

PAPPAS DRY CLEANERS
VILLAGE OF DANSVILLE, LIVINGSTON COUNTY

Final Engineering Report

NYSDEC Site Number: 826018

NYSDEC STANDBY ENGINEERING CONTRACT D007625
Work Assignment No. 4

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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June 2013

CERTIFICATIONS

I, Thomas M. Connors, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Design was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Design.

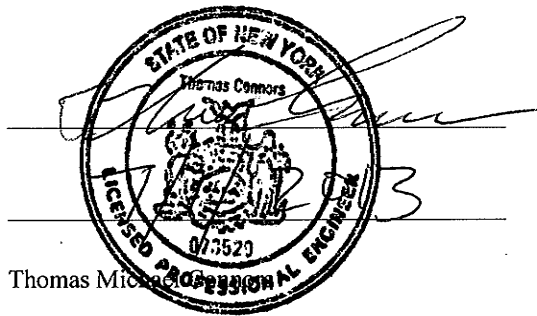
I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Design and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in for the remedy.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

Signature:



Date:

Name:

Thomas M. Connors

License No.:

073520

State:

New York

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Definition
bgs	Below Ground Surface
BOD	Biological Oxygen Demand
COD	Chemical Oxygen Demand
DOT	Department of Transportation
FER	Final Engineering Report
FS	Feasibility Study
ft	Feet
H&S	Health and Safety
HASP	Health and Safety Plan
HDR	Henningson, Durham, and Richardson Architecture and Engineering P.C.
HES	Horizon Environmental Services
IRM	Interim Remedial Measure
mg/l	Milligrams per liter
MGP	Manufactured Gas Plant
NYSDEC	New York State Department of Environmental Conservation
NYSEG	New York State Electric and Gas Corporation
OU	Operable Unit
PAMP	Perimeter Air Monitoring Plan
PCBs	Polychlorinated Biphenyls
PCE	Perchloroethylene
PDI	Pre-Design Investigation
PID	Photo Ionization Detector
ppb	Parts Per Billion
PPE	Personal Protective Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIR	Remedial Investigation Report
ROD	Record of Decision
SCGs	Standards, Criteria and Guidance values
SCOs	Soil Cleanup Objectives
SESCs	Soil Erosion and Sediment Controls
sf	Square Foot
Site	Pappas Dry Cleaner Site
SVOCs	Semi-Volatile Organic Compounds
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TOC	Total Organic Carbon
TPHs	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
UST	Underground Storage Tank

Acronym	Definition
VOCs	Volatile Organic Compounds
WWTP	Wastewater Treatment Plant

1.0 BACKGROUND AND SITE DESCRIPTION

Henningson, Durham, and Richardson Architecture and Engineering, P. C. (HDR) was retained by the New York State Department of Environmental Conservation (NYSDEC) to prepare the Final Engineering Report (FER) for the Pappas Dry Cleaners Site (site #826018) located in the Village of Dansville, Livingston County, New York. The work is being completed under Contract D007625. The remedial design (RD) was prepared in accordance with the Record of Decision (ROD) for Operable Unit #1 (OU-1) issued on March 30, 2009 and *DER-10: Technical Guidance for Site Investigation and Remediation*.

The ROD for OU-1 consisted of the impacted on-site soil and groundwater at the Pappas Dry Cleaner Site (Site). The selected remedy included demolition of the abandoned on-site building and excavation and off-site disposal of soil contaminated with perchloroethylene (PCE) at concentrations greater than 1.3 parts per million (ppm).

An electronic copy of this FER with all supporting documentation is included as Appendix A.

1.1 Site Location and Description

The Pappas Dry Cleaners Site is located in the Village of Dansville at 44, 46 Ossian Road (Figure 1). The Site is owned by Pappas Bros, Inc. The Site is situated on an approximately 0.44 acre area bounded to the north and west by a former manufactured gas plant (MGP) owned by the New York State Electric and Gas Corporation (NYSEG), to the east by a residential property, and to the south by Ossian Road. The former MGP site (site #826012) is a Class A Superfund site that is being addressed under a separate contract and was not part of the remedial design for this Site. The Site is a commercial property located in a primarily residential area with some commercial uses.

