686.7	7899334.1	0.4	-109337.5
17.79	692.6	7475969.1	0.5	-106636.2
17.96	697.8	7108554.9	0.6	-104215.9
18.13	703.0	6749590.9	0.7	-101777.4
18.29	708.8	6355935.9	0.8	-99012.4
18.46	714.0	6015139.0	0.9	-96535.5
18.63	719.2	5682988.9	1.0	-94040.5
18.80	725.1	5319734.4	1.1	-91211.9
18.97	730.3	5006169.8	1.2	-88678.4
19.13	736.1	4663982.8	1.4	-85806.6
19.30	741.3	4369286.7	1.5	-83234.7
19.47	746.5	4083568.0	1.6	-80644.7
19.64	752.4	3772944.6	1.8	-77709.2
19.80	757.6	3506513.3	1.9	-75080.7
19.97	763.4	3217747.6	2.0	-72102.0
20.14	768.6	2970888.0	2.2	-69435.1
20.31	773.8	2733336.6	2.3	-66750.0
20.48	779.7	2477296.5	2.5	-63707.7
20.64	784.9	2259735.0	2.6	-60984.2
20.81	790.7	2026343.0	2.8	-57898.6
20.98	795.9	1829055.6	2.9	-55136.7
21.15	801.1	1641407.5	3.1	-52356.6
21.31	807.0	1441903.5	3.3	-49207.4
21.48	812.2	1274947.7	3.4	-46388.9
21.65	818.0	1098882.4	3.6	-43196.5
21.82	823.2	952903.2	3.7	-40339.5
21.99	828.4	816893.6	3.9	-37464.5
22.15	834.3	675947.3	4.1	-34154.8
22.32	839.5	561614.0	4.2	-31179.0
22.49	844.7	457664.7	4.4	-28184.7
22.66	850.5	353213.8	4.5	-24794.0
22.83	855.7	271543.8	4.7	-21760.5
22.99	861.6	192320.7	4.9	-18325.6
23.16	866.8	133220.6	5.0	-15252.8
23.33	872.0	84842.1	5.2	-12161.5
23.50	877.8	43312.1	5.4	-8661.6
23.66	883.0	17930.7	5.5	-5531.0
23.83	888.9	2435.7	5.7	-1987.0
24.00	893.4	0.0	5.8	0.0

Support Engineering Group, LLC
12400 Highway 71W, Suite 350-120
Austin, Texas 78738
Tel: 770-306-5050
EMail: shefferengineer@mindspring.com

EFFICIENCY America's Trench Box Builder™
695 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

SERIAL NUMBER SAMPLE

PAGE 1 OF 2
SLIDERAIL PANEL

MODEL SRUR-826KE-5

DATE OF MANUFACTURE	N/A	LIFT-LUG RATING	21,000 LBS	WEIGHT AS MANUFACTURED	N/A

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P

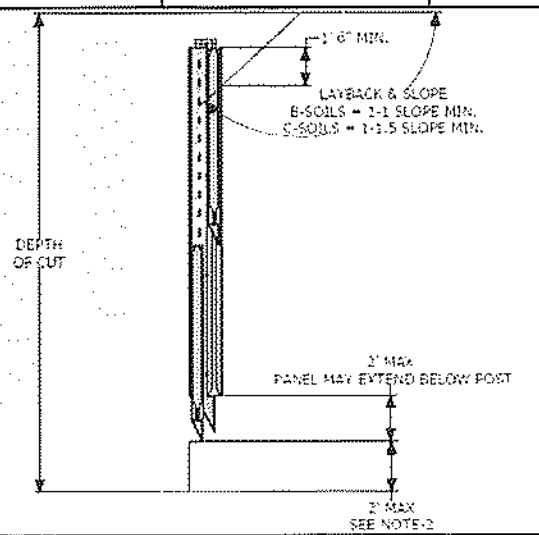
SHIELD SIZE		PSF RATING	EXAMPLES OF MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) IN SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	**TYPE B-45 (II)** MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FT OF DEPTH	**TYPE C-60 (III)** SOFT COHESIVE TO SATURATED SOIL. 60 PSF PER FT OF DEPTH	**TYPE C-80 (IV)** SOFT SUBMERGED AND FLOWING SOIL. 80 PSF PER FT OF DEPTH
8	26	1440	32	24	18

LIMITATIONS IN USE OF TABLE

1. SLIDERAIL SYSTEM TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF PANEL IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SYSTEM IS ENCOUNTERED. SEE PARAGRAPH 1926.652 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
4. DEPTH RATING IS BASED ON TEMPORARY LOADING, CONSULT MANUFACTURER IF SHIELD IS SUBJECT TO LONG TERM LOADING
5. C-80 DOES NOT REPRESENT THE WORST POSSIBLE SOIL CONDITION. OBTAIN SITE-SPECIFIC ENGINEERING FOR EXTREMELY NON-STABLE CONDITIONS SUCH AS MARINE CLAY, PEAT, SOFT SUBMERGED AND FLOWING CLAYS, ETC.
6. LIFT LUG RATING IS (THE SAFE WORKING LOAD) FOR EACH INDIVIDUAL LIFT LUG.
7. WEIGHT LISTED IS FOR PANEL ONLY.
8. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
9. THE SLIDERAIL SYSTEM AS A WHOLE IS LIMITED BY THE DEPTH RATING OF EACH PANEL AT THE DEPTH IT IS USED
10. KNIFE-EDGE LIFT LUG SAFE WORKING LOAD = 4,900lbs EACH

CONTINUED ON REVERSE SIDE

DESCRIPTION	DESCRIPTION	DESCRIPTION
CLAY, WITH UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TSF BUT LESS THAN 1.5 TSF COHESIONLESS GRAVEL, SILT, SILT LOAM OR SANDY LOAM	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.2 TSF, BUT LESS THAN 0.5 TSF CLAY, SAND AND LOAMY SAND; SATURATED SOIL THAT IS STABLE, DRY SAND, OR DEWATERED SOILS	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.2 TSF. FRACTURED ROCK THAT IS NOT STABLE, OR SUBMERGED SAND AND LOAMY SAND THAT IS FLOWING. (SEE NOTE 5)



MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,090,365-4,114,383-4,259,028 ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,062,684

CERTIFIED BY: EFFICIENCY PRODUCTION INC.

STATE OF MICHIGAN
ALEXANDRE NEDELTCHEV
ENGINEER
No. 6201052055
LICENSED PROFESSIONAL ENGINEER

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE COULD CAUSE IN CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN DEATH OR SERIOUS INJURY

EFFICIENCY PRODUCTION INC. America's Trench Box Builder
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

SERIAL NUMBER
SAMPLE

PAGE 1 OF 2
SLIDERAIL PANEL

MODEL SRUR-426NOKE-5

DATE OF MANUFACTURE	N/A	LIFT-LUG RATING	21,000 LBS	WEIGHT AS MANUFACTURED	N/A

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P

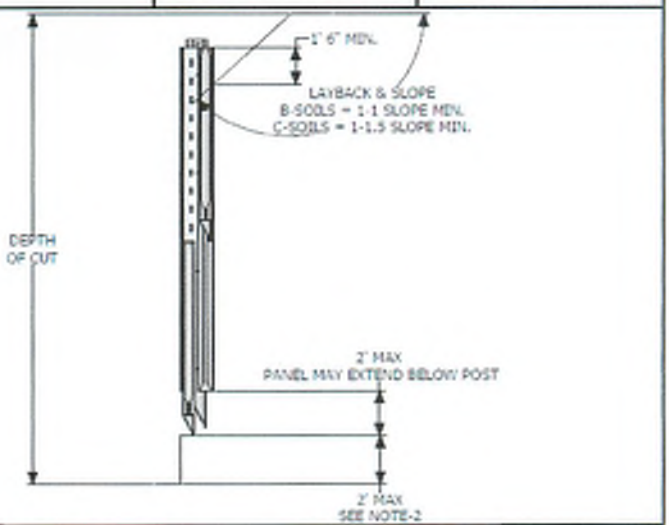
SHIELD SIZE		PSF RATING	EXAMPLES OF MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) IN SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	**TYPE B-45 (II)** MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FT OF DEPTH	**TYPE C-60 (III)** SOFT COHESIVE TO SATURATED SOIL. 60 PSF PER FT OF DEPTH	**TYPE C-80 (IV)** SOFT SUBMERGED AND FLOWING SOIL. 80 PSF PER FT OF DEPTH
4	26	1200	27	20	15

LIMITATIONS IN USE OF TABLE

1. SLIDERAIL SYSTEM TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF PANEL IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SYSTEM IS ENCOUNTERED. SEE PARAGRAPH 1926.652 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
4. DEPTH RATING IS BASED ON TEMPORARY LOADING, CONSULT MANUFACTURER IF SHIELD IS SUBJECT TO LONG TERM LOADING
5. C-80 DOES NOT REPRESENT THE WORST POSSIBLE SOIL CONDITION. OBTAIN SITE-SPECIFIC ENGINEERING FOR EXTREMELY NON-STABLE CONDITIONS SUCH AS MARINE CLAY, PEAT, SOFT SUBMERGED AND FLOWING CLAYS, ETC.
6. LIFT LUG RATING IS (THE SAFE WORKING LOAD) FOR EACH INDIVIDUAL LIFT LUG.
7. WEIGHT LISTED IS FOR PANEL ONLY.
8. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
9. THE SLIDERAIL SYSTEM AS A WHOLE IS LIMITED BY THE DEPTH RATING OF EACH PANEL AT THE DEPTH IT IS USED

CONTINUED ON REVERSE SIDE

DESCRIPTION	DESCRIPTION	DESCRIPTION
CLAY, WITH UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TSF BUT LESS THAN 1.5 TSF COHESIONLESS GRAVEL, SILT, SILT LOAM OR SANDY LOAM	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.3 TSF, BUT LESS THAN 0.5 TSF CLAY, SAND AND LOAMY SAND; SATURATED SOIL THAT IS STABLE, DRY SAND, OR DEWATERED SOILS	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.3 TSF. FRACTURED ROCK THAT IS NOT STABLE, OR SUBMERGED SAND AND LOAMY SAND THAT IS FLOWING. (SEE NOTE 5)



MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,090,365-4,114,383-4,259,028 ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,062,684

CERTIFIED BY:
EFFICIENCY PRODUCTION INC.

STATE OF MICHIGAN
ALEXANDRE NEDELTCHEV
ENGINEER
No. 6201052065
LICENSED PROFESSIONAL ENGINEER

⚠WARNING: Any use of this product not specifically described on this certificate could cause cave-in, collapse, or structural failure, and may result in injury, or death

EFFICIENCY PRODUCTION INC. America's Trench Box Builder
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

SERIAL NUMBER
SAMPLE

PAGE 1 OF 2
SLIDERAIL PANEL

MODEL SRUR-824HDKE-5

DATE OF MANUFACTURE	N/A	**LIFT-LUG RATING**	21,000 LBS	**WEIGHT AS MANUFACTURED**	N/A

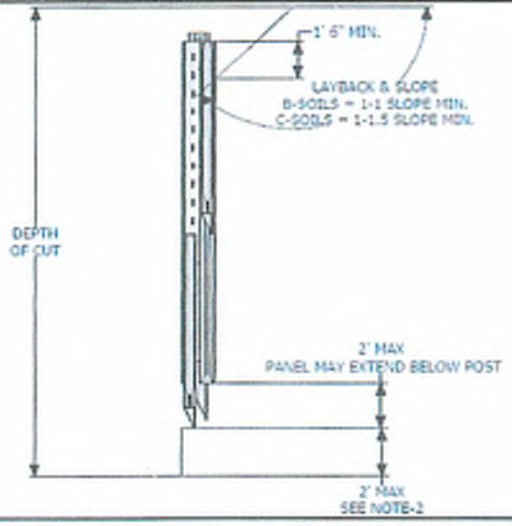
REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P

SHIELD SIZE		PSF RATING	EXAMPLES OF MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) IN SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	**TYPE B-45 (II)** MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FT OF DEPTH	**TYPE C-60 (III)** SOFT COHESIVE TO SATURATED SOIL. 60 PSF PER FT OF DEPTH	**TYPE C-80 (IV)** SOFT SUBMERGED AND FLOWING SOIL. 80 PSF PER FT OF DEPTH
8	24	1800	40	30	23
			DESCRIPTION	DESCRIPTION	DESCRIPTION
			CLAY, WITH UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TSF BUT LESS THAN 1.5 TSF COHESIONLESS GRAVEL, SILT, SILT LOAM OR SANDY LOAM	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.2 TSF, BUT LESS THAN 0.5 TSF CLAY, SAND AND LOAMY SAND; SATURATED SOIL THAT IS STABLE, DRY SAND, OR DEWATERED SOILS	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.2 TSF. FRACTURED ROCK THAT IS NOT STABLE, OR SUBMERGED SAND AND LOAMY SAND THAT IS FLOWING. (SEE NOTE 5)

LIMITATIONS IN USE OF TABLE

1. SLIDERAIL SYSTEM TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF PANEL IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SYSTEM IS ENCOUNTERED. SEE PARAGRAPH 1926.652 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
4. DEPTH RATING IS BASED ON TEMPORARY LOADING, CONSULT MANUFACTURER IF SHIELD IS SUBJECT TO LONG TERM LOADING
5. C-80 DOES NOT REPRESENT THE WORST POSSIBLE SOIL CONDITION. OBTAIN SITE-SPECIFIC ENGINEERING FOR EXTREMELY NON-STABLE CONDITIONS SUCH AS MARINE CLAY, PEAT, SOFT SUBMERGED AND FLOWING CLAYS, ETC.
6. LIFT LUG RATING IS (THE SAFE WORKING LOAD) FOR EACH INDIVIDUAL LIFT LUG.
7. WEIGHT LISTED IS FOR PANEL ONLY.
8. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
9. THE SLIDERAIL SYSTEM AS A WHOLE IS LIMITED BY THE DEPTH RATING OF EACH PANEL AT THE DEPTH IT IS USED
10. KNIFE-EDGE LIFT LUG SAFE WORKING LOAD = 4,900lbs EACH

CONTINUED ON REVERSE SIDE



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CERTIFIED BY:
EFFICIENCY PRODUCTION INC.

STATE OF MICHIGAN
ALEXANDRE NEDELTCHEV
ENGINEER
No. 6201052055
LICENSED PROFESSIONAL ENGINEER

11/5/2013

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE COULD CAUSE IN CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN DEATH OR SERIOUS INJURY

EFFICIENCY America's Trench Box Builder™
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

SERIAL NUMBER
SAMPLE

PAGE 1 OF 2
SLIDERAIL PANEL

MODEL SRUR-424NOKE-5

DATE OF MANUFACTURE	Jun-17	LIFT-LUG RATING	21,000 LBS	WEIGHT AS MANUFACTURED	4,500 LBS

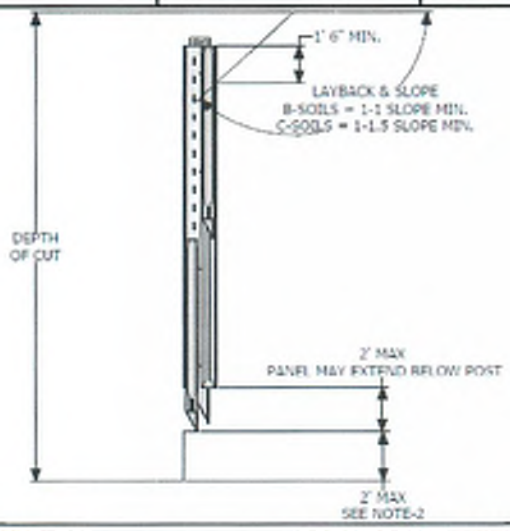
REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P

SHIELD SIZE		PSF RATING	EXAMPLES OF MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) IN SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	**TYPE B-45 (II)** MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FT OF DEPTH	**TYPE C-60 (III)** SOFT COHESIVE TO SATURATED SOIL. 60 PSF PER FT OF DEPTH	**TYPE C-80 (IV)** SOFT SUBMERGED AND FLOWING SOIL. 80 PSF PER FT OF DEPTH
4	24	1500	33	25	19
			DESCRIPTION	DESCRIPTION	DESCRIPTION
			CLAY, WITH UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TSF BUT LESS THAN 1.5 TSF COHESIONLESS GRAVEL, SILT, SILT LOAM OR SANDY LOAM	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.3 TSF, BUT LESS THAN 0.5 TSF CLAY, SAND AND LOAMY SAND; SATURATED SOIL THAT IS STABLE, DRY SAND, OR DEWATERED SOILS	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.3 TSF. FRACTURED ROCK THAT IS NOT STABLE, OR SUBMERGED SAND AND LOAMY SAND THAT IS FLOWING. (SEE NOTE 5)

LIMITATIONS IN USE OF TABLE

1. SLIDERAIL SYSTEM TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF PANEL IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SYSTEM IS ENCOUNTERED. SEE PARAGRAPH 1926.652 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
4. DEPTH RATING IS BASED ON TEMPORARY LOADING, CONSULT MANUFACTURER IF SHIELD IS SUBJECT TO LONG TERM LOADING
5. C-80 DOES NOT REPRESENT THE WORST POSSIBLE SOIL CONDITION. OBTAIN SITE-SPECIFIC ENGINEERING FOR EXTREMELY NON-STABLE CONDITIONS SUCH AS MARINE CLAY, PEAT, SOFT SUBMERGED AND FLOWING CLAYS, ETC.
6. LIFT LUG RATING IS (THE SAFE WORKING LOAD) FOR EACH INDIVIDUAL LIFT LUG.
7. WEIGHT LISTED IS FOR PANEL ONLY.
8. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
9. THE SLIDERAIL SYSTEM AS A WHOLE IS LIMITED BY THE DEPTH RATING OF EACH PANEL AT THE DEPTH IT IS USED

CONTINUED ON REVERSE SIDE



MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,090,365-4,114,383-4,259,028 ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,062,684

CERTIFIED BY:
EFFICIENCY PRODUCTION INC.

⚠WARNING: Any use of this product not specifically described on this certificate could cause cave-in, collapse, or structural failure, and may result in injury, or death

EFFICIENCY PRODUCTION INC. America's Trench Box Builder
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8500

SERIAL NUMBER
SAMPLE

PAGE 1 OF 2
SLIDERAIL PANEL

MODEL SRUR-818KE-5

DATE OF MANUFACTURE	N/A	**LIFT-LUG RATING**	21,000 lbs.	**WEIGHT AS MANUFACTURED**	N/A

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 289, PART 1926, SUBPART P

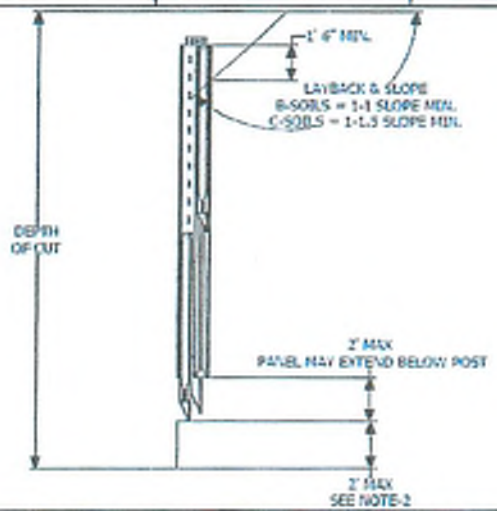
SHIELD SIZE		PSF RATING	EXAMPLES OF MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) IN SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	**TYPE B-45 (II)** MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FT OF DEPTH	**TYPE C-60 (III)** SOFT COHESIVE TO SATURATED SOIL. 60 PSF PER FT OF DEPTH	**TYPE C-80 (IV)** SOFT SUBMERGED AND FLOWING SOIL. 80 PSF PER FT OF DEPTH
8	18	1800	40	30	23

LIMITATIONS IN USE OF TABLE

1. SLIDERAIL SYSTEM TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF PANEL IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SYSTEM IS ENCOUNTERED. SEE PARAGRAPH 1926.652 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
4. DEPTH RATING IS BASED ON TEMPORARY LOADING, CONSULT MANUFACTURER IF SHIELD IS SUBJECT TO LONG TERM LOADING
5. C-80 DOES NOT REPRESENT THE WORST POSSIBLE SOIL CONDITION. OBTAIN SITE-SPECIFIC ENGINEERING FOR EXTREMELY NON-STABLE CONDITIONS SUCH AS MARINE CLAY, PEAT, SOFT SUBMERGED AND FLOWING CLAYS, ETC.
6. LIFT LUG RATING IS (THE SAFE WORKING LOAD) FOR EACH INDIVIDUAL LIFT LUG.
7. WEIGHT LISTED IS FOR PANEL ONLY.
8. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
9. THE SLIDERAIL SYSTEM AS A WHOLE IS LIMITED BY THE DEPTH RATING OF EACH PANEL AT THE DEPTH IT IS USED
10. KNIFE-EDGE LIFT LUG SAFE WORKING LOAD = 4,900lbs EACH

CONTINUED ON REVERSE SIDE

DESCRIPTION	DESCRIPTION	DESCRIPTION
CLAY, WITH UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TSF BUT LESS THAN 1.5 TSF COHESIONLESS GRAVEL, SILT, SILT LOAM OR SANDY LOAM	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.3 TSF, BUT LESS THAN 0.5 TSF CLAY, SAND AND LOAMY SAND; SATURATED SOIL THAT IS STABLE, DRY SAND, OR DEWATERED SOILS	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.3 TSF. FRACTURED ROCK THAT IS NOT STABLE, OR SUBMERGED SAND AND LOAMY SAND THAT IS FLOWING. (SEE NOTE 5)



MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,090,365-4,114,383-4,259,028 ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,062,684

CERTIFIED BY:
EFFICIENCY PRODUCTION INC.

STATE OF MICHIGAN
ALEXANDRE NEDELTCHEV
ENGINEER
No. 6201052056
LICENSED PROFESSIONAL ENGINEER

AWARNING: Any use of this product not specifically described on this certificate could cause cave-in, collapse, or structural failure, and may result in injury, or death

EFFICIENCY PRODUCTION INC. America's Trench Box Builder
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

SERIAL NUMBER
SAMPLE

PAGE 1 OF 2
SLIDERAIL PANEL

MODEL SRUR-418NOKE-5

DATE OF MANUFACTURE	N/A	LIFT-LUG RATING	21,000 LBS	WEIGHT AS MANUFACTURED	N/A

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P

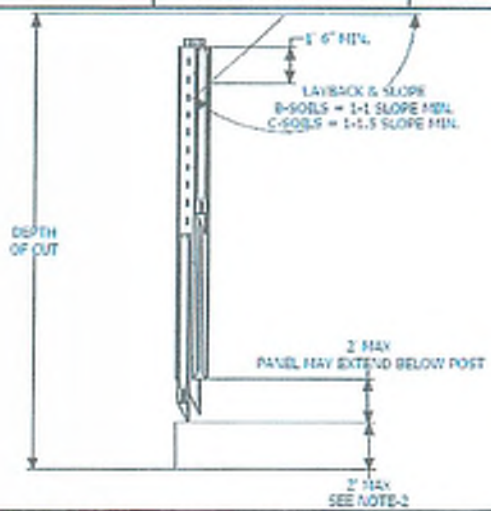
SHIELD SIZE		PSF RATING	EXAMPLES OF MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) IN SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	TYPE B-45 (II) MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FT OF DEPTH	TYPE C-60 (III) SOFT COHESIVE TO SATURATED SOIL. 60 PSF PER FT OF DEPTH	TYPE C-80 (IV) SOFT SUBMERGED AND FLOWING SOIL. 80 PSF PER FT OF DEPTH
4	18	1920	43	32	24

LIMITATIONS IN USE OF TABLE

1. SLIDERAIL SYSTEM TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF PANEL IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SYSTEM IS ENCOUNTERED. SEE PARAGRAPH 1926.652 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
4. DEPTH RATING IS BASED ON TEMPORARY LOADING, CONSULT MANUFACTURER IF SHIELD IS SUBJECT TO LONG TERM LOADING
5. C-80 DOES NOT REPRESENT THE WORST POSSIBLE SOIL CONDITION. OBTAIN SITE-SPECIFIC ENGINEERING FOR EXTREMELY NON-STABLE CONDITIONS SUCH AS MARINE CLAY, PEAT, SOFT SUBMERGED AND FLOWING CLAYS, ETC.
6. LIFT LUG RATING IS (THE SAFE WORKING LOAD) FOR EACH INDIVIDUAL LIFT LUG.
7. WEIGHT LISTED IS FOR PANEL ONLY.
8. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
9. THE SLIDERAIL SYSTEM AS A WHOLE IS LIMITED BY THE DEPTH RATING OF EACH PANEL AT THE DEPTH IT IS USED

CONTINUED ON REVERSE SIDE

DESCRIPTION	DESCRIPTION	DESCRIPTION
CLAY, WITH UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TSF BUT LESS THAN 1.5 TSF COHESIONLESS GRAVEL, SILT, SILT LOAM OR SANDY LOAM	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.3 TSF, BUT LESS THAN 0.5 TSF CLAY, SAND AND LOAMY SAND; SATURATED SOIL THAT IS STABLE, DRY SAND, OR DEWATERED SOILS	SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.3 TSF. FRACTURED ROCK THAT IS NOT STABLE, OR SUBMERGED SAND AND LOAMY SAND THAT IS FLOWING. (SEE NOTE 5)



MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,080,365-4,114,383-4,259,028 ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,062,684

CERTIFIED BY:
EFFICIENCY PRODUCTION INC.

STATE OF MICHIGAN
ALEXANDRE NEDELTCHEV
ENGINEER
No. 6201062066
LICENSED PROFESSIONAL ENGINEER

⚠WARNING: Any use of this product not specifically described on this certificate could cause cave-in, collapse, or structural failure, and may result in injury, or death

EFFICIENCY PRODUCTION INC. America's Trench Box Builder
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

SLIDERAIL-PANEL

Notes (continued from page 1 of the Tabulated Data):

* Not Type A if fissured, subject to vibration, previously disturbed or part of a sloped, layered system, where layers dip into excavation on a slope of four horizontal to one vertical (4H:1V) or greater.

* Previously disturbed soils may be Type B unless they would be classed as Type C. Soil that meets the requirements of Type A, but is subjected to vibration or fissured may be Type B. Dry rock that is not stable or soil that is not part of a sloped, layered system where layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) are Type B, but only if the material would otherwise be classified as Type B.

* Soil in a sloped layered system where layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or steeper may be Type C-60. Submerged soil is material with water freely seeping and entering the trench, but only part of the depth of the retained soil is submerged. Conditions more severe will require de-watering or sealing four sides of the excavation and pumping the trench. Such severe conditions will require the services of a Soils Engineer to establish the design pressure. Consult Efficiency for pressures exceeding the tabulated values.

* "Lay-back" and "hang-up" are not applicable to Type C-80 Soils. Some "toe-in" is preferred. The required height for the Slide Rail System shall be carefully considered. Surcharges adjacent to the excavation shall be minimized. "four-Sided" Slide Rail Pit Systems are strongly recommended in Type C-80 Soils. Consult Efficiency for equivalent fluid (soil) pressure exceeding 80 psf per foot of depth.

* This Tabulated Data shall be used with Efficiency's Accessories for both Pit-Type and Linear-Type Applications. Consult the applicable Installation/Removal Procedure(s). Equipment limitations: Linear-Type Applications require the use of Efficiency Parallel Beams with stop pins, and Efficiency Spreader Pipes with Pins and Keepers installed. Any use of other components and/or connection devices not approved by Efficiency voids the warranty, and Tabulated Data.

* System was designed to be used without plates extending below, above, or next to it. Any use of such plates will void tabulated data and require site-specific engineering prepared by a licensed professional Engineer.

* No deviation from the Tabulated Data, Installation/ Removal Procedure(s), and panel/ accessory usage (including any repair and/or retrofit) is allowed without Efficiency's written approval.

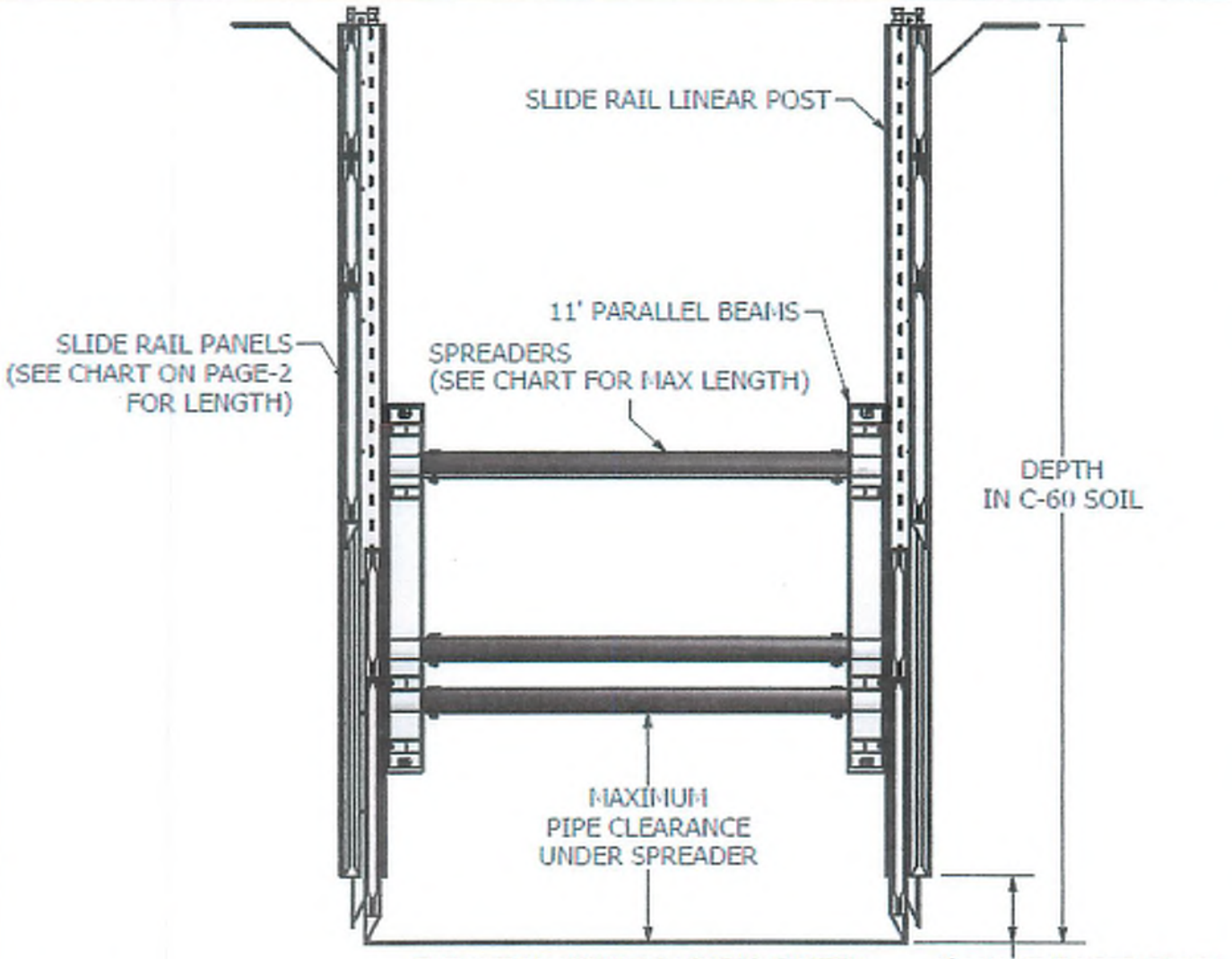
* Depth and PSF ratings are for lateral earth pressures only and do not take any surcharges into account. An additional lateral surcharge pressure up to 72PSF is allowed

EFFICIENCY America's Trench Box Builder™
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

LINEAR SLIDE RAIL TABULATED DATA FOR DEPTHS OF 20' TO 28' IN C-60 SOIL

PAGE 1 OF 2

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P



ELEVATION VIEW OF LINEAR SYSTEM

NOTE: SEE CHART ON PAGE-2

MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,090,365-4,114,383-4,259,028 ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,052,684

CERTIFIED BY:
EFFICIENCY PRODUCTION INC.

STATE OF MICHIGAN
DANIEL B. SHEFFER, II
ENGINEER
No. 60552
LICENSED PROFESSIONAL ENGINEER
2/24/15

DANIEL B. SHEFFER II
LICENSE
No. 60552
STATE OF FLORIDA
PROFESSIONAL ENGINEER
2/24/15

STATE OF TEXAS
DANIEL B. SHEFFER II
115219
LICENSED
PROFESSIONAL ENGINEER
2/24/15

COMMONWEALTH OF MASSACHUSETTS
DANIEL B. SHEFFER
NO. 61650
REGISTERED
PROFESSIONAL ENGINEER
12/21/15

⚠WARNING: Any use of this product not specifically described on this certificate could cause cave-in, collapse, or structural failure, and may result in injury, or death

EFFICIENCY America's Trench Box Builder™
685 HULL ROAD, MASON, MI 48854 PHONE (517) 676-8800

LINEAR SLIDE RAIL TABULATED DATA FOR DEPTHS OF 20' TO 28' IN C-60 SOIL

USE CHART BELOW TO DETERMINE SYSTEM LIMITATIONS ACCORDING TO DIAGRAM ON PAGE-1

SYSTEM DEPTH IN C-60 SOILS	MAXIMUM PANEL LENGTH	MAXIMUM SPREADER LENGTH	REQUIRED SPREADERS	MAXIMUM PIPE CLEARANCE
20' TO 22'	28'	20'	3	7'
20' TO 24'	26'	20'	3	7'
24' TO 28'	24'	20'	3	7'

NOTE: FOR GENERAL REFERENCE ONLY. SITE SPECIFIC ENGINEERING WILL BE REQUIRED FOR ALL OTHER SOIL CONDITIONS AND SITE LOADS.

LIMITATIONS IN USE OF TABLE

1. SLIDE RAIL SYSTEM TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF PANEL IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SYSTEM IS ENCOUNTERED. SEE PARAGRAPH 1926.652 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE PANELS VERTICALLY SHALL BE AVOIDED.
3. SEE INDIVIDUAL SERIALIZED TABULATED DATA FOR DEPTH RATINGS OF INDIVIDUAL PANELS, AND OTHER LIMITATIONS OF USE.
4. WHEN ADJOINING PANELS OF DIFFERENT LENGTHS THE PANELS WITH THE LOWEST PSF RATING SHALL CONTROL. POSTS ARE RESTRICTED ONLY BY THE PSF RATING OF THE PANELS USED.
5. DEPTH AND PSF RATINGS ARE FOR LATERAL EARTH PRESSURES ONLY, AND DO NOT TAKE ANY SURCHARGES INTO ACCOUNT. AN ADDITIONAL LATERAL SURCHARGE LOAD OF UP TO 72 PSF CAN BE APPLIED.
6. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
7. SYSTEM WAS DESIGNED TO BE USED WITHOUT PLATES EXTENDING BELOW, ABOVE, OR NEXT TO IT. ANY USE OF SUCH PLATES WILL VOID THE TABULATED DATA AND REQUIRE SITE SPECIFIC ENGINEERING PREPARED BY A LICENSED PROFFESIONAL ENGINEER.
8. 11' PARALLEL BEAMS CAN BE SUSTITUTED FOR THE 7' PARALLEL BEAMS SHOWN

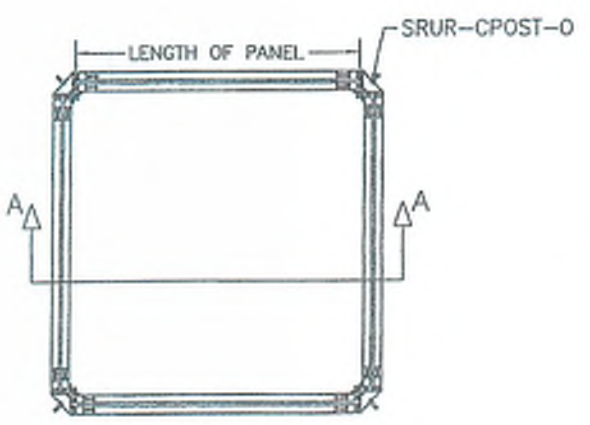
EFFICIENCY PRODUCTION, INC.

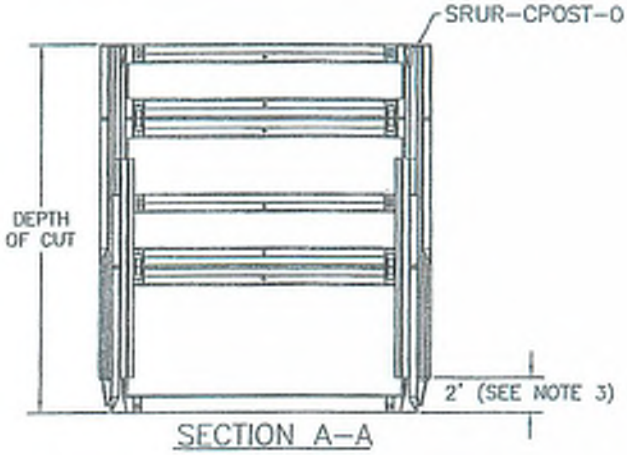
SRUR-CPOST-0

EFFICIENCY PRODUCTION, INC.

NOTE: CORNER POST DEPTHS ARE LIMITED BY THE DEPTH RATINGS OF THE LOWER PANELS.

END PANEL MODEL#	SIDE PANEL MODEL#	PSF RATING	MAXIMUM ALLOWABLE DEPTH OF CUT SOIL TYPE TO BE EXCAVATED			PSF RATING	DEPTH RATING OF CORNER POSTS (ft)		
			TYPE B	TYPE C-60	TYPE C-80		TYPE B	TYPE C-60	TYPE C-80
ALL	SRUR-8X8-5KE	3000	66	50	38	3000	66	50	38
ALL	SRUR-810-5KE	2760	61	46	35	2760	61	46	35
ALL	SRUR-812-5KE	2760	61	46	35	2760	61	46	35
ALL	SRUR-814-5KE	2460	55	41	31	2460	55	41	31
ALL	SRUR-816-5KE	1800	40	30	23	1800	40	30	23
ALL	SRUR-816HD-5KE	2100	46	35	26	2100	46	35	26
ALL	SRUR-818-5KE	1800	40	30	23	1800	40	30	23
ALL	SRUR-820-5KE	1560	35	26	20	1560	35	26	20
ALL	SRUR-820HD-5KE	1800	40	30	26	1800	40	30	23
ALL	SRUR-822-5KE	1560	35	26	20	1560	35	26	20
ALL	SRUR-822HD-5KE	1800	40	30	23	1800	40	30	23
ALL	SRUR-824-5KE	1500	33	25	19	1500	33	25	19
ALL	SRUR-824HD-5KE	1800	40	30	23	1800	40	30	23
ALL	SRUR-826-5KE	1440	32	24	18	1440	32	24	18





SECTION A-A

LIMITATIONS OF USE

1) DEPTH OF CUTS ARE BASED ON EXAMPLES OF VARIOUS SOIL CONDITIONS. VERIFY ACTUAL SOIL PRESSURES PRIOR TO EACH USE. (SEE PANEL TAB DATA)

2) CORNER POSTS MAY BE USED IN CONJUNCTION WITH LINEAR POSTS IN LARGE OPEN PIT EXCAVATIONS WITH NO PENALTY IN DEPTH OF CUT.

3) LOWER PANELS MAY EXTEND A MAXIMUM OF 2 FEET BELOW BOTTOM OF POSTS. (ALL LOWER PANELS MUST BE 8ft IN HEIGHT)

4) EXCAVATIONS OPEN FOR PERIODS EXCEEDING 24 HOURS REQUIRE CAREFUL MONITORING OF CHANGING SOIL CONDITIONS AND/OR DEWATERING SYSTEMS. FOR INSTANCE, IF THE BACK FILL CHANGES FROM FREE DRAINING TO A WATER TABLE AT THE TOP OF THE SHIELD, THE LATERAL PRESSURES MAY DOUBLE IN MAGITUDE. A CHANGE FROM "WET" TO "FULLY SATURATED" MAY INCREASE LATERAL PRESSURES 30% WHICH HAVE NOT BE CONSIDERED IN THE TABULATED VALUES. EXCAVATIONS OPEN FOR PERIODS EXCEEDING 5 DAYS MAY EXPERIENCE "LOSS OF COHESION" DUE TO CHANGES IN MOISTURE CONTENT, OXIDATION, TENSION CRACKS, ETC.

DANIEL B. SHEFFER LICENSE No.60294 STATE OF FLORIDA PROFESSIONAL ENGINEER

4/25/14

CERTIFIED BY: EFFICIENCY PRODUCTION, INC. DATE: 5-3-2003

685 HULL RD. MASON MI 48854
PH# (517) 676-8800 FAX# (517) 676-0373

DWG# CPOST-TAB DATA

Attachment-4
Shoring PE Qualifications

RESUME
of
DANIEL B. SHEFFER, II

100 Peninsula Boulevard, Suite A302
Gulf Shores, Alabama 36542
(770) 306-5050
e-mail shefferengineer@mindspring.com

Height: 5'-10"
Weight: 195
Married/One Child
DOB: 05/15/56

Education:

Bachelor of Science, Civil Engineering
1978, Clemson University
Clemson, South Carolina

Bracing and Slurry Wall Graduate Course
Summer 1990, Georgia Inst. Of Technology
Atlanta, Georgia

Urban Drainage Series (Hydraulics & Hydro)
Fall 1990, Southern Technical Institute
Marietta, Georgia

Groundwater Seepage Graduate Course
Winter 1991, Georgia Inst. Of Technology
Atlanta, Georgia

Registration:

Engineer-In-Training - June 1986 Reg. #13152

Professional Engineer

Georgia	Jul 1987	Reg. #016697	North Carolina	May 1991	Reg. # 17749
South Carolina	Jun 1991	Reg. #14126	Alabama	Feb 1994	Reg. #19936
Tennessee	May 1994	Reg. #101936	Florida	Mar 1996	Reg. #50294
Virginia	May 2007	Reg. #43576	Mississippi	April 2009	Reg. #19117
Ohio	Sept 2013	Reg. #78205	Michigan	Oct 2013	Reg. #60552
Texas	Oct 2013	Reg. #115219	Pennsylvania	Nov 2013	Reg. #081615
Maryland	Nov 2013	Reg. #44529	Delaware	Sept 2014	Reg. #19111
Connecticut	Mar 2015	Reg. #30881	Rhode Island	May 2015	Reg. #11480
Maine	May 2015	Reg. #13870	Arkansas	May 2015	Reg. #16650
Vermont	May 2015	Reg. #110310	Massachusetts	Jun 2015	Reg. #51890
New Hampshire	Jul 2015	Reg. #14815	Kentucky	Jul 2015	Reg. #31117
New York	Dec 2015	Reg. #95798-1	Nebraska	Feb 2016	Reg.#E-15979
Missouri	Feb 2016	Reg. #05495	Iowa	May 2016	Reg. #23455
Indiana	Sept 2016	Reg. #11500490	DC	May 2017	Reg. #909095

Certifications:	Instructor/Trainer for the Construction Industry Standards by the U.S. Dept. of Labor (OSHA), October 1991 Instructor in "Competent Person" and "Confined Space Entry" by the National Utility Contractors Association, December 1993 State of Georgia Construction Licensing Board
Professional Associations:	ASCE, National Utility Contractors Association, NASCAR.
Leisure Activities:	Golf, Salt Water Fishing, Kayaking, Stock Car Race Spotting
Work Experience:	February 1979 – April 1982 Batson-Cook Company 6666 Powers Ferry Road Atlanta, Georgia 30340 Paul Yantis, Vice President Position: Engineer

Nature of Work: Field Engineer involving building layout and site grading, material record keeping; Office Engineer involving material delivery scheduling, shop drawing review and job quantity take-off.

Project Experience: Richway Store #9, Lilburn, GA; Salvation Army Headquarters, Atlanta, GA; South Parking Deck, Atlanta International Airport, College Park, GA; Atlanta Life Insurance Building, Atlanta, GA.

Work Experience:	April 1982 – July 1990 Van Craft Industries, Inc. 1530 Rockbridge Road Conyers, Georgia 30207 Buford Vandergriff, President Position: Vice President/Engineer

Nature of Work: Responsible for all personnel management, material handling, and quantity take-offs. Coordinated all scheduling of construction projects and bid proposals, and preliminary site development design programs. Assistant to President of the firm.

Project Design Experience for Van Craft Industries, Inc.:

Georgia World Congress Center, Ford Motor Company – Hapeville Assembly Plant, Boomershine Pontiac, Venture Parkway, Georgia State University, Van Craft Industries Headquarters, Wesley Woods Geriatric Hospital, Atlanta Toyota, Riverdale Hyundai, Clorox, Atlanta Airport Hilton, Decatur Hotel, Troncalli Chrysler Plymouth, Kennestone Hospital, Underground Atlanta, Metro Heights Baptist Church.

Work Experience: July 1990 – June 2011
Sheffer Engineering Company, Inc.
107 Laser Industrial Court, Suite D
Fairburn, Georgia 30213
Position: Principal

Nature of Work: To provide trench safety plans and specifications, OSHA compliance reports, and excavation bracing designs to contractors, engineers and architects, and other safety personnel. Conduct "Construction Safety" and "Competent Person" training for employees who must work in excavations or confined spaces, and provide fall protection and scaffolding training seminars for construction and safety professionals, engineers and field personnel.

Work Experience: July 2011 – Present
SEC, LLC
100 Peninsula Boulevard, Suite A302
Gulf Shores, Alabama 36542
Position: Consultant

Nature of Work: To provide assistance in the preparation of trench safety plans and specifications, OSHA compliance reports, and excavation bracing designs to contractors, engineers and architects, and other safety personnel. Conduct "Construction Safety" and "Competent Person" training for employees who must work in excavations or confined spaces, and provide fall protection, scaffolding, steel erection and general safety training seminars for construction and safety professionals, engineers and field personnel.

Project Design Experience: Over 3300 and counting, Documentation Upon Request

Safety Training & Presentations: Over 1825 and counting, including the biannual training held at the Georgia Tech Research Institute, OTI class in Excavation, Trenching & Soil Mechanics for the past 20 years.

References: Upon Request

SESSION INSTRUCTOR

Dan Sheffer, the Principal Engineer and Consultant of SEC, LLC in Gulf Shores, Alabama has over 32 years of experience in the construction industry as both an engineer and contractor. He is an active member of the American Society of Civil Engineers (ASCE), and the National Utility Contractors Association. He is a registered professional engineer in 28 States, including Indiana, Kentucky, Georgia, North Carolina, South Carolina, Tennessee, Florida, Alabama, Virginia and Mississippi.

Mr. Sheffer has provided assistance in the preparation of trench safety plans and specifications, OSHA compliance reports, excavation bracing and fall protection designs to contractors, engineers and architects, and other safety personnel. He has conducted "Construction Safety" and "Competent Person" training for those employees who must work in excavations or confined spaces, and has provided fall protection, scaffolding, steel erection and general safety training seminars for construction and safety professionals, engineers and field personnel.

Prior to starting his own engineering practice, Mr. Sheffer worked for a pair of contractors in the Atlanta, Georgia area, assisting in the construction of multiple building and underground utility projects. He has also prepared over 3300 safety related designs for clients on multiple projects during his 29 year career as just an engineer since 1990.

Mr. Sheffer has also conducted multiple Safety Training & Presentations, over 1800 and counting, including the biannual training held at the Georgia Tech Research Institute, OTI class in Excavation, Trenching & Soil Mechanics for the past 20 years. He has also presented seminars in Excavation Safety, Confined Space Entry, Scaffolding Safety, Fall Protection, and OSHA 10-Hour Basic Construction Safety for multiple clients such as the American Water Works Association, the Metal Building Contractors Association, the AGC, ABC, and NUCA at numerous locations throughout the United States.

References provided by request.

Attachment-5
Decontamination Pad Materials

EverGuard® TPO 45 mil Membrane Information Sheet

Updated: 6/18

Quality You Can Trust…From
North America's Largest Roofing Manufacturer!™

GAF®

EverGuard® TPO

MEMBRANE

45 MIL

Quality You Can Trust…From North America's Largest Roofing Manufacturer!™

gaf.com

Why TPO

- Great Value—Excellent performance at a cost-effective price
- Excellent Seam Strength—Heat-welded seams provide greater seam strength to taped and other seams
- Long-term Weathering—Excellent long-term heat and UV resistance
- Energy Saving—Highly reflective and emissive white roof can help reduce energy costs and urban heat island effect
- CREST Energy Savings Calculator—See your potential savings at cool.gaf.com
- Versatile Application Method

Why GAF EverGuard® TPO

- Outperforms standard TPO in heat aging and UV tests—the best predictors of TPO performance
  - After accelerated heat aging at 275°F (135°C) for 105 days, EverGuard® 60 mil TPO showed no cracking—while every one of the competitors' samples had failed!
  - UV testing—Greater than 2.5 times the industry standard (ASTM D6878 weather resistance test)
- Guarantees are available up to 20 years when using EverGuard® TPO 45 mil Membrane.*
- Easier to install due to:
  - Large welding window
  - Most complete line of accessories
  - 10′ (3.05 m) wide sheets

Installation

EverGuard® TPO 45 mil Membrane is suitable for all types of single-ply systems:

- Mechanically Attached Application…for a quick and cost-effective system that can be installed practically year-round.

Fall River Courthouse, Fall River, Massachusetts

- RhinoBond® Application…can be applied without using adhesives and installed practically year round. Qualifies for the same guarantee length as an adhered system.*
- Adhered Application…can be installed with EverGuard® 1121 Bonding Adhesive (solvent-based), EverGuard® Low VOC Adhesive, or EverGuard® WB181 Bonding Adhesive (water-based) for the smoothest appearance. Provides excellent wind uplift performance.

Accessories

Field fabrication of TPO accessories is time-consuming, costly, and inconsistent, and can lead to unreliable details that compromise a watertight roofing system. EverGuard® TPO prefabricated accessories deliver consistent quality and eliminate the worry and problems often associated with field fabrication. They can also boost productivity up to 200%,** while reducing installed cost by up to 12%.

*See applicable guarantee for complete coverage and restrictions.
**Based on GAF estimate to field-fabricate flashing details.

Energy Star LEARN MORE AT energystar.gov
U.S. only

SPRI

California Title 24 Compliant

FM APPROVED

CLASSIFIED UL

MIAMI-DADE COUNTY APPROVED

TPO membranes meet the performance requirements of ICC ER-6030

EverGuard® TPO 45 mil Membrane

Applicable Standards

UL Listed, FM Approved, Miami-Dade County Product Control Approved, State of Florida Approved, CRRC Rated, Title 24 Compliant*, ENERGY STAR® Certified**, ASTM D6878.

Physical Properties	ASTM Test Method	ASTM D6878 Minimum	EverGuard® Typical Test Data
1. Certain data is provided in MD (machine direction) x CMD (cross machine direction) format. 2. Data is based upon typical product performance, and is subject to normal manufacturing tolerance and variance.			
Nominal Thickness	ASTM D751	0.039" (min.) (0.99 mm)	0.045" (1.14 mm)
Breaking Strength	ASTM D751 Grab Method	220 lbf/in. (38.5 kn/m)	280 lbf x 270 lbf (417.2 x 402.3 kg/m)
Factory Seam Strength	ASTM D751	66 lbf (98.34 kg/m)	110 lbf (membrane failure) (163.9 kg/m)
Elongation at Break	ASTM D751	15%	30%
Heat Aging	ASTM D573	90% Retention of Breaking Strength and Elongation at Break	100%
Tear Strength	ASTM D751 8" x 8" (203 x 203 mm) Sample	55 lbf (81.95 kg/m)	100 lbf x 120 lbf (149 x 178.8 kg/m)
Puncture Resistance	FTM 101C Method 2031	Not Established	290 lb. (131 kg)
Cold Brittleness	ASTM D2137	-40°C	-40°C
Permeance	ASTM E96	Not Established	0.08 Perms
Dimensional Change	ASTM D1204 @158°F (70°C), 6 hrs.	+/-1%	0.4%
Water Absorption	ASTM D471 @158°F (70°C), 1 week	+/-3.0% max.	0.7%
Hydrostatic Resistance	ASTM D751 Method D	Not Established	380 psi
Ozone Resistance	ASTM D1149	No visible deterioration @ 7 x magnification	No visible deterioration @ 7 x magnification
SRI (Solar Reflectance Index) Initial/Aged	N/A	N/A	94/81 83 Aged Title 24
Reflectivity (white) Initial/Aged	ASTM C1549 ASTM E903	N/A N/A	0.76/0.68 81.9% Reflectance
Emissivity (white) Initial/Aged	ASTM C1371 ASTM E403	N/A N/A	0.90/0.83 0.94
Weather Resistance	ASTM G155/D6878	10,080 KJ/(m^2 · nm) at 340 nm	>20,000 KJ/(m^2 · nm) at 340 nm
Heat Aging	ASTM D573	240°F (115°C) for 32 weeks	60 weeks
Thickness Above Scrim	ASTM D7635	Min 30% of Total Thickness	15.8 mil (Nominal)
Guarantee			
Up to 20 years			

*White Membrane Only

**ENERGY STAR® only valid in the U.S.

Product Data

	5′x 100′	6′ x100′	8′x100′	10′x100′	12′x100′
Roll Size	(1.52 x 30.5 m) (500 sq. ft. [46.5 sq.m])	(1.83 x 30.5 m) (600 sq. ft. [55.74 sq.m])	(2.44 x 30.5 m) (800 sq. ft. [74.3 sq.m])	(3.05 x 30.5 m) (1,000 sq. ft. [92.9 sq.m])	(3.65 x 30.5 m) (1,200 sq. ft. [111.484 sq.m])
Roll Weight	128 lb. (58.1 kg)	153.6 lb. (69.7 kg)	204 lb. (93 kg)	256 lb. (116.1 kg)	307.2 lb. (139.3 kg)
Colors	White, Tan, Gray				
Storage	Store rolls on their sides on pallets or shelving in a dry area.				
Safety Warning	Membrane rolls are heavy. Position and install by at least two people.				
Note: Membrane rolls shipped horizontally on pallets, stacked pyramid-style and banded. Product sizes, dimensions, and widths are nominal values and are subject to normal manufacturing/packaging tolerance and variation.					

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TRACKOUT CONTROL SYSTEM
BY RUBBERFORM®

TRACKOUT CONTROL MATS

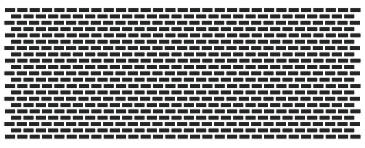
Technical Data Sheet

RubberForm Trackout Control Mats remove sediment, mud, and dirt off heavy equipment leaving the job site. As a replacement to Stabilized Construction Exits & Entrances, RubberForm Trackout Control Mats are easy to install, maintain, and transport to the next jobsite. These Mats do not require a graded surface, anchors, brackets, or any pre-installation work. Simply lift the mats up and lay them down at your desired construction exit or entrance.

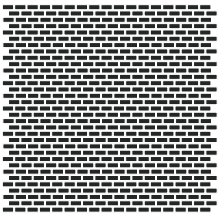
PRODUCT ID	TRACK-OUT MAT SIZE	EXACT SIZE WIDHT x LENGTH	TOTAL SQUARE FEET	WEIGHT DIMENSIONS
RF-TOCM.07.16	7'W x 16'L	87"W x 196"L	118	795 lbs
RF-TOCM.10.10	10'W x 10'L	120"W x 129"L	108	730 lbs
RF-TOCM.10.14	10'W x 14'L	120"W x 174"L	145	975 lbs
RF-TOCM.10.16	10'W x 16'L	120"W x 196"L	163	1,100 lbs
RF-TOCM.12.10	12'W x 10'L	144"W x 129"L	129	875 lbs
RF-TOCM.12.14	12'W x 14'L	144"W x 174"L	174	1,200 lbs
RF-TOCM.12.16	16'W x 12'L	196"W x 144"L	196	1,325 lbs

TRACKOUT CONTROL MAT LAYOUTS

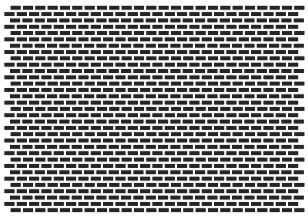
Endless configuration possibilities, less mats with more square footage than the competition.



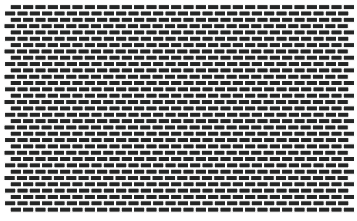
7'W x 16'L



10'W x 10'L



10'W x 14'L



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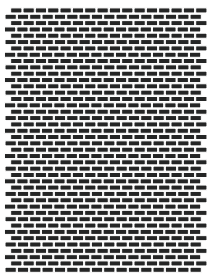
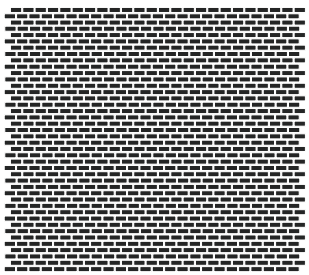


12'W x 10'L



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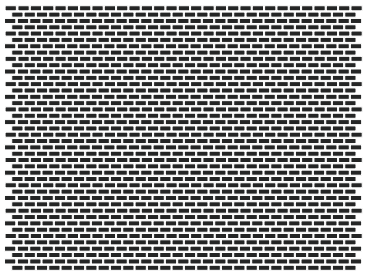

16'W x 12'L

**Custom sizes available **Pneumatic tires only*

RubberForm Recycled Products Trackout Control Mats - Technical Specs

COMPANY BENEFITS

- Quick setup saves on time & labor costs
- Fully customizable to fit your job site
- Made in the USA with 100% compounded recycled materials
- Reusable – folds up for easy transportation and storage

PRODUCT FEATURES

- Installs in minutes – no anchors or brackets needed
- No need to dig means no wasting time calling 811
- Conforms to any surface on the jobsite
- Quick & Easy maintenance. Simply lift the mat up & lay back down

QUICK INSTALLATION & EASY MAINTENANCE

STEP 1: LIFT

STEP 2: LAY OUT

STEP 3: GET TO WORK

RUBBERFORM

TRACKOUT CONTROL MATS

DEPLOY IN *A MATTER OF MINUTES.*

Simply lift the Mat off the pallet using a front loader and lay it down at your desired construction exit or entrance. RubberForm Trackout Mats conform to any surface with enough weight to keep them in place, eliminating the need to be anchored down so you can set it and forget it.

Attachment-6
Stockpile Pad Materials

TRACKOUT CONTROL SYSTEM
BY RUBBERFORM®

TRACKOUT CONTROL MATS

Technical Data Sheet

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TRACKOUT CONTROL MAT LAYOUTS

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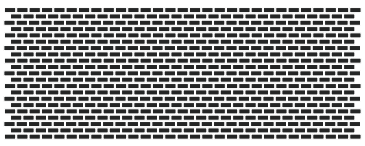
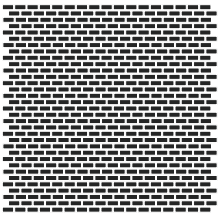
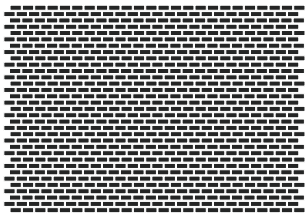


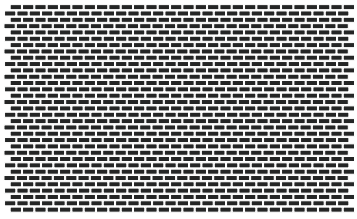
7'W x 16'L



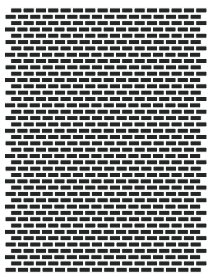
10'W x 10'L



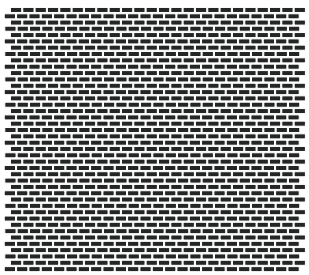
10'W x 14'L



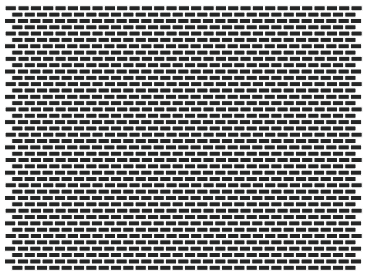
10'W x 16'L



12'W x 10'L



12'W x 14'L



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EverGuard® TPO 45 mil Membrane Information Sheet

Updated: 6/18

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North America's Largest Roofing Manufacturer!™

GAF®

EverGuard® TPO

MEMBRANE

45 MIL

Quality You Can Trust…From North America's Largest Roofing Manufacturer!™

gaf.com

Why TPO

- Great Value—Excellent performance at a cost-effective price
- Excellent Seam Strength—Heat-welded seams provide greater seam strength to taped and other seams
- Long-term Weathering—Excellent long-term heat and UV resistance
- Energy Saving—Highly reflective and emissive white roof can help reduce energy costs and urban heat island effect
- CREST Energy Savings Calculator—See your potential savings at cool.gaf.com
- Versatile Application Method

Why GAF EverGuard® TPO

- Outperforms standard TPO in heat aging and UV tests—the best predictors of TPO performance
  - After accelerated heat aging at 275°F (135°C) for 105 days, EverGuard® 60 mil TPO showed no cracking—while every one of the competitors' samples had failed!
  - UV testing—Greater than 2.5 times the industry standard (ASTM D6878 weather resistance test)
- Guarantees are available up to 20 years when using EverGuard® TPO 45 mil Membrane.*
- Easier to install due to:
  - Large welding window
  - Most complete line of accessories
  - 10′ (3.05 m) wide sheets

Installation

EverGuard® TPO 45 mil Membrane is suitable for all types of single-ply systems:

- Mechanically Attached Application…for a quick and cost-effective system that can be installed practically year-round.

Fall River Courthouse, Fall River, Massachusetts

- RhinoBond® Application…can be applied without using adhesives and installed practically year round. Qualifies for the same guarantee length as an adhered system.*
- Adhered Application…can be installed with EverGuard® 1121 Bonding Adhesive (solvent-based), EverGuard® Low VOC Adhesive, or EverGuard® WB181 Bonding Adhesive (water-based) for the smoothest appearance. Provides excellent wind uplift performance.

Accessories

Field fabrication of TPO accessories is time-consuming, costly, and inconsistent, and can lead to unreliable details that compromise a watertight roofing system. EverGuard® TPO prefabricated accessories deliver consistent quality and eliminate the worry and problems often associated with field fabrication. They can also boost productivity up to 200%,** while reducing installed cost by up to 12%.

*See applicable guarantee for complete coverage and restrictions.
**Based on GAF estimate to field-fabricate flashing details.

Energy Star LEARN MORE AT energystar.gov
U.S. only

SPRI

California Title 24 Compliant

FM APPROVED

CLASSIFIED UL

MIAMI-DADE COUNTY APPROVED

TPO membranes meet the performance requirements of ICC ER-6030

EverGuard® TPO 45 mil Membrane

Applicable Standards

UL Listed, FM Approved, Miami-Dade County Product Control Approved, State of Florida Approved, CRRC Rated, Title 24 Compliant*, ENERGY STAR® Certified**, ASTM D6878.

Physical Properties	ASTM Test Method	ASTM D6878 Minimum	EverGuard® Typical Test Data
1. Certain data is provided in MD (machine direction) x CMD (cross machine direction) format. 2. Data is based upon typical product performance, and is subject to normal manufacturing tolerance and variance.			
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Storage	Store rolls on their sides on pallets or shelving in a dry area.				
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Attachment-7
Aggregate Backfill

Date: June 1, 2023

Company: Sessler Environmental Services, LLC
1330 Research Forest
Macedon, NY 14502

Attn: Eric Hoban

Project: 245 Andrews Street
Rochester, New York

Heidelberg Materials: Honeoye Falls-Lima Plant
2049 Honeoye Falls # 6 Rd./PO Box 151
Honeoye Falls, NY 14472

NYSDOT Source #: 4-10R / 4-10RS
NYSDOT Test #: 20AR077 / 20AR076S

This is to certify that the material to be used on the above referenced project will be produced in accordance with the most current New York State Department of Transportation specifications. Specific values are listed below.

TYPICAL GRADATIONS (All values are % Passing)

SIEVE SIZE		**Crusher Run #2**		**#3A Stone**		**#2 Stone**		**#1 & #2 Blend**		**#1 Stone**		**#1A Stone**	
in.	mm	% Pass	Spec.	% Pass	Spec.	% Pass	Spec.	% Pass	Spec.	% Pass	Spec.	% Pass	Spec.
4"	100												
2"	50.0	**100.0**	100	**100.0**	100								
1 ½"	37.5	**97.8**		**90.0**	90-100	**100.0**	100	**100.0**	100				
1"	25.0	**84.2**		**15.0**	0-15	**90.8**	90-100	**93.0**	93-100	**100.0**	100		
3/4"	19.0	**72.4**				**58.8**		**78.7**		**100.0**			
1/2"	12.5	**56.6**				**9.5**	0-15	**49.4**	27-58	**91.5**	90-100	**100.0**	100
1/4"	6.3	**36.6**	25-60					**5.7**	0-8	**11.1**	0-15	**92.5**	90-100
1/8"	3.2	**23.3**										**10.0**	0-15
#40	0.425	**7.6**	5-40										
#200	0.075	**4.5**	0-10										
ITEM NUMBERS		304.12		703.0201		703.0201		703.0201		703.0201		703.0201	

I trust that this information meets with your approval. If we can be of any further assistance, please give us a call.

Very Truly Yours,
Heidelberg Materials

cc: file
encl.

Terry Page 585-622-6233 Cell
Senior Sales Representative

Attacgment-8
PVC Injection Piping

CHARLOTTE PIPE AND FOUNDRY COMPANY®

You can't beat the system.®

Submittal Package PVC Schedule 40 DWV System

(Updated March 17, 2022)

Table of Contents for PVC Schedule 40 DWV Submittal Package

Page

CHARLOTTE PIPE AND FOUNDRY COMPANY®

SUBMITTAL FOR CHARLOTTE PIPE®
PVC SCHEDULE 40 SOLID WALL PIPE AND PVC DWV FITTING SYSTEM

Date: _____

Job Name: _____ Location: _____

Engineer: _____ Contractor: _____

Scope:
This specification covers PVC Schedule 40 solid wall pipe and PVC DWV fittings used in sanitary drain, waste and vent (DWV), sewer and storm drainage applications. This system is intended for use in non-pressure applications where the operating temperature will not exceed 140° F.

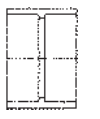
Specification:
Pipe shall be manufactured from virgin rigid PVC (polyvinyl chloride) vinyl compounds with a cell class of 12454 as identified in ASTM D 1784. PVC Schedule 40 pipe shall be Iron Pipe Size (IPS) conforming to ASTM D 1785 and ASTM D 2665. Injection molded PVC DWV fittings shall conform to ASTM D 2665. Fabricated PVC DWV fittings shall conform to ASTM F 1866. All pipe and fittings shall be manufactured in the United States. All systems shall utilize a separate waste and vent system. Pipe and fittings shall conform to NSF International Standard 14.

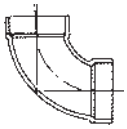
Installation:
Installation shall comply with the latest installation instructions published by Charlotte Pipe and Foundry and shall conform to all applicable plumbing, fire, and building code requirements. Buried pipe shall be installed in accordance with ASTM D 2321 and ASTM F 1668. Solvent cement joints shall be made in a two-step process with primer conforming to ASTM F 656 and solvent cement conforming to ASTM D 2564. The system shall be protected from chemical agents, fire-stopping materials, thread sealant, plasticized-vinyl products or other aggressive chemical agents not compatible with PVC compounds. The system shall be hydrostatically tested after installation.
WARNING! Never test with or transport/store compressed air or gas in PVC pipe or fittings. Doing so can result in explosive failures and cause severe injury or death.

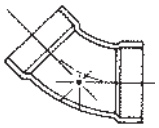
Referenced Standards:

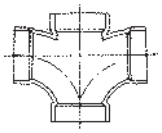
ASTM D 1784:	Rigid Vinyl Compounds
ASTM D 1785:	PVC Plastic Pipe, Schedule 40
ASTM D 2665:	PVC Drain, Waste and Vent Pipe and Fittings
ASTM D 2564:	Solvent Cements for PVC Pipe and Fittings
ASTM D 2321:	Underground Installation of Thermoplastic Pipe (non-pressure applications)
ASTM F 656:	Primers for PVC Pipe and Fittings
ASTM F 1668:	Procedures for Buried Plastic Pipe
ASTM F 1866:	Fabricated PVC DWV Fittings
NSF Standard 14:	Plastic Piping Components and Related Materials

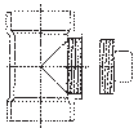
MADE IN USA

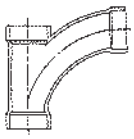

Coupling

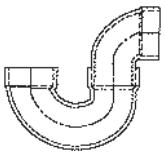

Quarter Bend

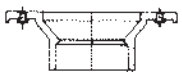

Eighth Bend


Double Sanitary Tee


Cleanout Tee w/Plug


Combination Wye & Eighth Bend


P-Trap


Closet Flange

Not all fitting patterns shown

PVC Schedule 40 DWV Pipe

PVC Schedule 40 DWV Pipe

NSF

PVC SCHEDULE 40 (WHITE)		PLAIN END		PVC 1120		ASTM D 2665
PART NO.	NOM. SIZE	UPC # 611942-	QTY. PER SKID	AVG. OD (IN.)	MIN. WALL (IN.)	WT. PER 100 FT. (LBS.)
PVC 7100*	1¼″x10′	03945	2120′	1.660	.140	42.4
PVC 7100*	1¼″x20′	03946	4240′	1.660	.140	42.4
PVC 7112*	1½″x10′	03947	1650′	1.900	.145	51.8
PVC 7112*	1½″x20′	03948	3300′	1.900	.145	51.8
PVC 7200*	2″x10′	03949	1110′	2.375	.154	69.5
PVC 7200*	2″x20′	03950	2220′	2.375	.154	69.5
PVC 7300*	3″x10′	03951	1130′	3.500	.216	144.2
PVC 7300*	3″x20′	03952	1000′	3.500	.216	144.2
PVC 7400†	4″x10′	03953	670′	4.500	.237	205.5
PVC 7400†	4″x20′	03954	1340′	4.500	.237	205.5
PVC 7500†	5″x20′	04837	760′	5.563	.258	272.5
PVC 7600†	6″x10′	03955	330′	6.625	.280	361.2
PVC 7600†	6″x20′	03956	660′	6.625	.280	361.2
PVC 7800†	8″x10′	13087	140′	8.625	.322	543.6
PVC 7800†	8″x20′	03958	280′	8.625	.322	543.6
PVC 7910†	10″x20′	03959	220′	10.750	.365	770.7
PVC 7912†	12″x20′	03961	120′	12.750	.406	1019.0
PVC 7914†	14″x20′	04862	60′	14.000	.437	1205.0
PVC 7916†	16″x20′	04918	60′	16.000	.500	1575.7

* Dual Marked ASTM D 1785 & ASTM D 2665.
† Triple Marked ASTM D 1785 & ASTM D 2665 & ASTM F 480.

Charlotte Pipe and Foundry Company • P.O. Box 35430 Charlotte, NC 28235 • (800) 438-6091 • www.charlottepipe.com

Product Certification

This is to certify that all Plastic Pipe and Fittings manufactured by Charlotte Pipe and Foundry Company are manufactured in the United States and conform to the following standards:

PVC SCH. 40 SOLID WALL PIPE
ASTM D 1784, ASTM D 1785, ASTM D 2665
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD 14 AND 61

PVC SCH. 40 DWV CELLULAR CORE PIPE
ASTM D 4396, ASTM F 891
NSF STANDARD NO. 14

PVC SCH. 40 DWV FITTINGS
ASTM D 1784, ASTM D 2665, ASTM D 3311,
ASTM F1866
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14

ConnecTite® PUSH-FIT DWV FITTINGS
ASME A112.4.4, IAPMO IGC 334
NSF STANDARD NO. 14

PVC SDR-21 AND SDR-26 PRESSURE PIPE
ASTM D 1784, ASTM D 2241
NSF STANDARD NO. 14 AND 61

PVC SCH. 40 PRESSURE FITTINGS
ASTM D 1784, ASTM D 2466
NSF STANDARD 14 AND 61

PVC SCH. 40 WELL CASING PIPE
ASTM D 1784, ASTM F 480
NSF STANDARD NO. 14 AND 61

PVC SCH. 80 PIPE
ASTM D 1784, ASTM D 1785
NSF STANDARD NO. 14 AND 61

PVC SCH. 80 FITTINGS
ASTM D 1784, ASTM D 2467
ASTM D 2464 ASTM F 1970
NSF STANDARD NO. 14 AND 61

PVC SDR 35 SEWER MAIN PIPE
ASTM D 1784, ASTM D 3034, SDR 35
ASTM D 3212, ASTM F 477

PVC SEWER AND DRAIN PIPE
ASTM D 1784, ASTM D 2729

PVC THIN WALL PIPE & FITTINGS
ASTM D 1784, ASTM D 2949
NSF STANDARD NO. 14

CPVC FLOWGUARD GOLD® CTS PIPE & FITTINGS
ASTM D 1784, ASTM D 2846
FHA UM-61a
NSF STANDARD NO. 14 AND 61
CSA LISTED ON SPECIFIED ITEMS

CPVC CHEMDRAIN® SCH. 40 PIPE & FITTINGS
ASTM D 1784, ASTM F 2618
NSF STANDARD 14

ABS SCH. 40 DWV CELLULAR CORE PIPE
ASTM D 3965, ASTM F 628
NSF STANDARD NO. 14

ABS PLUS® SCH. 40 DWV CELLULAR CORE PIPE
ASTM D 3965, ASTM D 4396, ASTM F 1488

ABS SCH. 40 DWV FITTINGS
ASTM D 3965, ASTM D 2661, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-322b
NSF STANDARD NO. 14

CHARLOTTE PIPE AND FOUNDRY COMPANY

Physical Properties of Charlotte Pipe® ABS and PVC Materials*

PROPERTY	UNITS	ABS	ASTM NO.		PVC	ASTM NO.
Specific Gravity	g/cc	1.05	D 792		1.40	D 792
Tensile Strength (73°F) Minimum	Psi	4,500	D 638		7,000	D 638
Modulus of Elasticity in Tension (73°F) Minimum	Psi	240,000	D 638		400,000	D 638
Flexural Strength (73°F)	Psi	10,585	D 790		14,000	D 790
Izod Impact (notched at 73°F) Minimum	ft lb/ in. of notch	6.00	D 256		0.65	D 256
Hardness (Durometer D)		70	D 2240		80 ± 3	D 2240
Hardness (Rockwell R)		100	D 785		110 - 120	D 785
Compressive Strength (73°F)	Psi	7,000	D 695		9,600	D 695
Hydrostatic Design Stress	Psi	N/A			2,000	D 1598
Coefficient of Linear Expansion	in./ in./ °F	5.5×10^{-5}	D 696		3.0×10^{-5}	D 696
Heat Distortion Temperature at 264 psi Minimum	degrees F	180	D 648		158	D 648
Coefficient of Thermal Conductivity	BTU/ hr/sq ft/ °F/ in.	1.1	C 177		1.2	C 177
Specific Heat	BTU/ °F/lb	0.35	D 2766		0.25	D 2766
Water Absorption (24 hrs at 73°F)	% weight gain	0.40	D 570		.05	D 570
Cell Classification - Pipe		42222	D 3965		12454	D 1784
Cell Classification - Fittings		32222	D 3965		12454	D 1784
Burning Rate					Self Ext.	D 635

*Above data is based upon information provided by the raw material manufacturers. It should be used only as a recommendation and not as a guarantee of performance.

Solvent Cements

Pipe and Fitting System	Diameter (in.)	Solvent Cement Standard	Cement Color (common usage, check local code)	Description	Primer (common usage, check local code)
ABS DWV	1½ - 6	ASTM D 2235	Black	Regular or Medium-Bodied	Not Recommended
ABS Plus® Foam Core Pipe	1½ - 4	ASTM D 2235	Black	Regular or Medium-Bodied	Not Recommended
FlowGuard Gold® CTS CPVC	½ - 2	ASTM F 493	Yellow	Regular-Bodied	Optional
CPVC Sch. 80	½ - 2	ASTM F 493	IPS 714 or Oatey CPVC Heavy Duty Orange	Heavy-Bodied	IPS P-70 or Oatey Industrial Grade
CPVC Sch. 80	2½ - 8	ASTM F 493	IPS 714 or Oatey CPVC Heavy Duty Orange	Heavy-Bodied	IPS P-70 or Oatey Industrial Grade
CPVC Sch. 40 ChemDrain	1¼ - 8	ASTM F 493	ChemDrain Mustard Yellow (Required)	Heavy-Bodied	6" and larger: IPS P-70 or Oatey Industrial Grade required
PVC DWV or Sch. 40 Pressure	½ - 4	ASTM D 2564	Clear	Regular or Medium-Bodied	Required ASTM F 656
PVC DWV or Sch. 40 Pressure	6 - 16	ASTM D 2564	Clear or Grey	Medium or Heavy-Bodied	Required ASTM F 656
PVC Sch. 80	¼ - 2	ASTM D 2564	Grey	Medium or Heavy-Bodied	Required ASTM F 656
PVC Sch. 80	2½ - 16	ASTM D 2564	Grey	Heavy-Bodied	IPS P-70 or Oatey Industrial Grade

NOTICE: Aerosol or spray-on type primers/solvent cements are not recommended. The practice of aggressively scouring the pipe and fittings with both primer and solvent cement is an integral part of the joining process. Not working the primer or solvent cement into the pipe or fitting could cause potential system failure or property damage.

⚠ WARNING

Primers and cements are extremely flammable and may be explosive. Do not store or use near open flame or elevated temperatures, which may result in injury or death.

- Solvent fumes created during the joining process are heavier than air and may be trapped in newly installed piping systems.
- Ignition of the solvent vapors caused by spark or flame may result in injury or death from explosion or fire.
- Read and obey all manufacturers' warnings and any instructions pertaining to primers and cements.
- Provide adequate ventilation to reduce fire hazard and to minimize inhalation of solvent vapors when working with cements, primers and new piping systems.

Applicator Types

Nominal Pipe Size (in.)	Applicator Type		
	Dauber	Brush Width (in.)	Swab Length (in.)
¼	A	½	NR
⅜	A	½	NR
½	A	½	NR
¾	A	1	NR
1	A	1	NR
1¼	A	1	NR
1½	A	1 - 1½	NR
2	A	1 - 1½	NR
2½	NR	1½ - 2	NR
3	NR	1½ - 2½	NR
4	NR	2 - 3	3
6	NR	3 - 5	3
8	NR	4 - 6	7
10	NR	6 - 8	7
12	NR	6 - 8	7
14	NR	7 - 8	7
16	NR	8+	8

A = Acceptable NR = Not Recommended

NOTICE: Rollers are not recommended.

Chemical Resistance

⚠ CAUTION

ABS, CPVC, and PVC piping systems have very different chemical resistance. Review manufacturer's literature for all chemicals coming into contact with the piping materials prior to use.

The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

Number = Maximum Recommended Temp. (°F)** CF = Consult Factory NR = Not Recommended • • = Incomplete Data

Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Acetaldehyde	NR	NR	NR	NR	200	NR
Acetamide	120	• •	• •	NR	200	NR
Acetate Solvent, Crude	NR	NR	NR	NR	200	NR
Acetate Solvent, Pure	NR	NR	NR	NR	200	NR
Acetic Acid, 10%	120	140‡	180‡	73	200	NR
Acetic Acid, 20%	NR	140‡	180‡	NR	200	NR
Acetic Acid, 50%	NR	NR	NR	NR	140	NR
Acetic Acid, 80%	NR	NR	NR	NR	140	NR
Acetic Acid, Glacial	NR	NR	NR	NR	73	NR
Acetic Anhydride	NR	NR	NR	NR	NR	73
Acetone	NR	NR	NR	NR	200	NR
Acetonitrile	NR	NR	NR	NR	NR	73
Acetophenone	NR	NR	NR	NR	140	NR
Acetyl Chloride	NR	NR	NR	185	NR	NR
Acetylene	140§	140§	180§	200	200	73
Acetyl Nitrile	NR	NR	NR	NR	NR	NR
Acrylic Acid	NR	NR	NR	NR	NR	NR
Acrylonitrile	NR	73	NR	NR	100	NR
Adipic Acid (Sat'd)	• •	140	180	160	140	140
Alcohol, Allyl	NR	NR	NR	73	73	73
Alcohol, Amyl	NR	NR	NR	160	200	140
Alcohol, Benzyl	NR	NR	NR	140	NR	NR
Alcohol, Butyl	NR	100	NR	200	140	140
Alcohol, Diacetone	NR	NR	NR	NR	70	NR
Alcohol, Ethyl (Ethanol) Up to 5%	73	140	180	200	200	160
Alcohol, Ethyl (Ethanol) Over 5%	NR	140	180	NR	200	140
Alcohol, Hexyl (Hexanol)	NR	100	NR	200	NR	NR
Alcohol, Isopropyl (Isopropanol)	NR	140	NR	160	160	73
Alcohol, Methyl (Methanol)	NR	140	140	NR	160	160
Alcohol, Octyl (1-n-Octanol)	NR	100	73	73	NR	NR
Alcohol, Propyl (Propanol)	NR	140	NR	200	200	140
Allyl Alcohol	NR	NR	NR	100	70	73
Allyl Chloride	NR	NR	NR	NR	NR	NR
Alums	140	140	180	200	100	100
Aluminum Acetate	140	• •	180	NR	200	NR

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.
‡ Must use solvent cement specially formulated for hypochlorite or caustic chemical service (IPS Weld-On 724 or equal).

Chemical Resistance

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The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

Number = Maximum Recommended Temp. (°F)** CF = Consult Factory NR = Not Recommended • • = Incomplete Data

Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Aluminum Ammonium	• •	140	180	200	200	160
Aluminum Chloride	140	140	180	200	200	160
Aluminum Chrome	• •	140	180	200	200	160
Aluminum Fluoride	NR	73	180	200	200	160
Aluminum Hydroxide	140	140‡	180‡	200	200	100
Aluminum Nitrate	140	140	180	100	200	100
Aluminum Oxychloride	140	140	180	NR	• •	• •
Aluminum Potassium Sulfate	140	140	180	200	200	160
Aluminum Sulfate	140	140	180	185	200	140
Amines, General	NR	NR	NR	NR	NR	NR
Ammonia, Aqueous	NR	140	NR	NR	175	150
Ammonia, Gas	140§	140§	NR	NR	140	140
Ammonia, Aqua, 10%	• •	73	NR	NR	140	• •
Ammonia, (25% Aqueous Solution)	140	NR	NR	NR	140	• •
Ammonia Hydroxide	73	100‡	NR	NR	175	150
Ammonia Liquid (Concentrated)	NR	NR	NR	NR	140	73
Ammonium Acetate	• •	140	180	73	140	140
Ammonium Benzoate	• •	• •	180	• •	• •	• •
Ammonium Bifluoride	• •	140	180	200	200	• •
Ammonium Bisulfide	140	140	180	• •	• •	• •
Ammonium Carbonate	140	140	180	200	200	140
Ammonium Chloride	120	140	180	200	200	160
Ammonium Citrate	120	• •	180	NR	73	73
Ammonium Dichromate	120	73	• •	NR	73	100
Ammonium Fluoride, 10%	120	140	180	140	200	100
Ammonium Fluoride, 25%	120	73	180	140	200	73
Ammonium Hydroxide, <10%	73	140‡	NR	70	200	160
Ammonium Hydroxide, >10%	73	73‡	NR	NR	200	150
Ammonium Metaphosphate.	120	140	180	200	200	• •
Ammonium Nitrate	120	140	180	100	200	160
Ammonium Persulphate	120	140	73	• •	200	73
Ammonium Phospate	120	140	73	185	200	140
Ammonium Sulfamate	120	• •	180	• •	• •	• •
Ammonium Sulfate	120	140	180	200	200	160
Ammonium Sulfide	120	73	180	200	200	• •

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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Chemical Resistance

The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

Number = Maximum Recommended Temp. (°F)** CF = Consult Factory NR = Not Recommended • • = Incomplete Data

Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Ammonium Thiocyanate	120	140	180	185	• •	73
Ammonium Tartrate	120	140	180	• •	• •	• •
Amyl Acetate	NR	NR	NR	NR	73	NR
Alcohol, Amyl	NR	NR	NR	185	200	140
Amyl Chloride	NR	NR	NR	200	NR	NR
Aniline	NR	NR	NR	NR	140	NR
Aniline Chlorohydrate	NR	NR	• •	• •	• •	• •
Aniline Hydrochloride	NR	NR	NR	185	• •	NR
Anthraquinone Sulfonic Acid	• •	140	• •	200	• •	• •
Anti-Freeze (See Alcohols, Glycols & Glycerin)						
Antimony Trichloride	• •	140	180	185	140	140
Aqua Regia	NR	NR	73	100	NR	NR
Aromatic Hydrocarbons	NR	NR	NR	73	NR	NR
Argon	• •	• •	• •	200	200	100
Arsenic Acid	• •	140	73	200	185	NR
Aryl Sulfonic Acid	• •	140	• •	185	140	• •
Asphalt	NR	NR	NR	180	NR	NR
Barium Carbonate	120	140	180	200	200	160
Barium Chloride	120	140	180	200	200	160
Barium Hydroxide	120	140	180	200	180	150
Barium Nitrate	120	73	180	200	200	160
Barium Sulfate	120	140	180	200	200	160
Barium Sulfide	120	140	180	200	140	160
Beer	120	140	180	200	200	140
Beet Sugar Liquids	120	140	180	185	200	160
Benzaldehyde	NR	NR	NR	NR	200	NR
Benzalkonium Chloride	NR	NR	NR	• •	• •	• •
Benzene	NR	NR	NR	150	NR	NR
Benzene, Benzol	NR	NR	NR	200	200	• •
Benzene Sulfonic Acid	NR	NR	NR	185	NR	100
Benzoic Acid, (Sat'd)	140	140	73	• •	NR	160
Benzyl Chloride	NR	NR	NR	200	NR	NR
Benzyl Alcohol	NR	NR	NR	140	NR	NR
Biodiesel Fuel	NR	73	NR	200	NR	NR
Bismuth Carbonate	140	140	180	• •	• •	73

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.

Chemical Resistance

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Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Black Liquor	73	140	180	200	180	73
Bleach (12.5% Sodium Hypochlorite)	NR	73‡	180‡	200	140	140
Bleach (5.5% Sodium Hypochlorite)	73	140‡	140‡	200	140	140
Borax	140	140	180	185	140	140
Boric Acid	140	140	180	185	140	140
Breeders Pellets, Deriv. Fish	140	140	180	• •	• •	• •
Brine, Acid	73	73	180	200	200	160
Bromic Acid	73	140	180	73	73	• •
Bromine	NR	NR	NR	73	NR	NR
Bromine, Liquid	NR	NR	NR	73	NR	NR
Bromine, Vapor 25%	NR	140	• •	• •	NR	• •
Bromine, Water	NR	73	73	185	NR	NR
Bromine, Water, (Sat'd)	NR	73	73	• •	• •	• •
Bromobenzene	NR	NR	NR	150	NR	NR
Bromotoluene	NR	NR	NR	NR	NR	NR
Butadiene	NR	140	73	185	NR	140
Butane	NR	140	• •	185	NR	73
Butanol, Primary	NR	NR	NR	• •	• •	• •
Butanol, Secondary	NR	NR	NR	• •	• •	• •
Butyl Acetate	NR	NR	NR	NR	140	NR
Butyl Alcohol	73	100	NR	75	200	140
Butyl Carbitol	• •	• •	NR	• •	• •	• •
Butyl Cellosolve (2-butoxyethanol)	NR	73	NR	NR	140	• •
Butynediol	NR	73	• •	• •	• •	• •
Butylene	NR	73	• •	100	NR	NR
Butyl Phenol	NR	73	• •	• •	• •	NR
Butyl Pthalate	NR	NR	NR	73	• •	• •
Butyl Stearate	NR	73	73	200	NR	NR
Butyric Acid	NR	NR	NR	73	140	NR
Cadmium Acetate	• •	• •	180	• •	• •	• •
Cadmium Chloride	• •	• •	180	• •	• •	• •
Cadmium Cyanide	• •	140	180	• •	• •	73
Cadmium Sulfate	• •	• •	180	• •	• •	• •
Caffeine Citrate	• •	73	• •	• •	• •	• •
Calcium Acetate	NR	73	180	• •	R	• •

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.
‡ Must use solvent cement specially formulated for hypochlorite or caustic chemical service (IPS Weld-On 724 or equal).

Chemical Resistance

The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

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Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Calcium Bisulfide	NR	NR	180	185	• •	• •
Calcium Bisulfite	NR	140	180	185	NR	73
Calcium Carbonate	140	140	180	200	200	73
Calcium Chlorate	140	140	180	185	140	73
Calcium Chloride	140	140	180	200	200	160
Calcium Hydroxide	140	140‡	180‡	200	200	70
Calcium Hypochlorite	140	140‡	180‡	185	73	• •
Calcium Nitrate	140	140	180	200	200	100
Calcium Oxide	140	140	180	• •	200	160
Calcium Sulfate	140	140	180	200	200	160
Camphor Crystals	NR	73	• •	200	200	NR
Cane Sugar Liquors	120	140	180	200	200	160
Caprolactam	NR	• •	NR	• •	• •	• •
Caprolactone	NR	• •	NR	• •	• •	• •
Caprylic Acid	NR	• •	NR	• •	• •	• •
Carbitol™	NR	NR	NR	73	140	73
Carbon Bisulfide	NR	NR	NR	• •	• •	• •
Carbon Dioxide, Wet	140	140	180	200	200	160
Carbon Dioxide, Dry	140	140	180	200	200	160
Carbon Disulfide	NR	NR	NR	200	NR	NR
Carbonic Acid	• •	140	180	200	200	73
Carbon Monoxide	140	140	180	200	200	73
Carbon Tetrachloride	NR	NR	NR	185	NR	NR
◊Castor Oil	NR	140	NR	200	NR	200
Caustic Potash	140	140	CF	NR	140	160
Caustic Soda	NR	73‡	CF	NR	70	100
Cellosolve	NR	73	NR	NR	140	• •
Cellosolve Acetate	NR	• •	NR	NR	140	NR
Chloracetic Acid	73	73	180	NR	73	• •
Cloracetyl Chloride	NR	73	• •	• •	• •	• •
Chloral Hydrate	• •	140	180	NR	NR	73
Chloramine	NR	73	• •	NR	NR	NR
Chloric Acid, 20%	• •	140	180	140	• •	140
Chlorinated Solvents, Wet or Dry	NR	NR	NR	200	NR	NR
Chlorinated Water, by Cl_2 Gas, Up to 3500 ppm	140	140	CF	185	100	NR

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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◊Castor oil may cause environmental stress cracking in high-stress areas such as plastic threaded connections.
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Chemical Resistance

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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Chlorinated Water, by Cl_2 Gas, Above 3500 ppm	NR	NR	185	NR	NR	
Chlorinated Water, by Sodium Hypochlorite	140	140	200	200	200	200
Chlorine Gas, Dry	NR	NR	NR	185	NR	NR
Chlorine Gas, Wet	NR	NR	NR	185	NR	NR
Chlorine, Liquid (See Sodium Hypochlorite)						
Chlorine, trace in air	• •	• •	180§	• •	• •	• •
Chlorine Dioxide (sat'd aqueous sol.)	• •	• •	180	• •	• •	• •
Chlorine Water, (Sat'd)	• •	140	180	200	73	• •
Chlorobenzene	NR	NR	NR	73	NR	NR
Chlorobenzene Chloride	NR	NR	NR	200	• •	• •
Chloroform	NR	NR	NR	73	NR	NR
Chloropicrin	NR	NR	NR	• •	• •	• •
Chlorosulfonic Acid	• •	73	73	NR	NR	NR
Chromic Acid, 10%	73	140‡	180‡	140	70	NR
Chromic Acid, 30%	NR	73‡	180‡	140	NR	NR
Chromic Acid, 40%	NR	73‡	180‡	140	NR	NR
Chromic Acid, 50%	NR	73‡	140‡	140	NR	NR
Chromium Nitrate	• •	• •	180	• •	• •	• •
Chromium Potassium Nitrate	73	73	73	200	140	160
Citric Acid (Sat'd)	140	140	180	200	200	140
Citrus Oils	• •	• •	NR	• •	• •	• •
Coconut Oil	NR	140	NR	185	NR	100
Coke Oven Gas	NR	NR	NR	185	70	• •
Copper Acetate, (Sat'd)	73	73	73	140	100	160
Copper Carbonate	120	140	180	185	200	• •
Copper Chloride	73	140	180	200	200	160
Copper Cyanide	73	140	180	185	200	160
Copper Fluoride	73	140	180	185	200	140
Copper Nitrate	120	140	180	200	200	160
Copper Salts	140	140	180	• •	• •	• •
Copper Sulfate	140	140	180	200	200	160
Corn Oil	73	140	NR	200	NR	NR
Corn Syrup	120	140	180	185	• •	100
Cottonseed Oil	120	140	NR	185	NR	• •
Creosote	NR	NR	NR	73	NR	NR

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Cresol	NR	NR	NR	100	NR	NR
Cresylic Acid, 50%	NR	140	NR	185	NR	NR
Crotonaldehyde	NR	NR	NR	NR	NR	73
Crude Oil	NR	73	180	200	NR	NR
Cumene	• •	• •	• •	200	NR	NR
Cupric Fluoride	73	140	180	• •	200	• •
Cupric Sulfate	140	140	180	200	200	160
Cuprous Chloride	73	140	180	200	200	70
Cyclohexane	NR	NR	NR	185	NR	NR
Cyclohexanol	NR	NR	NR	185	NR	NR
Cyclohexanone	NR	NR	NR	NR	73	NR
Decalin	NR	NR	NR	• •	• •	• •
D-Limonene	• •	• •	NR	• •	• •	• •
Desocyephedrine	• •	73	• •	• •	• •	• •
Detergents w/non-ionic surfactants	73	140	NR	200	200	160
Dextrine	• •	140	180	200	NR	• •
Dextrose	120	140	180	200	140	160
Diacetone Alcohol	NR	NR	NR	NR	73	NR
Diazo Salts	• •	140	180	• •	• •	• •
Dibutoxy Ethyl Phthalate	NR	NR	NR	200	73	NR
Dibutyl Ethyl Phthalate	NR	NR	NR	200	73	NR
Dibutyl Phthalate	NR	NR	NR	NR	73	NR
Dibutyl Sebacate	NR	NR	NR	NR	73	NR
Dichlorobenzene	NR	NR	NR	200	NR	NR
Dichloroethylene	NR	NR	NR	200	NR	NR
Diesel Fuels	NR	73	NR	200	NR	NR
Diethylamine	NR	NR	NR	NR	73	• •
Diethyl Cellosolve	NR	• •	NR	200	NR	100
Diethyl Ether	NR	NR	NR	NR	NR	• •
Diglycolic Acid	NR	140	• •	73	73	• •
Dill Oil	• •	• •	NR	• •	• •	• •
Dimethylamine	NR	140	NR	NR	140	NR
Dimethylformamide	NR	NR	NR	NR	NR	NR
Dimethyl Hydrazine	NR	NR	NR	NR	• •	• •
Dioctyl Phthalate (DEHP)	NR	NR	NR	73	73	NR

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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Chemical Resistance

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Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Dioxane	NR	NR	NR	NR	73	NR
Dioxane, 1.4	NR	NR	NR	NR	73	• •
Disodium Phosphate	120	140	180	• •	200	• •
Distilled Water	140	140	180	200	200	160
Divinylbenzene	NR	NR	NR	200	NR	• •
Dry Cleaning Fluid	NR	NR	NR	200	NR	NR
Dursban TC	NR	• •	NR	• •	• •	• •
EDTA, Tetrasodium, Aqueous Solution	140	140	180	200	200	160
Epsom Salt	120	140	180	• •	200	• •
Epichlorohydrin	NR	NR	NR	• •	• •	• •
Esters	NR	NR	NR	• •	• •	• •
Ethanol, Up to 5%	NR	140	180	• •	200	160
Ethanol, Over 5%	NR	140	NR	• •	200	160
Ethers	NR	NR	NR	NR	• •	NR
Ethyl Acetate	NR	NR	NR	NR	73	NR
Ethyl Acetoacetate	NR	NR	NR	NR	100	• •
Ethyl Acrylate	NR	NR	NR	NR	73	NR
Ethyl Benzene	NR	NR	NR	73	NR	NR
Ethyl Chloride	NR	NR	NR	140	73	73
Ethyl Chloroacetate	NR	NR	NR	• •	• •	• •
Ethylene Bromide	NR	NR	NR	73	NR	NR
Ethylene Chloride	NR	NR	NR	70	• •	• •
Ethylene Chlorohydrin	NR	NR	NR	NR	73	73
Ethylene Diamine	NR	NR	NR	• •	73	100
Ethylene Dichloride	NR	NR	NR	120	NR	NR
Ethyl Ether	NR	NR	NR	NR	NR	NR
Ethylene Glycol, Up to 50%	73	140	180	200	200	160
Ethylene Glycol, Over 50%	73	140	NR	200	200	160
Ethylene Oxide	NR	NR	NR	NR	NR	NR
Fatty Acids	140	140	73	185	NR	140
Ferric Acetate	NR	73	180	• •	• •	• •
Ferric Chloride	120	140	180	200	200	160
Ferric Hydroxide	140	140	180	180	180	100
Ferric Nitrate	140	140	180	200	200	160
Ferric Sulfate	140	140	180	185	200	140

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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Chemical Resistance

The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Ferrous Chloride	140	140	180	200	200	• •
Ferrous Hydroxide	140	73	180	180	180	• •
Ferrous Nitrate	140	73	140	200	180	160
Ferrous Sulfate	140	140	180	200	200	160
Fish Solubles	140	140	180	73	NR	• •
Fluorine Gas	NR	NR	NR	NR	NR	NR
Fluoboric Acid	• •	140	73	140	140	160
Fluorosilicic Acid, 30%	73	140	73	200	140	100
Formaldehyde, 35%	NR	140	NR	NR	140	140
Formalin (37% to 50% Formaldehyde)	NR	140	NR	NR	140	140
Formic Acid, Up to 25%	• •	73	180	NR	200	140
Formic Acid, Anhydrous	• •	73	NR	NR	• •	100
Freon F- 11	• •	140§	73§	73	NR	NR
Freon F-12	• •	140§	73§	NR	NR	130
Freon F-21	• •	NR	NR	NR	NR	NR
Freon F-22	• •	NR	NR	NR	NR	130
Freon F-113	• •	140§	• •	130	NR	130
Freon F-114	• •	140§	• •	NR	NR	73
Fructose	120	140	180	200	175	160
Fruit Juices	73	140	180	200	200	200
Furfural	NR	NR	NR	NR	140	73
Gallic Acid	• •	140	73	185	73	73
Gas, Manufactured	NR	73§	NR	• •	• •	• •
Gas, Natural	NR	140§	• •	185	NR	140
Gasoline, Unleaded	NR	NR	NR	200	NR	NR
Gasoline, Sour	NR	NR	NR	73	NR	NR
Gelatin	120	140	150	200	200	160
Gin	NR	140	NR	• •	• •	• •
Glucose	120	140	180	200	200	160
Glycerine	120	140	180	200	200	160
Glycerine, Glycerol	120	140	180	200	200	• •
Glycol, Ethylene, Up to 50%	73	140	180	200	200	200
Glycol, Ethylene, Over 50%	73	140	NR	200	200	200
Glycol, Polyethylene (Carbowax)	• •	140	140	200	180	73
Glycol, Polypropylene	73	NR	NR	200	200	200

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Chemical Resistance

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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Glycol, Propylene, Up to 25%	73	140	180	200	200	73
Glycol, Propylene, Up to 50%	73	140	NR	200	200	73
Glycolic Acid	• •	140	NR	NR	• •	73
Glycol Ethers	NR	140	NR	• •	• •	• •
Grape Sugar, Juice	73	140	180	185	200	160
Green Liquor	140	140	180	• •	150	70
Halocarbons Oils	NR	NR	NR	200	NR	NR
Heptane	73	140	NR	185	NR	73
Hexane	NR	73	73	73	NR	73
Hexanol	NR	100	NR	160	NR	73
Hydraulic Oil	NR	73	• •	200	NR	73
Hydrazine	NR	NR	NR	NR	70	• •
Hydrobromic Acid, Dilute	73	140	180	185	200	73
Hydrobromic Acid, 20%	73	140	73	185	140	73
Hydrobromic Acid, 50%	NR	140	73	185	140	73
Hydrochloric Acid, Dilute	73	140	180	200	140	73
Hydrochloric Acid, 20%	NR	140‡	180‡	200	140	73
Hydrochloric Acid Conc., 37%	NR	140‡	180‡	160	100	73
Hydrocyanic Acid, 10%	140	140	• •	185	200	• •
Hydrofluoric Acid, <10%	NR	140	140	150	73	100
Hydrofluoric Acid, 30%	NR	73	140	200	NR	NR
Hydrofluoric Acid, 40%	NR	73	NR	100	NR	NR
Hydrofluoric Acid, 50%	NR	NR	NR	73	NR	NR
Hydrofluoric Acid, 100%	NR	NR	NR	NR	NR	NR
Hydrofluosilicic Acid, 50%	NR	140	140	200	140	• •
Hydrogen	140§	140§	73§	200	200	160
Hydrogen Cyanide	• •	140	• •	• •	• •	73
Hydrogen Fluoride	NR	NR	NR	NR	73	NR
Hydrogen Peroxide, Dilute	73	140	73	200	73	NR
Hydrogen Peroxide, 36%	NR	140	73	200	NR	NR
Hydrogen Peroxide, 50%	NR	140	73	200	NR	NR
Hydrogen Peroxide, 90%	NR	NR	NR	200	NR	NR
Hydrogen Phosphide	• •	140	• •	• •	73	• •
Hydrogen Sulfide, Dry	• •	140	180	140	100	NR
Hydrogen Sulfide, Aqeous Sol.	• •	140	180	140	100	NR

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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Hydroquinone	• •	140	• •	185	NR	NR
Hydroxylamine Sulfate	• •	140	• •	• •	73	73
Hypochlorous Acid	73	140	CF	73	73	• •
Iodine	NR	NR	NR	73	73	NR
Iodine Solution, 10%	NR	NR	NR	200	150	• •
Iodine in Alcohol	NR	NR	NR	• •	• •	• •
Iron Salts	• •	• •	180	• •	• •	• •
Isopropanol	NR	140	NR	• •	• •	• •
Isopropyl Alcohol	NR	140	140	160	160	73
Isopropyl Ether	NR	NR	NR	NR	NR	NR
Isooctane	NR	NR	NR	185	NR	73
Jet Fuel	NR	NR	NR	200	NR	NR
Kerosene	NR	NR	NR	200	NR	73
Ketones	NR	NR	NR	NR	NR	NR
Kraft Liquor	73	140	180	100	• •	73
Lactic Acid, 25%	NR	140	100	200	140	73
Lactic Acid, 80%	NR	100	73	200	140	73
Lard Oil	73	140	NR	185	NR	73
Lauric Acid	• •	140	• •	100	• •	• •
Lauryl Chloride	• •	140	• •	200	140	• •
Lead Acetate	• •	140	180	NR	200	160
Lead Chloride	• •	140	180	140	NR	73
Lead Nitrate	• •	140	180	200	175	140
Lead Sulfate	• •	140	180	200	200	140
Lemon Oil	• •	140	NR	200	NR	73
Ligroine	NR	NR	NR	100	• •	73
Lime Sulfur	• •	140	180	185	200	100
Limonene	• •	• •	NR	• •	• •	• •
Linoleic Acid	• •	140	180	140	73	• •
Linoleic Oil	• •	140	180	73	• •	• •
Linseed Oil	73	140	NR	200	73	73
Linseed Oil, Blue	73	73	NR	200	• •	• •
Liqueurs	NR	140	NR	• •	200	160
Lithium Bromide (Brine)	• •	140	180	200	• •	• •
Lithium Chloride	• •	140	180	140	100	• •

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Lithium Sulfate	• •	140	180	• •	• •	• •
Lubricating Oil,Petroleum Based	NR	140	180	160	NR	NR
Lux Liquid	• •	NR	• •	• •	• •	• •
Lye Solutions	• •	140	180	• •	• •	• •
Machine Oil	NR	140	180	140	NR	NR
Magnesium Carbonate	120	140	180	200	170	140
Magnesium Chloride	120	140	180	170	170	160
Magnesium Citrate	120	140	180	200	175	• •
Magnesium Fluoride	120	• •	180	200	140	• •
Magnesium Hydroxide	120	140	180	200	200	• •
Magnesium Nitrate	120	140	180	• •	200	• •
Magnesium Oxide	120	• •	180	• •	140	160
Magnesium Salts, Inorganic	120	• •	180	200	160	160
Magnesium Sulfate	120	140	180	200	180	180
Maleic Acid	140	140	180	200	NR	73
Maleic Acid (Sat'd)	140	140	180	200	73	NR
Malic Acid	140	140	180	• •	• •	• •
Manganese Sulfate	120	140	180	200	175	160
Mercuric Acid	• •	• •	180	• •	• •	• •
Mercuric Chloride	• •	140	140	185	200	140
Mercuric Cyanide	• •	140	180	73	73	73
Mercuric Sulfate	• •	140	180	73	73	• •
Mercurous Nitrate	• •	140	180	73	73	NR
Mercury	• •	140	180	185	200	140
Methane	140§	140§	180§	185	NR	73
Methanol	NR	140	140	NR	160	160
Methoxyethyl Oleate	NR	73	• •	• •	• •	• •
Methyl Amine	NR	NR	NR	100	73	73
Methyl Bromide	NR	NR	NR	185	NR	NR
Methyl Cellosolve	NR	NR	NR	NR	NR	NR
Methyl Chloride	NR	NR	NR	73	NR	NR
Methyl Chloroform	NR	NR	NR	73	NR	NR
Methyl Ethyl Ketone	NR	NR	NR	NR	NR	NR
Methyl Formate	NR	• •	NR	NR	100	73
Methyl Isobutyl Ketone	NR	NR	NR	NR	NR	NR

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.