Prior to construction, the Site was covered by gravel and paved driveways, a small landscaped area, and an abandoned 8,713 square feet (sf), one story building. As part of the remedial action, the existing building was demolished and soil contaminated with PCE at concentrations greater than 1.3 parts per million (ppm) was disposed off-site as defined at 6NYCRR Part 375-6.8(b). Imposition of an environmental easement, restricting the use of groundwater as a potable water source may be required depending on subsequent groundwater monitoring results.

1.2 Background and Site History

According to the Remedial Investigation Report (RIR) (EA 2008), the initial wood frame structure was constructed in 1920 and was used for an auto painting shop. Subsequent to that use, it then served as a used furniture store. Between 1940 and 1950, the building was converted into a dry cleaning operation. The initial structure was expanded in 1988 to the north approximately doubling the size of the building foot print. The addition consisted of a one-story masonry block warehouse area. The structure foot print was doubled again by a second steel

frame warehouse expansion to the east sometime after 1988. The dry cleaner ceased operation in 2002.

Remedial investigations (RI) of the Site were completed from 2005 to 2008. The regulatory history and major investigations completed are as follows:

1. April 2005: Phase II Environmental Site Assessment, Preliminary Site Characterization, prepared by LaBella Associates, P.C.
2. October 2005: Supplemental Environmental Site Assessment, prepared by LaBella Associates, P.C.
3. October 2008: Final Remediation Investigation Report for OU-1, prepared by EA Engineer, P.C.
4. October 2008: Final Feasibility Report for OU-1, prepared by EA Engineer, P.C.
5. March 2009: Record of Decision for the Pappas Dry Cleaning site, OU-1, prepared by NYSDEC.
6. November 2009: Pre-Design Investigation Summary, prepared by HDR Inc.

During the RI, two underground storage tanks (USTs) were identified on the property. One tank was a 500-gallon UST located adjacent to the southern edge of the building and the other was a 1,000-gallon UST located near the northern property boundary. Both were suspected to store fuel oil.

A feasibility study (FS) evaluating potential remedial alternatives was completed in 2008. NYSDEC issued a ROD for the Site in March 2009. The ROD for OU-1 consisted of the on-site soil and groundwater at the Pappas Dry Cleaner property. The selected remedy was demolition of the abandoned on-site buildings, excavation of PCE contaminated soil at concentrations greater than 1.3 ppm, treatment of groundwater during excavation, backfilling of the excavation, and the transportation and off-site disposal of contaminated soil and building debris.

Based on the RI, a Pre-Design Investigation (PDI) was conducted in September 2009 by HDR to collect delineation and characterization data to complete the RD for OU-1. PDI activities performed included soil sampling activities associated with the delineation of primary site contaminants. An additional twenty-nine (29) soil borings were advanced to delineate impacts horizontally and vertically. Based upon the pre-design investigation results, the area and depth of impacted soil was revised and an increased volume of 5,100 cubic yards was estimated.

1.3 Geology and Hydrogeology

The geology of the Site consists of a mixture of sandy-silt, gravel, and cobbles to approximately 13 feet (ft) below ground surface (bgs). At 11 to 15 ft bgs, a confining clay unit is encountered beneath the Site. This clay unit limits the potential for downward vertical migration of the contamination from the soil and groundwater. Shallow groundwater is present from 9 and 13 ft bgs. Groundwater flow is to the northwest towards the former MGP site.

1.4 Nature and Extent of Contamination

Past disposal activities at the Site resulted in impacts to both soil and groundwater. The main categories of contaminants that exceeded their standards, criteria, and guidance values (SCGs) were volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). The primary contaminants were PCE and trichloroethene (TCE).