Chemical Resistance

The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

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Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Methyl Methacrylate	NR	NR	NR	NR	NR	NR
Methyl Sulfate	NR	73	73	• •	• •	• •
Methyl Sulfuric Acid	• •	140	73	NR	73	73
Methylene Bromide	NR	NR	NR	73	NR	NR
Methylene Chloride	NR	NR	NR	73	NR	NR
Methylene Chlorobromide	NR	NR	NR	NR	NR	NR
Methylene Iodine	NR	NR	NR	• •	200	• •
Methylisobutyl Carbinol	NR	NR	NR	73	73	73
Milk	140	140	73	200	200	200
Mineral Oil	73	140	180	200	NR	73
Molasses	120	140	180	185	100	150
Monochloroacetic Acid, 50%	73	140	73	70	NR	NR
Monoethanolamine	NR	NR	NR	185	70	NR
Motor Oil	73	140	180	200	NR	NR
Muriatic Acid, Up to 37% HCl	NR	140	180	160	100	73
Naphtha	NR	NR	NR	150	NR	NR
Naphthalene	NR	NR	NR	180	NR	NR
n-Heptane	NR	NR	NR	200	NR	73
Natural Gas	NR	140§	• •	185	NR	140
Nickel Acetate	73	73	180	NR	73	• •
Nickel Chloride	73	140	180	200	200	160
Nickel Nitrate	73	140	180	200	180	• •
Nickel Sulfate	73	140	180	200	200	160
Nicotine	NR	140	• •	• •	• •	NR
Nicotinic Acid	NR	140	180	• •	73	140
Nitric Acid, 10%	NR	140‡	140‡	NR	73	73
Nitric Acid, 30%	NR	140‡	140‡	NR	NR	NR
Nitric Acid, 40%	NR	140‡	140‡	NR	NR	NR
Nitric Acid, 50%	NR	73‡	100‡	NR	NR	NR
Nitric Acid, 70%	NR	NR	73‡	NR	NR	NR
Nitric Acid, 100%	NR	NR	NR	NR	NR	NR
Nitric Acid, Fuming	NR	NR	NR	NR	NR	NR
Nitrobenzene	NR	NR	NR	73	NR	• •
Nitroglycerine	NR	NR	NR	• •	• •	• •
Nitrous Acid, 10%	NR	73	• •	100	• •	• •

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.
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Chemical Resistance

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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Nitrous Oxide	73§	73§	• •	73	• •	NR
Nitroglycol	NR	NR	• •	• •	• •	73
Nonionic Surfactants	140	140	NR	200	200	160
1-Octanol	NR	• •	NR	• •	• •	• •
Ocenol	NR	• •	• •	• •	• •	• •
Oils, Vegetable	NR	140	NR	200	NR	• •
Oleic Acid	140	140	180	185	73	73
Oleum	NR	NR	NR	NR	NR	NR
Olive Oil	73	140	NR	150	NR	NR
Oxalic Acid (Sat'd)	• •	140	140	100	150	100
Oxalic Acid, 20%	73	140	180	100	150	100
Oxalic Acid, 50%	• •	140	73	100	150	100
Oxygen	140§	140§	180§	185	200	140
Ozonated Water	• •	73	73	NR	73	73
Ozone	140§	140§	180§	185	200	NR
Palm Oil	• •	• •	• •	73	NR	• •
Palmitic Acid, 10%	73	140	73	185	73	NR
Palmitic Acid, 70%	NR	NR	73	185	• •	NR
Paraffin	73	140	• •	200	NR	140
Peanut Oil	• •	• •	• •	150	NR	• •
Pentachlorophenol	NR	NR	NR	200	NR	NR
Peppermint Oil	NR	73	73	73	73	73
Peracetic Acid, 40%	NR	NR	NR	• •	• •	• •
Perchloric Acid, 10%	NR	73	180	200	73	140
Perchloric Acid, 70%	NR	NR	180	200	73	73
Perchloroethylene	NR	NR	NR	200	NR	NR
Perphosphate	• •	140	170	73	73	• •
Petrolatum	• •	140	180	• •	• •	• •
Petroleum Oils, Sour	• •	73	180	200	NR	• •
Petroleum Oils, Refined	73	140	180	200	NR	• •
Phenol	NR	NR	NR	200	73	NR
Phenylhydrazine	NR	NR	NR	NR	NR	• •
Phenylhydrazine Hydrochloride	NR	NR	NR	• •	• •	• •
Phosgene, Liquid	NR	NR	NR	NR	73	• •
Phosgene, Gas	NR	NR	NR	NR	73	• •

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.

Chemical Resistance

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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Phosphoric Acid, 10%	73	140‡	180‡	200	140	140
Phosphoric Acid, 50%	NR	140‡	180‡	160	160	160
Phosphoric Acid, 85%	NR	140‡	180‡	160	160	160
Phosphoric Anhydride	• •	73	73	• •	• •	• •
Phosphorous Pentoxide	• •	73	180	200	200	• •
Phosphorous, Red	NR	70	• •	• •	• •	• •
Phosphorus Trichloride	NR	NR	NR	• •	• •	NR
Phosphorous, Yellow	NR	73	• •	• •	• •	• •
Photographic Solutions	• •	140	180	185	• •	100
Phthalic Acid, 10%	73	73	• •	140	• •	NR
Picric Acid	NR	NR	NR	140	140	70
Pine Oil	NR	NR	NR	73	NR	NR
Plating Solutions, Brass	• •	140	180	140	73	140
Plating Solutions, Cadmium	• •	140	180	180	180	140
Plating Solutions, Chrome	• •	140	180	180	180	NR
Plating Solutions, Copper	• •	140	180	180	180	140
Plating Solutions, Gold	• •	140	180	180	73	73
Plating Solutions, Indium	• •	• •	• •	140	73	140
Plating Solutions, Lead	• •	140	180	180	180	140
Plating Solutions, Nickel	• •	140	180	180	180	140
Plating Solutions, Rhodium	• •	140	180	73	120	73
Plating Solutions, Silver	• •	140	180	140	120	140
Plating Solutions, Tin	• •	140	180	140	180	140
Plating Solutions, Zinc	• •	140	180	140	73	180
POE Oils (Polyolester)	NR	NR	NR	NR	NR	NR
Polyethylene Glycol (Carbowax)	• •	140	140	200	180	73
Polypropylene Glycol	73	NR	NR	200	200	200
Potash	140	140	180	200	170	160
Potassium Acetate	• •	• •	180	• •	• •	• •
Potassium Alum	• •	140	180	200	200	160
Potassium Aluminum Sulfate	• •	140	180	200	200	160
Potassium Amyl Xanthate	• •	73	• •	• •	• •	• •
Potassium Bicarbonate	140	140	180	200	170	160
Potassium Bichromate	140	140	180	200	170	• •
Potassium Bisulfate, Sat'd	• •	140	180	200	180	73

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Potassium Borate	140	140	180	200	200	• •
Potassium Bromate	140	140	180	200	• •	140
Potassium Bromide	140	140	180	200	170	160
Potassium Carbonate	140	140	180	200	170	160
Potassium Chlorate	140	140	180	140	140	100
Potassium Chloride	140	140	180	200	200	160
Potassium Chromate	140	140	180	200	170	70
Potassium Cyanide	140	140	180	185	140	160
Potassium Dichromate	140	140	180	200	170	• •
Potassium Ethyl Xanthate	• •	73	• •	• •	• •	• •
Potassium Ferricyanide	140	140	180	140	140	150
Potassium Ferrocyanide	140	140	180	140	140	150
Potassium Fluoride	140	140	180	200	140	• •
Potassium Hydroxide, 25%	73	140‡	180‡	NR	180	140
Potassium Hydroxide, 50%	73	140‡	180‡	NR	180	NR
Potassium Hypochlorite	• •	73‡	180‡	73	NR	• •
Potassium Iodide	• •	73	180	180	140	160
Potassium Nitrate	140	140	180	200	200	140
Potassium Perborate	140	140	180	73	73	73
Potassium Perchlorate, (Sat'd)	140	140	180	150	140	• •
Potassium Permanganate, 10%	140	140	180	140	200	100
Potassium Permanganate, 25%	140	140	180	140	140	100
Potassium Persulphate, (Sat'd)	73	140	180	200	200	140
Potassium Phosphate	73	• •	180	180	180	180
Potassium Sulfate	73	140	180	200	200	140
Potassium Sulfite	73	140	180	200	200	140
Potassium Tripolyphosphate	• •	• •	180	100	• •	73
Propane	140§	140§	73§	73	NR	73
Propanol	NR	140	NR	200	200	140
Propargyl Alcohol	NR	140	NR	140	140	NR
Propionic Acid, Up to 2%	NR	• •	180	• •	• •	NR
Propionic Acid, Over 2%	NR	• •	NR	• •	• •	NR
Propyl Alcohol	NR	140	NR	200	200	140
Propylene Dichloride	NR	NR	NR	73	NR	NR
Propylene Glycol, Up to 25%	73	140	180	200	200	73

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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Chemical Resistance

The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

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Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Propylene Glycol, Up to 50%	73	140	NR	200	200	73
Propylene Oxide	NR	NR	NR	NR	73	NR
Pyridine	NR	NR	NR	NR	73	NR
Pyrogallicia Acid	• •	73	• •	• •	• •	73
Quaternary Ammonium Salts	NR	140	NR	73	• •	73
Radon Gas	140§	140§	140§	200	200	200
Rayon Coagulating Bath	• •	140	NR	• •	• •	• •
Reverse Osmosis Water	140	140	180	200	200	200
Salicyclic Acid	• •	140	180	185	200	NR
Sea Water	140	140	180	200	200	200
Selenic Acid	• •	140	• •	NR	73	73
Silicic Acid	• •	140	• •	200	140	140
Silicone Oil	• •	100	180	200	140	200
Silver Chloride	140	• •	180	73	73	73
Silver Cyanide	140	140	180	140	140	73
Silver Nitrate	140	140	180	200	200	160
Silver Sulfate	140	140	180	200	170	73
Soaps	140	140	180	200	200	140
Sodium Acetate	120	140	180	NR	170	NR
Sodium Aluminate	120	• •	180	200	200	140
Sodium Alum	120	140	180	200	170	140
Sodium Arsenate	120	140	180	200	140	73
Sodium Benzoate	120	140	180	200	200	NR
Sodium Bicarbonate	120	140	180	200	200	160
Sodium Bichromate	120	140	180	200	140	73
Sodium Bisulfate	120	140	180	200	200	140
Sodium Bisulfite	120	140	180	200	200	140
Sodium Borate	120	73	180	140	140	100
Sodium Bromide	120	140	180	200	200	73
Sodium Carbonate	120	140	180	200	140	140
Sodium Chlorate	120	73	180	100	140	140
Sodium Chloride	120	140	180	200	140	160
Sodium Chlorite	120	NR	180	NR	NR	• •
Sodium Chromate	120	140	180	140	140	73
Sodium Cyanide	120	73	180	140	140	140

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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Chemical Resistance

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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Sodium Dichromate	120	140	180	200	140	NR
Sodium Ferricyanide	120	140	180	140	140	• •
Sodium Ferrocyanide	120	140	180	140	140	• •
Sodium Fluoride	120	73	140	140	140	73
Sodium Formate	• •	• •	180	• •	• •	• •
Sodium Hydroxide, 15%	120	140‡	CF	NR	180	160
Sodium Hydroxide, 30%	73	73‡	CF	NR	140	160
Sodium Hydroxide, 50%	73	73‡	CF	NR	140	160
Sodium Hydroxide, 70%	NR	73‡	CF	NR	140	160
Sodium Hypobromite	• •	• •	180	• •	• •	• •
Sodium Hypochlorite, Sat'd, 12.5%	NR	73‡	180‡	140	NR	NR
Sodium Iodide	• •	• •	180	140	140	140
Sodium Metaphosphate	120	73	180	73	73	• •
Sodium Nitrate	120	140	180	200	200	140
Sodium Nitrite	120	140	180	200	170	140
Sodium Palmitate	• •	140	180	• •	• •	• •
Sodium Perborate	120	140	180	73	73	73
Sodium Perchlorate	120	140	180	• •	• •	• •
Sodium Peroxide	NR	140	180	185	140	73
Sodium Phosphate, Alkaline	73	140	180	200	170	140
Sodium Phosphate, Acid	73	140	180	200	170	140
Sodium Phosphate, Neutral	73	140	180	200	170	140
Sodium Silicate	• •	• •	180	200	200	140
Sodium Sulfate	73	140	180	200	140	140
Sodium Sulfide	73	140	180	200	140	140
Sodium Sulfite	73	140	180	200	140	140
Sodium Thiosulfate	73	140	180	200	200	160
Sodium Tripolyphosphate	• •	• •	180	• •	• •	• •
Solicylaldehyde	NR	NR	• •	• •	• •	• •
Sour Crude Oil	NR	73	180	200	NR	NR
Soybean Oil	NR	140	180	200	NR	73
Soybean Oil, Epoxidized	NR	NR	NR	200	NR	NR
Stannic Chloride	120	140	180	200	100	NR
Stannous Chloride	120	140	180	200	73	160
Stannous Sulfate	• •	• •	180	• •	• •	• •

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
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	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Starch	140	140	180	200	170	160
Stearic Acid	• •	140	73	100	NR	73
Stoddard's Solvent	NR	NR	NR	185	NR	NR
Strontium Chloride	• •	• •	180	• •	• •	• •
Styrene Monomer	NR	NR	NR	NR	NR	NR
Succinic Acid	• •	140	• •	73	73	• •
Sugar Syrup	73	140	180	180	180	• •
Sulfamic Acid	NR	NR	180	NR	NR	73
Sulfate Liquors	• •	• •	• •	73	73	• •
Sulfite Liquor	• •	• •	180	140	140	73
Sulfur	• •	140	73	200	• •	73
Sulfur Chloride	NR	NR	180	140	NR	NR
Sulfur Dioxide, Dry	73§	140§	NR	100	73	NR
Sulfur Dioxide, Wet	73§	73§	NR	140	140	• •
Sulfur Trioxide	• •	140	180	140	73	NR
Sulfur Trioxide, Gas	140§	140§	• •	140	73	NR
Sulfuric Acid, 10%	120	140‡	180‡	200	140	160
Sulfuric Acid, 20%	120	140‡	180‡	200	140	160
Sulfuric Acid, 30%	NR	140‡	180‡	200	200	160
Sulfuric Acid, 50%	NR	140‡	180‡	200	200	160
Sulfuric Acid, 60%	NR	140‡	180‡	200	200	73
Sulfuric Acid, 70%	NR	140‡	180‡	200	NR	NR
Sulfuric Acid, 80%	NR	73‡	180‡	180	NR	NR
Sulfuric Acid, 90%	NR	NR	140‡	160	NR	NR
Sulfuric Acid, 93%	NR	NR	73‡	160	NR	NR
Sulfuric Acid, 98%	NR	NR	73‡	160	NR	NR
Sulfuric Acid, 100%	NR	NR	NR	160	NR	NR
Sulfurous Acid	NR	140	180	NR	NR	NR
Surfactants, Nonionic	140	140	NR	200	200	160
Tall Oil	• •	140	180	73	NR	73
Tannic Acid, 10%	NR	140	180	100	73	100
Tannic Acid, 30%	NR	• •	73	• •	• •	• •
Tanning Liquors	140	140	180	200	• •	73
Tar	NR	NR	NR	185	NR	73
Tartaric Acid	140	140	73	73	NR	73

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
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Number = Maximum Recommended Temp. (°F)** CF = Consult Factory NR = Not Recommended • • = Incomplete Data

Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Terpenes	NR	• •	NR	• •	• •	• •
Tetrachloroethylene	NR	NR	NR	200	NR	NR
Tetraethyl Lead	NR	73	• •	73	NR	• •
Tetrahydrodurane	NR	NR	NR	• •	• •	• •
Tetrahydrofuran	NR	NR	NR	NR	NR	NR
Tetralin	NR	NR	NR	NR	NR	NR
Tetra Sodium Pyrophosphate	• •	140	180	• •	• •	• •
Texanol	• •	• •	NR	• •	• •	• •
Thionyl Chloride	NR	NR	NR	• •	• •	NR
Thread Cutting Oils	73	73	• •	73	NR	• •
Titanium Tetrachloride	NR	NR	NR	185	NR	NR
Toluene, Toluol	NR	NR	NR	73	NR	NR
Toluene-Kerosene, 25%-75%	NR	NR	NR	73	NR	NR
Tomato Juice	73	73	73	200	200	140
Toxaphene-Xylene, 90%-100%	NR	NR	NR	73	NR	NR
Transformer Oil	NR	140	180	200	NR	73
Transmission Fluid, Type A	NR	NR	180	200	NR	73
Tributyl Phosphate	NR	NR	NR	NR	73	NR
Tributyl Citrate	NR	NR	NR	NR	73	73
Trichloroacetic Acid, ≤ 20%	NR	140	NR	NR	NR	NR
Trichloroethane	NR	NR	NR	185	NR	NR
Trichloroethylene	NR	NR	NR	185	NR	NR
Triethanolamine	73	73	73	NR	160	NR
Triethylamine	NR	73	NR	200	160	73
Trimethylpropane	NR	73	• •	• •	180	160
Trisodium Phosphate	73	140	180	185	73	73
Turpentine	NR	140	NR	150	NR	NR
Urea	73	140	180	185	200	140
Urine	140	140	180	73	200	140
Vaseline	NR	NR	NR	73	NR	140
Vegetable Oil	73	140	NR	200	NR	73
Vinegar	73	140	180	200	140	NR
Vinyl Acetate	NR	NR	NR	NR	73	NR
Water	140	140	180	200	200	160
Water, Acid Mine	140	140	180	• •	200	200

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.

Chemical Resistance

The following table gives the chemical resistance of ABS, PVC and CPVC thermoplastic piping materials and three commonly used seal materials. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This table is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com

Number = Maximum Recommended Temp. (°F)** CF = Consult Factory NR = Not Recommended • • = Incomplete Data

Chemical Name	Pipe & Fitting Materials Recommended Max. Temp (°F)			Seal Materials Recommended Max. Temp. (°F)		
	ABS	PVC	CPVC	Viton ®	EPDM	Neoprene
Water, Deionized	140	140	180	200	200	200
Water, Demineralized	140	140	180	200	200	200
Water, Distilled	140	140	180	200	200	200
Water, Potable	140	140	180	200	200	200
Water, Salt	140	140	180	200	200	200
Water, Sea	140	140	180	200	200	200
Water, Sewage	140	140	180	200	200	200
Water, Spa	NR	140	180	200	200	200
Water, Swimming Pool	140	140	180	200	200	200
WD 40	NR	• •	NR	• •	• •	• •
Whiskey	NR	140	180	140	200	140
White Liquor	73	140	180	180	200	140
Wines	NR	140	180	140	170	140
Xylene	NR	NR	NR	150	NR	NR
Zinc Acetate	• •	140	180	73	180	160
Zinc Bromide	• •	140	180	• •	• •	• •
Zinc Carbonate	120	• •	180	73	73	73
Zinc Chloride	120	140	180	200	180	180
Zinc Nitrate	120	140	180	200	180	• •
Zinc Phosphate	• •	• •	180	73	73	73
Zinc Sulfate	• •	140	180	200	180	140

Acrylonitrile-Butadiene-Styrene Polyvinyl Chloride Type 1 Grade 1 Chlorinated Polyvinyl Chloride Type IV Grade 1
Flourocarbon Elastomer (Viton ® is a registered trademark of the DuPont Co.) Ethylene Propylene Diene Monomer
** Maximum recommended temperature, for chemical resistance, under normal conditions. § Non-pressure, vent-only, applications when chemical is in gas form.

PVC Schedule 40 DWV Pipe

PVC Schedule 40 DWV Pipe

PVC SCHEDULE 40 (WHITE)		PLAIN END		PVC 1120		ASTM D 2665
PART NO.	NOM. SIZE	UPC # 611942-	QTY. PER SKID	AVG. OD (IN.)	MIN. WALL (IN.)	WT. PER 100 FT. (LBS.)
PVC 7100*	1¼″x10′	03945	2120′	1.660	.140	42.4
PVC 7100*	1¼″x20′	03946	4240′	1.660	.140	42.4
PVC 7112*	1½″x10′	03947	1650′	1.900	.145	51.8
PVC 7112*	1½″x20′	03948	3300′	1.900	.145	51.8
PVC 7200*	2″x10′	03949	1110′	2.375	.154	69.5
PVC 7200*	2″x20′	03950	2220′	2.375	.154	69.5
PVC 7300*	3″x10′	03951	1130′	3.500	.216	144.2
PVC 7300*	3″x20′	03952	1000′	3.500	.216	144.2
PVC 7400†	4″x10′	03953	600′	4.500	.237	205.5
PVC 7400†	4″x20′	03954	1340′	4.500	.237	205.5
PVC 7500†	5″x20′	04837	760′	5.563	.258	272.5
PVC 7600†	6″x10′	03955	330′	6.625	.280	361.2
PVC 7600†	6″x20′	03956	660′	6.625	.280	361.2
PVC 7800†	8″x10′	13087	140′	8.625	.322	543.6
PVC 7800†	8″x20′	03958	280′	8.625	.322	543.6
PVC 7910†	10″x20′	03959	220′	10.750	.365	770.7
PVC 7912†	12″x20′	03961	120′	12.750	.406	1019.0
PVC 7914†	14″x20′	04862	60′	14.000	.437	1205.0
PVC 7916†	16″x20′	04918	60′	16.000	.500	1575.7

*** Dual Marked ASTM D 1785 & ASTM D 2665. † Triple Marked ASTM D 1785 & ASTM D 2665 & ASTM F 480. NSF Listed. Meets All Requirements of ASTM D 1784, ASTM D 1785, and ASTM D 2665.**

MADE IN USA

⚠ WARNING

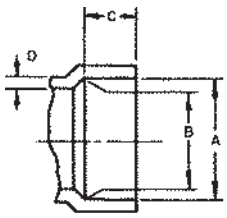
Testing with or use of compressed air or gas in ABS / CPVC / PVC pipe or fittings can result in explosive failures and cause severe injury or death.

- NEVER test with or transport/store compressed air or gas in ABS / CPVC / PVC pipe or fittings.
- NEVER test ABS / CPVC / PVC pipe or fittings with compressed air or gas, or air over water boosters.
- ONLY use ABS / CPVC / PVC pipe or fittings for water or approved chemicals.
- Refer to warnings on PPFA's website and ASTM D 1785.

CHARLOTTE PIPE AND FOUNDRY COMPANY®

PVC and ABS DWV Fittings

HUB DIMENSIONS



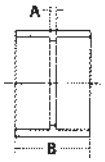
ABS

SIZE	A	B	C	D
1½	1.910	1.895	.687	.156
2	2.385	2.370	.750	.156
3	3.515	3.495	1.500	.218
4	4.515	4.495	1.750	.250
6	6.647	6.614	3.000	.281

PVC

SIZE	A	B	C	D
1¼	1.675	1.650	.687	.156
1½	1.915	1.895	.687	.156
2	2.390	2.370	.750	.156
3	3.520	3.495	1.500	.218
4	4.520	4.495	1.750	.250
6	6.647	6.614	3.000	.281
8	8.655	8.610	4.000	.322
10	10.776	10.737	5.000	.365
12	12.778	12.736	6.000	.406
14	14.035	13.985	7.000	.437
16	16.045	15.980	8.000	.500

PART NO. 100

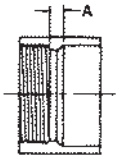


Coupling

HUB X HUB

SIZE	A	B
1¼	⅛	1⅝
1½ (PVC)	⅛	1 9/16
1½ (ABS)	⅛	1⅝
2 (PVC)	15/64	1¾
2 (ABS)	⅛	1 13/16
3	3/16	3 3/16
4	¼	3¾
6	¼	6¼
8 (PVC)	¼	8¼
10 (PVC)	5/16	10⅜
12 (PVC)	⅜	13 7/16
14(F) (PVC)	3	17
16(F) (PVC)	3 ⅜	19 ⅜

PART NO. 101



Female Adapter

FPT X HUB

SIZE	A
1½ (PVC)	¼
1½ (ABS)	3/16
2 (PVC)	¼
2 (ABS)	5/32
3 (PVC)	5/16
3 (ABS)	7/32
4	11/32
6 (PVC)	¼
6 (ABS)	3/32
8 (PVC)	9/16
10(F) (PVC)	2 ⅞
12(F) (PVC)	3 3/16

PART NO. PVC 101X

Female Adapter with Cleanout Plug

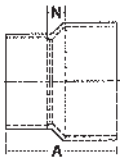
FPT X HUB

SIZE	
8 (PVC)	See Part No. 101 and 106
10(F) (PVC)	
12(F) (PVC)	

(F) Fabricated

Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. 102

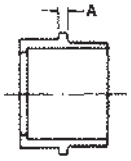


Pipe Increaser–Reducer

HUB X HUB

SIZE	A	N
1½ x 2 (PVC)	2 5/32	17/32
1½ x 2 (ABS)	2 3/32	5/8
1½ x 3	3 11/32	1 3/32
2 x 3 (PVC)	3 5/32	7/8
2 x 3 (ABS)	3 17/32	1 1/8
2 x 4 (PVC)	4	1 3/8
2 x 4 (ABS)	4 1/16	1 3/8
3 x 4	4 3/16	15/16
3 x 6 (PVC)	6½	2
4 x 6 (PVC)	6 9/32	1¾
4 x 8 (PVC)	7½	1 23/32
6 x 8 (PVC)	8 13/32	1 13/32
4 x 10** (PVC)	11 25/64	4 15/32
4 x 12** (PVC)	13 3/8	5 19/32
4 x 14(F) (PVC)	19	9¾
4 x 16(F) (PVC)	20 5/8	10¼
6 x 10 (PVC)	9 27/32	1⅞
6 x 12** (PVC)	13 3/8	4 3/8
6 x 14(F) (PVC)	20¾	10 15/32
6 x 16(F) (PVC)	22⅛	10 23/32
8 x 10 (PVC)	10¾	1 1/16
8 x 12 (PVC)	12¾	2 1/16
8 x 14(F) (PVC)	22½	11⅜
8 x 16(F) (PVC)	24¼	12⅛
10 x 12 (PVC)	12¾	1 11/16
10 x 14(F) (PVC)	17¾	5¾
10 x 16(F) (PVC)	25	12
12 x 14(F) (PVC)	16 11/16	3 3/16
12 x 16(F) (PVC)	20¾	6 7/16
14 x 16(F) (PVC)	19⅞	4 7/16

PART NO. 103

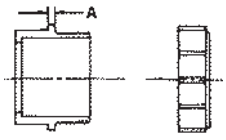


Trap Adapter–Male, Less Washer & Metal Nut

DWV SPIGOT X TUBULAR SLIP

SIZE	A
1½ x 1¼ (PVC)	13/64
1½	13/64
2	3/16

PART NO. 103P

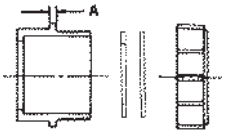


Trap Adapter–Male, with Washer & Polyethylene Nut

DWV SPIGOT X TUBULAR SLIP

SIZE	A
1½ x 1¼	13/64
1½	13/64
2 (PVC)	3/16

PART NO. 103R

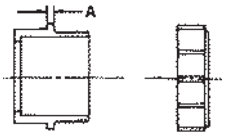


Trap Adapter–Male, with 1½" PVC Nut & Washer & 1½" x 1¼" Washer

DWV SPIGOT X TUBULAR SLIP WITH PVC NUT

SIZE	A
1½	3/16

PART NO. 103W

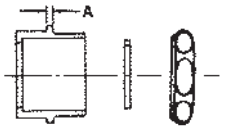


Trap Adapter–Male, with Washer & PVC Nut

DWV SPIGOT X TUBULAR SLIP WITH PVC NUT

SIZE	A
1½ x 1¼	13/64
1½	13/64
2	3/16

PART NO. 103X

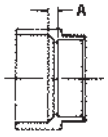


Trap Adapter–Male, with Washer & Chrome Nut

DWV SPIGOT X TUBULAR SLIP

SIZE	A
1½ x 1¼	13/64
1½	13/64
2 (PVC)	3/16

PART NO. 104

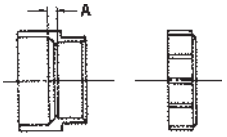


Trap Adapter–Female

NOTE: NOT A MALE ADAPTER.
DWV HUB X TUBULAR SLIP

SIZE	A
1½ x 1¼	5/16
1½	3/16

PART NO. 104P

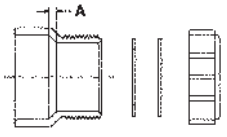


Trap Adapter–Female, with Washer & Polyethylene Nut

DWV HUB X TUBULAR SLIP

SIZE	A
1½ x 1¼	5/16
1½	3/16
1¼ (PVC)	3/16

PART NO. 104R



Trap Adapter–Female, with 1½" PVC Nut & Washer & 1½" x 1¼" Washer

DWV HUB X TUBULAR SLIP WITH PVC NUT

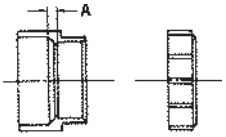
SIZE	A
1½	3/16

(F) Fabricated
** Assembled from two molded components
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. 104W

Trap Adapter–Female, with Washer & PVC Nut

DWV HUB X TUBULAR SLIP WITH PVC NUT

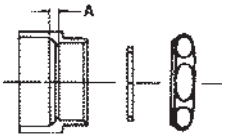


SIZE	A
1¼ (PVC)	3/16
1½ x 1¼	5/16
1½	3/16
2	3/32

PART NO. 104X

Trap Adapter–Female, with Washer & Chrome Nut

DWV HUB X TUBULAR SLIP

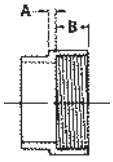


SIZE	A
1¼ (PVC)	3/16
1½ x 1¼ (PVC)	5/16
1½	3/16
2	9/64

PART NO. 105

Fitting Cleanout Adapter

SPIGOT X FPT

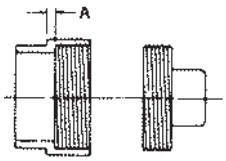


SIZE	A	B
1¼ (PVC)	3/16	3/4
1½ (PVC)	5/32	3/4
1½ (ABS)	3/16	23/32
2 (PVC)	5/32	7/8
2 (ABS)	1/16	27/32
3 (PVC)	7/32	1 14/32
3 (ABS)	7/32	1 5/32
4 (PVC)	1/4	7/8
4 (ABS)	7/32	1 9/32
6 (PVC)	5/16	1 1/16
8 (PVC)	3/8	1½
10(F) (PVC)	15/16	1 21/32
12(F) (PVC)	1⅛	2

PART NO. 105X

Fitting Cleanout Adapter with Cleanout Plug

SPIGOT X FPT

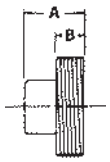


SIZE	A
For dimensions see part numbers 105 and 106.	

PART NO. 106

Cleanout Plug

MPT

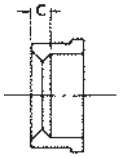


SIZE	A	B
1½	1⅜	5/8
2	1⅜	5/8
2½ (ABS)	1½	3/4
3	1¾	3/4
4	1⅞	7/8
6 (PVC)	2	1
6 (ABS)	1⅞	31/32
8 (PVC)	2⅜	1⅜
10 (PVC)	2 7/16	1 7/16
12 (PVC)	2 17/32	1 17/32

PART NO. 107

Flush Bushing

SPIGOT X HUB

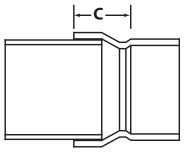


SIZE	C
1½ x 1¼	3/16
2 x 1¼	5/16
2 x 1½ (PVC)	5/16
2 x 1½ (ABS)	1/8
3 x 1½ (PVC)	1
3 x 1½ (ABS)	25/32
3 x 2 (PVC)	7/8
3 x 2 (ABS)	23/32
4 x 2 (PVC)	1 1/8
4 x 2 (ABS)	1 3/16
4 x 3 (PVC)	1/2
4 x 3 (ABS)	1/4
6 x 4 (PVC)	1 3/4
6 x 4 (ABS)	1 21/32
8 x 4 (PVC)	2 7/8
8 x 6 (PVC)	1 5/8
10 x 4** (PVC)	4 7/16
10 x 6** (PVC)	3 5/32
10 x 8 (PVC)	1½
12 x 4** (PVC)	5 5/32
12 x 6** (PVC)	4 5/32
12 x 8 (PVC)	2½
12 x 10 (PVC)	1½

PART NO. PVC 107

Concentric Reducer Bushing

SPIGOT X HUB

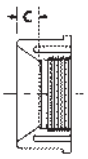


SIZE	C
14 x 4(F) (PVC)	8
14 x 6(F) (PVC)	8 63/64
14 x 8(F) (PVC)	9 7/16
14 x 10(F) (PVC)	9 5/8
14 x 12(F) (PVC)	7 3/8
16 x 4(F) (PVC)	8 3/4
16 x 6(F) (PVC)	9 1/4
16 x 8(F) (PVC)	10 1/4
16 x 10(F) (PVC)	10 7/8
16 x 12(F) (PVC)	10 5/8
16 x 14(F) (PVC)	9 1/4

PART NO. 108

Flush Bushing (Cleanout Adapter)

SPIGOT X FPT



SIZE	C
2 x 1½	5/16
8 x 6(CP) (PVC)	1 5/8

(F) Fabricated

** Assembled from two molded components

(CP) PVC 108, 8″x6″ is available only as a component part of PVC 444X.

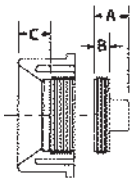
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 108X

Flush Bushing (Cleanout Adapter) with Plug

SPIGOT

SIZE	A	B	C
10 x 8 (PVC)	For dimensions see part numbers 106 & 108		
12 x 8 (PVC)			



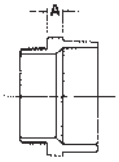
PART NO. 109

Male Adapter

MPT X HUB

NOTE: NOT A TRAP ADAPTER. WILL NOT ACCEPT A TAIL PIECE. SEE PART NUMBER 104

SIZE	A
1¼ (PVC)	3/16
1¼ x 1½ (PVC)	3/16
1½	3/16
2	3/16
3	3/8
4	3/8

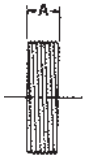


(Octagon shoulders for tightening purposes.)

PART NO. 110

Flush Cleanout Plug & PVC 110B Flush Cleanout Plug with Threaded Brass Insert

SIZE	A
2 (PVC)	5/8
2 (ABS)	11/16
3 (PVC)	3/4
3 (ABS)	27/32
4 (PVC)	3/4
4 (ABS)	7/8



PART NO. 111

Male Fitting Adapter

MPT X SPIGOT

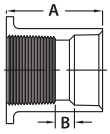
SIZE	A	B
1½	1 13/16	3/4
1½ x 1¼ (PVC)	1 11/16	11/16
2 (PVC)	1 15/16	7/8
2 (ABS)	1 7/8	7/8
3 (PVC)	3 1/16	1½

PART NO. PVC 113

Tray Plug Adapter

HUB

SIZE	A	B
1½ (PVC)	2 9/16	17/32

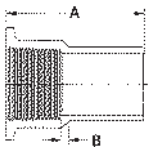


PART NO. ABS 113S

Tray Plug Adapter

SPIGOT

SIZE	A	B
1½ (ABS)	3 5/16	¼

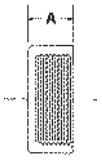


PART NO. ABS 114

Threaded Cap

FPT

SIZE	A
1½ (ABS)	7/8

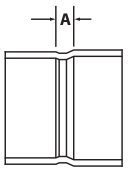


PART NO. PVC 115

Adapter Coupling

SDR 35 HUB X DWV HUB

SIZE	A
8(F) (PVC)	1¾
10(F) (PVC)	3½
10 x 8(F) (PVC)	3½
12(F) (PVC)	1

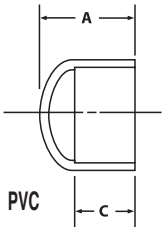


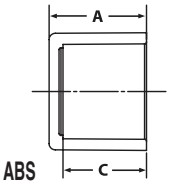
PART NO. 116

Cap

SOCKET

SIZE	A	C
1½ (PVC)	1 15/16	1 5/16
1½ (ABS)	1¼	1 1/16
2 (PVC)	2 5/32	1 3/8
2 (ABS)	1 3/16	31/32
3 (PVC)	2 15/16	1 29/32
3 (ABS)	2 3/32	1 27/32
4 (PVC)	3 1/8	2 1/32
4 (ABS)	2 11/32	1¾
6 (PVC)	4¾	3 5/8
6 (ABS)	3 15/32	3 1/32
8 (PVC)	6 13/32	4
10 (PVC)	7¾	5
12 (PVC)	9 7/16	6
14(F) (PVC)	5½	5 1/16
16(F) (PVC)	5¾	5¼





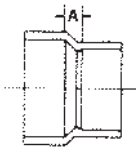
PART NO. 117

Adapter Coupling

(Adapts Sewer and Drain Spigot to DWV Spigot)

HUB X HUB

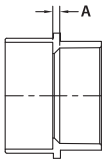
SIZE	A
3 x 3 (PVC)	1/8
4 x 3	3/4
4 x 4 (PVC)	1/2
4 x 4 (ABS)	3/8



(F) Fabricated

Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 117X



Adapter Coupling
(Adapts Sewer and Drain Spigot to DWV Hub)
HUB X SPG

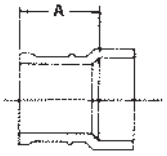
SIZE	A
4 x 3 (PVC)	1/4

PART NO. 118

Adapter Bushing
(Adapts DWV Hub to Sewer and Drain Spigot)
DWV SPIGOT X HUB

SIZE	A	B
3 (PVC)	1/4	1 3/4
4	1/4	2

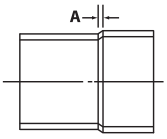
PART NO. 119



No-Hub Adapter
(Adapts Cast Iron No-Hub Spigot to DWV Spigot)
SPIGOT X HUB

SIZE	A
1 1/2 (PVC)	1 27/32
2 (PVC)	1 23/32
2 (ABS)	1 5/8
2 x 1 1/2 (PVC)	1 11/16
3	1 13/16
4	1 27/32
4 x 3 (PVC)	2 5/32

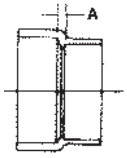
PART NO. PVC 120



Adapter Bushing
DWV SPIGOT X SDR 35 HUB

SIZE	A
8(F) (PVC)	5/8
10(F) (PVC)	5/8
12(F) (PVC)	5/8

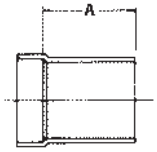
PART NO. 122



Spigot Adapter, Cast Iron
(Adapts Cast Iron Spigot to DWV Spigot)
HUB X HUB

SIZE	A
2 x 2	3/8
3 x 3 (PVC)	7/16
4 x 4 (PVC)	1/2
4 x 4 (ABS)	7/16

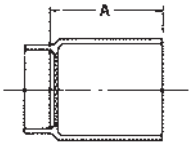
PART NO. 123



Hub Adapter, Cast Iron
(Adapts DWV Spigot to Cast Iron Hub)
HUB X SPIGOT

SIZE	A
2 x 2(P)	3 23/32
3 x 3(P) (PVC)	4 5/64
4 x 4(P)	4 25/64

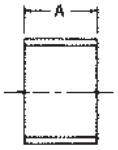
PART NO. PVC 123R



Hub Adapter, Cast Iron, Increaser
(Adapts DWV Spigot to Cast Iron Hub)
HUB X SPIGOT

SIZE	A
1 1/2 x 2(P) (PVC)	3 1/2
3 x 4(P) (PVC)	4

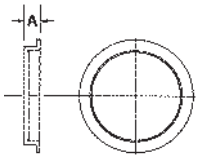
PART NO. 130



Repair Coupling
HUB X HUB

SIZE	A
1 1/2 (PVC)	1 5/8
1 1/2 (ABS)	1 1/2
2 (PVC)	1 7/8
2 (ABS)	1 13/16
3	3 3/16
4 (PVC)	3 3/4
4 (ABS)	3 17/32
6 (PVC)	6 1/4
8(F) (PVC)	8 3/16
10(F) (PVC)	10 3/16
12(F) (PVC)	12 3/16

PART NO. PVC 131



Test Cap(C1)

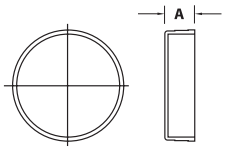
SIZE	A
1 1/2 (PVC)	9/32
2 (PVC)	9/32
3 (PVC)	5/16
4 (PVC)	3/8

(C1) Inserts into pipe
(P) Plain End: Joint can be made with compression gasket only.
(F) Fabricated
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 132

Outside Diameter Test Cap[C2]

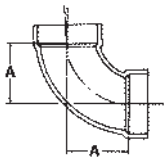
SIZE	A
1½ (PVC)	9/16
2 (PVC)	9/16
3 (PVC)	9/16
4 (PVC)	9/16



PART NO. 300

1/4 Bend
(Sanitary 90° Ell)
ALL HUB

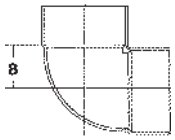
SIZE	A
1¼ (PVC)	1 9/16
1½	1¾
2 (PVC)	2 5/16
2 (ABS)	2¼
3	3 1/16
4	3⅞
6	5
8 (PVC)	6
10 (PVC)	9 9/32
12 (PVC)	11
14[F] (PVC)	16¾
16[F] (PVC)	20 9/16



PART NO. PVC 300A

Short 1/4 Bend[N]
(90° Ell)
ALL HUB

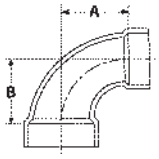
SIZE	B
8[N] (PVC)	4½
10[N] (PVC)	6¼
12[N] (PVC)	7 5/16



PART NO. 300R

1/4 Bend, Reducing
ALL HUB

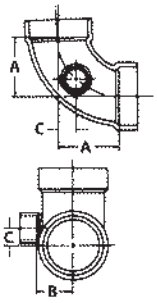
SIZE	A	B
2 x 1½	2 7/16	2 5/16



PART NO. 300S

1/4 Bend with Side Inlet
HUB X HUB

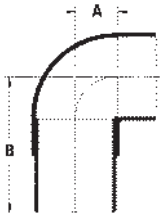
SIZE	A	B	C
3 x 3 x 1½ (PVC)	3 5/64	1⅞	15/16
3 x 3 x 2	3 5/64	1⅞	15/16



PART NO. PVC 301

Vent 1/4 Bend, Street
HUB X SPIGOT

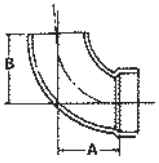
SIZE	A	B
8[F] (PVC)	4½	13½
10[F] (PVC)	6¼	18¾
12[F] (PVC)	7 5/16	18 13/16



PART NO. 302

1/4 Bend, Street
(Sanitary 90° Street Ell)
SPIGOT X HUB

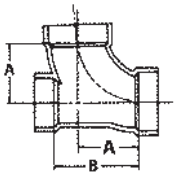
SIZE	A	B
1¼ (PVC)	1⅝	2 5/16
1½	1¾	2½
2	2 5/16	3 3/16
3	3 1/16	4 9/16
4	3⅞	5⅝
6 (PVC)	5 3/16	8⅛
8 (PVC)	6⅛	10
10[F] (PVC)	14 7/16	19¾
12[F] (PVC)	16⅜	19
14[F] (PVC)	16¼	23 9/16
16[F] (PVC)	19⅞	23 7/16



PART NO. 303

1/4 Bend, with Low Heel Inlet
ALL HUB

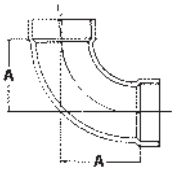
SIZE	A	B
3 x 3 x 1½ (PVC)	3 1/16	4 3/16
3 x 3 x 1½ (ABS)	3 1/16	4⅛
3 x 3 x 2	3 1/16	4 7/16
4 x 4 x 2	3⅞	5 7/16



PART NO. 304

Long Sweep 1/4 Bend
HUB X HUB

SIZE	A
1½	2¾
2	3¼
3 (PVC)	4 1/16
3 (ABS)	4
4	4 15/16
6 (PVC)	9



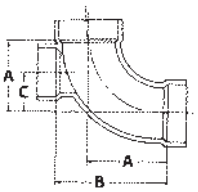
[C2] Inserts over pipe
[F] Fabricated
[N] Not a sanitary pattern
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 305

Long Sweep 1/4 Bend with High Heel Inlet

ALL HUB

SIZE	A	B	C
3 x 3 x 2 (PVC)	4 1/16	5 5/8	2 1/4

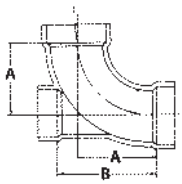


PART NO. 307

Long Sweep 1/4 Bend with Low Heel Inlet

ALL HUB

SIZE	A	B
3 x 3 x 1 1/2 (ABS)	4	4 19/32
3 x 3 x 2 (PVC)	4 1/16	4 15/16
3 x 3 x 2 (ABS)	3 15/16	4 13/16

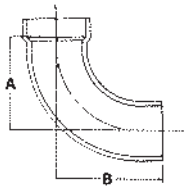


PART NO. 309

Long Sweep 1/4 Bend, Street

HUB X SPIGOT

SIZE	A	B
1 1/2 (PVC)	2 3/4	3 19/32
1 1/2 (ABS)	2 25/32	3 15/32
2	3 1/4	4 1/8
3	4 5/32	5 9/16
4 (PVC)	4 15/16	6 11/16

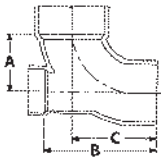


PART NO. 310

1/4 Bend, Street with Low Heel Inlet

HUB X SPIGOT X HUB

SIZE	A	B	C
3 x 3 x 2	3 1/16	5 15/16	4 9/16

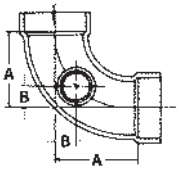


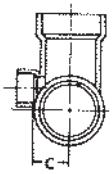
PART NO. PVC 311

Long Sweep 1/4 Bend, with Side Inlet

ALL HUB

SIZE	A	B	C
3 x 3 x 2 (PVC)	4 1/16	1 3/8	1 3/4





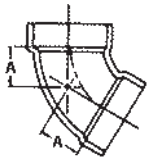
PART NO. 319

1/6 Bend

(60° EII)

HUB X HUB

SIZE	A
1 1/2	1
2 (PVC)	1 5/16
2 (ABS)	1 1/4
3	1 11/16
4 (PVC)	2 1/16
4 (ABS)	2



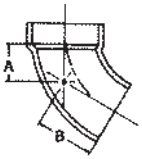
PART NO. 320

1/6 Bend, Street

(60° Street EII)

HUB X SPIGOT

SIZE	A	B
1 1/2	1	1 3/4
2	1 5/16	2 3/16
3	1 11/16	3 3/16
4 (PVC)	2 1/16	3 13/16



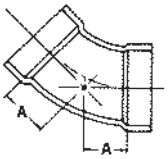
PART NO. 321

1/8 Bend

(45° EII)

HUB X HUB

SIZE	A
1 1/4 (PVC)	1
1 1/2	1 1/8
2	1 1/2
3	1 3/4
4	2 3/16
6	2 1/16
8 (PVC)	2 1/16
10 (PVC)	3 1/8
12 (PVC)	3 31/64
14(F) (PVC)	8 1/4
16(F) (PVC)	10 5/16



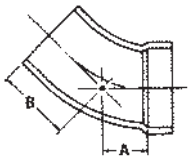
PART NO. 323

1/8 Bend, Street

(45° Street EII)

SPIGOT X HUB

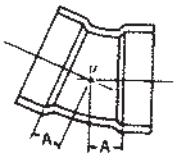
SIZE	A	B
1 1/4 (PVC)	1	1 3/4
1 1/2 (PVC)	1 1/8	1 7/8
1 1/2 (ABS)	1 1/16	1 7/8
2 (PVC)	1 1/2	2 3/8
2 (ABS)	1 15/32	2 1/8
3	1 3/4	3 1/4
4	2 3/16	3 15/16
6 (PVC)	2 1/16	5 5/64
6 (ABS)	2 1/16	5
8 (PVC)	2	6 3/32
10 (PVC)	3 1/8	8 5/32
12 (PVC)	3 31/64	9 1/2
14(F) (PVC)	9 3/8	15 9/16
16(F) (PVC)	10 5/16	18 1/2



(F) Fabricated

Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

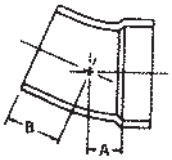
PART NO. 324



1/16 Bend
(22½° Ell)
HUB X HUB

SIZE	A
1½	½
2 (PVC)	11/16
2 (ABS)	½
3	13/16
4	1
6	1½
8 (PVC)	1½
10 (PVC)	2
12 (PVC)	2
14(F) (PVC)	5¼
16(F) (PVC)	5 13/16

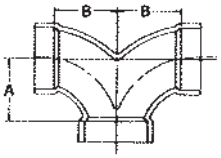
PART NO. 326



1/16 Bend, Street
(22½° Street Ell)
SPIGOT X HUB

SIZE	A	B
1½	½	1¼
2	11/16	1½
3	13/16	2 5/16
4	1	2¾
6 (PVC)	1½	5 3/64
8(F) (PVC)	6⅛	10 15/16
10(F) (PVC)	5 11/16	11¾
12(F) (PVC)	5½	14 1/16
14(F) (PVC)	6 9/16	13⅞
16(F) (PVC)	8 5/16	16¾

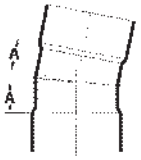
PART NO. 327



Double 1/4 Bend
ALL HUB

SIZE	A	B
1½	1¾	1¾
2 (PVC)	2 5/16	2 5/16
2 (ABS)	2¼	2 5/16
3 (PVC)	3 1/16	3 1/16
3 (ABS)	3	3
2 x 1½ x 1½ (PVC)	1 15/16	2 3/16
2 x 1½ x 1½ (ABS)	1 29/32	2

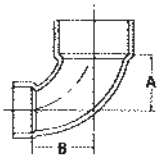
PART NO. PVC 328



1/32 Bend
HUB X HUB

SIZE	A
8(F) (PVC)	5⅛
10(F) (PVC)	5⅞
12(F) (PVC)	5 11/16

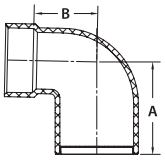
PART NO. 329



Closet Bend, Reducing
HUB X HUB

SIZE	A	B
3 x 4 (PVC)	3	3⅜
3 x 4 (ABS)	3 3/32	3 7/16

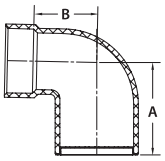
PART NO. 330



Closet Bend, Reducing
HUB X SPIGOT

SIZE	A	B
3 x 4	5 1/16	3 11/32

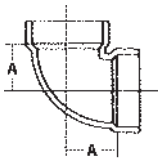
PART NO. 330X



Closet Bend, Reducing with Test Cap
HUB X SPIGOT

SIZE	A	B
3 x 4	5	5

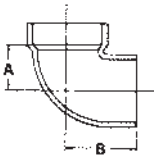
PART NO. 331



Vent Ell
(90° Short Turn Ell)
HUB X HUB

SIZE	A
1½	1 3/16
2	1½
3	1⅞

PART NO. 333



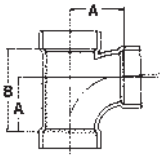
Vent Ell, Street
(90° Short Turn Street Ell)
HUB X SPIGOT

SIZE	A	B
1½ (PVC)	1 7/32	1 15/16
1½ (ABS)	1 3/16	1 15/16
2	1½	2⅜
3 (PVC)	1⅞	3½

(F) Fabricated

Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. 400

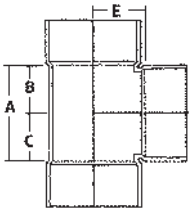


Sanitary Tee

ALL HUB

SIZE	A	B
1¼ (PVC)	1 9/16	2 5/16
1½ (PVC)	1¾	2¾
1½ (ABS)	1 23/32	2 21/32
2 (PVC)	2 5/16	3 11/16
2 (ABS)	2 5/16	3 19/32
3 (PVC)	3 1/16	4⅞
3 (ABS)	3 1/32	4 13/16
4	3⅞	6⅛
6	5	8½
8 (PVC)	6	10½
10(F) (PVC)	16 13/32	16½
12(F) (PVC)	19⅛	19½

PART NO. PVC 400A

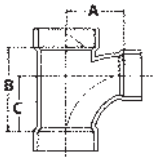


Straight Tee (N)

ALL HUB

SIZE	A	B	C	E
8(N) (PVC)	9	4½	4½	4½
10(N) (PVC)	12½	6¼	6¼	6 5/16
12(N) (PVC)	14 7/16	7 7/32	7 7/32	7¼
14(N)(F) (PVC)	21	10½	10½	11⅝
16(N)(F) (PVC)	23⅞	11 15/16	11 15/16	14 3/16

PART NO. 401

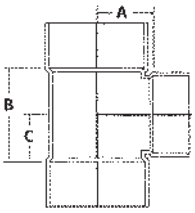


Sanitary Tee, Reducing

ALL HUB

SIZE	A	B	C
2 x 1½ x 1½ (PVC)	2 3/16	3⅛	1 15/16
2 x 1½ x 1½ (ABS)	2 5/32	3 1/16	1 29/32
2 x 1½ x 2 (PVC)	2 5/16	3 11/16	2 5/16
2 x 1½ x 2 (ABS)	2 9/32	3 19/32	2¼
2 x 2 x 1½	2 3/16	3⅛	1 15/16
3 x 3 x 1½ (PVC)	2 9/16	2 11/16	1¾
3 x 3 x 1½ (ABS)	2½	2⅝	1 23/32
3 x 3 x 2 (PVC)	2⅞	3 5/16	2⅛
3 x 3 x 2 (ABS)	2⅞	3¼	2 1/32
4 x 4 x 1½ (PVC)	3¼	3 1/16	2
4 x 4 x 2	3 5/16	3 3/16	2 1/16
4 x 4 x 3 (PVC)	3 9/16	4¾	3
4 x 4 x 3 (ABS)	3 17/32	4 21/32	2 31/32
6 x 6 x 4 (PVC)	4 27/32	6 3/64	3 25/32
6 x 6 x 4 (ABS)	4 9/32	5 25/32	3 19/32
8 x 8 x 4** (PVC)	9⅛	10 7/16	6
8 x 8 x 6** (PVC)	7¾	10 31/64	6 3/64

PART NO. PVC 401A

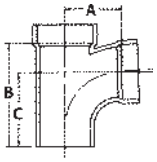


Straight Tee, Reducing (N)

ALL HUB

SIZE	A	B	C
8 x 8 x 4(N)** (PVC)	7⅞	10½	5¼
8 x 8 x 6(N)** (PVC)	6⅞	10½	5¼
10 x 10 x 4(N)** (PVC)	9¼	10⅜	5 3/16
10 x 10 x 6(N)** (PVC)	8	10⅜	5 3/16
10 x 10 x 8(N) (PVC)	6 11/32	10⅜	5 3/16
12 x 12 x 4(N)*** (PVC)	9 27/32	10¼	5⅛
12 x 12 x 6(N)** (PVC)	8 29/32	10¼	5⅛
12 x 12 x 8(N) (PVC)	7 5/32	10¼	5⅛
12 x 12 x 10(N) (PVC)	7 3/16	12 7/16	6 7/32
14 x 14 x 4(N)(F) (PVC)	10 11/16	10	5
14 x 14 x 6(N)(F) (PVC)	11¼	12	6
14 x 14 x 8(N)(F) (PVC)	11⅝	15	7½
14 x 14 x 10(N)(F) (PVC)	12	17	8½
14 x 14 x 12(N)(F) (PVC)	12⅜	19	9½
16 x 16 x 4(N)(F) (PVC)	12 15/16	10⅜	5 3/16
16 x 16 x 6(N)(F) (PVC)	12¼	14	7
16 x 16 x 8(N)(F) (PVC)	12⅝	16	8
16 x 16 x 10(N)(F) (PVC)	13	18	9
16 x 16 x 12(N)(F) (PVC)	13 7/16	19¾	9⅞

PART NO. 403

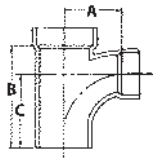


Sanitary Tee, Street

SPIGOT X HUB X HUB

SIZE	A	B	C
1½ (PVC)	1¾	3½	2½
1½ (ABS)	1 23/32	3 13/32	2 15/32
2 (PVC)	2 5/16	4 9/16	3 7/32
2 (ABS)	2 5/16	4 15/32	3⅛
3	3	6⅜	4 9/16
4	3⅞	7⅞	5⅝

PART NO. 404



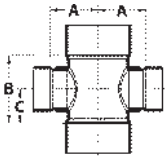
Sanitary Tee, Street Reducing

SPIGOT X HUB X HUB

SIZE	A	B	C
2 x 1½ x 1½ (PVC)	2 5/32	4	2 27/32
2 x 1½ x 1½ (ABS)	2 3/16	4	2¾
2 x 1½ x 2 (ABS)	2 5/16	4 17/32	3⅛
2 x 2 x 1½ (PVC)	2⅛	4	2⅞
2 x 2 x 1½ (ABS)	2 5/32	3 15/16	2⅞
3 x 3 x 1½	2 9/16	4 3/16	3¼
3 x 3 x 2	2⅞	4¾	3⅝
4 x 4 x 2 (PVC)	3 5/16	4 15/16	3 13/16

(F) Fabricated
(N) Not a sanitary pattern
** Assembled from two molded components
*** Assembled from three molded components
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 410

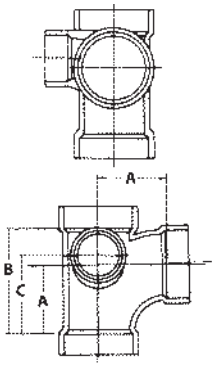


Tee Cross

ALL HUB

SIZE	A	B	C
6 x 6 x 4 x 4(F) (PVC)	5 11/16	9 1/4	4 5/8
6 x 6 x 6 x 6(F) (PVC)	6 1/8	10 3/4	5 3/8
8 x 8 x 4 x 4(F) (PVC)	6 5/16	8 7/8	4 7/16
8 x 8 x 6 x 6(F) (PVC)	7 7/32	10 7/8	5 7/16
8 x 8 x 8 x 8(F) (PVC)	8 5/16	13 1/8	6 9/16
10 x 10 x 4 x 4(F) (PVC)	7 3/4	12	6
10 x 10 x 6 x 6(F) (PVC)	8 1/2	11 1/2	5 3/4
10 x 10 x 8 x 8(F) (PVC)	8 7/8	13 1/2	6 3/4
10 x 10 x 10 x 10(F) (PVC)	8	18 3/8	9 3/16
12 x 12 x 4 x 4(F) (PVC)	8 7/8	10	5
12 x 12 x 6 x 6(F) (PVC)	9 3/4	12	6
12 x 12 x 8 x 8(F) (PVC)	9 7/8	15 3/4	7 7/8
12 x 12 x 10 x 10(F) (PVC)	10 1/4	16	8
12 x 12 x 12 x 12(F) (PVC)	9 1/8	21	10 1/2

PART NO. 416

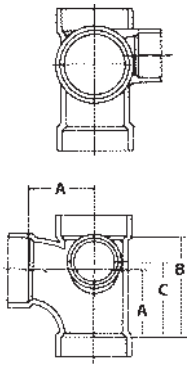


Sanitary Tee with Left Side Inlet

ALL HUB

SIZE	A	B	C
3 x 3 x 3 x 1 1/2	3 1/16	4 7/8	3 11/16
3 x 3 x 3 x 2 (PVC)	3 1/16	4 7/8	3 11/16
3 x 3 x 3 x 2 (ABS)	3 1/32	4 13/16	3 23/32
4 x 4 x 4 x 2 (PVC)	3 7/8	6 1/8	5

PART NO. 417

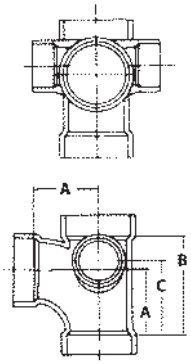


Sanitary Tee with Right Side Inlet

ALL HUB

SIZE	A	B	C
3 x 3 x 3 x 1 1/2	3 1/16	4 7/8	3 11/16
3 x 3 x 3 x 2 (PVC)	3 1/16	4 7/8	3 11/16
3 x 3 x 3 x 2 (ABS)	3 1/32	4 27/32	3 5/8
4 x 4 x 4 x 2 (PVC)	3 7/8	6 1/8	5

PART NO. 418

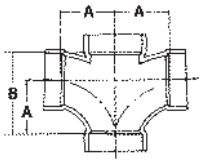


Sanitary Tee with Left & Right Side Inlets

ALL HUB

SIZE	A	B	C
3 x 3 x 3 x 2 x 2	3 1/16	4 7/8	3 11/16
4 x 4 x 4 x 2 x 2 (PVC)	3 7/8	6 1/8	5

PART NO. 428



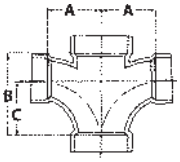
Double Sanitary Tee

(Sanitary Cross)

ALL HUB

SIZE	A	B
1 1/2 (PVC)	1 3/4	2 3/4
1 1/2 (ABS)	1 23/32	2 5/8
2 (PVC)	2 5/16	3 11/16
2 (ABS)	2 5/16	3 9/16
3	3 1/16	4 7/8
4 (PVC)	3 7/8	6 1/8
4 (ABS)	3 27/32	6 1/32

PART NO. 429



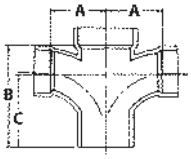
Double Sanitary Tee, Reducing

(Sanitary Cross)

ALL HUB

SIZE	A	B	C
2 x 2 x 1 1/2 x 1 1/2 (PVC)	2 3/16	3 1/8	1 15/16
2 x 2 x 1 1/2 x 1 1/2 (ABS)	2 5/32	3 5/32	2
3 x 3 x 1 1/2 x 1 1/2 (PVC)	2 9/16	2 11/16	1 3/4
3 x 3 x 1 1/2 x 1 1/2 (ABS)	2 1/2	2 19/32	1 5/8
3 x 3 x 2 x 2 (PVC)	2 7/8	3 5/16	2 1/8
3 x 3 x 2 x 2 (ABS)	2 29/32	3 7/32	2 5/32
4 x 4 x 2 x 2 (PVC)	3 5/16	3 3/16	2 1/16
4 x 4 x 2 x 2 (ABS)	3 9/32	3 1/8	2
4 x 4 x 3 x 3 (PVC)	3 9/16	4 3/4	3
4 x 4 x 3 x 3 (ABS)	3 5/8	4 21/32	2 31/32

PART NO. PVC 431



Double Sanitary Tee Street, Reducing

(Sanitary Cross)

SPIGOT X HUB X HUB X HUB

SIZE	A	B	C
3 x 3 x 1 1/2 x 1 1/2 (PVC)	2 9/16	4 3/16	3 1/4

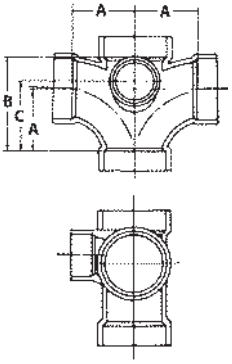
(F) Fabricated

Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 438

Double Sanitary Tee with Side Inlet
(Sanitary Cross)
ALL HUB

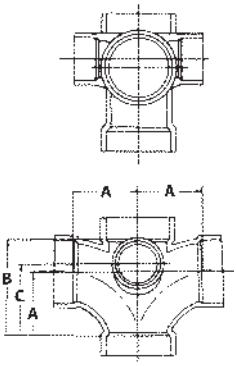
SIZE	A	B	C
3 x 3 x 3 x 3 x 2 (PVC)	3 1/16	4 7/8	3 11/16
4 x 4 x 4 x 4 x 2 (PVC)	3 7/8	6 1/8	5



PART NO. PVC 439

Double Sanitary Tee with Left & Right Side Inlets
(Sanitary Cross)
ALL HUB

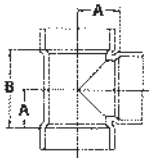
SIZE	A	B	C
3x3x3x3x2x2 (PVC)	3 1/16	4 7/8	3 11/16
4x4x4x4x2x2 (PVC)	3 7/8	6 1/8	5



PART NO. 441

Vent Tee
ALL HUB

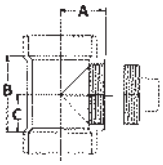
SIZE	A	B
1 1/2 (PVC)	1 3/16	2 3/8
1 1/2 (ABS)	1 7/32	2 13/32
2	1 1/2	3
3 (PVC)	1 7/8	3 3/4
3 (ABS)	1 15/16	3 3/4
4 (PVC)	2 1/2	5



PART NO. 444X

Cleanout Tee with Cleanout Plug
HUB X HUB X FPT

SIZE	A	B	C
1 1/2	1 15/16	2 3/8	1 3/16
2	2 1/4	3	1 1/2
3	2 11/16	3 7/8	1 15/16
4	3 3/8	5 1/8	2 9/16
6 (PVC)	4	8	4
6 x 6 x 4** (PVC)	8	8	4
8 (PVC)	5 1/4	10 1/2	5 5/32
8 x 8 x 4(F) (PVC)	7 3/4	9 1/4	4 5/8
8 x 8 x 6*** (PVC)	10 1/2	10 1/2	5 1/4
10 (PVC)	12 3/4	12 1/2	6 1/4
10 x 10 x 4(F) (PVC)	8 7/8	9 3/4	4 7/8
10 x 10 x 6(F) (PVC)	10 5/8	11 3/4	5 7/8
10 x 10 x 8 (PVC)	10 3/8	10 3/8	5 3/16
12 (PVC)	13 3/8	14 1/2	7 1/4
12 x 12 x 4(F) (PVC)	9 11/16	10	5
12 x 12 x 6** (PVC)	9 5/16	12 1/8	6 1/16
12 x 12 x 8 (PVC)	11 5/32	10 1/4	6 1/32
12 x 12 x 10(F) (PVC)	13 5/16	12 1/2	6 1/4

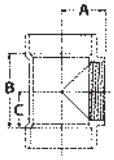


See Part No. 106 for plug dimensions.

PART NO. 445

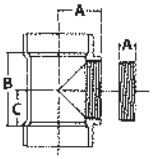
Cleanout Tee
HUB X HUB X FPT

SIZE	A	B	C
1 1/2 (PVC)	1 15/16	2 3/8	1 3/16
1 1/2 (ABS)	1 31/32	2 1/2	1 1/4
2	2 1/4	3	1 1/2
3 (PVC)	2 11/16	3 7/8	1 15/16
3 (ABS)	2 11/16	3 13/16	1 15/16
4 (PVC)	3 3/8	5 1/8	2 9/16
4 (ABS)	3 3/8	5	2 1/2
6 (PVC)	4	8	4
8 (PVC)	5 1/4	10 1/2	5 5/32
10 (PVC)	8 1/4	12 1/2	6 1/4
10 x 10 x 6(F) (PVC)	10 5/8	11 3/4	5 7/8
12 (PVC)	9 1/4	14 3/8	7 3/16



PART NO. PVC 445X

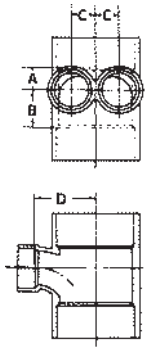
Flush Cleanout Tee with Cleanout Plug
For dimensions see Part Numbers 445 and 110.



PART NO. PVC 447

Horizontal Twin Tee
ALL HUB

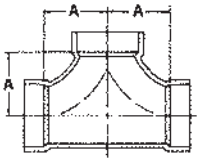
SIZE	A	B	C	D
3 x 3 x 1 1/2 x 1 1/2 (PVC)	7/8	1 3/4	1 3/32	2 9/16



PART NO. 448

Two-Way Cleanout
ALL HUB

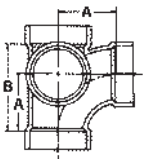
SIZE	A
3	4 1/16
4	4 15/16



(F) Fabricated
** Assembled from two molded components
*** Assembled from three molded components
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 449

Sanitary Tee with 2″ Left Hand Sanitary Inlet on Center

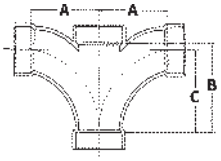


ALL HUB

SIZE	A	B
2 (PVC)	2 5/16	3 11/16

PART NO. 500

Double Fixture Fitting

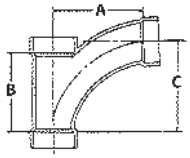


ALL HUB

SIZE	A	B	C
2 (PVC)	3 1/2	4 5/8	4 1/4
2 (ABS)	3 15/32	4 17/32	4 7/32
2 x 1 1/2 x 1 1/2 (PVC)	2 7/8	3 1/2	3 1/8
2 x 1 1/2 x 1 1/2 x 1 1/2 (ABS)	2 27/32	3 9/16	3 3/32
2 x 1 1/2 x 2 x 2 (ABS)	3 15/32	4 17/32	4 7/32
2 x 2 x 1 1/2 x 1 1/2 (PVC)	2 7/8	3 1/2	3 1/8
2 x 2 x 1 1/2 x 1 1/2 (ABS)	2 27/32	3 13/32	3 1/16
3 (PVC)	4 15/16	6 3/4	6 1/4
3 (ABS)	4 7/8	6 5/8	6 1/8
3 x 2 x 3 x 3 (ABS)	4 7/8	6 5/8	6 1/4

PART NO. 501

Combination Wye & 1/8 Bend

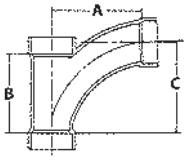


(One Piece)
ALL HUB

SIZE	A	B	C
1 1/2 (PVC)	3 15/16	3 1/2	3 15/16
1 1/2 (ABS)	3 7/8	3 1/2	3 13/16
2 (PVC)	5 1/8	4 7/16	5 1/8
2 (ABS)	5 5/32	4 7/16	5
3 (PVC)	7 9/16	6 1/2	7 9/16
3 (ABS)	7 17/32	6 15/32	7 7/16
4 (PVC)	10	8 1/2	10
4 (ABS)	9 31/32	8 15/32	9 27/32

PART NO. 502

Combination Wye & 1/8 Bend, Reducing

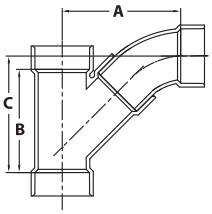


(One Piece)
ALL HUB

SIZE	A	B	C
2 x 1 1/2 x 1 1/2 (PVC)	4 3/16	3 1/2	3 15/16
2 x 1 1/2 x 1 1/2 (ABS)	4 1/8	3 17/32	3 3/4
2 x 2 x 1 1/2 (PVC)	4 3/16	3 1/2	3 15/16
2 x 2 x 1 1/2 (ABS)	4 1/8	3 7/16	3 7/8
3 x 3 x 1 1/2	4 3/4	3 1/2	3 15/16
3 x 3 x 2	5 11/16	4 7/16	5 1/8
4 x 4 x 2	4 7/16	5 1/16	6 1/16
4 x 4 x 3 (PVC)	8 1/16	6 1/2	7 9/16
4 x 4 x 3 (ABS)	7 29/32	6 13/32	7 5/16

PART NO. PVC 503

Combination Wye & 1/8 Bend

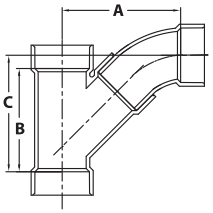


(Two Pieces)
ALL HUB

SIZE	A	B	C
6∞ (PVC)	11 15/32	10 1/8	11 9/64
8∞ (PVC)	14 19/32	14 1/8	14 23/32
10∞ (PVC)	18 1/2	16 1/2	18 1/4
12∞ (PVC)	21 1/2	19 1/2	21 1/2
14(F)∞ (PVC)	36 7/8	32 1/2	37 3/16
16(F)∞ (PVC)	39 1/2	35 1/2	39 13/16

PART NO. PVC 504

Combination Wye & 1/8 Bend, Reducing

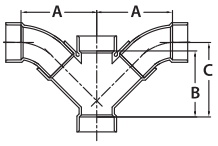


(Two Pieces)
ALL HUB

SIZE	A	B	C
6 x 6 x 3∞ (PVC)	8 7/8	7 1/8	8
6 x 6 x 4(1) (PVC)	8 13/16	8 1/2	7 3/4
8 x 8 x 4∞ (PVC)	11 17/32	10 1/2	10 1/2
8 x 8 x 6∞ (PVC)	12 1/2	10 1/2	11 3/16
10 x 10 x 4§ (PVC)	16 3/16	14 1/4	15 27/64
10 x 10 x 6§ (PVC)	15 31/32	14 1/4	15 9/64
10 x 10 x 8∞ (PVC)	15 7/16	14 1/4	14 25/32
12 x 12 x 4§ (PVC)	16 3/4	13 1/2	15 11/32
12 x 12 x 6§ (PVC)	16 7/16	13 1/2	15 5/64
12 x 12 x 8∞ (PVC)	16 3/32	13 17/32	14 5/8
12 x 12 x 10∞ (PVC)	19 15/32	17 1/16	18 3/16
14 x 14 x 4(F)∞ (PVC)	15 47/64	12 31/32	11 31/32
14 x 14 x 6(F)∞ (PVC)	17 7/32	15 21/32	15 19/64
14 x 14 x 8(F)∞ (PVC)	18 21/32	18 1/8	18 1/2
14 x 14 x 10(F)∞ (PVC)	22 1/2	20 3/4	22 1/4
14 x 14 x 12(F)∞ (PVC)	21 3/16	25 1/2	26 3/8
16 x 16 x 4(F)∞ (PVC)	16 1/2	12 9/16	12 7/8
16 x 16 x 6(F)∞ (PVC)	18 5/8	15 41/64	15 3/16
16 x 16 x 8(F)∞ (PVC)	19 11/16	18 5/8	19 3/16
16 x 16 x 10(F)∞ (PVC)	23 1/4	23	22 15/16
16 x 16 x 12(F)∞ (PVC)	26 3/16	27 3/16	27 13/16
16 x 16 x 14(F)∞ (PVC)	37 1/8	27 13/16	33 1/4

PART NO. PVC 507

Double Combination Wye & 1/8 Bend



(Three Pieces or Five Pieces)
ALL HUB

SIZE	A	B	C
4 (PVC)	9 13/32	8 1/4	9 5/32
2 x 2 x 1 1/2 x 1 1/2 (PVC)	4 7/8	4 3/8	4 15/16
3 x 3 x 2 x 2 (PVC)	6 5/64	4 15/16	5 11/64
4 x 4 x 2 x 2 (PVC)	7 5/16	5	6
4 x 4 x 3 x 3 (PVC)	8 19/64	6 5/8	7 19/32
6 x 6 x 4 x 4§ (PVC)	10 7/16	10 1/8	11 1/8

(1) One piece short pattern
(F) Fabricated
§ Fitting shipped with any required bushing(s) installed, street bend strapped to fitting; assembled from molded components.
∞ Fitting shipped with street bend strapped to fitting.

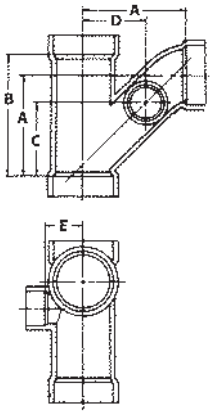
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. PVC 515

Combination Wye & 1/8 Bend with Left Side Inlet

ALL HUB

SIZE	A	B	C	D	E
3 x 3 x 3 x 2 (PVC)	6 5/16	7 31/64	5 1/4	3 3/8	1 7/8

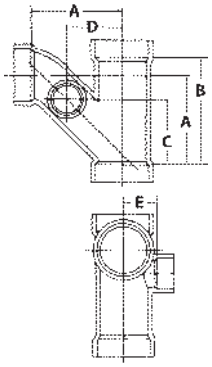


PART NO. PVC 516

Combination Wye & 1/8 Bend with Right Side Inlet

ALL HUB

SIZE	A	B	C	D	E
3 x 3 x 3 x 2 (PVC)	6 5/16	7 31/64	5 1/4	3 3/8	1 7/8

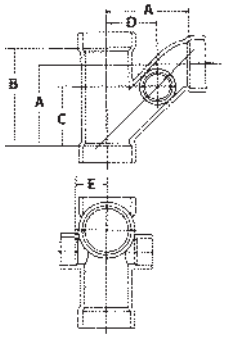


PART NO. PVC 517

Combination Wye & 1/8 Bend with Left & Right Side Inlets

ALL HUB

SIZE	A	B	C	D	E
3x3x3x2x2 (PVC)	6 5/16	7 31/64	5 1/4	3 3/8	1 7/8



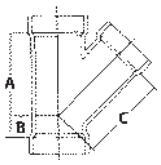
PART NO. 600

Wye

(45° Wye)

ALL HUB

SIZE	A	B	C
1 1/4 (PVC)	3 5/8	1 1/16	2 9/16
1 1/2 (PVC)	4	1 1/8	2 7/8
1 1/2 (ABS)	4 1/32	1 1/8	2 15/16
2	5	1 3/8	3 5/8
3	6 5/8	1 5/8	5
4 (PVC)	8 1/4	1 7/8	6 3/8
4 (ABS)	8 1/16	1 3/4	6 5/16
6 (PVC)	10 1/8	1 3/4	8 7/16
6 (ABS)	9 15/16	1 23/32	8 3/16
8 (PVC)	14 1/8	2 3/8	11 3/4
10 (PVC)	16 1/2	2 7/8	13 5/8
12 (PVC)	19 7/16	3 11/32	16
14(F) (PVC)	31 3/8	8	22 1/4
16(F) (PVC)	36 5/16	10 3/4	25 3/16



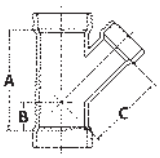
PART NO. 601

Wye, Reducing

(45° Wye)

ALL HUB

SIZE	A	B	C
2 x 1 1/2 x 1 1/2 (PVC)	3 1/2	1 1/16	2 15/16
2 x 1 1/2 x 1 1/2 (ABS)	4 7/32	1 1/32	3 3/8
2 x 1 1/2 x 2	4 1/2	1	3 7/16
2 x 2 x 1 1/2 (PVC)	4 3/8	1 1/16	3 7/16
2 x 2 x 1 1/2 (ABS)	4 1/4	1 1/32	3 3/8
3 x 3 x 1 1/2 (PVC)	4 1/4	1/2	4 5/16
3 x 3 x 1 1/2 (ABS)	4 3/16	1/2	4 9/32
3 x 3 x 2 (PVC)	5	7/8	4 5/8
3 x 3 x 2 (ABS)	5	13/16	4 21/32
4 x 4 x 1 1/2	5	0	6
4 x 4 x 2 (PVC)	4 31/32	11/32	5 17/32
4 x 4 x 2 (ABS)	5	1/4	5 9/16
4 x 4 x 3 (PVC)	6 5/8	1 1/16	6
4 x 4 x 3 (ABS)	6 19/32	1	6
6 x 6 x 3 (PVC)	7 1/8	1/4	7 1/2
6 x 6 x 4 (PVC)	6 7/8	3/16	7 1/2
6 x 6 x 4 (ABS)	6 25/32	7/32	7 7/16
8 x 8 x 4 (PVC)	10 1/2	1	9 1/2
8 x 8 x 6 (PVC)	10 1/2	1	9 13/16
10 x 10 x 4** (PVC)	14 1/4	1 3/8	15 15/16
10 x 10 x 6** (PVC)	14 1/4	1 3/8	15
10 x 10 x 8 (PVC)	14 1/4	1 3/8	13 1/16
12 x 12 x 4** (PVC)	13 1/2	1/2	16 23/32
12 x 12 x 6** (PVC)	13 1/2	1/2	15 29/64
12 x 12 x 8 (PVC)	13 19/32	1/2	13 7/8
12 x 12 x 10 (PVC)	17 1/16	1 7/8	15 3/32
14 x 14 x 4(F) (PVC)	12 3/8	1 37/64	15 23/64
14 x 14 x 6(F) (PVC)	15 51/64	15/64	18 37/64
14 x 14 x 8(F) (PVC)	15 49/64	3 1/64	16 51/64
14 x 14 x 10(F) (PVC)	18 57/64	3 43/64	18 29/32
14 x 14 x 12(F) (PVC)	25 7/8	5 9/16	20
16 x 16 x 4(F) (PVC)	12 11/16	1 9/16	15 1/4
16 x 16 x 6(F) (PVC)	15 3/4	3/16	17 3/16
16 x 16 x 8(F) (PVC)	18 7/16	1 9/16	18 3/8
16 x 16 x 10(F) (PVC)	23	3 1/2	19 5/8
16 x 16 x 12(F) (PVC)	26 3/8	4 1/2	21 3/4
16 x 16 x 14(F) (PVC)	27 1/2	5 1/4	23 9/16



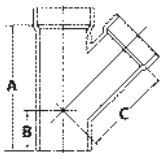
PART NO. 602

Wye, Street

(45° Wye)

SPIGOT X HUB X HUB

SIZE	A	B	C
1 1/2 (PVC)	4 3/4	1 7/8	2 7/8
1 1/2 (ABS)	4 5/8	1 7/8	2 27/32
2	5 7/8	2 1/4	3 5/8
3	8 1/8	3 1/8	5
4 (PVC)	9 15/16	3 5/8	6 1/4
4 (ABS)	9 29/32	3 5/8	6 1/4

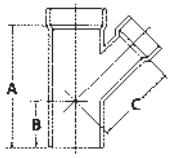


(F) Fabricated

** Assembled from two molded components.

Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

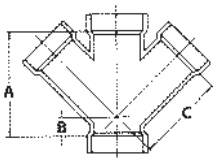
PART NO. 603



Wye, Street, Reducing
(45° Wye)
SPIGOT X HUB X HUB

SIZE	A	B	C
3 x 3 x 1½ (PVC)	5¾	2	4 7/32
3 x 3 x 2	6½	2⅜	4⅝
4 x 4 x 2 (PVC)	6 23/32	2⅛	5 15/64
4 x 4 x 3	8⅜	2 13/16	6

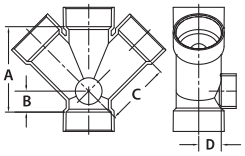
PART NO. 611



Double Wye
(Double 45° Wye)
ALL HUB

SIZE	A	B	C
1½ (PVC)	4	1⅛	2⅞
1½ (ABS)	3 15/16	1 5/32	2 27/32
2 (PVC)	5	1⅜	3⅝
2 (ABS)	5	1½	3 11/16
3 (PVC)	6⅝	1⅝	5
3 (ABS)	6 17/32	1 9/16	5
4 (PVC)	8¼	1⅞	6⅜
4 (ABS)	8 5/32	1 15/16	6 5/16
6 (PVC)	10 3/16	1¾	8 7/16
8[F] (PVC)	19 1/16	4⅞	13⅝
10[F] (PVC)	22 1/16	5 11/16	16¼
12[F] (PVC)	19 5/16	6⅞	25⅞
14[F] (PVC)	28 7/16	7⅛	20⅜

PART NO. PVC 611S

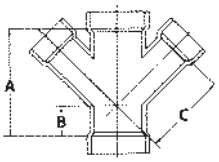


Double Wye with 2″ Side Inlet
(Double 45° Wye)
ALL HUB

SIZE	A	B	C	D
3 x 3 x 3 x 2 (PVC)	6⅝	1⅝	5	1¾

[F] Fabricated
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

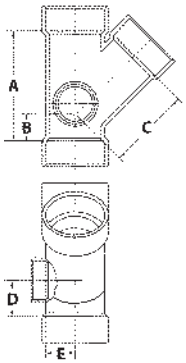
PART NO. 612



Double Wye, Reducing
(Double 45° Wye)
ALL HUB

SIZE	A	B	C
2 x 2 x 1½ x 1½ (PVC)	4⅜	1 1/16	3 7/16
2 x 2 x 1½ x 1½ (ABS)	4 5/16	31/32	3½
3 x 3 x 1½ x 1½ (PVC)	4¼	½	4 5/16
3 x 3 x 2 x 2	4 15/16	⅞	4⅝
4 x 4 x 2 x 2 (PVC)	5	⅜	5 9/16
4 x 4 x 3 x 3 (PVC)	6⅝	1 1/16	6
4 x 4 x 3 x 3 (ABS)	6 9/16	1	6 1/32
6 x 6 x 4 x 4 (PVC)	10 3/16	1¾	7¾
8 x 8 x 4 x 4[F] (PVC)	10 1/16	13/16	10 13/16
8 x 8 x 6 x 6[F] (PVC)	13	1½	12⅝
10 x 10 x 4 x 4[F] (PVC)	11 3/16	2 7/16	14
10 x 10 x 6 x 6[F] (PVC)	14 15/16	¾	14⅝
10 x 10 x 8 x 8[F] (PVC)	18	3 7/16	15 1/16
12 x 12 x 4 x 4[F] (PVC)	11 13/16	1	14
12 x 12 x 6 x 6[F] (PVC)	15 11/16	7/16	17⅛
12 x 12 x 8 x 8[F] (PVC)	18⅞	3 3/16	16½
12 x 12 x 10 x 10[F] (PVC)	21 11/16	3⅞	18 1/16
14 x 14 x 6 x 6[F] (PVC)	15	1	16 3/16
14 x 14 x 8 x 8[F] (PVC)	19	2 7/16	17 19/32
14 x 14 x 10 x 10[F] (PVC)	21⅞	4	18¾
14 x 14 x 12 x 12[F] (PVC)	25 3/16	5	19⅞
16 x 16 x 6 x 6[F] (PVC)	15 9/16	1 7/32	17 21/32
16 x 16 x 8 x 8[F] (PVC)	18¾	1½	18 3/16
16 x 16 x 10 x 10[F] (PVC)	21 9/16	1 9/16	20⅝
16 x 16 x 12 x 12[F] (PVC)	26 1/16	4 7/16	21¾
16 x 16 x 14 x 14[F] (PVC)			

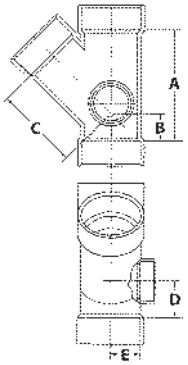
PART NO. PVC 625



Wye with Left Side Inlet
ALL HUB

SIZE	A	B	C	D	E
3 x 3 x 3 x 2 (PVC)	6⅝	1⅝	5	2¼	1¾
4 x 4 x 4 x 2 (PVC)	8¼	1⅞	6⅜	2½	3 5/16

PART NO. PVC 626



Wye with Right Side Inlet
ALL HUB

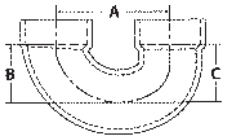
SIZE	A	B	C	D	E
3 x 3 x 3 x 2 (PVC)	6⅝	1⅝	5	2¼	1¾
4 x 4 x 4 x 2 (PVC)	8¼	1⅞	6⅜	2½	3 5/16

PART NO. 700

Return Bend

HUB X HUB

SIZE	A	B	C
1½ (PVC)	3½	1¾	1¾
1½ (ABS)	3 15/32	1 17/32	1 17/32
2	5	2¼	2¼
3 (PVC)	6¾	3 1/16	3 1/16
3 (ABS)	6 25/32	2 31/32	2 31/32
4 (PVC)	8½	3 11/16	3 11/16
4 (ABS)	8 7/16	3 11/16	3 11/16

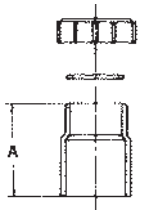


PART NO. ABS 704P

Tail Piece Adapter with Plastic Nut & Packing Ring

SPIGOT X SLIP

SIZE	A
1½ (ABS)	2 3/16

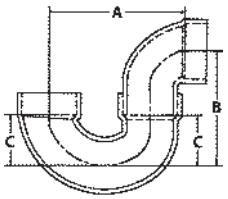


PART NO. 706X

P-Trap with Solvent Weld Joint

HUB X HUB

SIZE	A	B	C
1½	4⅝	3 55/64	1 31/64
2	6 19/32	4¾	2¼
3	8 15/16	6 27/32	3 1/16
4	11 13/64	8 3/16	3 11/16

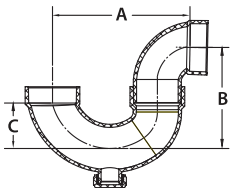


PART NO. 707X

P-Trap with Cleanout & Solvent Weld Joint

HUB X HUB

SIZE	A	B	C
1½ (PVC)	4⅝	3 15/16	1¾
1½ (ABS)	4 21/32	3½	1 9/16
2 (PVC)	6¾	4 11/16	2 5/16
2 (ABS)	6 25/32	4 11/16	2¼

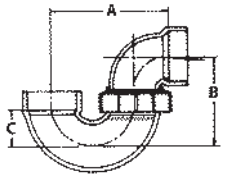


PART NO. 708P

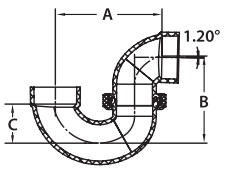
P-Trap with Union & Plastic Nut

HUB X HUB

SIZE	A	B	C
1¼ (PVC)	4 9/16	3½	1⅜
1½ (PVC)	4⅝	3 15/16	1¾
1½ (ABS)	4 29/32	4 3/32	1 9/16
2 (PVC)	6 13/16	4⅞	2⅜
2 (ABS)	6 25/32	4⅝	2¼



ABS 708P, 1 1/2" ONLY

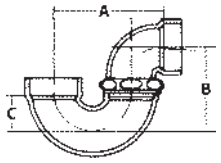


PART NO. 708X

P-Trap with Union & Chrome Nut

HUB X HUB

SIZE	A	B	C
1½ (PVC)	4⅝	3 15/16	1¾
1½ (ABS)	4 29/32	4 3/32	1 9/16

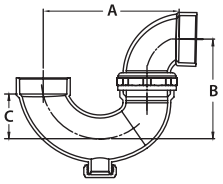


PART NO. PVC 709X

P-Trap with Cleanout, Union & Chrome Nut

HUB X HUB

SIZE	A	B	C
1½ (PVC)	4⅝	3 15/16	1½

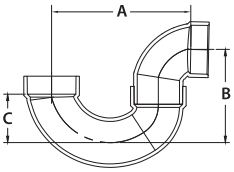


PART NO. PVC 710

Low Profile P-Trap with Solvent Weld

HUB X HUB

SIZE	A	B	C
2 (PVC)	6 13/16	4 9/16	2⅜

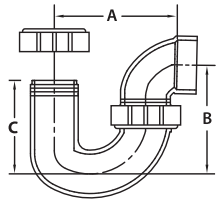


PART NO. 711P

L.A. Pattern P-Trap Furnished with a 1 1/2" and 1 1/2" x 1 1/4" Polyethylene Nut/Washer Combination

SLIP Union X HUB

SIZE	A	B	C
1½ (PVC)	4¾	4 15/64	3 7/16
1½ (ABS)	4 9/16	4⅛	3 17/32

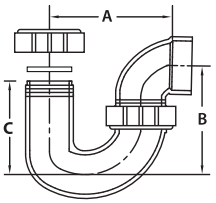


PART NO. 711W

L.A. Pattern P-Trap Furnished with a 1 1/2" ABS or PVC Nut, a 1 1/2" Washer and a 1 1/2" x 1 1/4" Washer

SLIP Union X HUB

SIZE	A	B	C
1½ (PVC)	4¾	4 15/64	3 7/16
1½ (ABS)	5 5/32	4 15/64	3 45/64

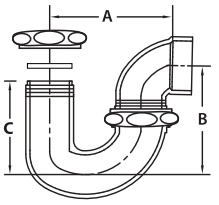


PART NO. PVC 711X

L.A. Pattern P-Trap Furnished with a 1 1/2" Chrome Nut, a 1 1/2" Washer and a 1 1/2" x 1 1/4" Washer

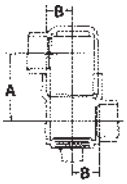
SLIP Union X HUB

SIZE	A	B	C
1½ (PVC)	4¾	4 15/64	3 7/16



Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

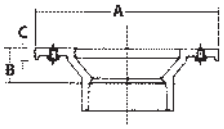
PART NO. 720X



Drum Trap
HUB X HUB

SIZE	A	B
3 x 6 x 1½ (PVC)	4 13/16	1 11/16
3 x 6 x 1½ (ABS)	4 21/32	1 23/32

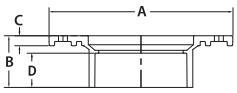
PART NO. 800 & 800K



Closet Flange
HUB END

SIZE	A	B	C
4 x 3	7	1¼	7/16
4 x 4*	7	1¼	7/16

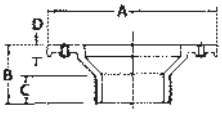
PART NO. 800S



Closet Flange with Stop
HUB END

SIZE	A	B	C	D
4 x 3	7	2¼	7/16	1½

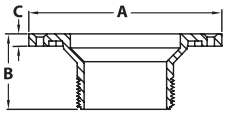
PART NO. 801



Closet Flange, Reducing
SPIGOT

SIZE	A	B	C	D
4 x 3 (PVC)	7	2¾	1 21/32	7/16
4 x 3 (ABS)	7 1/32	2¾	1 9/16	7/16

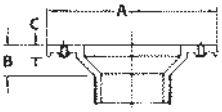
PART NO. ABS 808



Male Closet Flange
MPT

SIZE	A	B	C
4 x 3 (ABS)	7	2 11/16	15/32

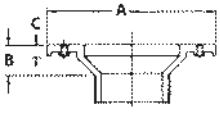
PART NO. PVC 810K



Closet Flange, Adjustable with Plastic Ring
HUB END

SIZE	A	B	C
4 x 3 (PVC)	7	1⅛	7/16

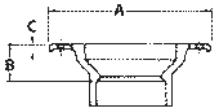
PART NO. ABS 811P



Closet Flange, Adjustable with Plastic Ring
HUB END

SIZE	A	B	C
4 x 3 (ABS)	7	1⅛	7/16
4 x 4 (ABS)	7	1⅛	7/16

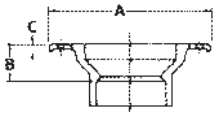
PART NO. 811



Closet Flange, Adjustable with Metal Ring
HUB END

SIZE	A	B	C
4 x 3	7	1¼	¼
4 x 4	7	1⅛	¼

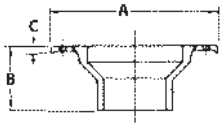
PART NO. PVC 811K



Closet Flange, Adjustable with Metal Ring
HUB END

SIZE	A	B	C
4 x 3 (PVC)	7	1¼	¼

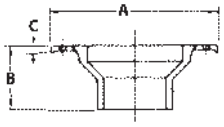
PART NO. 812



Closet Flange, Adjustable with Metal Ring
SPIGOT

SIZE	A	B	C
4 x 3 (PVC)	7	2⅝	¼
4 x 3 (ABS)	7	2¾	¼
4 x 4 (PVC)	7	2⅝	¼
4 x 4 (ABS)	7	2 13/32	¼

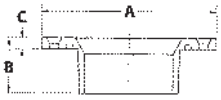
PART NO. 812P



Closet Flange, Adjustable with Plastic Ring
SPIGOT

SIZE	A	B	C
4 x 3 (PVC)	7	2⅝	¼
4 x 3 (ABS)	7	2¾	¼
4 x 4 (PVC)	7	2⅝	7/16

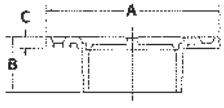
PART NO. 815



Flush Closet Flange
(Fits Over 3″ Pipe or Inside 4″ Pipe)
HUB

SIZE	A	B	C
4 x 4 / 4 x 3	7	2⅞	7/16

PART NO. 815K

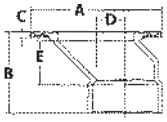


Flush Closet Flange with Knockout
(Fits Over 3″ Pipe or Inside 4″ Pipe)
HUB

SIZE	A	B	C
4 x 4 / 4 x 3	7	2 7/32	7/16

* Part No. 800K, 4x4″ is not available in ABS.
Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

PART NO. 820



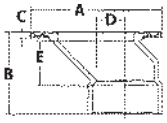
Offset Closet Flange, Adjustable with Metal Ring

(1½" Offset)

HUB

SIZE	A	B	C	D	E
4 x 3	7	4 5/16	¼	1½	2 5/16

PART NO. 820P



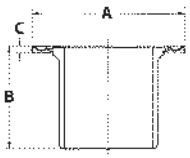
Offset Closet Flange , Adjustable with Plastic Ring

(1 ½" Offset)

HUB

SIZE	A	B	C	D	E
4 x 3	7	4 5/16	7/16	1½	2 5/16

PART NO. ABS 824

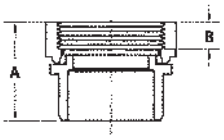


Closet Flange, Adjustable with Metal Ring & 4" Extended Spigot

SPIGOT

SIZE	A	B	C
4 (ABS)	7	4 11/16	¼

PART NO. 900

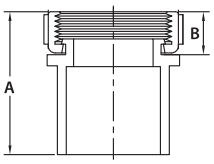


Swivel Tray Plug Adapter with Washer

SPG X FPT

SIZE	A	B
1½	1 23/32	15/32

PART NO. ABS 900X

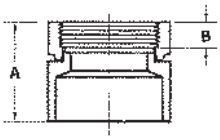


Swivel Tray Plug Adapter with Washer, Extended

SPG X FPT

SIZE	A	B
1½ (ABS)	2 7/16	15/32

PART NO. ABS 910



Swivel Tray Plug Adapter with Washer

H X FPT

SIZE	A	B
1½ (ABS)	1 13/16	9/16

Note: If PVC or ABS is not listed for a specific size, that size fitting is available in PVC and ABS materials, and the dimensions listed are the same for both materials.

NOTES

LIMITED WARRANTY

Charlotte Pipe and Foundry Company® (Charlotte Pipe®) Products are warranted to be free from manufacturing defects and to conform to currently applicable ASTM standards for a period of five (5) years from date of delivery. Buyer's remedy for breach of this warranty is limited to replacement of, or credit for, the defective product. This warranty excludes any expense for removal or reinstallation of any defective product and any other incidental, consequential, or punitive damages. **This limited warranty is the only warranty made by seller and is expressly in lieu of all other warranties, express and implied, including any warranties of merchantability and fitness for a particular purpose.** No statement, conduct or description by Charlotte Pipe or its representative, in addition to or beyond this Limited Warranty, shall constitute a warranty. This Limited Warranty may only be modified in writing signed by an officer of Charlotte Pipe.

This Limited Warranty will not apply if:

1) The Products are used for purposes other than their intended purpose as defined by local plumbing and building codes, and the applicable ASTM standard.
2) The Products are not installed in good and workmanlike manner consistent with normal industry standards; installed in compliance with the latest instructions published by Charlotte Pipe and good plumbing practices; and installed in conformance with all applicable plumbing, fire and building code requirements.
3) This limited warranty does not apply when the products of Charlotte Pipe are used with the products of other manufacturers that do not meet the applicable ASTM or CISPI standards or that are not marked in a manner to indicate the entity that manufactured them.
4) In hubless cast iron installations, this warranty will not apply if products are joined with unshielded hubless couplings. Charlotte Pipe requires that its hubless cast iron pipe and fittings be joined only with shielded hubless couplings manufactured in accordance with CISPI 310, ASTM C 1277 and certified by NSF® International or with Heavy Duty Couplings meeting ASTM C 1540.
5) The Products fail due to defects or deficiencies in design, engineering, or installation of the piping system of which they are a part.
6) The Products have been the subject of modification; misuse; misapplication; improper maintenance or repair; damage caused by the fault or negligence of anyone other than Charlotte Pipe; or any other act or event beyond the control of Charlotte Pipe.
7) The Products fail due to the freezing of water in the Products.
8) The Products fail due to contact with chemical agents, fire stopping materials, thread sealant, plasticized vinyl products, or other aggressive chemical agents that are not compatible.
9) Pipe outlets, sound attenuation systems or other devices are permanently attached to the surface of Charlotte® PVC, ABS or CPVC products with solvent cement or adhesive glue.

Charlotte Pipe products are manufactured to the applicable ASTM or CISPI standard. Charlotte Pipe and Foundry **cannot** accept responsibility for the performance, dimensional accuracy, or compatibility of pipe, fittings, gaskets, or couplings not manufactured or sold by Charlotte Pipe and Foundry.

This Limited Warranty will not apply unless written notice of a claim is mailed to Charlotte Pipe at the address below within 30 days of discovery of the allegedly defective product.

Any Charlotte Pipe products alleged to be defective **must** be made available to Charlotte Pipe at the following address for verification, inspection and determination of cause:

Charlotte Pipe and Foundry Company
Attention: Technical Services
2109 Randolph Road
Charlotte, North Carolina 28207

Purchaser must obtain a return materials authorization and instructions for return shipment to Charlotte Pipe of any product claimed defective or shipped in error.

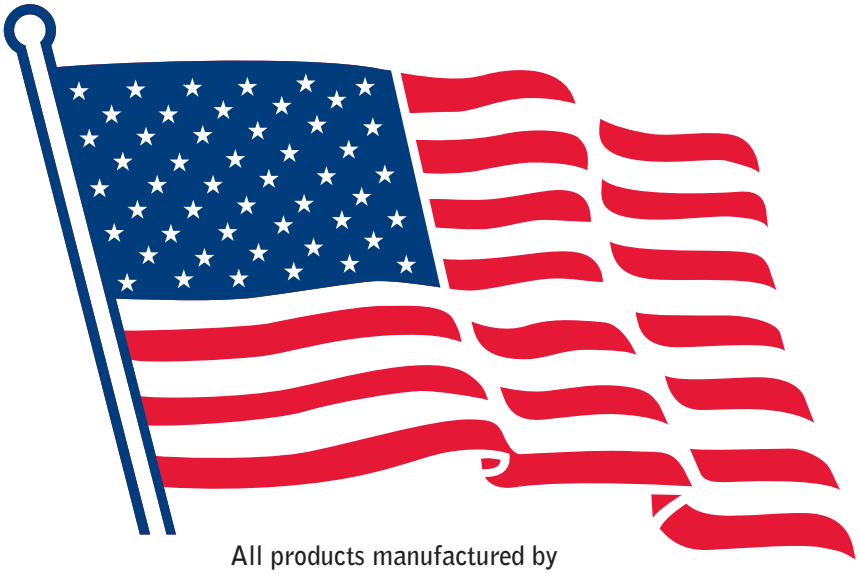
Any Charlotte Pipe product **proved** to be defective in manufacture will be replaced F.O.B. point of original delivery, or credit will be issued, at the discretion of Charlotte Pipe.

4/20/21

CHARLOTTE
PIPE AND FOUNDRY COMPANY®

PO BOX 35430
CHARLOTTE
NORTH CAROLINA 28235
PHONE (704) 348-6450
(800) 438-6091
FAX (800) 553-1605
WWW.CHARLOTTEPIPE.COM

MADE IN USA



All products manufactured by
Charlotte Pipe and Foundry Company
are proudly made in the U.S.A.