1.4.1 Subsurface Soil

A total of 39 soil borings advanced within the footprint of the on-site structure and areas immediately to the north and west of the structure during the RI and PDI were evaluated. A majority of the borings were advanced to the confining clay unit approximately 12 feet bgs.

VOCs were detected above the SCGs in subsurface soil samples (below 1 ft bgs) at approximately 74% of the soil boring locations and approximately 63% of the VOC samples submitted to the laboratory for analysis. The most prevalent compounds detected at concentrations greater than the SGCs were PCE, TCE, cis-1,2-dichloroethene, and trans-1,2-dichloroethene. The detection results for PCE ranged from 0.022 mg/kg to 620 mg/kg. Detection results for TCE ranged from 0.0071 mg/kg to 650 mg/kg. Soil analytical results from the remedial design investigation were summarized and submitted to the NYSDEC with the RD prepared in June 2011.

Low level detections of SVOCs above SCGs were located along the eastern and northern perimeter of the Site. The western and northern portion of the Site is bounded by the MGP site and it is likely that these detections are related to past operations at the MGP site.

1.4.2 Groundwater

On-site groundwater samples were collected from two locations around the Site building by NYSEG during their investigation of the adjacent MGP site. An additional nine groundwater samples were collected by Pappas Bros, Inc at locations both inside and outside the abandoned on-site building.

Results of samples collected indicated that the on-site shallow groundwater was impacted with PCE and its breakdown products. The highest concentrations were found on the northwest side of the property between the on-site building and the MGP site. PCE was found in 10 of the 11 wells ranging from non-detect to 15,200 parts per billion (ppb). TCE was found in six of the 11 wells ranging from non-detect to 20,800 ppb.

1.5 Remedial Action Objectives

The remedial action objectives for this site were to eliminate or reduce to the extent practicable:

- exposure of persons at or around the site to VOCs in indoor air;

- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from the subsurface soil and groundwater into indoor air through soil vapor intrusion.

The remedial action cleanup objectives for the site also included attaining to the extent practicable:

- ambient groundwater quality standards for groundwater; and
- soil cleanup objectives for the protection of groundwater listed in Table 375-6.8(b) of 6NYCRR Subpart 375-6.

1.6 Remedial Design

The remedial activities completed at the Site were conducted in accordance with the NYSDEC approved RD documents consisting of the RD report, construction drawings and technical specifications dated June 2011. The RD was prepared by HDR and approved by NYSDEC in June 2011. The design was prepared in accordance with the ROD issued by NYSDEC in March 2009. The RD construction drawings, including a pre-construction site map and excavation plan, can be found in Appendix B.

1.7 Project Bidding and Award

Contract Documents, prepared by HDR, were issued for bid by NYSDEC (Appendix C). The documents consisted of bidding instructions, specifications, and drawings. A mandatory pre-bid meeting was held at the site on September 15, 2011. Two addendums to the Contract Documents were prepared and issued prior to bid opening. Addendum No. 1 included pre-bid meeting, minutes, responses to questions from bidders, and a pre-bid attendance list. Addendum No. 2 provided further clarifications and modifications to the Contract Documents. Addendum No. 2 removed the line item for NYSEG supplied sheet piling and increased the quantity of contractor supplied sheet piling, and it also clarified that the sheet piling design submitted by the contractor required certification by a professional engineer. The approved low bidder was Horizon Environmental Services (HES) of Cranberry Township, Pennsylvania. The low bid was \$881,540.

2.0 SUMMARY OF REMEDIAL ACTION

The remedial action consisted of the following major work elements:

- Mobilization and site preparation
- Waste characterization for off-site disposal of contaminated soils
- Sheet pile installation and removal
- Excavation and off-site disposal of contaminated soils
- UST removal
- Dewatering
- Site restoration

The demolition of the existing on-site structure was completed as an interim remedial measure (IRM). The design for the demolition work was completed in January 2011 and the structure was demolished in March 2011.

The remedial design and bid documents for the excavation and off-site disposal of contaminated soil was completed in June 2012. Final construction activities for the remedial action were completed in December 2012.