Attachment-9
Nonhazardous Waste Receiving Facilities

PERMIT NUMBER	EFFECTIVE DATE
8-2648-00014/00001	7/19/11
FACILITY/PROGRAM NUMBER(S)	EXPIRATION DATE(S)
28S31	July 31, 2021

PERMIT

Under the Environmental Conservation Law (ECL)

TYPE OF PERMIT ☐ NEW X Renewal X Modification X Permit to Construct X Permit to Operate

- ☐ Article 15, Title 5: Protection of Waters
- ☐ Article 15, Title 15: Water Supply
- ☐ Article 15, Title 15: Water Transport
- ☐ Article 15, Title 15: Long Island Wells
- ☐ Article 15, Title 27: Wild, Scenic and Recreational Rivers
- ☐ 6NYCRR 608: Water Quality Certification
- ☐ Article 17, Titles 7, 8: SPDES
- ☐ Article 19: Air Pollution Control
- ☐ Article 23, Title 27: Mined Land Reclamation
- ☐ Article 24: Freshwater Wetlands
- ☐ Article 25: Tidal Wetlands
- X Article 27, Title 7; 6NYCRR 360: Solid Waste Management
- ☐ Article 27, Title 9; 6NYCRR 373: Hazardous Waste Management
- ☐ Article 34: Coastal Erosion Management
- ☐ Articles 1, 3, 17, 19, 27, 37; NYCRR 380: Radiation Control
- ☐ Other:

PERMIT ISSUED TO	TELEPHONE NUMBER
Monroe County	585-753-7517
ADDRESS OF PERMITTEE	
50 West Main Street, Rochester, NY 14614	
CONTACT PERSON FOR PERMITTED WORK	TELEPHONE NUMBER
Michael Garland - Monroe County/Gene Dries - Waste Management of NY	585-753-7517 - Garland 585-494-3000 - Dries
NAME AND ADDRESS OF PROJECT/FACILITY	
Mill Seat Landfill	
LOCATION OF PROJECT/FACILITY	
303 Brew Road, Bergen, NY 14416	

COUNTY	TOWN	WATERCOURSE	NYTM COORDINATES
Monroe	Riga	Water Body:	E: 260.8 N: 4771.1

DESCRIPTION OF AUTHORIZED ACTIVITY:

Construct and operate a 95 acre sanitary landfill and adjacent 62 acre soil borrow area. The site is owned by Monroe County, but all construction and operation is performed by Waste Management of NY (WMNY) under a long term lease with Monroe County. The approved design capacity is 1845 tpd.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

PERMIT ADMINISTRATOR:	ADDRESS	
Kimberly Merchant	6274 E. Avon-Lima Rd, Avon, NY 14414	
AUTHORIZED SIGNATURE	DATE	Page 1 of 16
Kimberly A Merchant	7/19/2011	

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

GENERAL CONDITIONS

General Condition 1: Facility Inspection by the Department

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

General Condition 2: Relationship of this Permit to Other Department Orders and Determinations

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

General Condition 3: Applications for Permit Renewals or Modifications

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

The permittee must submit a renewal application at least:

a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and

b) 30 days before expiration of all other permit types.

Submission of applications for permit renewal or modification are to be submitted to:

NYSDEC Regional Permit Administrator, Region 8,
6274 E Avon-Lima Rd, Avon, NY 14414 (585) 226-2466

General Condition 4: Permit Modifications, Suspensions and Revocations by the Department

The Department reserves the right to modify, suspend or revoke this permit in accordance with 6 NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;
b) failure by the permittee to comply with any terms or conditions of the permit;
c) exceeding the scope of the project as described in the permit application;
d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

ADDITIONAL GENERAL CONDITIONS FOR ARTICLE 27 (Title 7, Mill Seat Landfill)

9. All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or his agent as part of the permit application.
Such approved plans were prepared by Clark, Patterson Assoc; Earth Tech, Inc; McMahon & Mann Consulting Engineers, P.C.

SPECIAL CONDITIONS

I. **General Applicability**

1. Unless expressly authorized in writing or unless modified by conditions of any permit issued by the Department of Environmental Conservation (the "Department"), all work will be carried out in strict conformance with the plans, specifications, and reports submitted as part of the application for this permit. Those materials include:

(a) Permit applications to Construct and Operate Solid Waste Management Facility pursuant to 6NYCRR Part 360, dated 9/19/90; revised 5/27/94; renewed 5/4/01; revised 5/28/02; revised 11/13/02; revised 2/4/03; revised 1/9/04; revised 2/20/08; revised 8/13/09.

(b) Variance Request for Groundwater Separation - 6NYCRR Part 360-2.13(d), revised September 19, 1990.

(c) Engineering Report as revised by Clark Patterson dated August 1990.

(d) Operation and Maintenance Report dated January 2003, revised.

(e) Mill Seat Solid Waste Landfill Engineering Plans with last revision date July 22, 1990; October 2002 (Final Cover Design Modifications); March 2004 (Design Modifications for Stages IIIB, IIIB-1, and IV); and Construction Quality Assurance/Quality Control Plan dated April 2004.

(f) Mill Seat Solid Waste Landfill Engineering Plans-sheets 59,60,61, and 62 submitted September 27, 1990.

(g) Contingency Plan dated January 2003.

(h) Environmental Monitoring Plan revised May 2011 and Site Analytical Plan revised September 2003.

(i) Closure-Post Closure Plan revised September 14, 1990.

(j) Hydrogeologic Report revised September 18, 1990 and supplements.

(k) Wetlands Delineation Report - Mill Seat Landfill dated September 1990, updated May 2002, July 2002,and August 2009.

(l) Habitat Management Plan, Figure 1, dated 2/9/05 and updated May 2011.

SPECIAL CONDITIONS

For Article 27 (Title 7, Mill Seat Landfill)

(m) Draft Environmental Impact Statement dated April 1998.
Final Environmental Impact Statement dated June 1989.
Draft Supplemental EIS dated August 1990.
Final Supplemental EIS dated October 1990.

(n) Draft Supplemental Environmental Impact Statement dated January 2011.
Borrow Area Use Plan dated January 2011, Appendix G of the DSEIS (bound separately which includes the Wetlands Monitoring Plan.
Final Supplemental Environmental Impact Statement dated May 2011, including Environmental Monitoring Plan, Habitat Management Plan, and Stormwater Pollution Prevention Plan (SWPPP).

In any instance in which the above approved documents conflict with the requirements of 6NYCRR Part 360, the more stringent shall apply.

2. The Permittee shall comply with all conditions of this permit and 6NYCRR Part 360. Non-compliance constitutes a violation of ECL Article 27, Title 7 and is grounds for enforcement action, permit suspension, revocation, or modification, or denial of a permit renewal or modification application

3. The Permittee must maintain a copy of all application materials, plans, reports, permits, and the Draft, Supplemental Draft, and Final Environmental Impact Statement at the site and make these documents available to any representative of the Department. The Permittee must also maintain a copy of all written approvals and directives in a like manner, together with a copy of the effective Part 360.

4. Unless otherwise specified by the Department, two (2) copies of all plans, reports, or other submissions related to the design, construction, operation, or monitoring of this facility must be submitted to: Regional Solid & Hazardous Materials Engineer, NYS Department of Environmental Conservation, 6274 East Avon-Lima Road, Avon, NY 14414.

5. Unless otherwise specified in this permit, any approval required must be obtained in writing from the Region 8 Regional Solid & Hazardous Materials Engineer.

6. In the event a Department representative makes a determination that the Permittee is in non-compliance with any provision of the Environmental Conservation Law, or with any regulation promulgated thereunder or any provision of this permit or any judicial or administrative order applicable to the facility, the Permittee must, upon receipt of written or oral Notice of Non-Compliance from the Department, immediately take such steps as are necessary to correct, abate, or remediate the non-complying condition. When oral notice is given, the Department will provide a confirming written Notice of Non-Compliance. To the extent feasible, the Permittee must consult the Department regarding the selection and implementation of such remedial measures. Any instance of non-compliance, together with the responsive measures and results of such remedial measures, must be recorded in writing by the Permittee, and submitted to the Department. Failure to do so shall constitute non-compliance with this permit.

7. The Permittee shall take all steps to minimize or correct any adverse impact on human health or the environment resulting from facility operations. The Permittee shall report

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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For Article 27 (Title 7, Mill Seat Landfill

any such activity which may endanger human health or the environment to the DEC Region 8 Regional Solid & Hazardous Materials Engineer. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances and followed up in writing within seven days.

8. The Permittee shall allow any authorized representative of the Department upon the presentation of proper credentials, to:

   (a) Have access to and copy any records that must be kept under the conditions of this permit or Part 360;

   (b) Enter and inspect any buildings, facilities, equipment(including monitoring and control equipment),practices, or operations regulated or required under this permit; and

   (c) Sample or monitor for the purpose of assuring permit compliance or as otherwise authorized by the ECL or any applicable law, regulation, permit or Order, any substances or parameters at any location.

9. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

10. The provisions of this permit shall not be construed to limit the Department's authority as otherwise established by law or regulation.

11. The account to fund the Environmental Monitor(s) as established under permit #8-2648-00014/00001 shall continue as follows:

   (a) Funds as required to support the monitoring requirements shall be provided to the Department for funding of environmental compliance activities related to the operation of Permittee's Facility. This sum is based on annual Environmental Monitor service costs and is subject to annual revision. Subsequent annual payments shall be made for the duration of this Permit to maintain an account balance sufficient to meet the next year's anticipated expenses. The permittee shall be billed annually for each fiscal year beginning April 1, 2004.

   (b) The Department may revise the required payment on an annual basis to include all costs of monitoring to the Department. The annual revision may take into account factors such as inflation, salary increases, changes in operating hours and procedures and the need for additional Environmental Monitors and supervision of such Environmental Monitors by full-time Environmental Monitor supervisors.

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Upon written request by the Permittee, the Department shall provide that entity with a written explanation of the basis for any modification. If such a revision is required, the Department will notify the Permittee of such a revision no later than 60 days in advance of any such revision.

(c) Prior to making its annual payment, the Permittee will receive and have an opportunity to review an annual work plan that the Department will undertake during the year.

(d) Payments are to be in advance of the period in which they will be expended.

II. Landfill Construction

12. Not less than thirty (30) days prior to the commencement of the construction of remaining phases of the landfill, the Permittee must submit to the Department for its review and approval, detailed construction plans and technical specifications for that phase.

13. Written notice of the commencement of all major portions of on-site construction activities must be made to the Department prior to the commencement of construction, including a construction schedule indicating the projected start and end dates for construction activities. These activities include, but are not limited to, the commencement of the clearing and grading of any large areas, commencement of the placement of the liner for any large section, covering of any section of the leachate collection system, all quality control and quality assurance testing activities and the commencement of construction of any section of permanent final cover. The Permittee shall submit an updated schedule to the Department monthly during the course of construction.

14. The Department must be notified immediately in case of any development during construction that warrants a request to modify the approved engineering plans. Deviation from the approved plans without the specific prior written approval of the Department will constitute a violation of this permit.

15. All stones must be removed from the top surface of the low permeability soil and primary soil components that will be directly overlain by synthetic materials.

16. The Permittee must provide effective frost protection of all exposed portions of the installed landfill liner system unless the entire double composite liner system is completed within the single construction season. The Permittee may seek waiver of this requirement by submitting certified laboratory results of tests performed on representative samples of the soil component of the liner system. The Permittee must obtain Department approval of the laboratory testing procedures prior to testing. Results of the testing must be submitted by August 1 of the year in which soil liner construction is commenced. Results should include initial permeability and final permeability measured

after exposure to not less than five complete freeze/thaw cycles. A waiver may only be granted if final permeability does not exceed 1.0 x 10^{-7} cm/sec. and there is no significant increase in permeability at the conclusion of the laboratory tests. If a waiver is denied, a frost protection layer must be placed on the liner prior to November 15 or a later date acceptable to the Department.

17. All construction at the landfill site shall be under the supervision of a person licensed to practice professional engineering in the State of New York. This requires that a representative of the Permittee's engineering consultant be present whenever construction is on-going. This representative must maintain a daily log indicating work done that day, weather conditions, testing performed, quality control and quality assurance practices, problems encountered, and remedial activities undertaken to correct these problems. The certification must be submitted within three months after completion of construction. Clear color photographs of major project aspects, daily reports and results of all tests conducted to determine compliance shall also be included as part of the certification. As-built engineering plans must also be certified containing at least the following:

    (a) notation of any deviations from the plans and reports;

    (b) completed sub-grade elevations;

    (c) completed top of liner elevations, for both primary liner and secondary liner, and top of primary drainage blanket elevations;

    (d) location and critical elevations of leachate collection lines, leak detection lines, the top and bottom of the groundwater drainage blanket, valve pits, tanks, pond, containment berm, manholes, etc.

    (e) final drainage features;

    (f) locations, both existing and proposed, of all monitoring devices.

    Approval by this Department of the construction certification report is needed before the Department will grant approval to operate the specific cell of the facility. No waste shall be placed in a constructed cell prior to receipt of the Department's approval.

18. All boreholes, wells, and monitoring devices found within the proposed liner construction area shall be properly abandoned by overboring, grouting using a tremie method or similar downhole pressure grouting system and cement-bentonite grout to ensure that all contaminant migration pathways are sealed. Casings shall be removed. This activity must be noted as accomplished in the construction certification report.

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19. All structures, including the leak detection and leachate collection systems, groundwater monitoring wells, valve pits, manholes, etc., shall be maintained in proper working order. In the event any structure becomes damaged or malfunctions in any way, the Permittee shall notify the Department verbally within 48-hours, and follow up in writing within seven (7) days, and shall promptly repair or replace the structure.

20. Extreme care and protective measures shall be taken to protect the integrity of the groundwater depression system, leak detection system, leachate collection system, liners, geotextiles and all other landfill structures. Only rubber tired vehicles shall be allowed on the HDPE liner during placement of the liner.

21. Open burning of land clearing materials and debris (including trees, shrubs, and brush) is prohibited. Merchantable timber must be salvaged for commercial use. Toppings, brush, and slash must be chipped and/or beneficially used on or off-site. Tree stumps removed from the site may be chipped or buried in the landfill.

22. Synthetic liner material utilized on this project shall be inspected for obvious defects prior to its use. Any portions of the liner containing tears, defects, perforations, holes, punctures, etc. shall be removed and discarded. All synthetic liner seams shall be fusion or extrusion welded. Welds shall be 100 percent tested for pinholes and other weld faults using a vacuum box tester or air tests, as appropriate, subject to Department approval. Records shall be kept showing weather conditions (cloudy, sunny) on days when welding is ongoing including air temperatures at beginning and end of the work day and precipitation. No welding shall take place when the ambient air temperature is below 32°F or when the sheet temperature exceeds 158°F, or when the air temperature is above 120°F.

23. Should any leachate enter by migration, spill or other means into any stage which has not yet received refuse, all fluid within that cell shall be removed and treated as leachate. When the leachate is first detected in any such stage, all stormwater drainage or pumping from the stage shall cease immediately.

24. This Department shall be notified if any leachate, waste, gas or other conditions which may affect the integrity of the landfill are observed during construction, including excavation, of the landfill. Notification shall be provided verbally within 48 hours and followed up in writing within 7 days.

25. Prior to commencement of low permeability soil component of the liner system, a test pad must be constructed as described in the Quality Assurance (QA) Quality Control (QC) Plan.

26. Sides of both surface water drainage swales and the groundwater drain outfall structures shall be seeded and a vegetative cover established. Rip rap shall be placed in the bottom of both to prevent erosion anywhere flow velocities will exceed 4 feet per second. At velocities less than this, vegetation or erosion control mats may be used.

SPECIAL CONDITIONS

For Article 27 (Title 7, Mill Seat Landfill)

III. Variances

27. A variance from the landfill construction provision of 6 NYCRR Part 360-2.13(d) is hereby granted. This variance allows a separation of less than 5 feet between the base of the constructed liner system and the seasonal high groundwater table.

28. A variance has been approved to allow the revised frequency of testing of soil liner materials as follows:

Soil Test Type	Part 360 Frequency	Revised Frequency
Grain Size Distribution	1 per 2500 cubic yards	1 per 7500 cubic yards
Atterberg Limits	1 per 1000 cubic yards	1 per 5000 cubic yards
Moisture-density relationship	1 per 5000 cubic yards	1 per 12500 cubic yards
Moisture Content	1 per 1000 cubic yards	Obtained during permeability Test
Recompacted Permeability	1 per 5000 cubic yards	1 per 20000 cubic yards

When a new source of materials is acquired, the testing during the first year of construction shall be according to the frequency specified in Part 360.

IV. Landfill Operation

29. The following wastes shall not be disposed of at this facility:

(a) waste identified in 6 NYCRR Part 360-1.5(b);

(b) any empty drum or any container which has held hazardous waste and is not empty according to 40 CFR 261.7(a)(3); Metal containers of 5 gallons capacity or larger shall not be disposed at this facility unless the ends have been cut off and the containers have been crushed;

(c) any infectious waste; however, regulated medical waste that has been treated and destroyed by a method approved by the NYSDOH may be disposed.

(d) any industrial or commercial liquids, sludges, or slurries, which are less than 20 percent solids;

(e) whole tires, unless the tires have been cut into at least two pieces by cutting around the circumference;

(f) uncontaminated leaves, grass clippings, brush, branches, stumps, and tree sections with the exception of debris that has been contaminated by excessive use of pesticides.

(g) Any waste(s) regulated by 6 NYCRR Part 364 unless the waste hauler possesses a valid Part 364 permit which specifies this landfill as a disposal site for such waste(s) and disposal of such waste has been approved by the owner/operator in writing. Copies of a summary of all approved waste stream applications must be submitted to the Region 8-Regional Solid and Hazardous Materials Engineer within seven (7) days of such approval. On a monthly basis, a copy of the waste stream approvals shall be submitted in a format acceptable to the Department.

30. The approved design capacity for this landfill is 1945 tons/day. This threshold is a daily average based on the quantity of solid wastes accepted at the landfill during a calendar year, however during no calendar quarter shall the daily average exceed 2918 tons per day. Excluded from these limits is solid waste generated at the landfill facility and any Beneficial Use Determination (BUD) wastes.
By no later than the fifteenth day of each month, the permittee shall report in writing to the Region 8 Regional Solid & Hazardous Materials Engineer, the total amount of solid waste disposed at the facility during the previous month, the number of days of operation, and the amount of BUD wastes received.

31. Operation, including the placement of daily cover, at this facility shall be limited to the following:

Monday thru Friday	6:00 a.m. to 6:30 p.m.
Saturday	6:00 a.m. to 3:00 p.m.
Saturday following Major Holiday	6:00 a.m. to 6:30 p.m.

The landfill shall not be operated on Sundays or Major Holidays.

Major Holiday shall include New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day.

Landfill personnel must be on duty during all hours that wastes are deposited at the landfill.

32. During the placement of the first lift of waste above the primary leachate collection and removal system, the following precautions and practices will be observed:

(a) consideration for the approach and travel of haul trucks and other landfill operation vehicles relative to the location of the liner and leachate collection laterals.

For Article 27 (Title 7, Mill Seat Landfill)

(b) waste placement must be kept away from the top of the berms to allow for proper leachate control and effective future placement of final cover. Identification markers may be used along the berms with specific setback distances for waste placement.

(c) Placement of a select type refuse being free of demolition debris, large metal wastes, long items such as poles, piping and bulky wastes in general, and shall be placed in a minimum lift thickness of at least 5 feet above the leachate collection and removal system.

33. All structures, including the leachate collection and removal system, groundwater and gas monitoring wells, access roads, drainage structures, recharge basins, etc., shall be maintained in proper working order. In the event any structure becomes damaged or malfunctions in any way, the Permittee shall notify the Department verbally within 48-hours and follow up in writing within 7 days, and shall promptly replace or repair the structure. All monitoring wells shall be fitted with locking caps and locked at all times other than during times of sampling.

34. All wastes received at the disposal site must be spread and compacted in layers not more than two (2) feet thick upon deposition at the working face, excepting the first lift placed on the liner system, which shall be placed in accordance with condition 30(c) above.

35. The Permittee shall require that all vehicles delivering waste or cover material to the site be enclosed or covered or their contents secured.

36. On-site roads used to transport solid wastes shall be maintained passable and safe at all times. No penetrating or waste oils shall be used for dust control.

37. Wind-blown paper and other litter shall be confined to the disposal area by snow fence, portable screens, or any other necessary devices. The Permittee shall police wind-blown paper and litter along the landfill's perimeter as necessary and at least once a week.

38. The entire site shall be routinely inspected for rodent activity. The rodent control programs described in the Contingency Plan shall be implemented to effectively control vectors at the landfill.

39. Siltation ponds shall be inspected on an annual basis. Should it be determined that the presence of sediments in a pond interferes with the pond's designed function, sediment shall be removed. Silt shall not be removed between October 15 and May 15.

40. Daily, intermediate, and final cover must be applied as required by Part 360. The following materials may be used as alternate daily cover on interior slopes of the landfill footprint:

-non-hazardous contaminated soil, provided that it is used in areas that will receive additional waste the next day;
-crushed C&D
-bottom ash from coal-fired boilers;
-wood chips;
-auto shredder fluff;
-bottom ash/fly ash mixture;
-foundry sand;
-wastewater treatment plant incinerator ash;
-mixed glass cullet;
-solid waste incinerator ash excavated from the Greater Rochester International Airport, provided it is used in an area that will receive waste the next day;

Bottom ash, glass cullet, and wood chips may be stored away from the landfill footprint provided that the storage area(s) are outside the regulated wetlands and the associated buffer, dust and runoff from the storage area shall be prevented from reaching the wetlands, and a continuous siltation control barrier shall be maintained around the perimeter of the area.

The remaining alternate daily cover materials must be stockpiled within the limits of the landfill footprint and must be stored in such a manner that the materials do not leave the lined area either by tracking by vehicles, water erosion, or by wind deposition.

41. Cover soil and drainage control structures must be designed, graded and maintained to prevent ponding and erosion and to minimize infiltration of water into the solid waste cells.

42. The permit to operate the above-referenced facility is hereby modified to allow county-authorized solid waste haulers to transport wastes directly to the Mill Seat Landfill, bypassing the County's transfer station. The revised operation shall be in accordance with the revisions to the approved Operation and Maintenance Plan and the approved Contingency Plan.

V. Leachate Control

43. Any leachate on the ground shall immediately be contained and removed either by pumping or by utilizing spill cleanup procedures such as absorbent pads. Leachate and leachate spill debris must be disposed of at authorized facilities approved by the Department.

44. Weekly visual inspections shall be conducted by the operator on the leachate control system including all primary leachate manholes and secondary leachate MHS-37 (Stage I) and MHS-39 (Stage II), leachate pump stations, and main air release valves. If leachate is

detected in the outer pipes; or if there is evidence of plugging; or if defined action leakage rates are exceeded; or if groundwater monitoring wells indicate significant increases in contaminant levels above established background levels; then DEC must be notified verbally within 24 hours and follow up in writing within 7 days and corrective measures implemented promptly in accordance with the Contingency Plan. Weekly inspection reports shall be kept on file at the facility and included in the Annual Report.

45. The Permittee shall maintain a contingency plan which shall identify the alternative leachate treatment and disposal methods that will be employed in the case of: malfunction of the existing leachate treatment/disposal system; inadequate system capacity to manage short-term increased leachate volumes; and/or the leachate is not acceptable to the existing wastewater treatment plant. Should any element of the Contingency Plan become unavailable, or inoperative, a revised plan shall be submitted, subject to Department approval within 60 days.

46. The primary leachate collection system shall be jetted and the secondary lateral #9 shall be video inspected annually. Should the video inspection indicate impairment in the system's efficiency, then remedial jetting shall be conducted.

47. Under no circumstances shall leachate be discharged directly or indirectly from the site to surface waters or groundwaters.

48. Any leachate hauled from the facility shall be by a hauler in possession of a valid Part 364 permit, authorizing such hauler to haul leachate from the facility to a specified disposal site approved by the Department.

49. If refuse is deposited within a cell located on top of an area which has received intermediate cover, a portion of the intermediate soil cover shall be removed from the area to be filled so as to adequately allow leachate to reach the leachate collection system.

VI. Annual Reporting

50. Annual reporting will include, but not be limited to, the items listed in this condition and shall be submitted to the Department no later than March 1 of each year. This report must detail:

(a) The total quantity of solid waste disposed of, in tons, for the calendar year from January first to December 31. This information must be compiled by waste type such as refuse, sludge, construction and demolition, non-hazardous commercial waste, or other types of solid waste. All wastes received at the facility shall be measured by weight as described in the Report. These measurements shall be recorded on a daily basis. These records shall be maintained for the life of the facility.

(b) The remaining site life in years and remaining capacity in cubic yards of the existing constructed landfill.

(c) An evaluation of all water and leachate quality data collected throughout the year. The Department may request at any time that this information be provided in a computer-compatible format to be specified by the Department.

(d) An evaluation of gas monitoring and control systems, including a narrative description of proposed or actual changes to these systems.

(e) The quantity of leachate collected, treated and disposed of on a monthly basis.

(f) The quantity of leachate collected in the secondary leachate collection/leak detection and removal system. This must be compiled on a monthly basis to assess primary liner system performance.

(g) A revised site plan with 10-foot contours of the fill area reflecting the extent of the previous year's fill progression and the proposed fill progression for the year.

(h) Any proposed changes from the approved reports, plans, and specifications or permit conditions must be listed with justification for each change given. No change shall be effective until written approval is received from the Department.

VII. Comprehensive Recycling Analysis (CRA)/Recycling

51. The Permittee shall not accept solid waste that originates from a municipality that has not completed a Comprehensive Recycling Analysis satisfying the requirements of 6NYCRR Part 360-1.9(f) and approved by the Department, and implemented the recyclables recovery program determined to be feasible by the analysis unless, for the service area of the facility: either another municipality prepared such an analysis, the Department approves it and the analysis addresses the waste stream of that municipality; or a Department approved local Solid Waste Management Plan that addresses all components of such analysis, takes effect.

VIII. Solid Waste Management Plan

52. The permitted facility is prohibited from receiving waste after April 1, 1992 unless and until a local solid waste management plan, as set forth in paragraph b of subdivision one of Section 27-0107 (ECL), is in effect for the Permittee or planning unit of which the Permittee is a part, or for any municipality which sends solid waste to this facility.

IX. Leachate Recirculation

53. Leachate recirculation is allowed in Stages 1 through 4 per Department approval. The Department may rescind this approval should it be deemed necessary.

Leachate recirculation in other stages shall be reviewed individually and approved specifically for each stage.

X. Closure/Post-Closure

54. The Permittee shall notify the Department whenever changes in operating plans, waste deposition rates, facility design, or events occurring during the active life of the landfill change the projected final closure date by more than Twelve (12) months. The notice shall be submitted in writing to the Department within sixty (60) days of such changes in Permittee's plans, deposition rates, design, or events at the landfill. All proposed amendments shall be subject to the Department's approval and shall not be effective unless said approval is received in writing.

55. Twelve months before the date at which the landfill will cease accepting waste, the Permittee shall submit a Scope of Work which shall include: 1) a site investigation plan and 2) a schedule of all tasks required to implement a closure in conformance with the regulations expected to be effective at the time of closure. The schedule shall be in agreement with the final closure date set forth in the permit.

56. A permanent grass or ground cover crop approved by the Department must be established and maintained on all exposed final cover soil within sixty (60) days after placement, or season not permitting, as otherwise required by the Department.

57. The final contours of the site must conform to those shown on Department-approved engineering report and plans.

58. Final cover integrity, slopes, cover vegetation, drainage structures, leachate collection and removal structures established pursuant to this permit shall be maintained for a minimum period of thirty (30) years beyond the date of the placement of final cover, or for as long as leachate is produced at this facility, whichever is longer.

XI. Environmental Monitoring

59. Groundwater, surface water, and leachate sampling methodologies and analyses of samples must be performed in accordance with the approved Environmental Monitoring Plan and Site Analytical Plan and the following:

(a) Monitoring of Hotel Creek at NY Route 33A for dissolved oxygen shall occur at weekly intervals April 1 through October 30 and at monthly intervals November 1 through December 31 during the operating life of the landfill. In addition, a temperature logger shall be used at this location to log temperature readings at 4:00 PM. The Department will retain the right to modify stormwater management techniques should adverse temperatures or dissolved oxygen conditions in the trout reach of Hotel Creek warrant modification.

SPECIAL CONDITIONS

For Article 27 (Title 7, Mill Seat Landfill)

(b) Monitoring of the detention pond outfalls shall occur, if flowing, at quarterly intervals to coincide with the groundwater and surface water monitoring specified in the approved EMP. Outfall monitoring shall include temperature, dissolved oxygen, total dissolved and suspended solids, Total Kjeldahl Nitrogen, ammonia, and soluble and total phosphorus. The Department will retain the right to modify stormwater management techniques should adverse conditions in the regulated wetlands warrant modification.

END OF PERMIT

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER		EFFECTIVE DATE
8-9908-00162/00032		07/09/2013
FACILITY/PROGRAM NUMBER(S) 28532	PERMIT Under the Environmental Conservation Law (ECL)	EXPIRATION DATE: 07/08/2023

TYPE OF PERMIT ☐ NEW X Renewal ☐ Modification X PERMIT TO CONSTRUCT X Permit to Operate

- ☐ Article 15, Title 5: Protection of Waters
- ☐ Article 15, Title 15: Water Supply
- ☐ Article 15, Title 15: Water Transport
- ☐ Article 15, Title 15: Long Island Wells
- ☐ Article 15, Title 27: Wild, Scenic and Recreational Rivers
- ☐ 6NYCRR 608: Water Quality Certification
- ☐ Article 17, Titles 7, 8: SPDES
- ☐ Article 19: Air Pollution Control
- ☐ Article 23, Title 27: Mined Land Reclamation
- ☐ Article 24: Freshwater Wetlands
- ☐ Article 25: Tidal Wetlands
- X Article 27, Title 7; 6NYCRR 360: Solid Waste Management
- ☐ Article 27, Title 9; 6NYCRR 373: Hazardous Waste Management
- ☐ Article 34: Coastal Erosion Management
- ☐ Articles 1, 3, 17, 19, 27, 37; NYCRR 380: Radiation Control
- ☐ Other:

PERMIT ISSUED TO			TELEPHONE NUMBER
Waste Management of New York LLC			(585) 223-6132
ADDRESS OF PERMITTEE 425 Perinton Parkway, Fairport, NY 14450			
CONTACT PERSON FOR PERMITTED WORK Jeffrey Richardson			TELEPHONE NUMBER (585) 223-6132
NAME AND ADDRESS OF PROJECT/FACILITY High Acres Western Expansion Landfill, 425 Perinton Parkway, Fairport, NY 14450			
LOCATION OF PROJECT/FACILITY Perinton Parkway, Fairport, NY 14450			
COUNTY Monroe	TOWN Perinton	WATERCOURSE Water Body:	NYTM COORDINATES E: N:

DESCRIPTION OF AUTHORIZED ACTIVITY:

Construction and Operation of Mixed Solid Waste Landfill with an approved design capacity of 3500 tons per day. The permit modification effective 03/14/08 allows construction of the Parkway Expansion Phase III, except that no Phase III expansion construction activities may be initiated until the Department has issued the state air Title V permit modification required for this expansion and the U.S.E.P.A. has issued any required federal air permit(s) for this expansion. The permit modification effective 06/02/2011 incorporates revised final grading plans pertaining to the height of the landfill in Perinton; see Special Condition I(1). Wetland mitigation work authorized under the ECL Article 24 permit may commence prior to the issuance of the required state and federal air permits. No operation of any portion of this expansion may commence until the Department has approved the construction certification report(s).

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

REGIONAL PERMIT ADMINISTRATOR:	ADDRESS	
Scott E. Sheeley	6274 E. Avon-Lima Rd, Avon, NY 14414	
AUTHORIZED SIGNATURE Scott E. Sheeley	DATE APRIL 29, 2013	Page 1 of 15

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

GENERAL CONDITIONS

General Condition 1: Facility Inspection by the Department

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such represen-tative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, includ-ing all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Depart-ment representative is a violation of this permit.

General Condition 2: Relationship of this Permit to Other Department Orders and Determinations

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

General Condition 3: Applications for Permit Renewals or Modifications

The permittee must submit a separate written application to the Depart-ment for renewal, modification or transfer of this permit. Such applica-tion must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

The permittee must submit a renewal application at least:

a) 180 days before expiration of permits for State Pollutant Dis-charge Elimina-tion System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and

b) 30 days before expiration of all other permit types.

Submission of applications for permit renewal or modification are to be submitted to:

NYSDEC Regional Permit Administrator, Region 8

6274 E. Avon, Lima Road. Avon, NY 14414 (585)226-5400

General Condition 4: Permit Modifications, Suspensions and Revocations by the Department

The Department reserves the right to modify, suspend or revoke this permit in accordance with 6 NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;

b) failure by the permittee to comply with any terms or conditions of the permit;

c) exceeding the scope of the project as described in the permit application;

d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

ADDITIONAL GENERAL CONDITIONS FOR ARTICLE 27 (Title 7, High Acres Western Expansion Landfill)

5. All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or his agent as part of the permit application. Such approved plans were prepared by GeoSyntec Consultants, P.C. Revised May 1993, Earth Tech dated August 2000, McMahon & Mann Consulting Engineers dated September 2002, and Blasland, Bouck and Lee, Inc. dated January 2006 and March 2011 .

SPECIAL CONDITIONS

I. GENERAL APPLICABILITY

1. Unless expressly authorized in writing or unless modified by conditions of any permit issued by the Department of Environmental Conservation (the "Department"), construction and operation of the Western Expansion Landfill and the Parkway Expansion Phases I, II & III and related facilities shall be carried out in strict conformance with the plans, specifications, and reports submitted as part of the application for this permit, except vertical expansion in the Town of Perinton is not authorized. Those materials include:

   (a) Permit applications to Construct and Operate Solid Waste Management Facility pursuant to 6 NYCRR Part 360, most recently revised and dated 04/10/06 and signed by David Balbierz.

   (b) Part 360 permit modification application, Parkway Expansion Phase II, High Acres Landfill and Recycling Center, Perinton, Monroe County, New York, September 2002;

   (c) Permit Modification Application and Engineering Drawings for Parkway Expansion Phase II, Waste Management of New York, Inc., High Acres Landfill and Recycling Center, Town of Perinton, Monroe County, New York, dated September 2002, Drawings 1-33;

   (d) Part 360 permit modification application and Engineering Drawings for the Western Expansion Landfill, Parkway Expansion Phase I, Waste Management of New York, Inc., High Acres Landfill and Recycling Center, Town of Perinton, Monroe County, New York, dated August 1999 and revised August 2000.

   (e) Hydrogeologic Investigation of the Proposed Parkway Expansion Phase II, High Acres Landfill and Recycling Center, Perinton, Monroe County, New York, October 2000.

   (f) Supplemental Draft Environmental Impact Statement, Proposed Parkway Expansion Phase II, High Acres Landfill and Recycling Center, Perinton, Monroe County, New York, October 2002.

   (g) Permit Modification Application and Engineering Drawings for Parkway Expansion Phase III, Waste Management of New York, Inc., High Acres Landfill and Recycling Center, Town of Perinton, Monroe County, and Town of Macedon , Wayne County, New York, dated January 2006, Volumes I and II and Drawings 1-36, except that drawings 4 and 27 have been replaced by drawings 4A and 4B and 27Aand 27B, respectively. These new drawings are dated March 15, 2011, and show elimination of vertical expansion in the Town of Perinton

SPECIAL CONDITIONS

For Article 27 (Title 7, High Acres Western Expansion Landfill)

(h) Hydrogeologic Investigation Report of the Proposed Parkway Expansion Phase III, High Acres Landfill and Recycling Center, Town of Perinton, Monroe County, New York, August 2005.

(i) Final Supplemental Environmental Impact Statement, Volumes I and II, Proposed Parkway Expansion Phase III and Vertical Expansion, High Acres Landfill and Recycling Center, Town of Macedon, Wayne County and Town of Perinton, Monroe County, New York, January 2007.

In any instance in which the above approved documents conflict with the requirements of 6NYCRR Part 360, the more stringent shall apply.

2. The Permittee shall comply with all conditions of this permit and the appropriate edition of 6NYCRR Part 360 as outlined in this permit or as directed in writing by the Department. Non-compliance constitutes a violation of ECL Article 27, Title 7 and is grounds for enforcement action, permit suspension, revocation, or modification, or denial of a permit renewal or modification application.

3. The Permittee must maintain a copy of all application materials, plans, reports, permits, and the Draft and Final Environmental Impact Statements at the site and make these documents available to any representative of the Department. The Permittee must also maintain a copy of all written approvals and directives in a like manner, together with a copy of the effective Part 360.

4. Unless otherwise specified by the Department, two copies of all plans, reports, or other submissions related to the design, construction, operation, or monitoring of this facility must be submitted to: Regional Solid & Hazardous Materials Engineer, NYSDEC, 6274 East Avon-Lima Road, Avon, NY 14414. Any approval required must be obtained in writing from the Region 8 Regional Solid & Hazardous Materials Engineer.

5. In the event an authorized Department representative makes a determination that the Permittee is in non-compliance with any provision of the Environmental Conservation Law, or with any regulation promulgated thereunder or any provision of this permit or any judicial or administrative order applicable to the facility, the Permittee must, upon receipt of written or oral Notice of Non-Compliance from the Department, immediately take such steps as are necessary to correct, abate, or remediate the non-complying condition. When oral notice is given, the Department will provide a confirming written Notice of Non-Compliance. To the extent feasible, the Permittee must consult the Department regarding the selection and implementation of such remedial measures. Any instance of non-compliance, together with the responsive measures and results of such remedial measures, must be recorded in writing by the Permittee, and submitted to the Department. Failure to do so shall constitute non-compliance with this permit.

For Article 27 (Title 7, High Acres Western Expansion Landfill)

6. The Permittee shall take all steps to minimize or correct any adverse impact on human health or the environment resulting from facility operations. The Permittee shall report any such activity which may endanger human health or the environment to the DEC Region 8 Regional Solid & Hazardous Materials Engineer. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances and followed up in writing within seven days.

7 The Permittee shall allow any authorized representative of the Department upon the presentation of proper credentials, to:

(a) Have access to and copy any records that must be kept under the conditions of this permit or Part 360;

(b) Enter and inspect any buildings, facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(c) Sample or monitor for the purpose of assuring permit compliance or as otherwise authorized by the ECL or any applicable law, regulation, permit or Order, any substances or parameters at any location.

8. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

9. The provisions of this permit shall not be construed to limit the Department's authority as otherwise established by law or regulation.

10. **On-site Environmental Monitor**

(a) Waste Management of New York shall fund on-site environmental monitoring services to be performed by the Department. These monitoring services will include, but not be limited to, the following:

1. Compliance monitoring;
2. Inspections and compliance response;
3. Pollution prevention assurance.

(b) Funds necessary to support the monitoring services and requirements for the coming year shall be provided to the Department by Waste Management of New York on an annual basis. The sum to be provided is based on annual on-site environmental monitoring service costs of the Department for up to one quarter of a person-year of service, and is subject to annual revision. Subsequent annual payments shall

be made for the duration of this Permit or until the monitoring requirement no longer exists, whichever comes first.

(c) Waste Management of New York shall be billed annually for each fiscal year beginning on April 1. If this Permit is to first become effective subsequent to April 1, the initial payment may be for an amount sufficient to meet the anticipated cost of the monitoring services through the end of the current fiscal year.

(d) The Department may revise the required payment on an annual basis to include all of the Department's costs associated with the monitoring services. The annual revision may take into account such factors as inflation, salary increases, changes in operating hours and procedures, increase or decrease in the amount of monitoring necessary, and increase or decrease in the number of on-site environmental monitors and on-site environmental monitor supervision necessary. Upon written request by Waste Management of New York, the Department shall provide Waste Management of New York with a written explanation of the basis for any revision or modification. If such a revision is required, the Department will notify Waste Management of New York of such a revision no later than 60 days in advance of such revision.

(e) Prior to making its annual payment, Waste Management of New York will receive, and have an opportunity to review, an annual work plan that the Department will undertake during the year.

(f) Payments are to be made in advance of the period in which they will be expended and shall be made in full within 30 days of receiving a bill from the Department. Payments shall be addressed to the address and contact person identified in the bill received from the Department.

(g) Failure to make the required payments shall be a violation of this Permit. The State reserves all rights to take appropriate action to enforce the above payment provisions

II. LANDFILL CONSTRUCTION

11. Written notice of the commencement of all major portions of on-site construction activities must be made to the Department. The Permittee shall submit to the Department, prior to the commencement of construction, a construction schedule which indicates the anticipated beginning and end dates for all major construction activities. These activities include, but are not limited to, the commencement of the clearing and grading of any large areas, commencement of the placement of the liner for any large section, covering of any section of the leachate collection system, all quality control and quality assurance testing including on-site permeability and/or density testing activities and the commencement of construction of any section of permanent final cover. The Permittee shall submit an updated schedule to the Department monthly during the course of construction.

SPECIAL CONDITIONS

For Article 27 (Title 7, High Acres Western Expansion Landfill)

12. The Department must be notified immediately in case of any development during construction that warrants a request to modify the approved engineering plans. Deviation from the approved plans without the specific prior written approval of the Department will constitute a violation of this permit.

13. All construction at the landfill site shall be under the supervision of a person licensed to practice professional engineering in the State of New York or an authorized representative of that individual. This requires that a representative of the Permittee's engineering consultant be present whenever construction is on-going. This representative must maintain a daily log indicating work done that day, weather conditions, testing performed, quality control and quality assurance practices, problems encountered, and remedial activities undertaken to correct these problems. A copy of this log, certified by the supervising engineer as accurate and correct, must be submitted with the construction certification for each cell. The certification made in duplicate with original signatures and stamped by the licensed engineer must indicate whether all work performed was in compliance with this permit, and the plans and reports as detailed in special condition #1. The certification must be submitted within sixty (60) days after completion of construction. Clear color photographs of major project aspects, daily reports and results of all tests conducted to determine compliance shall also be included as part of the certification. As-built engineering plans must also be certified containing at least the following:

    (a) notation of any deviations from the plans and reports;

    (b) completed sub-grade elevations;

    (c) completed top of liner elevations, for both primary liner and secondary liner, and top of primary drainage blanket elevations;

    (d) location and critical elevations of leachate collection lines, leak detection lines, the top and bottom of the groundwater drainage blanket, valve pits, tanks, pond, containment berm, manholes, etc.

    Approval by this Department of the construction certification report is needed before the Department will grant approval to operate the specific cell of the facility. No waste shall be placed in a constructed cell prior to receipt of the Department's approval.

14. All boreholes, wells, and monitoring devices found within the proposed fill area shall be properly abandoned by overboring, grouting using a tremie method or similar downhole pressure grouting system and cement-bentonite grout to ensure that all contaminant migration pathways are sealed. Casings shall be removed. This activity must be noted as accomplished in the construction certification report.

For Article 27 (Title 7, High Acres Western Expansion Landfill)

15. Extreme care and protective measures shall be taken to protect the integrity of the groundwater depression system, leak detection system, leachate collection system, liners, geotextiles and all other landfill structures. Only rubber tired vehicles shall be allowed in direct contact with HDPE liner.

16. All synthetic liner seams shall be fusion or extrusion welded. Welds shall be 100 percent tested for pinholes and other weld faults using a vacuum box tester or air tests, as appropriate, subject to Department approval. Records shall be kept showing weather conditions (cloudy, sunny) on days when welding is ongoing including air temperatures at beginning and end of the work day and precipitation. No welding shall take place when the ambient air or sheet temperature is below 32°F, when the sheet temperature exceeds 158°F, or when the air temperature is above 120°F.

17. Should any leachate enter by migration, spill or other means into any cell which has not yet received refuse, all liquids within that cell shall be removed and treated as leachate. When the leachate is first detected in any such cell, all pumping of liquids from the cell into the stormwater drainage system shall cease immediately. Pumping of liquid from that cell into the stormwater drainage system may only recommence upon written approval from the Department.

18. This Department shall be notified if any leachate, waste, gas or other conditions which may affect the integrity of the landfill are observed during construction, including excavation, of the landfill. Notification shall be provided verbally within 48 hours and followed up in writing within 7 days.

III. LANDFILL OPERATION

19. The approved design capacity for this landfill is 3500 tons/day, based on an annual average. Excluded from these limits is solid waste generated at the landfill facility and any Beneficial Use Determination (BUD) daily or intermediate cover wastes.
By no later than the fifteenth day of each month, the permittee shall report in writing to the Region 8 Regional Solid & Hazardous Materials Engineer, the total amount of solid waste disposed at the facility during the previous month, the number of days of operation, and the amount of BUD cover wastes received.

20. Operation of the landfill and landfill related activities will be in accordance with the following:

    (a) Operations directly related to the acceptance and disposal of solid waste at this facility shall be limited to the following:

For Article 27 (Title 7, High Acres Western Expansion Landfill)

Monday through Friday	6:00 a.m. to 4:30 p.m.
Saturday	6:00 a.m. to 2:00 p.m.
Saturday following a Major Holiday*	6:00 a.m. to 4:30 p.m.

The landfill shall not be operated on Sundays or Major Holidays.

*Major Holiday shall include New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day.

(b) Placement of daily cover shall be limited to the following:

Monday through Friday	6:00 a.m. to 6:30 p.m.
Saturday	6:00 a.m. to 4:30 p.m.
Saturday following a Major Holiday*	6:00 a.m. to 6:30 p.m.

(c) Landfill activities not directly related to the disposal of solid waste may be conducted under the following schedule:

October 1 to March 31: Monday through Saturday 5:00 a.m. to 6:30 p.m.
April 1 to September 30: Monday through Saturday 4:30 a.m. to 8:30 p.m.

These activities include road maintenance, "dress-up" of landfill sideslopes, cleaning of sedimentation ponds, extension and connection of gas recovery wells, repair of drainage ditches and erosion control systems, repair of litter fences, etc.

(d) There will be no restrictions on activities which do not require the operation of equipment. These activities shall include equipment maintenance, facility maintenance (such as electrical or phone repair), office personnel, etc.

(e) The Permittee shall notify the Department, in writing, of operating hours for special projects before beginning the project. Special projects shall include such items as final cover system placement, installation and decommissioning of groundwater monitoring wells, cleaning of leachate collection lines, etc.

21. The following wastes shall not be disposed of at this facility:

(a) waste identified in 6 NYCRR Part 360-1.5(b);

(b) any intact steel or plastic drums larger than 10 gallon capacity, that has not been crushed and had at least one end removed or has not been shredded;

(c) any container which has held hazardous waste and is not empty according to 6NYCRR Part 371.1(f);

(d) any container of 5 to 10 gallon capacity shall not be disposed of at this facility unless the containers have been crushed, compacted, or rendered incapable of holding any liquids except that small quantities of dry wastes may be containerized for disposal in this manner;

(e) any regulated medical waste which has not been treated in accordance with the requirements of 6NYCRR Subpart 360-17 or 10NYCRR Subpart 10-3;

(f) any industrial or commercial liquids, sludges, or slurries, which contain any free liquids unless they have been rendered free of any liquids at the on-site liquid Solidification Facility;

(g) any waste(s) regulated by 6 NYCRR Part 364 unless the waste hauler possesses a valid Part 364 permit which specifies this landfill as a disposal site for such waste;

(h) tires which have not been cut into a minimum of two equal pieces;

(i) All yard waste (leaves, grass, brush/branches and stumps/tree sections) shall be banned from disposal in the landfill except for that yard waste which is contaminated by excessive pesticides, hazardous substances, or other items which would make the yard waste unsuitable for composting or chipping. Yard wastes contained in plastic bags do not qualify for the exception from the ban on landfilling.

All sludges and chemical, industrial, commercial, food or power plant wastes must be reviewed for compliance with this condition by the Permittee prior to accepting these wastes for disposal at this facility. All records relating to the disposal of these wastes at this facility shall be made available to routine Department inspections.

22. During the placement of the first lift of waste above the primary leachate collection and removal system, the following precautions and practices shall be observed:

(a) consideration for the approach and travel of haul trucks and other landfill operation vehicles relative to the location of the liner and leachate collection laterals.

(b) waste placement must be kept away from the top of the berms to allow for proper leachate control and effective future placement of final cover. Identification markers may be used along the berms with specific setback distances for waste placement. The initial waste placement must be a minimum of 5 feet of compacted thickness and must be of a select nature and free of all construction and demolition debris; large metal objects; any long rigid items such as poles or piping; and any other rigid, bulky items which could be placed so as to damage the liner or the leachate collection system.

SPECIAL CONDITIONS

For Article 27 (Title 7, High Acres Western Expansion Landfill)

23. Regulated medical waste (RMW) to be accepted for disposal at this facility must be in strict accordance with the following:

    (a) Only treated regulated medical waste (TRMW) or treated and destroyed medical waste (TDMW) which has been treated in accordance with the minimum operating requirements of 6NYCRR Subpart 360-17 or 10NYCRR Subpart 70-3 may be accepted at this facility for disposal.

    (b) Each load of TRMW and TDMW to be accepted for disposal must be accompanied by the original certification form. Each certification form must be signed and dated by the treatment facility shift supervisor or treatment facility manager. The original and all copies of the certification must be maintained at the facility for a period of no less than seven (7) years from the date they are prepared.

    (c) All RMW accepted at the facility shall be handled in accordance with the approved Operation and Maintenance Manual.

24. All structures, including the leachate collection and removal system, groundwater and gas monitoring wells, access roads, drainage structures, sedimentation basins, etc., shall be maintained in proper working order. In the event any structure becomes damaged or malfunctions so that it will not properly function, the Permittee shall notify the Department verbally within 48-hours and follow-up in writing within 7 days, and shall promptly replace or repair the structure. If the Permittee immediately repairs the damaged structure within 24 hours of discovering the damage or malfunction, the Permittee will not be required to notify the Department verbally or in writing. All monitoring wells (groundwater and gas) shall be fitted with locking caps and locked at all times other than during times of sampling.

25. The Permittee shall maintain a contingency plan which shall identify the alternative leachate treatment and disposal methods that will be employed in the case of: malfunction of the existing leachate treatment/disposal system; inadequate system capacity to manage short-term increased leachate volumes; and/or the leachate is not acceptable to the existing wastewater treatment plant. Should any element of the contingency plan become unavailable, or inoperative, a revised plan shall be submitted to the Department within 60 days for approval.

26. The Permittee shall inspect the primary and secondary leachate collection (leak detection) and removal system bi-weekly and pump stations weekly. Should the defined action leakage rate levels be exceeded, or groundwater monitoring wells indicate significant increases in contaminant levels above established background, the Permittee shall notify the Department verbally within 24-hours and follow-up within seven (7) days in writing and immediately initiate the appropriate actions as defined in the contingency plan.

SPECIAL CONDITIONS

For Article 27 (Title 7, High Acres Western Expansion Landfill)

27. In the event that leachate must be hauled from the facility it shall be by a hauler in possession of a valid Part 364 permit, authorizing such hauler to haul leachate from the facility to a specified disposal site approved by the Department.

28. Daily, intermediate and final cover must be applied in accordance with the following schedule:

(a) Daily Cover: A minimum of six (6) inches of compacted cover material and/or approved alternate daily cover must be applied on all exposed surfaces of solid waste at the close of each operating day to control vectors, fires, odors, blowing litter, and scavenging.

(b) Alternate Daily Cover: The Permittee may utilize an alternate daily consisting of Amoco 2006 geosynthetic or other approved geosynthetic materials in accordance with the following restrictions:

1. The alternate daily cover is to be used only on the sloping portion of the working face.

2. The alternate daily cover is to be used only over an area which will receive solid waste disposal within 24-hours.

3. The alternate daily cover shall not be used when weather or other conditions prevent or hinder the effective control of vectors, fires, odors, blowing litter, and scavenging.

4. The alternate daily cover must be secured to the surface of the working face by use of sandbags, piles of cover material, steel reinforcing rods, half tires or other approved methods. Tires or other solid waste shall not be used for securing.

(c) Beneficial Use Determination (BUDS) for Wastes as Daily Cover: Approval has been granted for the beneficial use of each waste stream listed below as daily cover at this facility. When these waste streams are utilized beneficially as daily cover material, they are no longer considered solid waste upon their receipt at the landfill. However, prior to receipt at the landfill, any industrial waste must be hauled by a permitted Part 364 hauler. The weight of each load shall be measured and reported to the Department as BUD daily cover material and categorized as to the specific solid waste which is being beneficially used.