2.1 Pre-Construction Activities

Pre-construction activities included a pre-construction meeting, access agreements and permits, submission and review of the contractor's work plans, a pre-construction survey, and utility mark-outs.

2.1.1 Pre-Construction Meeting

A pre-construction meeting was held to coordinate the efforts of all parties involved prior to site mobilization. Participants involved in the pre-construction meeting included representatives from NYSDEC, HDR, and HES. The pre-construction meeting was held at the Site on August 1, 2012. The pre-construction meeting minutes are provided in Appendix D.

2.1.2 Access Agreements and Permits

No access agreements were obtained for the implementation of the RA. Due to the limited area available on-site for staging, the design provided an option for HES to coordinate with NYSEG for the use of the adjacent MGP site for additional staging area. However, HES did not require the extra staging area, therefore the MGP site was not used for staging.

HES contacted the Village of Dansville Sewer Department to request permission to discharge construction water generated during the RA to the Village of Dansville Waste Water Treatment Plant (WWTP). Approval to discharge the treated water was received via email on November 13, 2012. The approval email is included in Appendix E.

2.1.3 Pre-Construction Work Plans

HES submitted the following work plans for review and acceptance by HDR and NYSDEC.

- Health and Safety Plan
- Sheet Piling Design
- Sampling and Analysis Plan
- Excavation and Handling Materials Plan
- UST Removal Plan

The submitted work plans provided the descriptions of methods, procedures, and equipment to be used to complete the work. Copies of the HES work plans are included in Appendix F.

2.1.4 Pre-Construction Survey

HES subcontracted Wendel Companies of Amherst, New York, to complete a pre-construction survey prior to beginning work. The pre-construction survey was conducted on October 1, 2012 to field locate and mark out the excavation limit and verify the pre-construction site conditions and topography. The surveyed topography did not significantly vary from the survey completed by Fisher Associates in September 2009 (Appendix B) that was used to prepare the design documents. The pre-construction survey was certified by a New York State licensed surveyor and is shown on Figure 2.

2.1.5 Utility Mark-outs

Dig Safely New York was contacted prior to any subsurface disturbance at the Site to mark out underground utilities adjacent to the Site. In addition, the surveyor, mobilized on Site on October 1, 2012 to locate any underground utilities on the Site. All underground utilities including water, sanitary, gas, and communications were located and marked prior to excavation. All existing underground utilities that were to remain were properly protected during the remedial activities.

On October 1, 2012 HES contacted NYSEG to discuss the removal of utility pole NYSEG 19-6 RTC 1A, located along the west property line. The pole was in proximity to the excavation limit and needed removal prior to completing the work. NYSEG arrived on-site the following day to remove the two overhead lines on the pole (a low voltage electric and a fiber optic line) which served the former MGP site. HES then removed the utility pole with NYSEG's approval, and placed the pole on the former MGP site to the north.

2.2 Site Preparation

Preparations for intrusive site activities started on October 1, 2012 with the mobilization of HES and associated equipment to the Site. Activities related to preparing for intrusive work and excavation included installation of soil erosion and sediment controls, mobilization of temporary facilities, and temporary perimeter security fence installation. A NYSDEC-approved project sign

was erected at the project entrance and remained in place during all phases of the remedial action.

2.2.1 Soil Erosion and Sediment Controls

Soil erosion and sediment controls (SESCs) were installed prior to disturbance of impacted soil at the Site. Erosion controls included installation of a silt fence along the entire down gradient portion of the area to be disturbed by the construction. The sheet piling was installed along the western, eastern and northern limit of the excavation, which extended approximately 2 feet above ground surface providing SESC. Sheet piles were installed flush with the ground surface along the southern limit of excavation, therefore, approximately 280 linear feet of silt fence was installed along the southern edge of the property. The 30-inch high silt fence was constructed of synthetic filter fabric attached to wooden posts and supported with 6 by 6 inch woven wire mesh. All SESC implemented at the Site met the requirements of the New York State Standards for SESC. The silt fence was inspected on a weekly basis or after significant rain events. Erosion control features observed to be damaged or in need of repair were repaired immediately.