With the exception of the coal bottom ash and paper processing sludge, all of the BUD daily cover materials shall be covered with additional waste or clean soil within 24-hours of placement.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPECIAL CONDITIONS

For Article 27 (Title 7, High Acres Western Expansion Landfill)

Storage of these BUD daily cover materials shall be confined to areas of the landfill which will not cause an impact on surface water quality. Runoff and run-on controls such as berms and swales shall be provided around storage areas. Appropriate measures shall be taken to prevent the materials from becoming airborne and from eroding into drainage ways.
The specific waste streams which are approved for beneficial use as daily cover and the additional restrictions which apply to each are as follows:

1. *Contaminated Soil* - Contaminated soils which are not classified as hazardous waste may be used alone or blended. Use shall be limited to the sloping portion of the working face and restricted from the outside slopes of the landfill.

2. *Coal Bottom Ash* - Use of this material is allowed at any portion of the working face. Blending of the material with soil is optional.

3. *Paper Processing Sludge* - Use of this material as daily cover alone is limited to the sloping portion of the working face. Use on the flat portion of the working face requires the blending of an equal portion of clean soils.

4. *Incinerator Ash* - Non-hazardous ash from industrial or medical waste incinerators, and residential (multiple family) incinerators may be used as daily cover. Use as daily cover is limited to the sloping portion of the working face. Ash which contains visible incompletely combusted wastes or in the case of medical waste ash, the presence of sharp objects is not acceptable for use as daily cover. Ash which has the potential of becoming airborne is also not acceptable. All ash which is not acceptable for use as daily cover shall be disposed of on the same day of its receipt at the landfill.

5. *Resource Recovery Ash (RRA)*- Non hazardous ash generated by permitted resource recovery facilities in New York State may be used as daily cover provided that the following conditions are met:

   i. Sampling results must be provided in the annual report for the facility and be made available to the Department upon request.

   ii. Ash which contains unburned wastes shall not be suitable for use as daily cover and must be landfilled on the same day as acceptance at the landfill.

   iii. Ash with a probability of becoming airborne (windblown), or eroded into surface water drainageways, shall not be used as daily cover.

vii. Ash shall be used as daily cover or disposed of at the working face on the same day as it is received at the landfill.

With the exception of coal bottom ash, paper processing sludge, crushed C&D, and contaminated soils, all of the BUD daily cover materials shall be covered with an additional lift of waste or six inches of clean soil within 24 hours of placement. Contaminated soils shall be covered, as stated above, within 7 calendar days of being placed.

(d) Select Refuse Lift: Clean soil, geosynthetic materials and wood chips are acceptable for use as cover for the select refuse lift placed in the Western Expansion Landfill. Soil shall be used as cover on the top portion of the select refuse lift. Woodchips and/or geosynthetic materials may be used on the sloping portion of the select refuse lift. The geosynthetic materials and/or chips may be left in place for an extended period of time provided that the area is maintained free of exposed refuse, vectors are not attracted, and odors are controlled.

(e) Intermediate Cover: A minimum of 12-inches of compacted cover material (soil) must be applied and maintained on all landfill surfaces where no additional solid waste has been or will be deposited within 30 calendar days. Coal ash blended with an equal amount of clean soil may be used as intermediate cover on inside slopes of the landfill.

(f) Final Cover: The final cover system shall be designed, constructed, and maintained in accordance with the requirements of 6NYCRR Part 360, Section 360-2.15 .

29. An Annual Report shall be submitted to the Department no later than March 1 of each year which includes the following information:

(a) The total quantity of solid waste disposed of and BUD daily cover wastes in tons on a monthly basis, for the calendar year from January 1 to December 31. This information must be compiled by waste type such as refuse, sludge, construction and demolition, non-hazardous commercial waste, or other types of solid waste. All wastes received at the facility shall be measured by weight as described in the Report. These measurements shall be recorded on a daily basis. These records shall be maintained for the life of the facility.

(b) The remaining site life in years and remaining capacity in cubic yards of the existing constructed landfill.

(c) An evaluation of all water and leachate quality data collected throughout the year. The Department may request at any time that this information be provided in a computer-compatible format to be specified by the Department.

For Article 27 (High Acres Western Expansion Landfill)

(d) The quantities of leachate collected, (for each cell) treated and disposed of on a monthly basis.

(e) The quantity of leachate collected in the secondary leachate collection/leak detection and removal system for each cell. This must be compiled on a monthly basis to assess primary liner system performance. These figures shall be used to compute the action leakage rate for each active cell.

(f) A revised site plan with 5-foot contours of the fill area reflecting the extent of the previous year's fill progression and the proposed fill progression for the next year.

(g) An update of the closure and post-closure cost estimates taking into account any changes to the closure/post closure plans, or operating conditions.

30. Final cover integrity, slopes, cover vegetation, drainage structures, leachate collection and removal structures established pursuant to this permit shall be maintained for a minimum period of thirty (30) years beyond the date of the placement of final cover, or for as long as leachate is produced at this facility, whichever is longer.

31. Groundwater, surface water, and leachate sampling methodologies and analyses of samples must be performed in accordance with the approved Environmental Monitoring Plan (EMP)/ Site Analytical Plan (SAP) for this facility. Operational, closure, and post-closure sampling and analysis shall be in accordance with the approved EMP.

32. All new monitoring wells are to be constructed and sampled as specified in the approved Environmental Monitoring Plan (EMP) and are to meet or exceed the requirements of 6NYCRR Part 360. Any proposed revisions to the EMP are to be submitted to the Department and are subject to the Department's approval.

33. Any wells which do not yield sufficient water to be sampled or are otherwise unsuitable for monitoring purposes are to be reported immediately to the Region 8 Regional Solid Waste Engineer. The operator shall be required to repair, redevelop, or replace such wells in time for the next scheduled sampling event. Such work must receive prior written approval of the Department.

34. The permittee shall implement the Mined Land Use Plan. No excavated on-site soils shall be removed from the site unless the Permittee has first obtained a mining permit pursuant to 6NYCRR Part 422.

Attachment-10
Hazardous Waste Receiving Facilities

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

C. HEIDI GRETHER
DIRECTOR

November 13, 2017

Ms. Sylwia Scott
Michigan Disposal Waste Treatment Plant
49350 North I-94 Service Drive
Belleville, Michigan 48111

Dear Ms. Scott:

SUBJECT: Regulatory Status of the Michigan Disposal Waste Treatment Plant
Hazardous Waste Management Facility Operating License;
MID 000 724 831

The term of the hazardous waste management facility operating license issued to Michigan Disposal Waste Treatment Plant (MDWTP) expired on October 31, 2017. US Ecology filed a timely hazardous waste operating license renewal application for MDWTP. By filing a timely renewal application, the Michigan Administrative Procedures Act, 1969 PA 306, as amended, allows MDWTP to continue operation under the conditions of their existing license until the Michigan Department of Environmental Quality (MDEQ) makes a final determination on the renewal application.

If you have any questions, please contact Ms. Kimberly M. Tyson, Environmental Engineer Specialist, Hazardous Waste Section, Waste Management and Radiological Protection Division (WMRPD), at 517-284-6574; tysonk@michigan.gov; or MDEQ, WMRPD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Allan B. Taylor

Allan B. Taylor, Manager
Hazardous Waste Section
Waste Management and Radiological
Protection Division
517-614-7335

cc: Ms. Tracy Kecskemeti, MDEQ
Mr. Michael Busse, MDEQ
Ms. Jeanette Noechel, MDEQ
Mr. Dave Slayton, MDEQ
Ms. Virginia Himich, MDEQ
Ms. Kimberly M. Tyson, MDEQ
Operating License File

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

October 31, 2007

Ms. Melinda Keillor
Regulatory Specialist
The Environmental Quality Company
Michigan Disposal Waste Treatment Plant
49350 North I-94 Service Drive
Belleville, Michigan 48111

Dear Ms. Keillor:

SUBJECT: Final Hazardous Waste Management Facility Operating License (License); Michigan Disposal Waste Treatment Plant (MDWTP), Belleville, Michigan; MID 000 724 831

The Michigan Department of Environmental Quality (MDEQ), Waste and Hazardous Materials Division (WHMD), has completed its review of the MDWTP License Application. Based on that review and the results of the public hearing held on June 6, 2007, the MDEQ has issued a License to the MDWTP pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The License Application review and the public participation procedures were conducted in accordance with Part 111.

Enclosed are copies of the License, Final Fact Sheet, Response to Comments, and Notice of Final Decision. If you have any questions or comments, please contact Ms. Kimberly M. Tyson, Hazardous Waste Section, WHMD, at 517-373-2487.

Sincerely,

George W. Bruchmann, Chief
Waste and Hazardous Materials Division
517-373-9523

Enclosures
cc: Mr. Jae Lee, U.S. Environmental Protection Agency, Region 5
Mr. Dale Meyer, U.S. Environmental Protection Agency, Region 5
Ms. Delores Montgomery, MDEQ
Mr. Steve Buda, MDEQ
Mr. Larry AuBuchon/Mr. Michael Busse, MDEQ
Ms. Connie Pennell, MDEQ
cc/enc: Ms. Kimberly M. Tyson, DEQ
Operating License File

NOTICE OF FINAL DECISION

MICHIGAN DISPOSAL WASTE TREATMENT PLANT
Hazardous Waste Management Facility Operating License
and Federal Resource Conservation and Recovery Act of 1976 (RCRA) Permit

The Michigan Department of Environmental Quality (MDEQ) issued a hazardous waste management facility operating license (License) to the Michigan Disposal Waste Treatment Plant (MDWTP), pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The License was issued on October 31, 2007, and allows the MDWTP to continue to operate a hazardous waste storage and treatment facility at 49350 North I-94 Service Drive, Belleville, Michigan. The MDWTP also received a federal RCRA Permit issued by the U.S. Environmental Protection Agency, Region 5 (U.S. EPA), pursuant to the Hazardous and Solid Waste Amendments to the RCRA. The effective date of the RCRA permit is September 11, 2007. Both the Part 111 License and the RCRA Permit will expire ten years from the date of issuance.

The MDEQ conducted a public participation process. Issues raised during that process have been addressed by the MDEQ in the Response to Comments.

The final Part 111 License, Response to Comments, and Final Fact Sheet may be reviewed at the Fred C. Fischer Library, 167 Fourth Street, Belleville, Michigan 48111; the Van Buren Charter Township Hall, 46425 Tyler Road, Belleville, Michigan 48111; the MDEQ, Southeast Michigan District Office, Waste and Hazardous Materials Division, 27700 Donald Court, Warren, Michigan 48092 (contact Mr. Michael Busse at 586-753-3839); the MDEQ, Waste and Hazardous Materials Division, Constitution Hall, Atrium North, 525 West Allegan Street, Lansing, Michigan 48933 (contact Ms. Kimberly M. Tyson at 517-373-2487); and at the U.S. EPA, Land and Chemical Division, RCRA Programs Section (DU-7J), 77 West Jackson Boulevard, Chicago, Illinois 60604 (contact Mr. Jae Lee at 1-800-621-8431, Extension 63781). Copies of these documents may be obtained for the cost of reproduction by contacting Ms. Lindacarol Leiter, Waste and Hazardous Materials Division, MDEQ, at 517-373-9875. Questions or comments concerning the MDWTP should be directed to Ms. Tyson.

State of Michigan
Department of Environmental Quality

DEQ

HAZARDOUS WASTE MANAGEMENT FACILITY OPERATING LICENSE

NAME OF LICENSEE: Michigan Disposal Waste Treatment Plant

NAME OF OWNER: EQ – The Environmental Quality Company

NAME OF OPERATOR: EQ – The Environmental Quality Company

NAME OF TITLEHOLDER OF LAND: Wayne Disposal, Incorporated

FACILITY NAME: Michigan Disposal Waste Treatment Plant

FACILITY LOCATION: 49350 North I-94 Service Drive, Belleville, Michigan 48111

EPA IDENTIFICATION NUMBER: MID 000 724 831 EFFECTIVE DATE: October 31, 2007

REAPPLICATION DATE: October 31, 2016 EXPIRATION DATE: October 31, 2017

AUTHORIZED ACTIVITIES

Pursuant to Part 111 of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), being §§324.11101 to 324.11153 of the Michigan Compiled Laws, and the hazardous waste management administrative rules (hereafter called the "rules") promulgated thereunder, being R 299.9101 *et seq.* of the Michigan Administrative Code, by the Michigan Department of Environmental Quality (MDEQ), an operating license (hereafter called the "license") is issued to Michigan Disposal Waste Treatment Facility (MDWTP) (hereafter called the "licensee") to operate a hazardous waste management facility (hereafter called the "facility") located at latitude 42°13'30"N and longitude 083°31'00"W. The licensee is authorized to conduct the following hazardous waste management activities:

X STORAGE	X TREATMENT	☐ DISPOSAL	☐ POST CLOSURE
X Container	X Container	☐ Landfill	☐ Tank
X Tank	X Tank	☐ Land Application	☐ Surface Impoundment
☐ Waste Pile	☐ Surface Impoundment	☐ Surface Impoundment	☐ Landfill
☐ Surface Impoundment	☐ Incinerator		☐ Waste Pile
☐ Drip Pad	☐ Other:		

APPLICABLE REGULATIONS AND LICENSE APPROVAL

The conditions of this license were developed in accordance with the applicable provisions of the rules, effective December 16, 2004. The licensee shall comply with all terms and conditions of this license. This license consists of the 26 pages of conditions attached hereto (including those in Attachments 1 through 11) and the applicable regulations contained in R 299.9101 through R 299.11008, as specified in the license. For purposes of compliance with this license, applicable rules are those which are in effect on the date of issuance of this license in accordance with R 299.9521(3)(a).

This license is based on the information in the license application submitted on April 30, 2004, and any subsequent amendments (hereafter referred to as "the application"). Pursuant to R 299.9519(11)(c), the license may be revoked if the licensee fails, in the application or during the license issuance process, to disclose fully all relevant facts or, at any time, misrepresents any relevant facts. As specified in R 299.9519(1), the facility shall be constructed, operated, and maintained in accordance with Part 111 of Act 451, the rules, and this license.

This license is effective on the date of issuance and shall remain in effect for 10 years from the date of issuance, unless revoked pursuant to R 299.9519 or continued in effect as provided by the Michigan Administrative Procedures Act, 1969 PA 306, as amended (Act 306).

Issued this 31st day of October 2007

by _____

George W. Bruchmann, Chief
Waste and Hazardous Materials Division

Ministère
de l'Environnement
Québec

Montréal, July 8, 1993

CERTIFICATE OF AUTHORIZATION

Solution Eau Air Sol (EAS) inc.
12 698, boulevard Industriel
Montréal (Québec) H1A 3V2

N/Réf. : 7610-06-01-0158410
1075774

Subject: Construction and exploitation of a recycling center of soils containing light hydrocarbons

Dear Sirs,

Following your request for certificate of authorization received on Mai 14, 1993 and completed on June 30, 1993, I hereby authorize, in accordance with section 22 of the Environment Quality Act, the holder above mentioned to carry out the project describes below :

- Construction of a treatment surface for contaminated soils of a capacity of 2 500 cubic meter;
- Exploitation of the surface of treatment

The installations are located on lot 244 of the official land register of the parish of Pointe-aux-Trembles at Montréal-Est on the territory of the Communauté urbaine de Montréal.

N/Réf. : 7610-06-01-0158410
1075774

July 8, 1993

The request for certificate of authorization and the documents following form integral part of this certificate of authorization:

TYPE OF DOCUMENT	DATES	SIGNATORY
Letter in Kathleen Carrière	May 13, 1993	Benoit Cyr
Lettre in Robert Brisebois	June 1, 1993	Benoit Cyr
Lettre in Robert Brisebois	June 7 1993	J.L.Sansregret
Letter in Robert Brisebois	June 25, 1993	Benoit Cyr
Report: Implantation d'une station de biotraitement de sols contenant des hydrocarbures légers à Montréal-Est - Request for certificate of authorization	May 1993	Solution Inc

The project will have to be carried out and exploited in accordance with this request for certificate and documents.

The authorized activity and work can be undertaken as from the date of present.

Furthermore, this certificate of authorization does not relieve the holder of the obligation to obtain any other authorization required by law or regulation, where applicable.

For the Minister,

Kathleen Carrière
Directrice régionale
de Montréal et de Lanaudière

If there is a difference between the French original version and the English translation, the French version has precedence.

Ministère
de l'Environnement
Québec

Montréal, July 14, 1995

CERTIFICATE OF AUTHORIZATION

Solution Eau Air Sol (EAS) inc.
12 698, boulevard Industriel
Montréal (Québec) H1A 3V2

N/Réf. : 7610-06-01-0158412
1095874

Subject: Addition of the used oils to the list of the contaminants which can be present in the acceptable soils at the treatment center of contaminated soils

Dear Sirs,

Following your request for certificate of authorization dated on October 25, 1994, received on October 27, 1994 and completed on Novembre 17, 1994, I hereby authorize, in accordance with section 22 of the Environment Quality Act, the holder above mentioned to carry out the project describes below :

Traitement of contaminated soils by used oils on the lot 244 of the official land register of the parish of Pointe-aux-Trembles at Montréal-Est on the territory of the Communauté urbaine de Montréal.

N/Réf. : 7610-06-01-0158412
1095874

July 14, 1995

The request for certificate of authorization and the documents following form integral part of this certificate of authorization:

- Letter to Robert Brisebois, dated on October 25, 1994 and signed by Luc Dussault;
- Letter to Pierre Robert, dated on November 17, 1994 and signed by Benoit Cyr;
- Report entitled « Agrandissement de la station et biotraitement de sols contenant des huiles usées » prepared by the firm Solution Eau Air Sol (EAS) Inc, dated on January 1994.

In the event of divergence between these documents, the information contained with the most recent document will prevail.

The project must be carried out and operated in accordance with these documents.

Furthermore, this certificate of authorization does not relieve the holder of the obligation to obtain any other authorization required by law or regulation, where applicable.

For the Minister,

Robert Tétreault, ing.
Directeur régional
de Montréal et de Lanaudière

If there is a difference between the French original version and the English translation, the French version has precedence.

Ministère
de l'Environnement
Québec

Montréal, April 29, 1996

CERTIFICATE OF AUTHORIZATION

Solution Eau Air Sol (EAS) inc.
12 698, boulevard Industriel
Montréal (Québec) H1A 3V2

N/Réf. : 7610-06-01-0158416
1094571

Subject: Biotreatment of contaminated soils by polycyclic aromatic hydrocarbons (HAP)

Dear Sirs,

Following your request for certificate of authorization dated on March 18, 1996, received on March 22, 1996 and completed on April 16, 1996, I hereby authorize, in accordance with section 22 of the Environment Quality Act, the holder above mentioned to carry out the project describes below :

> Biotreatment of contaminated soils by polycyclic aromatic hydrocarbons (HAP) on the lot 244 of the official land register of the parish of Pointe-aux-Trembles at Montréal-Est on the territory of the Communauté urbaine de Montréal.

N/Réf. : 7610-06-01-0158416
1094571

April 29, 1996

The following documents form integral part of this modification:

- Letter to Robert Brisebois, dated on October 20, 1995 and signed by Luc Dussault;
- Letter to Guylaine Pépin, dated on March 18, 1996 and signed by Luc Dussault;
- Letter to Guylaine Pépin, dated on April 15, 1996 and signed by Luc Dussault;
- Report entitled « Biotraitement de sols contaminés par des agents organiques servant à la préservation du bois » prepared by the firm Solution Eau Air Sol (EAS) Inc, dated on May 1995.

In the event of divergence between these documents, the information contained with the most recent document will prevail.

The project must be carried out and operated in accordance with these documents.

Furthermore, this certificate of authorization does not relieve the holder of the obligation to obtain any other authorization required by law or regulation, where applicable..

For the Minister,

Robert Tétreault, ing.
Directeur régional
de Montréal

If there is a difference between the French original version and the English translation, the French version has precedence.

Ministère
de l'Environnement
Québec

Montréal, October 1, 1997

CERTIFICATE OF AUTHORIZATION

Solution Eau Air Sol (EAS) inc.
350, rue Franquet
Sainte-Foy (Québec) G1P 4P3

N/Réf. : 7610-06-01-0158418
1150957

Subject: Biotreatment of contaminated soils by PCP

Dear Sirs,

Following your request for certificate of authorization dated on March 28, 1997, received on March 28, 1997 and completed on September 26, 1997, I hereby authorize, in accordance with section 22 of the Environment Quality Act, the holder above mentioned to carry out the project describes below :

Biotreatment of soils contaminated by PCP

The project will be realized on the lot 244 of the official land register of the parish of Pointe-aux-Trembles at Montréal-Est on the territory of the Communauté urbaine de Montréal. The lot is situated in the civil number 8365, of the Broadway Nord street.

N/Réf. : 7610-06-01-0158418
1150957

October 1, 1997

The following documents form integral part of this modification:

- Letter to Robert Brisebois, dated on April 29, 1997, signed by André Carange ;
- Letter to Guylaine Pépin, dated on March 18, 1996 and signed by Luc Dussault;
- Letter to Guylaine Pépin, dated on April 15, 1996 and signed by Luc Dussault;
- Report entitled « Biotraitement de sols contaminés par des agents organiques servant à la préservation du bois » prepared by the firm Solution Eau Air Sol (EAS) Inc, dated on May 1995.

In the event of divergence between these documents, the information contained with the most recent document will prevail.

The project will have to be carried out in accordance with these documents.

Furthermore, this certificate of authorization does not relieve the holder of the obligation to obtain any other authorization required by law or regulation, where applicable.

For the Minister,

Daniel Leblanc, ing.
Directeur régional
de Montréal

If there is a difference between the French original version and the English translation, the French version has precedence.

Québec

Ministère
de l'Environnement

Montréal, January 31, 2002

CERTIFICATE OF AUTHORIZATION

Solution Eau Air Sol (EAS) inc.
350, rue Franquet
Sainte-Foy (Québec) G1P 4P3

N/Réf. : 7610-06-01-0158422
060006933

Subject : Biological treatment of the « Chlorinated aliphatic volatile, organic compounds »

Dear Sirs,

Following your request for certificate of authorization dated on May 24, 2001, received on May 29, 2001 and completed on January 18, 2002, I hereby authorize, in accordance with section 22 of the Environment Quality Act, the holder above mentioned to carry out the project describes below :

> To treat biologically the 29 substances mentioned under the section « Chlorinated aliphatic volatile, organic compounds » of Schedule I of the Regulation respecting the burial of contaminated soils in the biological treatment center located on a part of the lots 1 250 930 and 2 209 893 of the official cadastral designation of Quebec of the Town of Montréal (district Rivière-des-Prairies/Pointe-aux-Trembles/Montréal-Est) on the territory of the Communauté Métropolitaine de Montréal.

The following documents form integral part of this certificate of authorization:

- Letter to ministère de l'Environnement dated on May 24, 2001, signed by Norman Légaré, constituting the request for certificate of authorization;

- Report entitled « Demande de certificat d'autorisation – Biotraitement des sols contaminés par les hydrocarbures aliphatiques chlorés (HHT) » prepared by the firm Solution Eau Air Sol (EAS) Inc, May 2001, 8 pages and appendices;

- Letter to ministère de l'Environnement, dated on September 19, 2001, signed by Norman Légaré, concerning a modification with the original request, 1 page;

- Letter to ministère de l'Environnement, dated on November 1, 2001, signed by Norman Légaré, concerning a modification with the original request, 1 page.

- Letter to ministère de l'Environnement, dated on January 17, 2002, signed by Norman Légaré, concerning a modification with the original request, 1 page.

In the event of divergence between these documents, the information contained with the most recent document will prevail.

In the event of discrepancy between these documents, the information contained in the most recent document shall prevail.

The project must be carried out and operated in accordance with these documents.

Furthermore, this certificate of authorization does not relieve the holder of the obligation to obtain any other authorization required by law or regulation, where applicable.

For the Minister,

Gérard Cusson
Directeur régional
de Montréal par intérim

If there is a difference between the French original version and the English translation, the French version has precedence.

Ministère
de l'Environnement
Québec

Montréal, October 17 2002

MODIFICATION

Solution Eau Air Sol (EAS) inc.
350, rue Franquet
Sainte-Foy (Québec) G1P 4P3

N/Réf. : 7610-06-01-0158410
400053501

Subject: Construction and exploitation of a center of recycling of soils containing of light hydrocarbons

Dear Sirs,

The present modification relates to the certificate of authorization delivered on July 8, 1993 (7610-06-01-0158410 061075774) under the terms of section 22 of the Environment Quality Act, with regard to the project describes below:

- Construction of a treatment surface for contaminated soils of a capacity of 2 500 cubic meter;
- Exploitation of the surface of treatment

The installations are located on lot 244 of the official land register of the parish of Pointe-aux-Trembles at Montréal-Est on the territory of the Communauté urbaine de Montréal.

Following your request dated on October 10, 2002, received on October 15, 2002 and duly supplemented, I authorize, in accordance with section 122.2 of the aforementioned law, the following modifications:

To modify the profile of the floor of the treatment surfaces #1 and #2 of the biological treatment center of the contaminated soils.

N/Réf. : 7610-06-01-0158410
400053501

October 17, 2002

The following documents form integral part of this modification:

- Letter to ministère de l'Environnement dated on October 10, 2002 and signed by Jean-Luc Sansregret, v.-p., constituting the request for modification of a certificate of authorization, 1 page and appendices;

- Plan SOL2-10-CA01, Revision 1, heading « Détails de bourrelet et de voirie Type 1 – Aires AT-01, AT-02, AT-03, AT-04 et AT-05 », signed and sealed by Andre Carange, ing. and Stephan Richard, ing., of the firm Solution Eau Air Sol (EAS) inc, October 7, 2002

In the event of divergence between these documents, the information contained with the most recent document will prevail.

The modification will have to be carried out in accordance with these documents.

Moreover, the aforementioned modification of certificate of authorization does not exempt to you to obtain any other authorization required by any law or any payment if necessary.

For the Minister,

Jean Rivet
Directeur régional
de Montréal

If there is a difference between the French original version and the English translation, the French version has precedence.

Québec

Ministère
de l'Environnement

Montréal, June 13, 2003

MODIFICATION

Solution Eau Air Sol (EAS) inc.
350, rue Franquet
Sainte-Foy (Québec) G1P 4P3

N/Réf. : 7610-06-01-0158422
400084361

Subject : Biological treatment of the « Chlorinated aliphatic volatile, organic compounds »

Dear Sirs,

The present modification relates to the certificate of authorization delivered on January 31, 2002 (7610-06-01-0158422 060006933) under the terms of section 22 of the Environment Quality Act, with regard to the project describes below:

> To treat biologically the 29 substances mentioned under the section « Chlorinated aliphatic volatile, organic compounds » of Schedule I of the Regulation respecting the burial of contaminated soils in the biological treatment center located on a part of the lots 1 250 930 and 2 209 893 of the official cadastral designation of Quebec of the Town of Montréal (district Rivière-des-Prairies/Pointe-aux-Trembles/Montréal-Est) on the territory of the Communauté Métropolitaine de Montréal

Following your request dated on May 15, on 2003 and received on May 16, 2003, I authorize, in accordance with section 122.2 of the aforementioned law, the following modifications:

> To add chlorobenzenes to the list of the substances being able to be treated at the biological treatment center of the contaminated soils of the holder.

N/Réf. : 7610-06-01-0158422
400084361

June 13, 2003

The following documents form integral part of this modification :

- Letter to ministère de l'Environnement, dated on May 15, 2003, signed by Jean-Luc Sansregret, constituting the request for modification of the certificate of authorization delivered on January 31, 2002, 2 pages;

- Report entitled « Traitement biologique des sols contaminés par des chlorobenzènes au Centre Solution Eau Air Sol (EAS) inc. de Montréal » prepared by the firm Biogénie, March 2003, 15 pages and appendix.

In the event of discrepancy between these documents, the information contained in the most recent document shall prevail.

The project must be carried out and operated in accordance with these documents.

Furthermore, this modification does not relieve the holder of the obligation to obtain any other authorization required by law or regulation, where applicable.

For the minister,

Jean Rivet
Directeur régional
de Montréal

If there is a difference between the French original version and the English translation, the French version has precedence.

Ministère
de l'Environnement
Québec

Montréal, July 25, 2003

MODIFICATION

Solution Eau Air Sol (EAS) inc.
350, rue Franquet
Sainte-Foy (Québec) G1P 4P3

N/Réf. : 7610-06-01-0158410
400097128

Subject: Construction and exploitation of a recycling center of soils containing of light hydrocarbons

Dear Sirs,

The present modification respectively relates to the certificate of authorization delivered on 8 July 1993 (7610-06-01-0158410 061075774) and modified on October 17, 2002 (7610-06-01-0158420 400053501) under the terms of sections 22 and 122.2 of the Environment Quality Act, with regard to the project describes below:

> To modify the profile of the floor of the treatment surfaces #1 and #2 of the biological treatment center of the contaminated soils.

Following your request dated on June 25, 2003, received on July 7, 2003 and duly supplemented on July 22, 2003, I authorize, in accordance with section 122.2 of the aforementioned law, following modification:

> To allow the use of the surfaces treatment #1 and #2 for storage or treatment of contaminated soils and to integrate this mode of management into the whole of the treatment surfaces of the treatment center. The treatment surfaces can be used as surface of storage at a rate of 40 % of the total volume which is 29 800 m^3. The whole will be carried out on a part of lots 1 250 930, 1 508 791, 2 209 893 and 2 209 894 of the land register of Quebec of the district of Rivière-des-Prairies / Pointe-aux-Tremble / Montréal-Est of the town of Montréal.

N/Réf. : 7610-06-01-0158410
400097128

July 25, 2003

The following documents form integral part of this modification:

- Letter to ministère de l'Environnement dated on June 25, 2003 and signed by Martin Plants, ing., constituting the request for modification of a certificate of authorization, 1 page and appendices;
- Letter to ministère de l'Environnement dated on July 22, 2003 and signed by Martin Plante, ing., concerning the request for modification of a certificate of authorization, 1 page and appendices.

In the event of divergence between these documents, the information contained with the most recent document will prevail.

The modification will have to be carried out in accordance with these documents.

Moreover, the aforementioned modification of certificate of authorization does not exempt to you to obtain any other authorization required by any law or any payment if necessary.

For the Minister

Jean Rivet
Directeur régional
de Montréal

If there is a difference between the French original version and the English translation, the French version has precedence.

Attachment-11
Nonhazardous Waste Transporters

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-953

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SWAN TRUCKING WEST INC. /dba TRIPI TRANSPORTATION
77 WEST DRULLARD AVENUE
LANCASTER, NY 14086

CONTACT NAME: TONY ALU / KAREN ALU
COUNTY: ERIE
TELEPHONE NO: (716)681-3386

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

EFFECTIVE DATE: 10/24/2022
EXPIRATION DATE: **10/23/2023**
US EPA ID NUMBER:

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:

The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Allied Waste Niagara Falls Landfill	Niagara Falls , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Grease Trap Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
BIRD ISLAND WWTP	BUFFALO , NY	Non-Hazardous Industrial/Commercial	
Chaffee Landfill	Chaffee , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Grease Trap Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
Chautauqua Landfill	Ellery , NY	Petroleum Contaminated Soil	
Chemung County Sanitary Landfill	Chemung , NY	Petroleum Contaminated Soil	
High Acres Western Expansion Landfill	Fairport , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Grease Trap Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS:

New York State Department of Environmental Conservation
Division of Materials Management - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

AUTHORIZED SIGNATURE: Laura Stevens Digitally signed by Laura Stevens Date: 2022.10.14 08:31:54 -04'00' Date:____/____/____

WASTE TRANSPORTER PERMIT

GENERAL CONDITIONS

The permittee must:

1. Carry a copy of this waste transporter permit in each vehicle used to transport waste. Failure to produce a copy of the permit upon request is a violation of the permit.

2. Display the full name of the transporter on both sides of each vehicle and display the waste transporter permit number on both sides and rear of each vehicle containing waste. The displayed name and permit number must be in characters at least three inches high and of a color that contrasts sharply with the background.

3. Transport waste only in authorized vehicles. An authorized vehicle is one that is listed on this permit.

4. Submit to the Department a modification application for additions/deletions to the authorized fleet of vehicles. The permittee must wait for a modified permit before operating the vehicles identified in the modification application.

5. Submit to the Department a modification application to add a new waste category or a new destination facility, or to change the current waste or destination facility category. The permittee must wait for a modified permit before transporting new waste types or transporting to new destination facilities.

6. Submit to the Department a modification application for any change to the permit.

7. Comply with requirements for placarding and packaging as set forth in New York State Transportation Law as well as any applicable federal rules and regulations.

8. Contain all wastes in the vehicle so there is no leaking, blowing, or other discharge of waste.

9. Use vehicles to transport only materials not intended for human or animal consumption unless the vehicle is properly cleaned.

10. Comply with requirements for manifesting hazardous waste, regulated medical waste, or low-level radioactive waste as set forth in the New York State Environmental Conservation Law and the implementing regulations. Transporters who provide a pre-printed manifest to a generator/shipper/ offeror of regulated waste shall ensure that all information is correct and clearly legible on all copies of the manifest.

11. Deliver waste only to transfer, storage, treatment and disposal facilities authorized to accept such waste. Permittee must demonstrate that facilities are so authorized if requested to do so.

12. Maintain liability insurance as required by New York State Environmental Conservation Law.

13. Maintain records of the amount of each waste type transported to each destination facility on a calendar-year basis. The transporter is obligated to provide a report of this information to the Department by March 1 of each year.

14. Pay regulatory fees on an annual basis. Non-payment may be cause for revocation or suspension of permit.

15. This permit is not transferrable. A change of ownership will invalidate this permit.

16. This permit does not relieve the permittee from the obligation to obtain any other approvals or permits, or from complying with any other applicable federal, state, or local requirement.

17. Renewal applications must be submitted no less than 30 days prior to the expiration date of the permit to:

New York State Department of Environmental Conservation
Division of Materials Management, Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-953

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SWAN TRUCKING WEST INC. /dba TRIPI TRANSPORTATION
77 WEST DRULLARD AVENUE
LANCASTER, NY 14086

CONTACT NAME: TONY ALU / KAREN ALU
COUNTY: ERIE
TELEPHONE NO: (716)681-3386

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

EFFECTIVE DATE: 10/24/2022
EXPIRATION DATE: **10/23/2023**
US EPA ID NUMBER:

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
High Acres Western Expansion Landfill	Fairport , NY	Sludge from Sewage or Water Supply Treatment Plant	
Mill Seat SLF	Riga , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Grease Trap Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
Modern Landfill, Inc.	Model City , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Ontario County Sanitary Landfill	Stanley , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Grease Trap Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
Seneca Meadows LF	Waterloo , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
STEUBEN CO SLF #4	BATH , NY	Petroleum Contaminated Soil	
TONAWANDA (T) LANDFILL	TONAWANDA , NY	Non-Hazardous Industrial/Commercial	
TONAWANDA BIOREMEDIATION FACILITY	TONAWANDA , NY	Petroleum Contaminated Soil	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-953

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SWAN TRUCKING WEST INC. /dba TRIPI TRANSPORTATION
77 WEST DRULLARD AVENUE
LANCASTER, NY 14086

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

CONTACT NAME:	TONY ALU / KAREN ALU	EFFECTIVE DATE:	10/24/2022
COUNTY:	ERIE	EXPIRATION DATE:	**10/23/2023**
TELEPHONE NO:	(716)681-3386	US EPA ID NUMBER:	

AUTHORIZED VEHICLES:
The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:

(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

17 (Seventeen) Permitted Vehicle(s)

NY 30253NC
NY 53100MN
NY 53102MN
NY 53103MN
NY 53104MN
NY 53105MN
NY 53106MN
NY 53108MN
NY 53109MN
NY 53110MN
NY 53111MN
NY 53113MN
NY 53114MN
NY 53116MN
NY BU11266
NY BU11267
NY BU11268
End of List

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 8A-1051

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SESSLER ENVIRONMENTAL SERVICES LLC
1330 RESEARCH FOREST
MACEDON, NY 14502

CONTACT NAME: BRIAN SESSLER
COUNTY: WAYNE
TELEPHONE NO: (585)617-5710

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

EFFECTIVE DATE: 04/12/2022
EXPIRATION DATE: **04/11/2023**
US EPA ID NUMBER: NYR000230979

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:

The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Auburn Landfill No 2	Auburn , NY	Non-Hazardous Industrial/Commercial Asbestos	
Bath Sanitary Landfill	Bath , NY	Non-Hazardous Industrial/Commercial Asbestos	
Broome County Landfill	Binghamton , NY	Non-Hazardous Industrial/Commercial Asbestos	
Chaffee Landfill	Chaffee , NY	Non-Hazardous Industrial/Commercial Asbestos Hazardous Industrial/Commercial	
Covanta Environmental Solutions - Niagara, LLC	Niagara , NY	Non-Hazardous Industrial/Commercial Waste Oil	
CYCLE CHEM (PA)	LEWISBERRY , PA	Non-Hazardous Industrial/Commercial Asbestos Hazardous Industrial/Commercial Waste Oil	
Development Authority of the North Country Landfill	Rodman , NY	Non-Hazardous Industrial/Commercial Asbestos	
High Acres Western Expansion Landfill	Fairport , NY	Non-Hazardous Industrial/Commercial Asbestos	
Honeywell/Camillus Bed #15 C&D	Syracuse , NY	Non-Hazardous Industrial/Commercial	inc nonfriable asbestos

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS:

New York State Department of Environmental Conservation
Division of Materials Management - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

AUTHORIZED SIGNATURE: Laura Stevens Digitally signed by Laura Stevens Date: 2022.03.08 08:29:42 -05'00' Date:_____/_____/_____

WASTE TRANSPORTER PERMIT

GENERAL CONDITIONS

The permittee must:

1. Carry a copy of this waste transporter permit in each vehicle to transport waste. Failure to produce a copy of the permit upon request is a violation of the permit.

2. Display the full name of the transporter on both sides of each vehicle and display the waste transporter permit number on both sides and rear of each vehicle containing waste. The displayed name and permit number must be in characters at least three inches high and of a color that contrasts sharply with the background.

3. Transport waste only in authorized vehicles. An authorized vehicle is one that is listed on this permit.

4. Submit to the Department a modification application for additions/deletions to the authorized fleet of vehicles. The permittee must wait for a modified permit before operating the vehicles identified in the modification application.

5. Submit to the Department a modification application to add a new waste category or a new destination facility, or to change the current waste or destination facility category. The permittee must wait for a modified permit before transporting new waste types or transporting to new destination facilities.

6. Submit to the Department a modification application for change of address or company name.

7. Comply with requirements for placarding and packaging as set forth in New York State Transportation Law as well as any applicable federal rules and regulations.

8. Contain all wastes in the vehicle so there is no leaking, blowing, or other discharge of waste.

9. Use vehicles to transport only materials not intended for human or animal consumption unless the vehicle is properly cleaned.

10. Comply with requirements for manifesting hazardous waste, regulated medical waste, or low-level radioactive waste as set forth in the New York State Environmental Conservation Law and the implementing regulations. Transporters who provide a pre-printed manifest to a generator/shipper/offeror of regulated waste shall ensure that all information is correct and clearly legible on all copies of the manifest.

11. Deliver waste only to transfer, storage, treatment and disposal facilities authorized to accept such waste. Permittee must demonstrate that facilities are so authorized if requested to do so.

12. Maintain liability insurance as required by New York State Environmental Conservation Law.

13. Maintain records of the amount of each waste type transported to each destination facility on a calendar-year basis. The transporter is obligated to provide a report of this information to the Department at the time of permit renewal, or to any law enforcement officer, if requested to do so.

14. Pay regulatory fees on an annual basis. Non-payment may be cause for revocation or suspension of permit.

15. This permit is not transferrable. A change of ownership will invalidate this permit.

16. This permit does not relieve the permittee from the obligation to obtain any other approvals or permits, or from complying with any other applicable federal, state, or local requirement.

17. **Renewal applications must be submitted no less than 30 days prior to the expiration date of the permit to:**

New York State Department of Environmental Conservation
Division of Materials Management, Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 8A-1051

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SESSLER ENVIRONMENTAL SERVICES LLC
1330 RESEARCH FOREST
MACEDON, NY 14502

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

CONTACT NAME:	BRIAN SESSLER	EFFECTIVE DATE:	04/12/2022
COUNTY:	WAYNE	EXPIRATION DATE:	**04/11/2023**
TELEPHONE NO:	(585)617-5710	US EPA ID NUMBER:	NYR000230979

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Industrial Oil Tank Used Oil Storage Facility	Oriskany , NY	Non-Hazardous Industrial/Commercial Hazardous Industrial/Commercial Waste Oil	
Mill Seat SLF	Riga , NY	Non-Hazardous Industrial/Commercial Asbestos	
Modern Landfill, Inc.	Model City , NY	Non-Hazardous Industrial/Commercial Asbestos	
Ontario County Sanitary Landfill	Stanley , NY	Non-Hazardous Industrial/Commercial Asbestos Hazardous Industrial/Commercial	
Seneca Meadows LF	Waterloo , NY	Non-Hazardous Industrial/Commercial Asbestos	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 8A-1051

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SESSLER ENVIRONMENTAL SERVICES LLC
1330 RESEARCH FOREST
MACEDON, NY 14502

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

CONTACT NAME:	BRIAN SESSLER	EFFECTIVE DATE:	04/12/2022
COUNTY:	WAYNE	EXPIRATION DATE:	**04/11/2023**
TELEPHONE NO:	(585)617-5710	US EPA ID NUMBER:	NYR000230979

AUTHORIZED VEHICLES:
The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:

(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

19 (Nineteen) Permitted Vehicle(s)

NY 11447MP
NY 13158MP
NY 15982NA
NY 16057NA
NY 23945MM
NY 74566MM
NY 88800ML
NY 94626ML
NY 94641ML
NY 97587MN
NY 97588MN
NY BL83246
NY BN14270
NY BN88631
NY BP27213
NY BP27248
NY BT29236
NY BT96122
NY BU51630
End of List

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 7A-402

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RICCELLI ENTERPRISES, INC.
6131 EAST TAFT ROAD
N SYRACUSE, NY 13217

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

CONTACT NAME:	RICHARD J. RICCELLI / ROBERT J. MADEY	EFFECTIVE DATE:	04/06/2023
COUNTY:	ONONDAGA	EXPIRATION DATE:	**07/31/2023**
TELEPHONE NO:	(315)433-5115	US EPA ID NUMBER:	NYR000059246

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:

The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Albany (City) SWMF	Albany , NY	Non-Hazardous Industrial/Commercial	
		Petroleum Contaminated Soil	
Allegany County Landfill	Angelica , NY	Non-Hazardous Industrial/Commercial	
AUBURN (C) STP	AUBURN , NY	Non-Hazardous Industrial/Commercial	
		Sludge from Sewage or Water Supply Treatment Plant	
Auburn Landfill No 2	Auburn , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
Ava Landfill	Boonville , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Sludge from Sewage or Water Supply Treatment Plant	
Bath Sanitary Landfill	Bath , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Sludge from Sewage or Water Supply Treatment Plant	
BIRD ISLAND WWTP	BUFFALO , NY	Non-Hazardous Industrial/Commercial	
Bristol Hill SLF	Fulton , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS:

New York State Department of Environmental Conservation
Division of Materials Management - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

AUTHORIZED SIGNATURE: Laura Stevens Digitally signed by Laura Stevens Date: 2023.04.05 07:51:23 -04'00' Date: ____/____/____

WASTE TRANSPORTER PERMIT

GENERAL CONDITIONS

The permittee must:

1. Carry a copy of this waste transporter permit in each vehicle to transport waste. Failure to produce a copy of the permit upon request is a violation of the permit.

2. Display the full name of the transporter on both sides of each vehicle and display the waste transporter permit number on both sides and rear of each vehicle containing waste. The displayed name and permit number must be in characters at least three inches high and of a color that contrasts sharply with the background.

3. Transport waste only in authorized vehicles. An authorized vehicle is one that is listed on this permit.

4. Submit to the Department a modification application for additions/deletions to the authorized fleet of vehicles. The permittee must wait for a modified permit before operating the vehicles identified in the modification application.

5. Submit to the Department a modification application to add a new waste category or a new destination facility, or to change the current waste or destination facility category. The permittee must wait for a modified permit before transporting new waste types or transporting to new destination facilities.

6. Submit to the Department a modification application for change of address or company name.

7. Comply with requirements for placarding and packaging as set forth in New York State Transportation Law as well as any applicable federal rules and regulations.

8. Contain all wastes in the vehicle so there is no leaking, blowing, or other discharge of waste.

9. Use vehicles to transport only materials not intended for human or animal consumption unless the vehicle is properly cleaned.

10. Comply with requirements for manifesting hazardous waste, regulated medical waste, or low-level radioactive waste as set forth in the New York State Environmental Conservation Law and the implementing regulations. Transporters who provide a pre-printed manifest to a generator/shipper/ offeror of regulated waste shall ensure that all information is correct and clearly legible on all copies of the manifest.

11. Deliver waste only to transfer, storage, treatment and disposal facilities authorized to accept such waste. Permittee must demonstrate that facilities are so authorized if requested to do so.

12. Maintain liability insurance as required by New York State Environmental Conservation Law.

13. Maintain records of the amount of each waste type transported to each destination facility on a calendar-year basis. The transporter is obligated to provide a report of this information to the Department at the time of permit renewal, or to any law enforcement officer, if requested to do so.

14. Pay regulatory fees on an annual basis. Non-payment may be cause for revocation or suspension of permit.

15. This permit is not transferrable. A change of ownership will invalidate this permit.

16. This permit does not relieve the permittee from the obligation to obtain any other approvals or permits, or from complying with any other applicable federal, state, or local requirement.

17. **Renewal applications must be submitted no less than 30 days prior to the expiration date of the permit to:**

New York State Department of Environmental Conservation
Division of Materials Management, Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 7A-402

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RICCELLI ENTERPRISES, INC.
6131 EAST TAFT ROAD
N SYRACUSE, NY 13217

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

CONTACT NAME:	RICHARD J. RICCELLI / ROBERT J. MADEY	EFFECTIVE DATE:	04/06/2023
COUNTY:	ONONDAGA	EXPIRATION DATE:	**07/31/2023**
TELEPHONE NO:	(315)433-5115	US EPA ID NUMBER:	NYR000059246

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Bristol Hill SLF	Fulton , NY	Waste Tires	
Broome County Landfill	Binghamton , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Cayuga Ash Disposal Facility	Lansing , NY	Non-Hazardous Industrial/Commercial Sludge from Sewage or Water Supply Treatment Plant	
Chaffee Landfill	Chaffee , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Chemung County Sanitary Landfill	Chemung , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Chenango County Landfill	Norwich , NY	Non-Hazardous Industrial/Commercial Asbestos Waste Tires	
Clinton County MRF / Casella	Morrisonville , NY	Petroleum Contaminated Soil Waste Tires	
Colonie (T) SWMF	Colonie , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Covanta Niagara I, LLC	Niagara Falls , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Grease Trap Waste Sludge from Sewage or Water Supply Treatment Plant	
CWM CHEMICAL SERVICES LLC	MODEL CITY , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial Waste Oil	
Development Authority of the North Country Landfill	Rodman , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 7A-402

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RICCELLI ENTERPRISES, INC.
6131 EAST TAFT ROAD
N SYRACUSE, NY 13217

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

CONTACT NAME:	RICHARD J. RICCELLI / ROBERT J. MADEY	EFFECTIVE DATE:	04/06/2023
COUNTY:	ONONDAGA	EXPIRATION DATE:	**07/31/2023**
TELEPHONE NO:	(315)433-5115	US EPA ID NUMBER:	NYR000059246

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
ESMI of New York	Fort Edward , NY	Petroleum Contaminated Soil	
FRANK E. VAN LARE WWTP	ROCHESTER , NY	Non-Hazardous Industrial/Commercial	Leachate
Franklin County Regional Landfill	Constable , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Waste Tires	
		Sludge from Sewage or Water Supply Treatment Plant	
Fulton County Landfill	Johnstown , NY	Non-Hazardous Industrial/Commercial	
		Petroleum Contaminated Soil	
Green Ridge RDF	Gansevoort , NY	Non-Hazardous Industrial/Commercial	
		Petroleum Contaminated Soil	
Hakes C&D Disposal Inc	Painted Post , NY	Non-Hazardous Industrial/Commercial	Incl non-friable asbestos
		Waste Tires	
High Acres Western Expansion Landfill	Fairport , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Waste Tires	
		Sludge from Sewage or Water Supply Treatment Plant	
Hyland Landfill	Angelica , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Waste Tires	
		Sludge from Sewage or Water Supply Treatment Plant	
Industrial Oil Tank Used Oil Storage Facility	Oriskany , NY	Non-Hazardous Industrial/Commercial	
		Petroleum Contaminated Soil	
		Waste Oil	
Madison County West Side Extension LF	Canastota , NY	Non-Hazardous Industrial/Commercial	
		Petroleum Contaminated Soil	
		Waste Tires	
		Sludge from Sewage or Water Supply Treatment Plant	
Mill Seat SLF	Riga , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

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TELEPHONE NO:	(315)433-5115	US EPA ID NUMBER:	NYR000059246

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Mill Seat SLF	Riga , NY	Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Modern Landfill, Inc.	Model City , NY	Non-Hazardous Industrial/Commercial Waste Tires	
NEWARK WASTEWATER TREATMENT FAC	NEWARK , NY	Non-Hazardous Industrial/Commercial	
NYS CANAL CORPORATION	PALMYRA , NY	Non-Hazardous Industrial/Commercial	CANAL SED.
NYS CANAL CORPORATION	SPENCERPORT , NY	Petroleum Contaminated Soil	
NYS CANAL CORPORATION	PITTSFORD , NY	Petroleum Contaminated Soil	
NYS CANAL CORPORATION	MACEDON , NY	Non-Hazardous Industrial/Commercial	CANAL SED.
Ontario County Sanitary Landfill	Stanley , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires Sludge from Sewage or Water Supply Treatment Plant	
OSWEGO (C) WEST SIDE WWTF	OSWEGO , NY	Non-Hazardous Industrial/Commercial	
Oswego County Energy Recovery Facility	Fulton , NY	Non-Hazardous Industrial/Commercial Waste Tires	
RED CREEK REGIONAL WWTP	RED CREEK , NY	Non-Hazardous Industrial/Commercial	
RICCELLI FULTON LLC (BUD 1018-7-36)	VARIOUS , NY	Non-Hazardous Industrial/Commercial	Salt Cont. Soil
ROME MUNICIPAL STP	ROME , NY	Non-Hazardous Industrial/Commercial Septage only (residential) Residential Raw Sewage including Portable Toilet Waste	
SCHENECTADY (C) WPCP	SCHENECTADY , NY	Non-Hazardous Industrial/Commercial Septage only (residential) Residential Raw Sewage including Portable Toilet Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
Seneca Meadows LF	Waterloo , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires Sludge from Sewage or Water Supply Treatment Plant	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
SYRACUSE INNER HARBOR - CANAL WORK PERMIT C3W120077	SYRACUSE , NY	Non-Hazardous Industrial/Commercial	DREDGE
Tonawanda Bioremediation Facility	Tonawanda , NY	Petroleum Contaminated Soil	
WATERTOWN (C) WPCP	WATERTOWN , NY	Septage only (residential) Residential Raw Sewage including Portable Toilet Waste Sludge from Sewage or Water Supply Treatment Plant	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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COUNTY:	ONONDAGA	EXPIRATION DATE:	07/31/2023
TELEPHONE NO:	(315)433-5115	US EPA ID NUMBER:	NYR000059246

AUTHORIZED VEHICLES:
The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:

(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

185 (One Hundred and Eighty Five) Permitted Vehicle(s)

NY 10799PC	NY 3800C4	NY 58089JZ	NY AH67410	NY BU37972
NY 11420PC	NY 39329KA	NY 60069PC	NY AL52081	NY BU57585
NY 11423PC	NY 40505PC	NY 67351PC	NY AM30359	NY BU57594
NY 12549JV	NY 43022NA	NY 67353PC	NY AM30361	NY CC60242
NY 13057PC	NY 43076NA	NY 67354PC	NY AM41060	NY CE64273
NY 13060PC	NY 43077NA	NY 67355PC	NY AM41087	End of List
NY 1560C9	NY 43079NA	NY 70326MA	NY AM41088	
NY 1651D5	NY 43080NA	NY 75159PC	NY AM41089	
NY 1652D5	NY 43082NA	NY 75360PC	NY AM41090	
NY 1653D5	NY 43083NA	NY 75362PC	NY AN62544	
NY 1654D5	NY 43084NA	NY 75363PC	NY AN62658	
NY 1655D5	NY 43085NA	NY 78242PC	NY AN74690	
NY 1657D5	NY 43086NA	NY 78643PC	NY AR40449	
NY 1658D5	NY 43087NA	NY 84212PC	NY AR96060	
NY 1660D5	NY 43088NA	NY 84213PC	NY AR96315	
NY 1662D5	NY 43089NA	NY 84214PC	NY AR96316	
NY 1663D5	NY 43091NA	NY 84547PC	NY AR96317	
NY 1782C9	NY 43092NA	NY 84548PC	NY AR96353	
NY 1806C3	NY 43093NA	NY 84549PC	NY AS56302	
NY 1807C3	NY 43094NA	NY 84573PC	NY AS56368	
NY 18653PB	NY 43095NA	NY 84574PC	NY AS56369	
NY 18658PB	NY 43096NA	NY 84650PC	NY AS56370	
NY 19964MD	NY 43097NA	NY 84651PC	NY AT24328	
NY 19965MD	NY 43098NA	NY 84652PC	NY AT24331	
NY 19967MD	NY 43099NA	NY 84850PC	NY AT24843	
NY 20049PC	NY 44790JD	NY 84851PC	NY AU59418	
NY 21184PF	NY 46114PC	NY 84852PC	NY AW55319	
NY 21185PF	NY 48275PC	NY 84853PC	NY BD20025	
NY 2351C1	NY 48401MH	NY 84854PC	NY BG30835	
NY 2352C1	NY 4902D7	NY 84855PC	NY BH59312	
NY 3037C4	NY 4903D7	NY 84856PC	NY BK95741	
NY 3038C4	NY 4904D7	NY 84857PC	NY BL57027	
NY 3039C4	NY 4905D7	NY 84858PC	NY BL57686	
NY 3040C4	NY 4906D7	NY 84859PC	NY BL57687	
NY 3043C4	NY 4907D7	NY 84860PC	NY BL57728	
NY 32227MM	NY 4908D7	NY 89041MM	NY BL96891	
NY 3251C2	NY 51471PC	NY AG86832	NY BP62791	
NY 3283C1	NY 51473PC	NY AG86833	NY BP73996	
NY 3290C1	NY 51474PC	NY AG86834	NY BP90011	
NY 3291C1	NY 53184PC	NY AG86835	NY BT10947	
NY 33674PC	NY 53383PC	NY AG86836	NY BT78103	
NY 3442C1	NY 54590ML	NY AH67406	NY BT78104	
NY 3455C1	NY 56853ML	NY AH67407	NY BT78105	
NY 3460C1	NY 57489PC	NY AH67408	NY BT78693	
NY 35792NB	NY 57493PC	NY AH67409	NY BU14012	

Attachment-12
Hazardous Waste Transporters

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. PA-242

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

U.S. BULK TRANSPORT, INC.
205 PENNBRIAR DRIVE
ERIE, PA 16509

PERMIT TYPE:

- ☐ NEW
- ☐ RENEWAL
- ■ MODIFICATION

CONTACT NAME: KATHLEEN COWGER
COUNTY: OUT OF STATE
TELEPHONE NO: (814)824-9949

EFFECTIVE DATE: 05/31/2019
EXPIRATION DATE: 03/31/2020
US EPA ID NUMBER: PAD987347515

AUTHORIZED VEHICLES:
The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:

(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

106 (One Hundred and Six) Permitted Vehicle(s)

IL 473570ST	1084	PA XDL1603	90927	PA XKM8116	179
IL 507422ST	351	PA XDL1604	90916	PA XKP0286	134
IL 507947ST	378	PA XDP7872	90914	PA XKZ6950	90905
IL 528105ST	1010	PA XDT6951	90918	PA XLA9474	178
IL 540599ST	119	PA XDX0518	90909	PA XLF2628	174d
IL 542671ST	331	PA XDZ4788	90928	PA XLH6576	142
IN SP130EEE	1086	PA XFB0886	144	PA XLM1956	90932
IN SP543EPL	321	PA XFK9299	90906	PA XLM7104	101
IN SP554NDR	1012-2	PA XFY9861	90910	PA XLM7105	102
ME 216248C	115-3	PA XGA3543	90908	PA XLS1823	130a
ME 2175427	115-1	PA XGA3580	159	PA XLS1866	90902
ME 2175429	115-7	PA XGN0822	90926	PA XLS1867	126a
ME 225808D	184	PA XGN1073	90929	PA XLS1868	126a
ME 227034B	176	PA XGS1725	129	PA XN76170	155-1
ME 238581B	114	PA XGS1786	127	PA XT36187	1295
MI D215155	185	PA XHB5100	177-1	PA XZ66858	192-2
MI D379590	158	PA XHE6228	150	End of List	
MI D835932	106	PA XHG5245	137		
MS 50327A	571	PA XHH2007	190-1		
NY AD65298	327	PA XHH2077	198B		
NY AE94114	308	PA XJC1911	171b		
NY BL26345	169	PA XJF1611	90921		
NY BN99297	123	PA XJF1662	1231		
NY BN99316	197	PA XJF1685	198d		
OH TML9573	538	PA XJG5946	121		
OH TPK7600	322	PA XJG5947	105		
OH TQD1131	141	PA XJL9891	1237		
OH TQF4884	1217	PA XJN1830	1543		
OH TQU8924	1278	PA XJN1908	90930		
OH TQW2998	1203	PA XJP5778	90933		
OH TRF7192	1271	PA XJR2361	149		
PA PT2158M	157	PA XJR3523	90903		
PA PT264C7	1298	PA XJR3543	90924		
PA PT305DY	1257	PA XJS6771	90931		
PA PT362B3	1296	PA XJS6772	164		
PA PT437D4	145	PA XJX0829	1260		
PA PT473P6	1207b	PA XJY6588	1244		
PA PT83787	1252	PA XK14799	107		
PA PT854A3	1276	PA XKE4352	494		
PA PT992E4	1266	PA XKJ0997	186		
PA XCD2891	1239	PA XKJ0998	138		
PA XCS6959	90904	PA XKJ1006	1268		
PA XCX2942	160	PA XKJ1007	1282		
PA XCX8739	90913	PA XKM8083	1222		
PA XDH7360	190	PA XKM8084	90935		

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

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U.S. BULK TRANSPORT, INC.
205 PENNBRIAR DRIVE
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▣ MODIFICATION

CONTACT NAME:	KATHLEEN COWGER	EFFECTIVE DATE:	05/31/2019
COUNTY:	OUT OF STATE	EXPIRATION DATE:	**03/31/2020**
TELEPHONE NO:	(814)824-9949	US EPA ID NUMBER:	PAD987347515

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:

The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Action Trucking Company	Wantagh , NY	Non-Hazardous Industrial/Commercial Hazardous Industrial/Commercial	
ADVANCED DISPOSAL GREENTREE LANDFILL, LLC	KERSEY , PA	Non-Hazardous Industrial/Commercial	
Allied Waste Niagara Falls Landfill	Niagara Falls , NY	Non-Hazardous Industrial/Commercial Asbestos Waste Tires Sludge from Sewage or Water Supply Treatment Plant	
ATHENS HOCKING RECLAMATION	NELSONVILLE , OH	Non-Hazardous Industrial/Commercial	
Ava Landfill	Boonville , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
BIOGENIE CORPORATION	QUAKERTOWN , PA	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Hazardous Industrial/Commercial	
BROOKE COUNTY LANDFILL	COLLIERS , WV	Non-Hazardous Industrial/Commercial	
CARBON LIMESTONE LANDFILL, LLC	LOWELVILLE , OH	Non-Hazardous Industrial/Commercial	
CHEMICAL WASTE MANAGEMENT	EMELLE , AL	Non-Hazardous Industrial/Commercial Asbestos Hazardous Industrial/Commercial	
CHEMICAL WASTE MANAGEMENT, INC.	SULPHUR , LA	Non-Hazardous Industrial/Commercial Hazardous Industrial/Commercial	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS:

New York State Department of Environmental Conservation
Division of Materials Management - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

AUTHORIZED SIGNATURE: _____ Date: 5/30/19

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
CLEAN HARBORS CANADA, INC.	CORUNNA , ON	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS DEER PARK	LAPORTE , TX	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS DEER TRAIL LLC	DEER TRAIL , CO	Non-Hazardous Industrial/Commercial	
CLEAN HARBORS ENV. SERVICES (SPRING GROVE RRF)	CINCINNATI , OH	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires Hazardous Industrial/Commercial	
CLEAN HARBORS ENVIRONMENTAL	ARAGONITE , UT	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Grease Trap Waste Hazardous Industrial/Commercial	
CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.	GLENMONT , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS KIMBALL, NE	KIMBALL , NE	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS LONE MOUNTAIN	WAYNOKA , OK	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS OF BALTIMORE	BALTIMORE , MD	Non-Hazardous Industrial/Commercial Asbestos	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

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AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
CLEAN HARBORS OF BALTIMORE	BALTIMORE , MD	Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS OF BRAINTREE	BRAINTREE , MA	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS OF CONNECTICUT	BRISTOL , CT	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS REIDSVILLE, LLC.	REIDSVILLE , NC	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
CLEAN HARBORS SERVICES INC.	CHICAGO , IL	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
Clinton County MRF / Casella	Morrisonville , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires Sludge from Sewage or Water Supply Treatment Plant	
Covanta Niagara I, LLC	Niagara Falls , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Grease Trap Waste	
CUMBERLAND COUNTY LANDFILL (PA DEP 100945)	SHIPPENSBURG , PA	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
CWM CHEMICAL SERVICES LLC	MODEL CITY , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

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AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
CWM CHEMICAL SERVICES LLC	MODEL CITY , NY	Hazardous Industrial/Commercial	
ENVIRITE OF PENNSYLVANIA	YORK , PA	Non-Hazardous Industrial/Commercial Hazardous Industrial/Commercial	
ENVIROSAFE SERVICES OF OHIO, INC.	OREGON , OH	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires Grease Trap Waste Sludge from Sewage or Water Supply Treatment Plant Hazardous Industrial/Commercial	
EQ OF CANTON	CANTON , OH	Non-Hazardous Industrial/Commercial Hazardous Industrial/Commercial	
ESMI of New York	Fort Edward , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
GREEN AMERICA RECYCLING LLC	HANNIBAL , MO	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Grease Trap Waste Hazardous Industrial/Commercial	
GSI ENVIRONMENT	SHERBROOKE , QC	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant Hazardous Industrial/Commercial	
HERITAGE ENVIRONMENTAL SERVICES	ROACHDALE , IN	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
HERITAGE ENVIRONMENTAL SERVICES, LLC	INDIANAPOLIS , IN	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Hazardous Industrial/Commercial	
HERITAGE WTI, INC.	EAST LIVERPOOL , OH	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. PA-242

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

U.S. BULK TRANSPORT, INC.
205 PENNBRIAR DRIVE
ERIE, PA 16509

CONTACT NAME: KATHLEEN COWGER
COUNTY: OUT OF STATE
TELEPHONE NO: (814)824-9949

PERMIT TYPE:

☐ NEW
☐ RENEWAL
▩ MODIFICATION

EFFECTIVE DATE: 05/31/2019
EXPIRATION DATE: **03/31/2020**
US EPA ID NUMBER: PAD987347515

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
HERITAGE WTI, INC.	EAST LIVERPOOL , OH	Hazardous Industrial/Commercial	
High Acres Western Expansion Landfill	Fairport , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
HORIZON ENVIRONMENTAL	GRANDE-PILES , QC	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
Hyland Landfill	Angelica , NY	Non-Hazardous Industrial/Commercial	
KIMBERLY SANITARY LANDFILL	DOVER , OH	Non-Hazardous Industrial/Commercial	
MAX ENVIRONMENTAL	PITTSBURGH , PA	Non-Hazardous Industrial/Commercial Hazardous Industrial/Commercial	
MINERVA ENTERPRISES INC	WAYNESBURG , OH	Non-Hazardous Industrial/Commercial Asbestos	
Modern Landfill	Youngstown , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires Sludge from Sewage or Water Supply Treatment Plant	
MOSTOLLER LANDFILL	SOMERSET , PA	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Ontario County Sanitary Landfill	Stanley , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
PSC ENVIRONMENTAL	HATFIELD , PA	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

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AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
PSC ENVIRONMENTAL	HATFIELD , PA	Grease Trap Waste	
		Hazardous Industrial/Commercial	
RELUPERE SOL, INC.	SAINT AMBROISE , QC	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Hazardous Industrial/Commercial	
REPUBLIC SERVICES, INC. (REPUBLIC CONESTOGA)	MORGANTOWN , PA	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Waste Tires	
		Grease Trap Waste	
		Sludge from Sewage or Water Supply Treatment Plant	
ROSS INCINERATION SERVICES, INC.	GRAFTON , OH	Non-Hazardous Industrial/Commercial	
		Petroleum Contaminated Soil	
		Hazardous Industrial/Commercial	
		Waste Oil	
SANDY RUN LANDFILL	HOPEWELL , PA	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Sludge from Sewage or Water Supply Treatment Plant	
Seneca Meadows LF	Waterloo , NY	Non-Hazardous Industrial/Commercial	
		Asbestos	
		Petroleum Contaminated Soil	
		Waste Tires	
		Grease Trap Waste	
		Non-Residential Raw Sewage or Sewage-Contaminated Wastes	
SMS RAIL LINES OF NEW YORK	FORT EDWARDS , NY	Hazardous Industrial/Commercial	
SOIL REMEDIATION INC	LOWELLVILLE , OH	Petroleum Contaminated Soil	
SOLUTION EAU AIR SOL (EAS) INC	MONTREAL-EAST , QC	Non-Hazardous Industrial/Commercial	
		Petroleum Contaminated Soil	
		Hazardous Industrial/Commercial	
STABLEX CANADA INC.	BLAINVILLE , QC	Non-Hazardous Industrial/Commercial	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
STABLEX CANADA INC.	BLAINVILLE , QC	Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial	
SYSTECH ENVIRONMENTAL CORP	FREEDONIA , KS	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Grease Trap Waste Hazardous Industrial/Commercial	
US ECOLOGY DETROIT SOUTH	DETROIT , MI	Non-Hazardous Industrial/Commercial Hazardous Industrial/Commercial	
US ECOLOGY IDAHO, INC.	GRAND VIEW , ID	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires Sludge from Sewage or Water Supply Treatment Plant Hazardous Industrial/Commercial	
US ECOLOGY MICHIGAN DISPOSAL WASTE TREATMENT PLANT	BELLEVILLE , MI	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Hazardous Industrial/Commercial Waste Oil	
VEOLIA ENVIRONMENTAL SERVICE LLC	PORT ARTHUR , TX	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Hazardous Industrial/Commercial	
WASTE MANAGEMENT MAHONING LANDFILL, INC.	NEW SPRINGFIELD , OH	Non-Hazardous Industrial/Commercial	
WESTERN BERKS LANDFILL	BIRDSBORO , PA	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
WM AMERICAN LANDFILL	WAYNESBURG , OH	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Grease Trap Waste	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
WM AMERICAN LANDFILL	WAYNESBURG , OH	Septage only (residential)	
		Residential Raw Sewage including Portable Toilet Waste	
		Non-Residential Raw Sewage or Sewage-Contaminated Wastes	
		Sludge from Sewage or Water Supply Treatment Plant	

WASTE TRANSPORTER PERMIT

GENERAL CONDITIONS

The permittee must:

1. Carry a copy of this waste transporter permit in each vehicle to transport waste. Failure to produce a copy of the permit upon request is a violation of the permit.

2. Display the full name of the transporter on both sides of each vehicle and display the waste transporter permit number on both sides and rear of each vehicle containing waste. The displayed name and permit number must be in characters at least three inches high and of a color that contrasts sharply with the background.

3. Transport waste only in authorized vehicles. An authorized vehicle is one that is listed on this permit.

4. Submit to the Department a modification application for additions/deletions to the authorized fleet of vehicles. The permittee must wait for a modified permit before operating the vehicles identified in the modification application.

5. Submit to the Department a modification application to add a new waste category or a new destination facility, or to change the current waste or destination facility category. The permittee must wait for a modified permit before transporting new waste types or transporting to new destination facilities.

6. Submit to the Department a modification application for change of address or company name.

7. Comply with requirements for placarding and packaging as set forth in New York State Transportation Law as well as any applicable federal rules and regulations.

8. Contain all wastes in the vehicle so there is no leaking, blowing, or other discharge of waste.

9. Use vehicles to transport only materials not intended for human or animal consumption unless the vehicle is properly cleaned.

10. Comply with requirements for manifesting hazardous waste, regulated medical waste, or low-level radioactive waste as set forth in the New York State Environmental Conservation Law and the implementing regulations. Transporters who provide a pre-printed manifest to a generator/shipper/ offeror of regulated waste shall ensure that all information is correct and clearly legible on all copies of the manifest.

11. Deliver waste only to transfer, storage, treatment and disposal facilities authorized to accept such waste. Permittee must demonstrate that facilities are so authorized if requested to do so.

12. Maintain liability insurance as required by New York State Environmental Conservation Law.

13. Maintain records of the amount of each waste type transported to each destination facility on a calendar-year basis. The transporter is obligated to provide a report of this information to the Department at the time of permit renewal, or to any law enforcement officer, if requested to do so.

14. Pay regulatory fees on an annual basis. Non-payment may be cause for revocation or suspension of permit.

15. This permit is not transferrable. A change of ownership will invalidate this permit.

16. This permit does not relieve the permittee from the obligation to obtain any other approvals or permits, or from complying with any other applicable federal, state, or local requirement.

17. **Renewal applications must be submitted no less than 30 days prior to the expiration date of the permit to:**

New York State Department of Environmental Conservation
Division of Materials Management, Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

GOODELLE GARY
U S BULK TRANSPORT INC
6286 STERRETTANIA RD
FAIRVIEW, PA 16415

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

(TS-798)
October 22, 1991
4106

Subject: Notification of PCB Activity

Thank you for filing the **Notification of PCB Activity** form dated **September 9, 1991** for the facility location listed below:

U S BULK TRANSPORT INC
6286 STERRETTANIA RD
FAIRVIEW, PA 16415

Please be advised that the EPA Identification Number for the above facility is correctly stated on your form as **PAD987347515**. This is the number you will use for reporting PCB activity.

If you have any questions on the EPA ID, call 301 294-2840. If you have any questions on the interpretation of PCB Waste Handlers rules, call 202 260-3933.

Sincerely,

Tony Barney, Chief
Chemical Regulation Branch

United States Environmental Protection Agency

ACKNOWLEDGEMENT OF NOTIFICATION OF REGULATED WASTE ACTIVITY (VERIFICATION)

This is to acknowledge that you have filed a Notification of Regulated Waste Activity for the installation located at the address shown below to comply with Section 3010 of the Resource Conservation and Recovery Act (RCRA). Your EPA Identification Number for that installation is identified below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Biennial Reports that generators of hazardous waste, and owner and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA ID No.:
PAD987347515

Installation Address:
US BULK TRANSPORT INC
205 PENNBRIAR DR
ERIE PA 16509

Mailing Address:
205 PENNBRIAR DR
ERIE PA 16509
ATTN: GARY GOODELLE, PRESIDENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

GOODELLE GARY
U S BULK TRANSPORT INC
6286 STERRETTANIA RD
FAIRVIEW, PA 16415

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EPA ID No.:
PAD987347515

Installation Address:
US BULK TRANSPORT INC
205 PENNBRIAR DR
ERIE PA 16509

Mailing Address:
205 PENNBRIAR DR
ERIE PA 16509
ATTN: GARY GOODELLE, PRESIDENT

2510-CD-LRWM0056 Rev. 04/00

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE TRANSPORTER LICENSE

PA-AH0338	09/30/2022	225
AUTHORIZATION NO.	EXPIRATION DATE	NO. OF COPIES

-VOID UNLESS VALIDATED

VALIDATED
11/19/2020

NAME & ADDRESS OF LICENSEE

PAGE E.T.C., INC.

PO BOX 1290
WEEDSPORT NY 13166-1290

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUSINESS PHONE NO.	24-HOUR PHONE NO.
315-834-6681	800-233-2126

SEE REVERSE FOR ADDITIONAL CONDITIONS -

ADEM
Alabama Department of Environmental Management

HAZARDOUS WASTE TRANSPORT PERMIT

PERMITTEE:	**Page E.T.C., Inc.**
ADDRESS:	**2758 Trombley Rd Weedsport, NY 13166**
PERMIT NUMBER:	**NYD986969947**
HAZARDOUS WASTES APPROVED:	**All hazardous waste identified by Rules 335-14-2-.02. through 335-14-2-.04, inclusive, and used oil identified by Rule 335-14-17-.02 of the ADEM Administrative Code**
TRANSPORTATION MODE:	**Highway**

In accordance with and subject to the provisions of the Hazardous Waste Management Act of 1978, as amended, Code of Alabama 1975, §§22-30-1 to 22-30-2, the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to transport the approved hazardous wastes by the approved transportation mode.

ISSUANCE DATE:	**March 30, 2022**
EFFECTIVE DATE:	**April 11, 2022**
EXPIRATION DATE:	**April 10, 2025**

Alabama Department of Environmental Management

ARKANSAS HIGHWAY POLICE
A DIVISION OF THE ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | iDriveArkansas.com | Lorie H. Tudor, P.E., Director – ArDOT | Jay Thompson, Chief – AHP
P.O. Box 2779 | Little Rock, AR 72203-2779 | Phone: 501.569.2421 | Fax: 501.569.4999

ARKANSAS HAZARDOUS WASTE TRANSPORTATION PERMIT

Page E.T.C., Inc.
2758 Trombley Road
Weedsport, NY 13166

Permit No. H-0824
EPA ID No. NYD986969947
Date Issued: 8/13/2021

ORDER AND PERMIT

It appearing that the above named carrier has met with all applicable provisions of the rules and regulations adopted by the Arkansas Highway Police under authority of the Arkansas Hazardous Waste Management Act, and therefore, is issued a permit from the Arkansas Highway Police to engage in the transportation of hazardous waste in and/or through the State of Arkansas, for a period of one (1) year.

The above said carrier is hereby issued this permit subject to such terms, conditions, and limitations as are now, or may hereafter be attached to the exercise of the privileges herein granted.

It is a condition of the permit that the holder shall comply with all rules and regulations of the Arkansas Highway Police and the laws of the State of Arkansas concerning the transportation of hazardous waste and operation of a motor vehicle over the highways of this State.

This permit does not confer any operating authority to said carrier and shall not be considered as such.

This permit shall terminate one (1) year from the date issued, but may be subject to renewal upon application of the carrier.

Entered this 21st day of July, 2021.

For Jay Thompson, Chief
ARKANSAS HIGHWAY POLICE

COLORADO
Department of Transportation

Annual HazMat Permit # 22HM0076641

Valid From: **03/01/2022** To: **02/28/2023**

Issued to:
PAGE ETC INC
2758 TROMBLEY RD
WEEDSPORT, NY 13166

Permit Fee: **$354.00** (Credit Card)
Sent By: **Email - ASTEVENS@PAGETRUCKING.COM**
Ordered By: **ANGELA STEVENS**

USDOT #: **348083**
Fed. HM Registration #: **060920550069CE**
Carrier Type: **For Hire, Interstate**
Number of Vehicles Transporting Hazardous Materials in CO: **101-300**

Weight: **Vehicle Combination 10,001 lbs. or more**

Commodity Being Transported: **Class 3, Class 4.1, Class 5.1, Class 6.1, Class 7 - I, Class 8, Class 9**

Proof of Financial Responsibility: **Form MCS-90**

Financial Responsibility Verification:

Pursuant to 42-20-202, C.R.S., as amended, applicant swears under penalty of perjury that applicant has the minimum liability insurance required by the U.S. Department of Transportation pursuant to 49 C.F.R., Part 387

In compliance with the provisions section 42-20-202(b), C.R.S., the department does grant authority to transport hazardous materials subject to the limitations and provisions mentioned below.

1. This permit must be carried in the transporting motor vehicle.

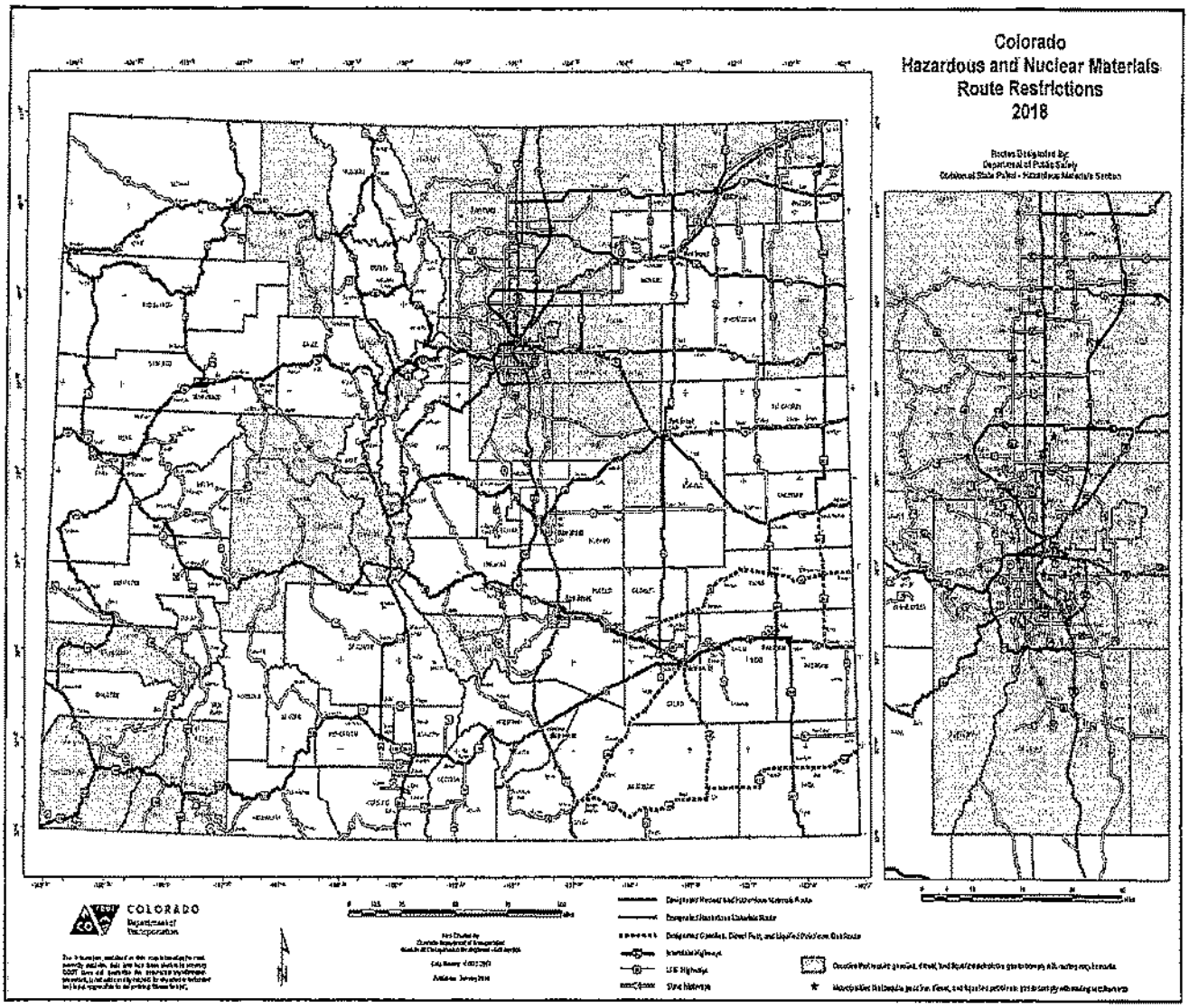
2. The above named carrier has paid the required amount and is authorized to make copies for the number of vehicles listed herein on the permit.

Full compliance with the laws of the State of Colorado and with the Rules and Regulations of the Department of Public Safety is required under this permit.

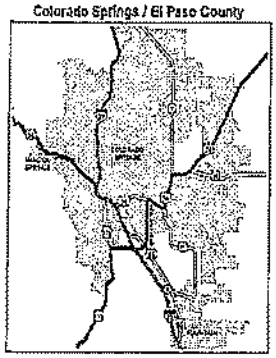
THE UNDERSIGNED HAS READ THIS DOCUMENT AND HAS PERSONAL KNOWLEDGE THAT THE FACTS IN IT ARE TRUE, AND AGREES TO COMPLY WITH THE RULES AND REGULATIONS PROMULGATED PURSUANT TO SECTION 42-20-108, C.R.S., AS AMENDED.

Driver Signature:_____ Date:_____

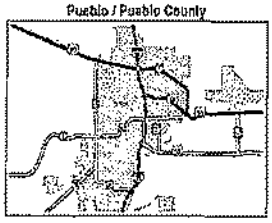
For current commercial vehicle restrictions and maps please visit our Freight and Trucking webpage at https://sites.google.com/state.co.us/cotriporgfreight.


Colorado
Hazardous and Nuclear Materials
Route Restrictions
2018
COLORADO
Department of
Transportation

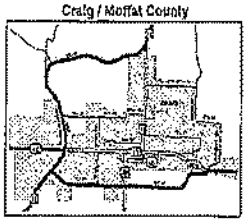
Colorado Springs / El Paso County



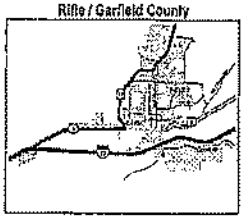
Pueblo / Pueblo County



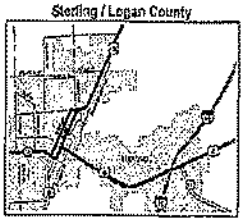
Craig / Moffat County



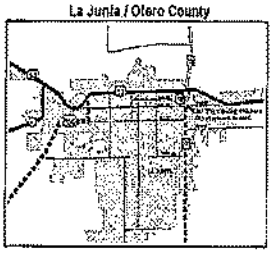
Rifle / Garfield County



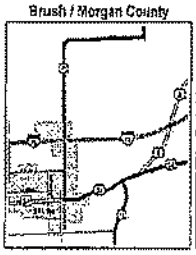
Sterling / Logan County



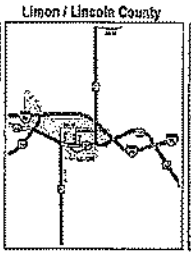
La Junta / Otero County



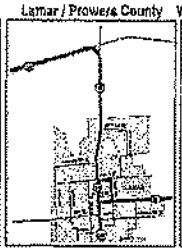
Brush / Morgan County



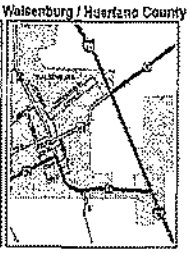
Limon / Lincoln County



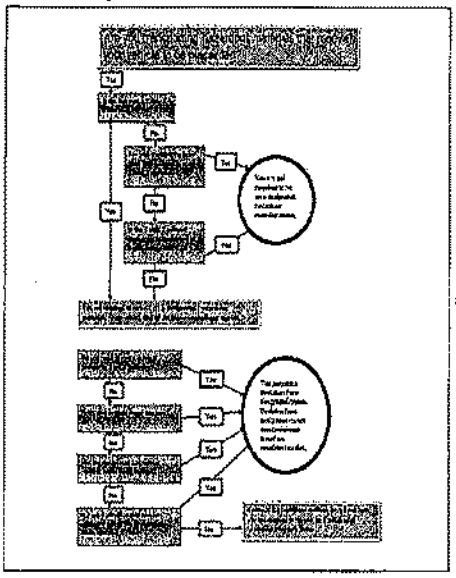
Lamar / Prowers County



Walsenburg / Huerfano County



Routing Decision Chart



Colorado State Patrol Communications Centers

24 Hours Emergency Phone Numbers

Alamosa	(719) 589-5407
Craig	(970) 824-5501
Denver	(303) 239-4501
Montrose	(970) 249-4332
Pueblo	(719) 544-2424

Colorado State Patrol Hazardous Materials Unit

(303) 275-1600

Nuclear Materials Routing Exceptions

Nuclear materials are defined as a highway route controlled quantity of radioactive materials, in 42-20-402, CRS. When transporting a nuclear material, carriers are required to remain on designated nuclear materials routes.

Carriers are not to deviate from designated nuclear materials routes except under certain circumstances:

- Carriers may deviate from designated routes in order to make local pickups or deliveries.
- Carriers may deviate from designated routes when enclosed use of the route is unsafe.
- Carriers may deviate from designated routes in order to refuel.
- Carriers may deviate from designated routes when the route is closed due to road conditions, road construction or maintenance operations.

When a emergency condition exists or when the designated nuclear materials route closed due to adverse weather conditions, or other circumstances, the Colorado State Patrol (CSP) may designate an alternative route. The CSP requires carriers be escorted while on the designated route. Carriers must contact the nearest CSP Communications Center for instructions prior to deviating from a designated route.

There are exceptions to the definition of nuclear materials. These exceptions remove the materials described from the routing needs made discussed earlier. Nuclear Materials, as defined in 42-20-402, CRS, do not include:

- Nuclear materials used for research or medical purposes within Colorado. A Highway Route Control Quantity (HRCQ) of radioactive material used to transport medical supplies and equipment, is not considered as being "used for medical purposes" and is therefore required to abide by the nuclear material routing rules.
- Radioactive materials transported as ores or products even mining, milling, smelting, or similar processing of ores, and mineral-bearing materials.
- Radioactive materials utilized in national security activities under the direct control of the Department of Defense; radioactive materials under the direct control of the Department of Energy used in carrying out atomic energy defense activities as defined in the federal "Nuclear Waste Policy Act of 1982," 42 USC 10101 et seq.

Finally, carriers transporting nuclear materials shall be familiar with the rules and regulations adopted by the Colorado State Patrol and published under 8 CCR 1507-25. Additionally, the carrier is required to comply with the provisions of 49 CFR 397.101(b).

Hazardous Materials Routing

As a general rule, vehicles carrying an amount of hazardous materials that require placards, must remain on designated hazardous materials routes. There are some exceptions to the rule:

- You may leave an authorized route to stop in another vehicle.
- You may leave an authorized route for local pickup or delivery of hazardous materials.
- You may leave an authorized route due to emergencies that would make continued use of the route unsafe.
- You may leave an authorized route when 24 hr closed pursuant to 42-20-304, CRS.

A person transporting hazardous materials may make necessary local pickups and deliveries without returning to the route between deliveries, when returning to the route is unnecessary.

Agricultural products other than Class 2 materials as defined in 49 CFR, over local roads between fields of the same farm, are excepted from the statutory requirements when transported by a farmer who is not hired as primary motor carrier and the movement of the agricultural product is exempt from 49 CFR 173.5 and 42-20-108.5, CRS.

Some motor vehicles that are carrying hazardous materials, even though they may require placards, are not subject to the routing requirements. Vehicles carrying materials described in Table 2 of 49 CFR 172.504 in the following configurations:

- Quantities of less than 500 gallons of Table 2 hazardous materials.
- Table 2 hazardous materials in containers of five gallons or less.
- Table 2 hazardous materials when they are package size container commodities as defined in 49 CFR.

Additionally, motor vehicles that are transporting ores, the products from mining, milling, smelting, other similar processing of ores, and the wastes and tailings from these processes as special materials as defined in 49 CFR 173.388 when the aggregate amount of such special ores not excessively packed, are exempted from the requirements of routing.

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

HAZARDOUS WASTE TRANSPORTER PERMIT

Permit No.: CT-HW-515 **Expires on:** June 30, 2023

EPA ID No.: NYD986969947

Name of Permittee: PAGE ETC INC

Mailing Address: 2758 TROMBLEY ROAD – WEEDSPORT, NY 13166

Facility Contact: RACHEL BRIGGS – 800-233-2126 X103
rbriggs@pagetrucking.com

Wastes Authorized for Transport:

Connecticut Regulated Wastes- WASTE PCB's, WASTE OIL, WASTE WATER SOLUBLE OIL, WASTE CHEMICAL LIQUID, WASTE CHEMICAL SOLID

Hazardous Waste- Per 40 CFR 261- ALL HAZARDOUS WASTE PER 40 CFR 261

The Permittee is authorized to transport hazardous waste and Connecticut regulated wastes in accordance with the above referenced Permit and the Regulations of Connecticut State Agencies Section 22-449(c)-103.

4-24-2019
Issuance Date

Waste Engineering & Enforcement Division
Bureau of Materials Management &
Compliance Assurance

Application No.: 01905393 Received on: APRIL 16, 2019

A COPY OF THIS PAGE (PROOF OF PERMIT) SHALL BE MAINTAINED IN THE VEHICLE DURING PERMITTED OPERATIONS.

Transporter Permit No.
CT-HW-515

Terms and Conditions

A. Scope of Authorization:

The Permittee is hereby authorized to transport hazardous and/or Connecticut regulated waste in accordance with this Permit, Regulations of Connecticut State Agencies Sections 22a-449(c)-100 through 119 inclusive and 22a-449(c)-11 and Section 22a-454 of the Connecticut General Statutes. The Permittee shall only use those vehicles that are registered, fully insured and appropriately equipped to transport authorized wastes. This permit does not authorize the transfer of hazardous/Connecticut regulated wastes from one vehicle to another or from one mode of transportation to another.

B. Operating Conditions:

This Permit incorporates by reference the Permit Application for Waste Transportation cited on the first page of this Permit.

1. The Permittee shall ensure that each driver employed is completely familiar with the terms and conditions of this permit prior to transporting waste in or through Connecticut. A copy of the Proof of Permit (first page of this Permit) shall accompany each vehicle used by the Permittee to transport waste authorized by this Permit.

2. The transporter permit number shall be displayed on the sides and rear of each waste-carrying portion of the vehicle, authorized to transport wastes, in letters and numbers of contrasting color and at least four inches (4") high.

3. All wastes authorized to be transported by this permit shall be transported in compliance with all applicable provisions of Title 49 of the Code of Federal Regulations.

4. Transporters who provide a pre-printed manifest to a generator/shipper/offeror of hazardous waste shall ensure that all information pre-printed is correct and clearly legible on all copies. This includes, but is not limited to: US EPA Generator ID Number, Generator Name and Mailing Address, Generator's Site Address; Emergency Response Phone; Transporter(s) US EPA ID Number and Company Name; Designated Facility US EPA ID Number, Name and Site Address; all waste information (Items 9 – 13 and item 19); Alternate facility US EPA ID Number, Name and Site Address if applicable.

   Manifest forms (EPA forms 8700-22 and 8700-22a) are designed for use with a 12 pitch font. Pre-printed manifests using smaller font may be rejected by the Permittee as not fulfilling the legal notification requirement. Pre-printed manifests should be inspected (especially the last copy – page 6) before the driver goes out to pick up the waste shipment to ensure legibility and correctness. Equipment used to print manifests should be maintained regularly and adjusted/serviced as needed.

5. The Permittee shall not store, transfer, treat, discharge, dispose or otherwise manage waste at any site in Connecticut unless such site has written authorization from the Commissioner for such activity.

11. The Permittee shall ensure that all drivers engaged in the transportation of wastes which are hazardous materials as defined in Title 49 of the Code of Federal Regulations ("CFR") 171.8 are provided with, at a minimum, the training required pursuant to 49 CFR 172.704 and 177.816. Each vehicle authorized to transport hazardous/Connecticut regulated wastes shall be equipped, at a minimum, with the emergency equipment required pursuant to 49 CFR Part 393, Subpart H.

12. The Permittee shall ensure that personnel engaged in emergency response as defined by 29 CFR subparagraph 1910.12(a)(3) are in compliance with all applicable requirements of the regulations developed by the Occupational Safety and Health Administration cited in 29 CFR.

13. The Permittee shall provide and maintain the required emergency information prescribed in 49 CFR 172, Subpart G - Emergency Response Information. When a package or container leaks in the course of transportation the Permittee shall ensure that, at a minimum, the actions required pursuant to 49 CFR 177.843 and 177.854 are complied with as applicable.

C. Reporting and Inspection Requirements:

1. Monthly Reports for each calendar month of the permit period shall be compiled by the Permittee on or before the 10th day of the following month. Such reports shall be maintained by the Permittee in electronic or hardcopy form for the life of this Permit plus five (5) years, and shall be made available for review by the Commissioner upon request. Monthly Reports shall be compiled using a template specified by the Commissioner and in accordance with the following:

    a. The Permittee shall report ALL Connecticut Regulated Wastes transported, regardless of whether or not such waste is accompanied by a Manifest. This includes all Non-Hazardous Waste PCBs, Waste Oil, Waste Water Soluble Oil, and/or Waste Chemical Liquids that are transported in a calendar month.
    b. ANY and ALL unmanifested Hazardous Wastes (as per 40 CFR 261) that are transported in a calendar month shall be recorded by the Permittee and appear on the Monthly Report.
    c. If no hazardous/Connecticut regulated waste was transported in a calendar month, the Permittee shall record "No Waste Transported."

2. The Permittee shall ensure that periodic inspections are conducted on each vehicle, authorized to transport hazardous/Connecticut regulated wastes, in accordance with 49 CFR 396.17. Copies of the inspection reports shall be provided for the Commissioner's review upon request.

3. The Permittee shall allow the CT DEEP to conduct inspections to ensure permit compliance. These include but may not be limited to evaluation and review of records, inspection and sampling of facilities and vehicles, photographs (including aerial), or other means deemed necessary for documentation of the inspection.

4. In the event of spillage or uncontrolled discharge while collecting, transferring and/or transporting any waste in or through the State of Connecticut, the CT DEEP Emergency

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTRO
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
89 KINGS HIGHWAY
DOVER, DE 19901

COMPLIANCE & PERMITTING

PHONE: (302) 739-9403
FAX: (302) 739-5060

DELAWARE HAZARDOUS WASTE TRANSPORTER PERMIT

PERMIT NUMBER DE-HW-0353

Effective Date:	July 01, 2022	EPA Identification Number:	NYD986969947
Date of Expiration:	June 30, 2024		
Permittee:	Page E.T.C., Inc. 2758 Trombley Road Weedsport, NY 13166-9510	Street Address:	2758 Trombley Road Weedsport, NY 13166-9510

This permit, issued pursuant to the provisions of 7 Del. C. Chapters 60 and 63, shall remain in effect for the term stated above provided the permittee is familiar with, and complies with, all terms and conditions herein.

Terms and Conditions:

1. As specified in the application for this permit, the following wastes may be transported by the permittee: Part 261 characteristic or listed hazardous wastes; used or waste oils (as defined by Part 279, Used Oil Management Standards); PCB contaminated hazardous waste.

2. A copy of this permit must be carried in each transport vehicle and presented upon request to any law enforcement officer or representative of the Delaware Department of Natural Resources and Environmental Control (DNREC).

3. Permits issued for a period greater than one year: Permittees holding multi-year permits have pre-paid the annual fees. The permit shall remain in effect until the expiration date identified above, unless the permit is cancelled by the permitee or revoked by the Secretary of the Department of Natural Resources and Environmental Control (DNREC).

4. Only those vehicles identified in the application for this permit may be used to transport the wastes identified in Condition 1. All vehicles shall be operated in accordance with Delaware's *Regulations Governing Hazardous Waste*, Section 263.105. Permittee shall also be responsible for all company vehicles operating under this permit.

5. Wastes identified in Condition 1 of this permit may not be transported to facilities that are not permitted or specifically approved by the receiving state to receive and manage those wastes.

6. The permittee's name shall be prominently displayed on both sides of the vehicle (motorized and containerized units) in figures at least 3 inches high, and of a color that contrasts with the color of the vehicle.

7. The permittee's permit number shall be prominently displayed on both sides and the rear of the vehicle (motorized and containerized units) in figures at least 3 inches high, and of a color that contrasts with the color of the vehicle.

8. Safety and Emergency Equipment: All vehicles shall carry the safety and emergency equipment

contained in the application for this permit in addition to any equipment required by DOT 49 CFR Motor Carrier Safety Regulations.

9. Spill Containment Equipment: All vehicles shall carry spill containment equipment appropriate for the type of waste being transported. All vehicles shall carry a copy of the Spill Control Plan.

10. All vehicles shall be equipped and operated so as to prevent any release of waste material to the environment.

11. All personnel shall be properly trained prior to handling or transporting wastes for which this permit is issued.

12. Permittee shall at all times be in compliance with applicable insurance requirements for motor carriers as prescribed by *Regulations Governing Hazardous Waste*, Section 263.103(b)(3) and the Federal DOT 49 CFR Part 387.

13. Permittee must notify the Solid and Hazardous Waste Management Section in writing of any additions or changes in waste types to be transported, ownership information, TSD facilities, and/or changes in operations, procedures or equipment within ten (10) working days after putting those changes into effect.

14. This permit does not relieve the permittee of complying with any other applicable Federal, State or local regulations or ordinances.

15. In the event that regulations governing the activity authorized herein are revised, this permit may be reopened and modified. Permittee shall be notified in writing and provided an opportunity for a public hearing. At that time, additional limitations, requirements, and/or special conditions may be included in the permit.

16. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

17. Permittee shall immediately contact the Department in the event of a release of any waste material while in transport in or through . The 24 hr. numbers to call are 800.662.8802, 302.739.9401 or 911.

18. Any violation of the conditions of this permit, regulations promulgated by the Department of Natural Resources and Environmental Control, Secretary's Orders, or provisions of 7 Del. C., Chapters 60 or 63 will be grounds for suspension or revocation of this permit.

19. Special conditions: None.

Karen G. J'Anthony

Karen G. J'Anthony
Environmental Program Manager I
Solid and Hazardous Waste Management Section

10 JUNE 2022
Date

FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

****

HAZARDOUS WASTE TRANSPORTER
CERTIFICATE OF APPROVAL

****

This is to certify that the carrier specified below has been approved as a hazardous waste transporter in Florida. The terms and conditions of this certificate require that the holder comply with all applicable portions of Chapter 62-730, Florida Administrative Code. This certificate shall be rendered null and void if any information contained within becomes obsolete. The certificate shall remain valid through the expiration date specified below.

TRANSPORTER: Page E T C Inc

FACILITY ID NO: NYD986969947

FACILITY ADDRESS: 2758 TROMBLEY ROAD
WEEDSPORT, NY 13166

EXPIRATION DATE: November 30, 2022

APPROVED TRANSFER FACILITY: NO Susan L Horlick

APPROVAL ISSUED BY: _____ DATE: November 15, 2021
Susan Horlick
Environmental Specialist III
Hazardous Waste Regulation Section
850/245-8778

State of Kansas
Kansas Department of Health and Environment

Hazardous Waste Transporter Registration Certificate

(A registered hazardous waste transporter may also transport used oil)

This certificate acknowledges that the company named below is registered with the Kansas Department of Health and Environment, Bureau of Waste Management, as a hazardous waste transporter.

PAGE E T C INC
2758 TROMBLEY RD
WEEDSPORT NY 13166

EPA ID Number: NYD986969947

A copy of this certificate must be carried in each company vehicle that transports hazardous waste or used oil within, into, out of, or through the State of Kansas and must be made available for review upon request.

Kelsie L Gfeller

Kelsie L Gfeller
Bureau of Waste Management
Regulations and Data Unit

Issued: November 17, 2021

KENTUCKY DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
CERTIFICATE OF REGISTRATION
FOR HAZARDOUS WASTE MANAGEMENT ACTIVITY

ISSUED TO:

PAGE E.T.C., INC.
ATTN: DONNA MAHANEY
PO BOX 1290
WEEDSPORT, NY 13166

LOCATED AT:

2758 TROMBELY RD.
WEEDSPORT, NY 13166

TYPE OF CERTIFICATE: MODIFICATION UPDATE

The Division of Waste Management hereby issues the above-named installation a Certificate of Registration for the hazardous waste activity specified below. This Certificate is issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Conformance with all applicable laws and regulations is the responsibility of the registrant. All rights of inspection by representatives of the Division of Waste Management are reserved.

This Certificate supersedes all previous Certificates of Registration.

EPA ID NUMBER: NYD-986-969-947

AI NUMBER: 129758

STATE: NEW YORK

ISSUED: 09/09/16

EFFECTIVE: 09/07/16

EXPIRATION: NONE

ACTIVITY: TRANSPORTER OF HAZARDOUS WASTE, NON-HAZARDOUS & PCB'S

April J. Webb, P.E.
Branch Manager
Hazardous Waste Branch

Carla Cornett
Edith Greer
Maria B. Wood
Carla Cornett/Edith Greer/Maria Wood
Environmental Technologists

Questions concerning this Certificate should be directed to Carla Cornett, Edith Greer, or Maria Wood at (502) 564-6716

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

HAZARDOUS WASTE AND WASTE OIL TRANSPORTER LICENSE

LICENSE NO.: H354 W354 EFFECTIVE DATE: April 09, 2022 EXPIRES: April 09, 2023

NAME OF LICENSE PAGE E T C INC

LICENSEE ADDRES 2758 TROMBLEY RD, WEEDSPORT, NY 13166

is hereby granted a Hazardous Waste Waste Oil Transporter License from the State of Maine, Department of Environmental Protection pursuant to the provisions of the "Maine Hazardous Waste, Septage and Solid Waste Management Act," 38, M.R.S. § 1319-O (2015) and rules pertaining to "Licensing of Transporters of Hazardous Waste," 06-096 C.M.R. ch. 853, § 4 (last amended July 23, 2008) and rules pertaining to "Waste Oil Management," 06-096 C.M.R. ch. 860, § 9 (last amended June 13, 1988). The licensee(s) shall comply with applicable Department of Environmental Protection rules, including standard conditions set forth in 06-096 C.M.R. ch. 853, § 8 and 06-096 C.M.R. ch. 860, § 9 and the following special conditions:

1. The above named licensee shall notify the Department of Environmental Protection, in writing, of any change, including renewal, made to liability insurance coverage within ten days of the change.

2. The licensee shall comply with all Federal operation and safety standards and regulations as listed in 49 C.F.R. (2016), including, but not limited to, the "Federal Motor Carrier Safety Regulations," 49 C.F.R. §§ 390 to 397 (2016).

3. The licensee shall file all applicable reports with the Department and pay all applicable fees in accordance with the requirements of 38 M.R.S. § 1319-I; 06-096 C.M.R. ch. 853, § 6(D); 06-096 C.M.R. ch. 860, §13 to 15 and procedures there under.

4. The Department, as it deems necessary for the effective management of hazardous waste and waste oil may require transporters to furnish reports of records concerning quantities and handling of wastes identified or listed in "Identification of Hazardous Waste," 06-096 C.M.R. ch. 850 (last amended March 11, 2015) and 06-096 C.M.R. ch. 860 of the Department's rules.

5. The licensee shall not operate as a transfer facility, or store hazardous waste, including in vehicles and conveyances, for more than one day on weekdays, three days over weekends, or four days over holiday weekends (associated with a Friday or Monday holiday), without a transfer facility license, pursuant to the rules, "Licensing of Hazardous Waste Facilities," 06-096 C.M.R. ch. 856, §11(A)(3) (last amended November 3, 2002).

6. The licensee shall not operate as a storage facility or store hazardous waste, including in vehicles and conveyances, for more than ten (10) days without a storage facility license, pursuant to the rules, 06-096 C.M.R. ch. 856, §10(H).

7. This license shall not prohibit the Department from seeking enforcement of violations. The Licensee shall provide the

8. If no activity has occurred during the quarterly report period, the licensee shall so designate the lack of activity on the report form and forward it to the Department.

9.The licensee shall not accept any hazardous waste for transport without a properly completed Uniform Hazardous Waste Manifest. The licensee shall not accept any universal waste for transport without a properly completed Uniform Bill of Lading for Maine Recyclable Material pursuant to "Hazardous Waste Manifest Requirements," 06-096 C.M.R. 857, §§ (4), (5)(D), and 8(A) (last amended July 23, 2008).

Given under our hand and seal, Thursday, March 24, 2022

BY: _____ for
Susanne Miller

TITLE: MELANIE LOYZIM, COMMISSIONER

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

website: www.maine.gov/dep

Alliance for Uniform Hazmat Transportation Procedures
Uniform Program Credentials

ALLIANCE FOR UNIFORM HAZMAT TRANSPORTATION PROCEDURES

ANGELA STEVENS
PAGE E T C INC
2758 TROMBLEY RD.
WEEDSPORT, NY 13166-

USDOT Census #: 348083

ICC #: 0209504

EPA Transporter ID #: NYD986969947

Intrastate Motor Carrier #:

Telephone number to call in case of accident or emergency: (800) 233-2126

Uniform Program #: UPW0348083MI

Certified by: *Jeanette M. Noechel*

Registration Issued: 10/1/2021 Registration Expiration: 10/1/2022

Issuing Agency: Michigan Department of Environment, Great Lakes, and Energy

Agency Telephone Number: (248) 320-1790 or (586) 494-5091

STATE OF MICHIGAN

MassDEP Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Department of Environmental Protection
One Winter Street Boston, MA 02148 • 617-292-5500

Hazardous Waste Transport License

This license is not valid until the effective date and unless signed by a Director/Officer or equivalent and the Director of the Business Compliance Division (Bureau of Waste Prevention, Massachusetts Department of Environmental Protection).