A majority of the area along the eastern excavation limit was covered with a concrete pad associated with the former building located at the Site. A portion of this concrete pad was retained to facilitate access to the excavation area as well as to provide load out platform for the excavated material. The existing concrete pad assisted in minimizing the soil erosion off-site.

2.2.2 Mobilization and Temporary Facilities

Temporary facilities on the site included the trailer, shipping container for equipment storage and a frac tank. Both the trailer and shipping container were mobilized on-site on October 1, 2012 and demobilized on December 28, 2012. The Frac tank was received on October 26, 2012 from Rain for Rent and was removed from the Site on November 15, 2012.

2.3 General Site Controls

2.3.1 Temporary Fence Installation

The existing permanent chain link fence along the northern and western perimeter of the Site was maintained during the RA to provide site security by restricting unauthorized visitors on the Site during off hours. Approximately 250 linear feet of temporary 6-foot chain link fence was installed along the eastern and southern perimeter of the Site. Along the southern perimeter, the temporary fence was installed just inside the sidewalk along Ossian Street maintaining public access to the sidewalk. Temporary fence along with permanent fence was used to completely enclose the construction area.

2.3.2 Decontamination

Personnel decontamination was performed upon exiting the exclusion zone in accordance with the approved Health and Safety Plan. Exclusion zone was set up surrounding the excavation area,

and existing concrete pad was used as the contamination reduction zone. All construction work was performed in modified level D equipment. Personal protective equipment (PPE) removed during personnel decontamination were combined with the contaminated material and disposed off-site.

HES proposed an alternate load out procedure which included a use of the existing concrete pad as a load out platform to avoid truck tire contact with contaminated soil. Therefore a decontamination pad was not constructed for a load out platform. During the initial phase of the excavation activities, the existing concrete pad located near the southern border of the excavation was utilized and as work progressed, the existing concrete pad located near the eastern border of the excavation outside of the excavation limits was utilized as a truck load out platform. The concrete pad where the trucks were being loaded was covered with a layer of geotextile fabric to prevent tracking of the Site soils onto Ossian Street. When necessary, double layers of geotextile fabric were placed to improve durability of the loading platform. Contaminated soil that fell on the geotextile during the load out process was swept and removed from the fabric. When necessary, HES replaced the entire fabric with a clean section of geotextile fabric. All trucks were visually inspected thoroughly to ensure that all soils and other visible contamination were removed before leaving the Site. Solids from within the geotextile fabric along with any debris were returned for the next bucket load of excavated material.

Near the end of the excavation activities, contaminated soil was temporarily staged outside of the area of excavation before loading into on-site hauling vehicles. In this event, excavated soil was stockpiled on two layers of 6-mil thick polyethylene sheeting and was covered at the end of each day to prevent migration of the contaminated soil. Stockpiles were inspected and maintained on a daily basis.

2.3.1 Perimeter Air Monitoring

The purpose of the perimeter air monitoring was to provide a measure of protection for the off-site receptors including residences and businesses from potential airborne contaminant releases as a direct result of construction activities. A perimeter air monitoring plan (PAMP) was implemented (provided in Appendix F as part of the Health and Safety Plan (HASP)) that included real-time monitoring for particulates (i.e., dust) at two monitoring stations located around the perimeter of the construction area. The monitoring stations were spaced to the south and east of the construction area to provide downwind monitoring of the construction in the event of a change in wind direction. The air monitoring locations are shown on Figure provided in Appendix G.

The particulate monitoring was performed continuously using real-time monitoring equipment TSI Dusk Trak 8520. The continuous readings were averaged over a period of 15 minutes for comparison to the site-specific airborne particulate action level. The real-time particulate monitor was equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration was visually assessed during all work activities. A meteorological system

was also installed near the support zone to monitor wind speed and direction, minimum and maximum daily temperature, and barometric pressure.