License Number
HW05-MA-0357

Licensee
PAGE ETC INC

Contact Person Information
Name: KELLEY CLARK
Phone: (315) 834-6681
Email: compliancedept@pagetrucking.com

Company Address:
2758 TROMBLEY RD
WEEDSPORT, NY 13166

EPA Identification Number
NYD986969947

Signature

11/25/2020
Date (MM/DD/YYYY)

Piper Titus
Name of Director/Officer or equivalent

CEO
Official Title

For MassDEP use only

The Department hereby grants the above-named company a license to transport hazardous waste pursuant to M.G.L. Chapter 21C and Massachusetts Hazardous Waste Regulations 310 CMR 30.000. **The license becomes effective twenty-one (21) days after the date of signature on the license by the Director of the Business Compliance Division,** unless during that time an appeal has been received by the Department. In that case, the license is not in effect until, and if, the appeal is resolved in favor of the license applicant.

This license authorizes only the named licensee to engage in the transportation of all categories of hazardous waste listed or described in 310 CMR 30.100. This license is not transferable. This license does not grant any rights not otherwise granted by federal, state, or local statutes, ordinances, or regulations. The licensee shall comply at all times with all state and federal regulations and statutes applicable to the transportation of

Director, Business Compliance Division

11/19/2020
Date (MM/DD/YYYY)

12/10/2020
Effective Date (MM/DD/YYYY)

12/31/2025
Expiration Date (MM/DD/YYYY)

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02148 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

KELLEY M CLARK
PAGE ETC INC
2758 Trombley Rd
Weedsport, NY 13166

Hazardous Waste Transporter License HW05

Dear Mrs. CLARK:

The Massachusetts Department of Environmental Protection (the Department) has completed its review of PAGE ETC INC application for a Massachusetts Hazardous Waste Transporter license. Pursuant to M.G.L. c. 21C and the Massachusetts Hazardous Waste Regulations 310 CMP 30.000, the Department hereby issues to, **PAGE ETC INC** a hazardous waste transporter license, License Number **HW05-MA-0357**, which is valid for a period not to exceed five (5) years (see attached License).

This license will become effective 21 days after the date of my signature unless, during that time, an appeal has been received by the Department. If so, PAGE ETC INC will immediately be notified of an appeal. In the event of an appeal, the license will not be in effect until (and if) the appeal is resolved in favor of PAGE ETC INC.

Please ensure that the licensee'd drivers carry the assigned VID information for the current calendar year in the cab of each approved vehicle that is used to transport hazardous waste in Massachusetts.

PAGE ETC INC shall comply at all times with the terms of this license and 310 CMR 30.000, M.G.L. c. 21C, and all other applicable State and Federal statutes and regulations. The company shall submit to the department the following:

Monthly operating reports in electronic format (310 CMR 30.407); and
Quarterly transporter fee reports (801 CMR 40.07).

PAGE ETC INC also has a duty to provide information to the Department which may be deemed by the Department to be relevant in determining whether cause exists to modify, revoke, or suspend a license or to determine the company's compliance with the license (310 CMR 30.822(5) & (9)). The company shall notify the department of changes to the following:

Company name;
Company address, including areas where vehicles are parked in Massachusetts;
EPA ID No.;
Telephone numbers;
Stock transfers (>5% equity/liability);
New owner or operator; and
Criminal felony convictions, civil suits, or legal administrative actions (including changes to the driving record) of the licensee, or its officers, directors, trustees, partners, or key staff individuals.

For information about filing Electronic Monthly Operating Reports, please contact Michael Hurley at 617-292-5633. For information about filing Quarterly Transporter Fee Reports, please contact Annette Molyneaux at 617-292-5660.

MassDEP Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02148 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

If you have any questions, please contact Marrcus Henry of my staff at 617-292-5576.

Sincerely,

Richard Blanchet, Deputy Division Director
Business Compliance Division
Bureau of Air and Waste

11/19/2020
Date

Enclosures: Massachusetts Hazardous Waste Transporters License;
Appeals Rights/ Hearing Information

Missouri Department of Transportation

Motor Carrier Services

830 MoDOT Drive, P.O Box 270
Jefferson City, MO 65102-0270
(866)831-6277 or (573)751-7100

HAZARDOUS WASTE TRANSPORTER LICENSE CERTIFICATE

File No:	***USDOT 348083***	*License No:*	***21G28002000***
Name:	***PAGE ETC INC***		
D/B/A:			
City:	***WEEDSPORT***	*Expiration Date:*	***September 30, 2022***
State:	***NY***	*Effective Date:*	***October 01, 2021***

In accordance with Section 260.395 of the "Missouri Hazardous Waste Management Law", the Missouri Department of Transportation approves the application of the above-named transporter. Beginning on the effective date shown above, until the expiration date, this transporter may transport hazardous waste within this state. This permit is not transferable, and does not apply to other environmentally regulated areas.

All equipment used for the transport of hazardous waste shall meet and be operated in accordance with the provisions of the Missouri Hazardous Waste Management Law (Section 260.350 to 260.430, RSMo) and rules made under its authority. The Department does not inspect each vehicle to be used for hauling waste, and the issuance of this permit does not imply approval of that equipment.

The Department may suspend, revoke, or modify this permit if it finds that the hauler is in violation of the chapter, rules, or any terms or conditions thereof, or has created a public nuisance, or posed a threat to the health of humans or other living organisms.

This license must be carried in the vehicle at all times when transporting hazardous waste. The license must be shown to representatives of the Department, Officers of Missouri Highway Patrol and other law enforcement officials on demand.

Issued at 830 MoDOT Drive
Post Office Box 270
Jefferson City, MO 65102-0270
On July 28, 2021

Jerica Holtsclaw
Motor Carrier Services Director

MISSOURI DEPARTMENT OF TRANSPORTATION LICENSE NUMBER 1005324

PAGE ETC INC

License No: 21G28002000

Hazardous Waste Transporter License Certificate

VEHICLE IDENTIFICATION NUMBER(S):

Oct 01, 2021 131045-1XPWDP9X4BD131045; 313423-1XP5DB9X4NN313423; 389529-1XKWD49X1LJ389529;
418380-1XKWD49X4EJ418380; 418918-1XKWD49XXFJ418918; 423169-1XKWD49X9FJ423169;
428768-2HSCKSCR97C428768; 631887-1XP5DB9X16N631887; 672771-1XP5DB9X17D672771;
674172-1XP5DB9X07D674172; 800781-1XP5DB9X73D800781; 805947-1XP5DB9X24N805947;
849534-1XP5DB9X85N849534; 852420-1XP5DB9X85N852420; 880168-1XP5DB9X67N880168;
888872-1XP5DB9X16N888872; 971170-2WKEDDXJX1K971170; GN6657-3ALXA7CG4FDGN6657;
GN6660-3ALXA7CG4FDGN6660; GZ7966-3AKJGMD64GDGZ7966; LC9981-3ALXA7008KDLC9981;

Mar 23, 2022 133007-1XKWD49XXGJ133007; 215247-1XKWD49X3JJ215247; 888869-1XP5DB9X16N888869;

Expiration Date: September 30, 2022

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

April 18, 2022

ANGELA STEVENS
PAGE E T C INC
2758 TROMBLEY RD
WEEDSPORT NY 13166

Subject: Hazardous Waste Transporter Registration Renewal Confirmation

Dear ANGELA STEVENS:

Your hazardous waste transporter renewal registration application has been received and accepted by the Department of Environmental Services (NHDES).

This letter shall be proof of registration. A copy of this letter must be carried in each vehicle used to transport federal and state listed or characteristic hazardous wastes, including used oil, in and through the State of New Hampshire. Hazardous waste transporters and their employees shall display a copy of this letter upon request of any law enforcement officer or agent of the Waste Management Division.

Registration number TNH-0159 is assigned to your company. This number should be referenced in all correspondence with this office. Display this number on all vehicles used to transport hazardous wastes in and through New Hampshire in accordance with Env-Hw 603.06.

Please refer to the transporter regulations at https://www.des.nh.gov/waste/hazardous-waste/reporting. By registering to transport hazardous waste in New Hampshire the registered transporter has agreed to comply with the regulations as they pertain to the transportation of hazardous waste in New Hampshire. Failure to comply with the regulations may result in enforcement action by NHDES.

Transporters shall maintain financial responsibility as required under 49 CFR section 387.9. Discontinuance of this responsibility by the transporter may result in revocation of your company's eligibility to transport hazardous waste in New Hampshire.

This registration shall expire on June 30, 2023. Forms for renewal of your registration will be supplied by the Waste Management Division. Completed renewal registration forms shall be returned to the Waste Management Division by May 15.

If you need further information or have any questions on transportation registration, please contact me at 603-271-3203.

Sincerely,

Maria Michel Digitally signed by Maria Michel Date: 2022.04.18 11:50:01 -04'00'

Maria Michel, Supervisor
Reporting and Information Mgmt Section
Tel: (603) 271-3203
Fax: (603) 271-2181
Email: maria.michel@des.nh.gov

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection
Division of Solid and Hazardous Waste
CN 414
Trenton, N.J. 08625-0414
Tel (609) 984-2080
Fax (609) 984-6874

Robert C. Shinn, Jr.
Commissioner

I/M/O THE APPLICATION OF PAGE ETC., INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE & NECESSITY TO TRANSPORT SOLID WASTE	))))	SOLID WASTE ORDER DOCKET NO SE92080795

(Service List Attached)

On July 30, 1992, Page, Etc., Inc., (Applicant), formerly Gary Goodelle Transport, Inc., located at Trombley Road, Weedsport, New York 13166, filed an application with the Department of Environmental Protection pursuant to N.J.S.A. 48:13A-6, for a Certificate of Public Convenience and Necessity (Certificate) to transport small quantities of solid waste incidental to the transportation of hazardous waste for various clients.

Pursuant to N.J.S.A. 48:13A-6, persons are not permitted to engage in the solid waste transportation, collection or disposal business unless they hold a Certificate, are qualified by experience, training or education and the proposed collection or disposal system is registered with and approved by the Department.

A review of the filed application and attendant documentation shows that the Applicant has met the requirements for certification. Moreover, Applicant has obtained approval dated February 28, 1990, obtained after meeting the requirements of N.J.S.A. 13:1E-126 et seq. (A-901).

After review of the application as filed, the Department FINDS that the Applicant has met the necessary requirements as to financial responsibility, A-901 approval, experience and training to be granted a Certificate. Therefore, the Department HEREBY AUTHORIZES the issuance of a Certificate identified as SW No. 1935, to engage in the solid waste transportation business in New Jersey as specified herein above. Operations authorized herein are subject to the rights and duties of public utilities as set forth in Title 48, New Jersey Administrative Code. Further the Department HEREBY ACCEPTS the affidavit as the effective rate for service on or after receipt of this Certificate.

This Order shall not limit, prevent, or in any matter affect the authority of the Department or State to institute any proceeding, civil, criminal, regulatory, or administrative, in any federal or

state court or agency with respect to anti-trust, monopoly, or restraint of trade issues, "fitness to serve" or other activities of the parties to this proceeding. Nor shall this Order limit, prevent, or in any matter affect the authority of the Department, or any federal or state court or agency.

Should the fitness to serve of Page Etc., Inc. be successfully challenged in any legal and/or administrative proceeding, or should Page Etc., Inc. or its owners, officer or employees be found to have violated any statutory or regulatory provision, the Department hereby reserves its right to amend, change, and/or rescind such provisions of this Order, as in its judgment the public good may demand.

Further, this Order grants approval to operate only to the extent consistent with the application, affidavit and supporting documents incorporated and requested herein by reference. Should Page Etc., Inc. expand the scope of its solid waste operations without seeking approval to do so, including filing an amended tariff, the Applicant shall be subject to penalties and fines pursuant to applicable law.

DATED: 12/12/95

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BY:

Kenneth T. Hart, Director
Division of Solid & Hazardous Waste

This Certificate is
Non-Transferable

State of New Jersey
Department of Environmental Protection
Division of Solid and Hazardous Waste

CERTIFICATE
of
PUBLIC CONVENIENCE AND NECESSITY

SW Number: SW1935

Hereby issued to: **PAGE ETC INC**
TROMBLEY ROAD
PO BOX 1290
WEEDSPORT, NY 13166

FOR AUTHORITY TO ENGAGE IN THE BUSINESS OF SOLID WASTE COLLECTION AS DEFINED IN N.J.S.A. 48:13A-1 ET SEQ. AND N.J.S.A. 13:1E-1 ET SEQ IN AND ABOUT THE STATE OF NEW JERSEY.

The authority granted herein shall not exceed that requested and applied for in the application and tariff, Docket No: SE92080795.

IT IS MADE A CONDITION OF THIS CERTIFICATE THAT THE HOLDER SHALL OPERATE IN COMPLIANCE WITH THE AUTHORITY HEREIN GRANTED UNDER THE PROVISIONS OF N.J.S.A. 48:13A-1 ET SEQ. AND N.J.S.A. 13:1E-1 ET SEQ. FAILURE TO DO SO SHALL CONSTITUTE SUFFICIENT GROUNDS FOR SUSPENSION OR REVOCATION PURSUANT TO N.J.S.A. 48:13A-9 ET SEQ.

Date of Issue: December 12, 1995

Kenneth T. Hart, Director
Division of Solid & Hazardous Waste

State of New Jersey
Department of Environmental Protection and Energy

Robert C. Shinn, Jr.
Commissioner

Bureau of Background Disclosure Review
CN-414
Trenton, NJ 08625-0414
Phone: (609) 530-8210
Fax: (609) 530-8899

APR 25 1994

Ms. Shannon Hoerger
Safety & Compliance
Page E.T.C., Inc.
Trombley Road, P.O. Box 1290
Weedsport, NY 13166

RE: Hazardous Waste Transporter License
N.J.S.A. 13:1E-126 et seq.

Dear Ms. Hoerger:

This is to advise you that the investigative report from the Attorney General required under N.J.S.A. 13:1E-126 et seq. has been received by the Department of Environmental Protection and Energy.

Based on our review of the investigative report, the disclosure statement, your other application papers and the Department's enforcement history, the Department is issuing a hazardous waste transporter license to:

PAGE E.T.C., INC.

This license must be renewed annually by filing the annual license update form and any other information concerning your company or its operation as required by the Department.

This letter will serve as documentation that Page E.T.C., Inc. has been issued a hazardous waste transporter license. If you have any further questions concerning this license, please contact the Bureau of Background Disclosure Review at (609) 530-8210.

Please be advised that you are not permitted to transport hazardous waste until your vehicles are registered with the Division of Facility Wide Enforcement. This registration can be accomplished by contacting the Transportation Oversight Unit at (609) 984-7907 and requesting a registration application.

Sincerely,

Alan Kaczoroski, Chief
Bureau of Background Disclosure Review

AK/rh

Ohio | Public Utilities Commission

October 21, 2020

PAGE E T C INC
P.O. BOX 1290
WEEDSPORT NY 13166

NOTICE OF REINSTATEMENT OF INTRASTATE OPERATING AUTHORITY

You are hereby advised that appropriate evidence of insurance required by ORC 4921.09 and OAC 4901:2-13-01 has been filed with the commission.

In accordance with OAC 4901:2-13-09, this letter serves as written notice that your right to operate in intrastate commerce as a motor carrier in Ohio has been reinstated. Operations previously suspended may now resume.

BY ORDER OF
THE PUBLIC UTILITIES COMMISSION OF OHIO
Administrative Systems Division - 4th Floor
180 East Broad St.
Columbus, OH. 43215

P.O. Box 8472
Harrisburg, PA 17105-8472
November 25, 1998

Bureau of Land Recycling
and Waste Management

717-787-7381

)onna Mahaney
'he Page Companies
. O. Box 920
/eldsport, NY 13166

ear Ms. Mahaney:

Thank you for your letter concerning transportation of residual waste through
nnsylvania.

Section 285.218 of Title 25 of the Pennsylvania Code requires a six inch sign denoting the
)e of waste transported to be placed on the roll off box or trailer for vehicles transporting solid
ste.

Our department currently has an unwritten policy that vehicles traveling through
nsylvania (origin in another state and delivery in another state) with no pickup or delivery of
te in our state be exempt from the signing requirement. That is, our staff will not cite or
alize transporters who do not have signs on their vehicles.

I enclosed a residual waste transportation packet for your information. If there are any
tional questions, please contact this office.

Sincerely,

Samuel Sloan, Chief
Enforcement and Bonding Section
Division of Municipal and Residual Waste

are

Regional Operations Managers
Mr. Pounds
Mr. Baker
Ms. Campfield

58822
(2)

dhec
Healthy People. Healthy Communities

February 28, 2022

Attn: **Clark, Kelley**
Page ETC, INC
2758 Trombley Road
Weedsport, New York 13166

RE: South Carolina Hazardous Waste Transporter's Permit NYD986969947

Dear Sir or Madam:

The Bureau of Land and Waste Management has reached a final administrative decision on your application for a permit to transport hazardous waste within the State of South Carolina. The information used in making this decision includes the permit application, evidence of financial responsibility for sudden and accidental occurrences, and other supporting documentation. This information indicates that your company meets or exceeds all of the requirements set forth in Regulation 61-79 for the issuance of a permit to transport hazardous waste.

Enclosed you will find Hazardous Waste Transporter Permit **NYD986969947** issued to **Page ETC, INC** in accordance with the South Carolina Hazardous Waste Management Act and regulations promulgated pursuant thereto. This permit is valid for a period of three (3) years from the date of issuance and renewal may be sought by following the procedures outlined in Regulation 61-79.

As you are aware, many changes are occurring in the Federal Hazardous Waste Program and more are anticipated in the future. Some of these will necessitate revisions in our present State requirements and at such time as the Department accomplishes the necessary regulatory changes, you will be required to comply with any applicable portion of such revisions.

Thank you for your cooperation. If you have any questions, please contact me by phone at (803) 898-0482 or e-mail at delangec@dhec.sc.gov.

Respectfully,

Elizabeth C. DeLanghe

Elizabeth C. DeLanghe
Hazardous Waste Compliance Section
Division of Compliance and Enforcement
Bureau of Land and Waste Management

dhec
Healthy People. Healthy Communities.

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIROMENTAL CONTROL
BUREAU OF LAND AND WASTE MANAGEMENT
Hazardous Waste Transporter Permit

Date of Issue: February 28, 2022 Expiration Date: February 28, 2025

Permit: **NYD986969947**

Permission is hereby granted to:

Name of transporter: **Page ETC, INC**
ADDRESS: **2758 Trombley Rd.**
Weedsport, NY 13166

Supervisor: **Clark, Kelley**
Phone: **(315)834-6681**

For the operation as a transporter of hazardous waste located in **Weedsport, NY 13166**. This permit is issued pursuant to Section 44-56-10 et seq. of the 1976 South Carolina Code of Laws, as amended, and South Carolina Rule(s) and Regulation(s) 61-79. The authority granted hereunder is subjected to the requirements of the aforementioned laws and regulations and the following conditions:

(See attached list of conditions)

Elizabeth C. DeLanghe
Hazardous Waste Compliance Section
Compliance and Enforcement Division
Bureau of Land & Waste Management

This permit is non-transferable and is the property of the Bureau of Land and Waste Management and must be surrendered on demand. Keep posted at all times in a conspicuous place on the premises.

dhec
Healthy People. Healthy Communities.

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIROMENTAL CONTROL
BUREAU OF LAND AND WASTE MANAGEMENT

Hazardous Waste Transporter Permit Conditions

Page ETC, INC Permit: **NYD986969947**

Conditions

February 28, 2022

1. Operations should conform to the information pertaining to your activities as described in the application for permit and all applicable provisions of the S.C. Hazardous Waste Management Regulations, of the S.C. Public Service Commission Regulations and of the Federal Department of Transportation Regulation.

2. In the event of any change in the coverage of the policy concerned in the Certificate of Insurance, an updated Certificate of Insurance shall be signed by an authorized representative of the Insurance Company who is authorized to sign forms for the Insurance Company and the form sent to the Department.

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE MANAGEMENT PROGRAM

HAZARDOUS WASTE TRANSPORTER PERMIT

A HAZARDOUS WASTE TRANSPORTER PERMIT IS REQUIRED IN THE STATE OF TENNESSEE BY THE DEPARTMENT OF ENVIRONMENT AND CONSERVATION FOR THE TRANSPORTATION OF HAZARDOUS WASTES THAT ORIGINATE IN THE STATE OF TENNESSEE AND / OR HAVE A TENNESSEE DESTINATION

THIS PERMIT IS NOT TRANSFERABLE

THIS PERMIT ISSUED TO:

Page E T C Inc

2758 TROMBLEY ROAD
WEEDSPORT, NY 13166

PERMIT NUMBER	EFFECTIVE DATE	EXPIRATION DATE
NYD986969947	December 07 2021	January 31 2023

PERMIT EFFECTIVE UNTIL THE ABOVE EXPIRATION DATE UNLESS SUSPENDED, REVOKED, OR VOLUNTARILY RESCINDED.

SPECIAL INSTRUCTIONS:

1. AN ORIGINAL OR PHOTOCOPY OF THIS PERMIT MUST BE KEPT IN EACH TRANSPORTER VEHICLE.
2. GENERATORS OF HAZARDOUS WASTE IN THE STATE OF TENNESSEE ARE REQUIRED, BEFORE SIGNING HAZARDOUS WASTE MANIFESTS, TO VERIFY THAT THE TRANSPORTERS TO WHOM THEY GIVE THEIR WASTE POSSESS A VALID TENNESSEE HAZARDOUS WASTE TRANSPORTER PERMIT. THE GENERATOR'S VERIFICATION PROCESS ENSURES THAT:
   (a) THE TRANSPORTER BUSINESS NAME ON THE PERMIT IS THE SAME AS THE MANIFEST'S ITEM 6, TRANSPORTER 1 COMPANY NAME;
   (b) THE ASSIGNED PERMIT NUMBER IS THE SAME AS THE MANIFEST'S ITEM 6, U.S. EPA ID NUMBER;
   (c) THE MANIFEST'S ITEM 15, GENERATOR'S CERTIFICATION, IS SIGNED BY THE GENERATOR ON OR AFTER THE EFFECTIVE DATE BUT NO LATER THAN THE EXPIRATION DATE.
3. THIS PERMIT SUPERCEDES ALL PREVIOUSLY ISSUED STATE OF TENNESSEE HAZARDOUS WASTE TRANSPORTER PERMITS INCLUDING ORIGINALS, FACSIMILES AND PHOTOCOPIES. DESTROY ALL PREVIOUSLY ISSUED PERMITS TO PREVENT ILLEGAL ACTIVITIES.
4. REPORT SPILLS WITHIN THE STATE OF TENNESSEE IMMEDIATELY TO 1-800-262-3300 (THE TENNESSEE EMERGENCY MANAGEMENT AGENCY - T.E.M.A.).

12/16/2021

Lisa A. Hughey, Director
Division of Solid Waste Management

FOR MORE INFORMATION CONTACT:
STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
WASTE ACTIVITY AUDIT SECTION – ATTENTION ASHLEY SEXTON

William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Blvd, 14th Floor
Nashville, TN 37243

PHONE: 615-532-7704 FAX: 615-532-0938 eMail: Ashley.Sexton@tn.gov

Ministère
du Développement durable,
de l'Environnement
et de la Lutte contre les
changements climatiques

Québec

Montréal, le 24 novembre 2016

PERMIS
Loi sur la qualité de l'environnement
(RLRQ, chapitre Q-2, article 70.11)

Page E.T.C. inc.
PO Box 1290
2758, Trombley road
Weedsport, New York 13166
États-Unis

N/Réf. : 7610-06-01-01417-11
401534532

Objet : Transport de matières dangereuses vers un lieu d'élimination

Mesdames,
Messieurs,

À la suite de votre demande de renouvellement de permis du 17 octobre 2016, reçue le 26 octobre 2016 et complétée le 21 novembre 2016, je délivre au titulaire mentionné ci-dessus, conformément à l'article 70.11 de la *Loi sur la qualité de l'environnement* (RLRQ, chapitre Q-2), le permis à l'égard de l'activité décrite ci-dessous :

> Transport des matières dangereuses résiduelles visées par *le Règlement sur les matières dangereuses*, à l'exception des matières dangereuses résiduelles explosives et des matières dangereuses résiduelles radioactives.

Le lieu de remisage de ce système de transport est situé à l'emplacement ci-après :

> Aucune adresse de remisage au Québec.

Le document suivant fait partie intégrante du présent permis :

- Demande de renouvellement transmise au ministère du Développement durable, de l'Environnement, et de la Lutte contre les changements climatiques, signée le 17 octobre 2016 par monsieur Daniel Titus, de la compagnie Page E.C.T inc.

Le projet devra être réalisé et exploité conformément à ce document.

Ce permis est valide pour cinq ans à compter du 15 décembre 2016, conformément à l'article 70.14 de ladite loi.

En outre, ce permis ne dispense pas le titulaire d'obtenir toute autorisation requise par toute loi ou tout règlement, le cas échéant.

Pour le ministre,

HP/SS/gg

Hélène Proteau
Directrice régionale de l'analyse et de l'expertise de Montréal, de Laval, de Lanaudière et des Laurentides

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE TRANSPORT SERVICE LICENS

License Number: 16159
HAZARDOUS WASTE TRANSPORT SERVICE LICENSE
Hazardous Waste Transporter - Hazardous Waste - PCB
Truck Count: **5**
Licensee Name: PAGE E T C INC
Effective Date: October 01, 2021
Expiration Date: September 30, 2022

Facility Information
FID: 998288500
EPA ID: NYD986969947

PAGE ETC INC
2758 Trombley Rd
Weedsport NY 13166-9510

DNR Region: WC

This license authorizes the licensee to operate the transport service described above during the term hereof except as modified by the Department. This license is subject to and conditioned on compliance with the provisions of chapters 291 and 292, Wis. Stats., all applicable hazardous waste requirements of chapters NR 660 to 679, Wis. Adm. Code, and the equipment operator qualifications in the U.S. Department of Transportation regulations in 49 CFR 177.816.

The Department may modify or revoke the license during its term, or its issuance or renewal may be denied for grievous and continuous failure of the licensee or equipment operator to comply with the provisions of chapters 291 and 292, Wis. Stats., or the applicable requirements of chapters NR 113, 204 or 660 to 679. This license does not convey any property rights of any sort, or any exclusive privileges. This license does not authorize entry or trespass upon the property of any person.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

HOERGER, SHANNAN
PAGE E.T.C., INC.
P.O. BOX 1290
WEEDSPORT, NY 13166

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

(7404)
September 20, 1995
5711

Subject: Notification of PCB Activity

Thank you for filing the **Notification of PCB Activity** form dated **August 22, 1995** for the facility location listed below:

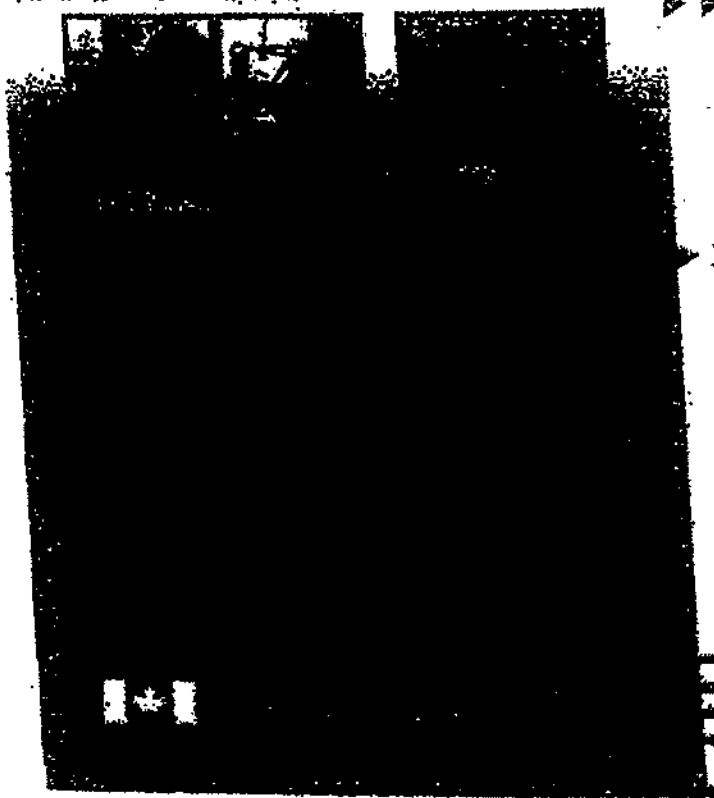
PAGE E.T.C., INC.
2758 TROMBLY RD
WEEDSPORT, NY 13166

Please be advised that the EPA Identification Number for the above facility is correctly stated on your form as **NYD986969947.** This is the number you will use for reporting PCB activity.

If you have any questions regarding the accuracy of the EPA ID number, please call (301) 294-2840. All other questions should be directed to the Chemical Regulation Branch at (202) 260-3933.

Sincerely,

Tony Barney, Chief
Chemical Regulation Branch



FAST EXPRES

Free and Secure Trade (FAST)

I am pleased to hereby confirm that

Page E.T.C., Inc.

has been a participant in the
Free and Secure Trade Program since

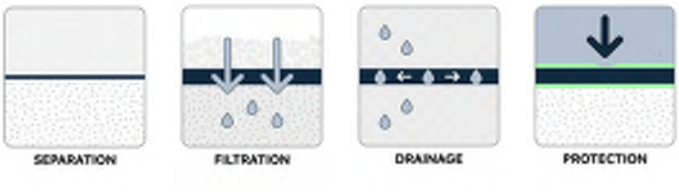
April 26, 2004

and is playing a vital role in securing the Canada-US Border and facilitating legitimate trade.

Alain Jolicoeur, President, Canada Border Services Agency
signed at Ottawa on the 13th day of August 2004

U.S. Customs and Border Protectio

Attachment-13
Geosynthetic Materials



MIRAFI S800

MIRAFI® S800 is a needlepunched nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. MIRAFI S800 is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids.

TenCate Geosynthetics Americas (A Solmax Company) is accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

MIRAFI S800 meets Build America, Buy America Act, Pub. L. No. 117-58, div. G §§ 70901-52.

MECHANICAL PROPERTIES	TEST METHOD	UNIT	MINIMUM AVERAGE ROLL VALUE	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	230 (1024)	230 (1024)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	95 (423)	95 (423)
CBR Puncture Strength	ASTM D6241	lbs (N)	600 (2669)	
Thickness	ASTM D5199	mils (mm)	90 (2.3)	
			MINIMUM ROLL VALUE	
Permittivity	ASTM D4491	sec-1	1.4	
Permeability	ASTM D4491	cm/sec	0.31	
Flow Rate	ASTM D4491	gal/min/ft2 (l/min/m2)	110 (4481)	
			MAXIMUM OPENING SIZE	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	80 (0.180)	
			MINIMUM TEST VALUE	
UV Resistance (@ 500 hrs)	ASTM D4355	% strength retained	80	

PHYSICAL PROPERTIES		UNIT	MINIMUM AVERAGE ROLL VALUE
Weight	ASTM D5261	oz/yd2 (g/m2)	8.0 (271)
			ROLL SIZE
Roll Dimensions (width x length)		Ft (m)	15 x 300 (4.5 x 91)
Roll Area		yd^2 (m^2)	500 (418)
Roll Weight		lbs (kg)	265 (120)

365 South Holland Drive Pendergrass, GA 30567

Tel +1 706 693 2226 www.tencategeo.us

SOLMAX

MIRAFI 600X

MIRAFI® 600X is a woven geotextile composed of polypropylene fibers, which are woven into a stable network such that the fibers retain their relative position. MIRAFI 600X is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. MIRAFI 600X meets AASHTO M288 Strength Classes 1, 2, & 3 for Elongation < 50%.
TenCate Geosynthetics Americas (A Solmax Company) is accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

MECHANICAL PROPERTIES	TEST METHOD	UNIT	MINIMUM AVERAGE ROLL VALUE	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	315 (1402)	615 (1402)
Grab Tensile Elongation	ASTM D4632	%	15	15
Trapezoid Tear Strength	ASTM D4533	lbs (N)	120 (534)	120 (534)
CBR Puncture Strength	ASTM D6241	lbs (N)	900 (4005)	
			MAXIMUM OPENING SIZE	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	40 (0.425)	
			MINIMUM ROLL VALUE	
Permittivity	ASTM D4491	sec^{-1}	0.05	
Flow Rate	ASTM D4491	gal/min/ft² (l/min/m²)	4 (163)	
			MINIMUM TEST VALUE	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	

PHYSICAL PROPERTIES	UNIT	ROLL SIZE
Roll Dimensions (width x length)	ft (m)	12.5 x 360 (3.8 x 110) 15 x 300 (4.6 x 91) 17.5 x 254 (5.3 x 78.7)
Roll Area	yd² (m²)	500 (418)
Roll Weight	lbs (kg)	208 (94)

365 South Holland Drive Pendergrass, GA 30567
Tel +1 706 693 2226 www.tencategeo.us

SOLMAX

Attachment-14
Laboratory License

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology	
Coliform, Total / E. coli (Qualitative)	SM 20, 21-23 9223B (-04) (Colilert)
Disinfection By-products	
Bromide	EPA 300.0 Rev. 2.1
Dissolved Gases	
Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175
Metals I	
Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4

Metals I	
Silver, Total	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Metals II	
Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4
Metals III	
Boron, Total	EPA 200.7 Rev. 4.4
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4
Miscellaneous	
1,4-Dioxane	EPA 522
Organic Carbon, Dissolved	SM 21-23 5310C (-00)
Organic Carbon, Total	SM 21-23 5310B (-00)
	SM 21-23 5310C (-00)

Serial No.: 62601

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ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

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All approved analytes are listed below:

Miscellaneous	
Turbidity	EPA 180.1 Rev. 2.0
UV 254	SM 21-23 5910B (-00,-11)
Non-Metals	
Alkalinity	SM 21-23 2320B (-97)
Calcium Hardness	SM 18-22 2340B (-97)
Chloride	EPA 300.0 Rev. 2.1
Color	SM 21-23 2120B (-01)
Corrosivity	SM 18-22 2330
Cyanide	Kelada 01, Rev. 1.2
	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1
Nitrate (as N)	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 353.2 Rev. 2.0
Orthophosphate (as P)	EPA 365.1 Rev. 2.0
Solids, Total Dissolved	SM 21-23 2540C (-97)
Specific Conductance	EPA 120.1 Rev. 1982
Sulfate (as SO4)	EPA 300.0 Rev. 2.1

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260C
	EPA 624.1
Acrylonitrile	EPA 8260C
	EPA 624.1
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C
Amines	
1,2-Diphenylhydrazine	EPA 625.1
	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
Aniline	EPA 625.1
	EPA 8270D
Carbazole	EPA 625.1
	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D

Amines	
Propionitrile	EPA 8260C
Pyridine	EPA 625.1
	EPA 8270D
Benzidines	
3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 625.1
	EPA 8270D
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
	EPA 608.3
beta-BHC	EPA 8081B
	EPA 608.3
Chlordane Total	EPA 8081B

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Chlorinated Hydrocarbon Pesticides	
Chlordane Total	EPA 608.3
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
	EPA 608.3
Diallate	EPA 8270D
Dieldrin	EPA 8081B
	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3
Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B
	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
	EPA 608.3
Heptachlor	EPA 8081B
	EPA 608.3
Heptachlor epoxide	EPA 8081B
	EPA 608.3
Isodrin	EPA 8270D
Kepone	EPA 8270D

Chlorinated Hydrocarbon Pesticides	
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3
Mirex	EPA 8081B
PCNB	EPA 8270D
Toxaphene	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625.1
	EPA 8270D
2-Chloronaphthalene	EPA 625.1
	EPA 8270D
Hexachlorobenzene	EPA 625.1
	EPA 8270D
Hexachlorobutadiene	EPA 625.1
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625.1
	EPA 8270D
Hexachloroethane	EPA 625.1
	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

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Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
	EPA 8270D
Pentachlorophenol	EPA 8151A
Demand	
Biochemical Oxygen Demand	SM 5210B-2011
Carbonaceous BOD	SM 5210B-2011
Chemical Oxygen Demand	EPA 410.4, Rev. 2.0 (1993)
Dissolved Gases	
Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175
Fuel Oxygenates	
Di-isopropyl ether	EPA 8260C
	EPA 8015C
Ethanol	EPA 8015C
Methyl tert-butyl ether	EPA 8260C
	EPA 624.1
tert-amyl methyl ether (TAME)	EPA 8260C
Fuel Oxygenates	
tert-butyl alcohol	EPA 8260C
	EPA 624.1
tert-butyl ethyl ether (ETBE)	EPA 8260C
Haloethers	
2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D
4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625.1
	EPA 8270D
Low Level Polynuclear Aromatics	
Acenaphthene Low Level	EPA 610
	EPA 8270D
Acenaphthylene Low Level	EPA 610
	EPA 8270D
Anthracene Low Level	EPA 610
	EPA 8270D
Benzo(a)anthracene Low Level	EPA 610
	EPA 8270D
Benzo(a)pyrene Low Level	EPA 610
	EPA 8270D

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Low Level Polynuclear Aromatics	
Benzo(b)fluoranthene Low Level	EPA 610
	EPA 8270D
Benzo(g,h,i)perylene Low Level	EPA 610
	EPA 8270D
Benzo(k)fluoranthene Low Level	EPA 610
	EPA 8270D
Chrysene Low Level	EPA 8270D
Dibenzo(a,h)anthracene Low Level	EPA 8270D
Fluoranthene Low Level	EPA 610
	EPA 8270D
Fluorene Low Level	EPA 610
	EPA 8270D
Indeno(1,2,3-cd)pyrene Low Level	EPA 610
	EPA 8270D
Naphthalene Low Level	EPA 610
	EPA 8270D
Phenanthrene Low Level	EPA 610
	EPA 8270D
Pyrene Low Level	EPA 610
	EPA 8270D
Metals I	
Barium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Metals I	
Cadmium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Chromium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Copper, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Iron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Lead, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)

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Metals I		
Nickel, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
	EPA 200.8, Rev. 5.4 (1994)	
Potassium, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
Silver, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
	EPA 200.8, Rev. 5.4 (1994)	
Sodium, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
Strontium, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
Metals II		
Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 200.8, Rev. 5.4 (1994)	
Antimony, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
	EPA 200.8, Rev. 5.4 (1994)	
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
Metals II		
Arsenic, Total	EPA 200.8, Rev. 5.4 (1994)	
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
	EPA 200.8, Rev. 5.4 (1994)	
Chromium VI	EPA 218.6, Rev. 3.3 (1994)	
	EPA 7196A	
	EPA 7199	
	SM 3500-Cr B-2011	
Mercury, Low Level	EPA 1631E	
Mercury, Total	EPA 245.1, Rev. 3.0 (1994)	
	EPA 7470A	
Selenium, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
	EPA 200.8, Rev. 5.4 (1994)	
Vanadium, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
	EPA 200.8, Rev. 5.4 (1994)	
Zinc, Total	EPA 200.7, Rev. 4.4 (1994)	
	EPA 6010C	
	EPA 6020A	
	EPA 200.8, Rev. 5.4 (1994)	

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Metals III	
Cobalt, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Gold, Total	EPA 200.7, Rev. 4.4 (1994)
Molybdenum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Palladium, Total	EPA 200.7, Rev. 4.4 (1994)
Thallium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Tin, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Titanium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Uranium (Mass)	EPA 6020A
Mineral	
Alkalinity	SM 2320B-2011
Calcium Hardness	SM 2340B-2011
Chloride	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)

Mineral	
Fluoride, Total	EPA 9056A
Hardness, Total	SM 2340C-2011
	SM 2340B-2011
Sulfate (as SO4)	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Miscellaneous	
Boron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Bromide	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Color	SM 2120B-2011
Corrosivity	SM 2330
Cyanide, Available	SM 4500-CN G-2011
Cyanide, Total	Kelada-01
	SM 4500-CN E-2011
	EPA 335.4, Rev. 1.0 (1993)
	EPA 9012B
Formaldehyde	EPA 8315A
non-Polar Extractable Material (TPH)	EPA 1664B
Oil and Grease Total Recoverable (HEM)	EPA 1664B
Organic Carbon, Total	SM 5310B-2011
	SM 5310C-2011
	EPA 9060A
Phenols	EPA 420.4, Rev. 1.0 (1993)
	EPA 9066

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All approved analytes are listed below:

Miscellaneous	
Specific Conductance	EPA 120.1 (Rev. 1982)
Sulfide (as S)	SM 4500-S2- F-2011
	EPA 9034
Turbidity	EPA 180.1, Rev. 2.0 (1993)
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270D
1,3-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 625.1
	EPA 8270D
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D
Isophorone	EPA 625.1
	EPA 8270D
Nitrobenzene	EPA 625.1
	EPA 8270D
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 625.1
	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625.1
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625.1

Nitrosoamines	
N-Nitrosodiphenylamine	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D
Nutrient	
Ammonia (as N)	EPA 350.1, Rev. 2.0 (1993)
Kjeldahl Nitrogen, Total	EPA 351.2, Rev. 2.0 (1993)
Nitrate (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Nitrate-Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Orthophosphate (as P)	EPA 365.1, Rev. 2.0 (1993)
Phosphorus, Total	EPA 365.1, Rev. 2.0 (1993)
Organophosphate Pesticides	
Atrazine	EPA 8270D
Dimethoate	EPA 8270D
Disulfoton	EPA 8270D
Famphur	EPA 8270D
Parathion ethyl	EPA 8270D
Parathion methyl	EPA 8270D
Phorate	EPA 8270D

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Organophosphate Pesticides	
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 625.1
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270D
Diethyl phthalate	EPA 625.1
	EPA 8270D
Dimethyl phthalate	EPA 625.1
	EPA 8270D
Di-n-butyl phthalate	EPA 625.1
	EPA 8270D
Di-n-octyl phthalate	EPA 625.1
	EPA 8270D
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A
	EPA 608.3
Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Polychlorinated Biphenyls	
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3
Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Polynuclear Aromatics	
2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 625.1
	EPA 8270D
Acenaphthylene	EPA 625.1
	EPA 8270D
Anthracene	EPA 625.1
	EPA 8270D
Benzo(a)anthracene	EPA 625.1
	EPA 8270D
Benzo(a)pyrene	EPA 625.1
	EPA 8270D
Benzo(b)fluoranthene	EPA 625.1

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Polynuclear Aromatics	
Benzo(b)fluoranthene	EPA 8270D
Benzo(g,h,i)perylene	EPA 625.1
	EPA 8270D
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D
Chrysene	EPA 625.1
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 625.1
	EPA 8270D
Fluoranthene	EPA 625.1
	EPA 8270D
Fluorene	EPA 625.1
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625.1
	EPA 8270D
Naphthalene	EPA 625.1
	EPA 8270D
Phenanthrene	EPA 625.1
	EPA 8270D
Pyrene	EPA 625.1
	EPA 8270D

Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4,6-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dimethylphenol	EPA 625.1
	EPA 8270D
2,4-Dinitrophenol	EPA 625.1
	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 625.1
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625.1
	EPA 8270D
2-Methylphenol	EPA 625.1
	EPA 8270D
2-Nitrophenol	EPA 625.1
	EPA 8270D
3-Methylphenol	EPA 625.1
	EPA 8270D
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270D
4-Methylphenol	EPA 625.1
	EPA 8270D
4-Nitrophenol	EPA 625.1
	EPA 8270D
Cresols, Total	EPA 8270D

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

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All approved analytes are listed below:

Priority Pollutant Phenols	
Pentachlorophenol	EPA 625.1
	EPA 8270D
Phenol	EPA 625.1
	EPA 8270D
Residue	
Settleable Solids	SM 2540 F-2011
Solids, Total	SM 2540 B-2011
Solids, Total Dissolved	SM 2540 C-2011
Solids, Total Suspended	SM 2540 D-2011
Solids, Volatile	SM 2540 E-2011
Semi-Volatile Organics	
1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 625.1
	EPA 8270D
alpha-Terpineol	EPA 625.1
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D

Semi-Volatile Organics	
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270D
p-Dimethylaminoazobenzene	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D
Volatile Aromatics	
1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,4-Dichlorobenzene	EPA 8260C
	EPA 624.1
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 624.1
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C

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Volatile Aromatics	
Chlorobenzene	EPA 624.1
Ethyl benzene	EPA 8260C
	EPA 624.1
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
	EPA 624.1
Naphthalene, Volatile	EPA 8260C
	EPA 624.1
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 624.1
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 624.1
Total Xylenes	EPA 8260C
	EPA 624.1

Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
	EPA 624.1

Volatile Halocarbons	
1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethene	EPA 8260C
	EPA 624.1
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloro-1,1,2-Trifluoroethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
	EPA 624.1
1,2-Dichloropropane	EPA 8260C
	EPA 624.1
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
	EPA 624.1
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C

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Volatile Halocarbons	
Bromodichloromethane	EPA 8260C
	EPA 624.1
Bromoform	EPA 8260C
	EPA 624.1
Bromomethane	EPA 8260C
	EPA 624.1
Carbon tetrachloride	EPA 8260C
	EPA 624.1
Chloroethane	EPA 8260C
	EPA 624.1
Chloroform	EPA 8260C
	EPA 624.1
Chloromethane	EPA 8260C
	EPA 624.1
cis-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
cis-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
Dibromochloromethane	EPA 8260C
	EPA 624.1
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
	EPA 624.1
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C

Volatile Halocarbons	
Methylene chloride	EPA 624.1
Tetrachloroethene	EPA 8260C
	EPA 624.1
trans-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
trans-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
	EPA 624.1
Trichlorofluoromethane	EPA 8260C
	EPA 624.1
Vinyl chloride	EPA 8260C
	EPA 624.1
Volatiles Organics	
1,4-Dioxane	EPA 8260C
	EPA 8270D
	EPA 8270D SIM
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
	EPA 624.1
Acetone	EPA 8260C
	EPA 624.1

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Volatiles Organics	
Acetonitrile	EPA 8260C
	EPA 624.1
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethyl Acetate	EPA 8260C
	EPA 8015C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
	EPA 8015C
Isopropanol	EPA 8260C
Methanol	EPA 8015C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propylene Glycol	EPA 8015C
Tetrahydrofuran	EPA 8260C
	EPA 624.1
Vinyl acetate	EPA 8260C
	EPA 624.1

Sample Preparation Methods
EPA 5030C
EPA 200.2
EPA 9030B

Sample Preparation Methods
EPA 3010A
EPA 3005A
EPA 3510C
EPA 3535A

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Acrylates

Acrolein (Propenal)	EPA 8260C
Acrylonitrile	EPA 8260C
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 8270D

Characteristic Testing

Corrosivity (pH)	EPA 9040C
	EPA 9045D
Free Liquids	EPA 9095B
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270D
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
Diallate	EPA 8270D
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Isodrin	EPA 8270D
Kepone	EPA 8270D
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270D
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A

Chlorophenoxy Acid Pesticides

Dicamba	EPA 8151A
Dinoseb	EPA 8270D
Pentachlorophenol	EPA 8151A

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 8270D
4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl)ether	EPA 8270D

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270D
Acenaphthylene Low Level	EPA 8270D
Anthracene Low Level	EPA 8270D
Benzo(a)anthracene Low Level	EPA 8270D
Benzo(a)pyrene Low Level	EPA 8270D
Benzo(b)fluoranthene Low Level	EPA 8270D
Benzo(g,h,i)perylene Low Level	EPA 8270D
Benzo(k)fluoranthene Low Level	EPA 8270D
Chrysene Low Level	EPA 8270D
Dibenzo(a,h)anthracene Low Level	EPA 8270D
Fluoranthene Low Level	EPA 8270D
Fluorene Low Level	EPA 8270D
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D
Naphthalene Low Level	EPA 8270D
Phenanthrene Low Level	EPA 8270D

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Low Level Polynuclear Aromatic Hydrocarbons

Pyrene Low Level	EPA 8270D

Metals I

Barium, Total	EPA 6010C
	EPA 6020A
Cadmium, Total	EPA 6010C
	EPA 6020A
Calcium, Total	EPA 6010C
Chromium, Total	EPA 6010C
	EPA 6020A
Copper, Total	EPA 6010C
	EPA 6020A
Iron, Total	EPA 6010C
Lead, Total	EPA 6010C
	EPA 6020A
Magnesium, Total	EPA 6010C
Manganese, Total	EPA 6010C
	EPA 6020A
Nickel, Total	EPA 6010C
	EPA 6020A
Potassium, Total	EPA 6010C
Silver, Total	EPA 6010C
	EPA 6020A
Sodium, Total	EPA 6010C
Strontium, Total	EPA 6010C

Metals II

Aluminum, Total	EPA 6010C
Antimony, Total	EPA 6010C
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6020A
Chromium VI	EPA 7199
Lithium, Total	EPA 6010C
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C
	EPA 6020A
Vanadium, Total	EPA 6010C
	EPA 6020A
Zinc, Total	EPA 6010C
	EPA 6020A

Metals III

Cobalt, Total	EPA 6010C
	EPA 6020A
Molybdenum, Total	EPA 6010C
	EPA 6020A
Silica, Dissolved	EPA 6010C
Thallium, Total	EPA 6010C
	EPA 6020A
Tin, Total	EPA 6010C

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Metals III	
Titanium, Total	EPA 6010C
Minerals	
Bromide	EPA 9056A
Chloride	EPA 9056A
Fluoride, Total	EPA 9056A
Sulfate (as SO4)	EPA 9056A
Miscellaneous	
Boron, Total	EPA 6010C
Cyanide, Total	EPA 9012B
Organic Carbon, Total	Lloyd Kahn Method
Phenols	EPA 9066
Sulfide (as S)	EPA 9034
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270D
1,3-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 8270D
2,6-Dinitrotoluene	EPA 8270D
4-Dimethylaminoazobenzene	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D
Isophorone	EPA 8270D
Nitrobenzene	EPA 8270D
Pyridine	EPA 8270D
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D
Nutrients	
Nitrate (as N)	EPA 9056A
Nitrite (as N)	EPA 9056A
Organophosphate Pesticides	
Dimethoate	EPA 8270D
Disulfoton	EPA 8270D
Famphur	EPA 8270D
Parathion ethyl	EPA 8270D
Parathion methyl	EPA 8270D
Phorate	EPA 8270D
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C

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Phthalate Esters	
Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D

Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1016 (PCB-1016) in Oil	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1221 (PCB-1221) in Oil	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1232 (PCB-1232) in Oil	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1242 (PCB-1242) in Oil	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1248 (PCB-1248) in Oil	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1254 (PCB-1254) in Oil	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1260 (PCB-1260) in Oil	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Aroclor 1268 (PCB-1268) in Oil	EPA 8082A

Polynuclear Aromatic Hydrocarbons	
2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(g,h,i)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D

Serial No.: 62603

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Priority Pollutant Phenols	
2,4-Dinitrophenol	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D
Semi-Volatile Organics	
1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 8270D
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Semi-Volatile Organics	
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D
Volatile Aromatics	
1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
1,4-Dichlorobenzene	EPA 8260C
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C

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Volatile Aromatics	
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
Total Xylenes	EPA 8260C
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
1,1-Dichloroethane	EPA 8260C
1,1-Dichloroethene	EPA 8260C
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260C
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C

Volatile Halocarbons	
2-Chloroethylvinyl ether	EPA 8260C
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
Bromoform	EPA 8260C
Bromomethane	EPA 8260C
Carbon tetrachloride	EPA 8260C
Chloroethane	EPA 8260C
Chloroform	EPA 8260C
Chloromethane	EPA 8260C
cis-1,2-Dichloroethene	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260C
Dibromochloromethane	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260C
trans-1,3-Dichloropropene	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260C
Vinyl chloride	EPA 8260C

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All approved analytes are listed below:

Volatile Organics

1,4-Dioxane	EPA 8260C
	EPA 8270D
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Acetonitrile	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
Isopropanol	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Methyl tert-butyl ether	EPA 8260C
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propionitrile	EPA 8260C
tert-butyl alcohol	EPA 8260C
Tetrahydrofuran	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

EPA 5035A-L

Sample Preparation Methods

EPA 5035A-H
EPA 3580A
EPA 9030B
EPA 3050B
EPA 3546
EPA 3060A
EPA 3541

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Lead in Dust Wipes	EPA 6010C

Sample Preparation Methods

	EPA 3050B

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All approved analytes are listed below:

Miscellaneous

Sulfur Dioxide	40 CFR 60 Method 8
Sulfuric Acid	40 CFR 60 Method 8

Serial No.: 62605