Perimeter monitoring was conducted daily during intrusive remedial activities at the Site from October 9 to November 12, 2012. There were no recorded exceedances of actions levels during the construction activities. Complete air monitoring results are provided in Appendix G.

2.3.2 Dust and Odor Control

Work zone air monitoring was conducted during all intrusive activities. Based on the monitoring, no significant dust or odor control measures needed to be implemented during the remedial activities. Regular rainfall events that occurred during the remedial activities resulted in relatively wet soil conditions throughout the excavation. During warmer days, minor odors and small amounts of brown sheen were observed within the limits of excavation. During several instances, southerly and southeasterly winds would mobilize the odors toward the northwest corner of the excavation. In these instances, Photo Ionization Detector (PID) readings were recorded to determine levels of VOCs related to the observed odors. PID readings above background levels correlated well with the strongest odors within the excavation limits, however, each response noted was transient in nature lasting only a few seconds. There were no odor issues observed outside of the excavation limits during the construction.

2.3.3 Traffic Control

All traffic (i.e. Site personnel, subcontractors, truck traffic, and visitors) entering and exiting the Site utilized Ossian Street from October 1 to December 28, 2012. Vehicular traffic is sporadic throughout the day expect for early mornings and later in the afternoon. Minimal disturbance of normal traffic patterns resulted from truck traffic entering and exiting the Site. Disturbance to the traffic pattern was typically very transient in nature and traffic controls (flagmen) were provided by HES personnel as necessary. Overall, no lane closures or formal supplemental equipment (arrow boards, safety zone trucks, additional signage etc.) were required during the remedial action.

2.3.4 Reporting

Accurate and comprehensive records of the RA construction activities were maintained throughout the project. A summary of all the reporting documents is provided below:

- **Daily Observation Report:** A Daily Observation Report for all site activities was prepared for each day by HDR. Pertinent information regarding personnel present on the Site, weather conditions, health and safety, major equipment used at the Site, imported material used at the Site, problems encountered and corrective actions taken, and site activities were recorded on a daily basis. Daily observation reports are provided in Appendix H.
- **Project Progress Photographs:** Progress of the site activities was photographically documented on a daily basis and four to five photographs representing the major site

activities were submitted to the NYSDEC along with the Daily Observation Report. Additional photographs are provided in Appendix I.

- Meeting Minutes: Bi-weekly meeting minutes were prepared as a record of the construction progress meetings to document the RA activities and to document any key decisions that were discussed with the project team for any problems, field observations or conflicts that came up during construction. Three progress meetings were conducted during the RA construction activities and meeting minutes are provided in Appendix J.

2.3.5 Health and Safety

Over 1540 man hours were worked over the course of approximately 41 days without any lost time due to injury. As required by the HASP, HES provided oversight for on-site health and safety (H&S) and tailgate meetings were conducted when relevant issues were encountered. HDR conducted work according to the NYSDEC Standby Engineering Contract Generic Health and Safety plan. Special H&S considerations such as slip, trip, and fall hazards/prevention, excavation/trenching safety, and safety while working in the vicinity of heavy equipment (excavators, bulldozers, and dump trucks) were discussed as they pertained to the daily activities. Bi-weekly meetings were also held to review issues related to any new activities.

General site workers were required to be trained and medically monitored for Hazardous Waste Operations and Emergency Response in accordance with 20 CFR 1919.120, including for excavation. Individuals involved with shipping of hazardous materials were required to receive the appropriate Department of Transportation (DOT) training. All work was conducted in modified Level D PPE with a contingency for Level C upgrade for personnel in direct contact with the excavated material based on air monitoring results. Work zone and perimeter air monitoring were performed throughout the period of construction.

No recordable accidents occurred during the construction activities.

2.4 Pre-Excavation Activities

2.4.1 Sheet Pile Installation

Sheet pilings were installed around the perimeter of the excavation to minimize the rate of groundwater infiltration into the excavation and to provide side wall stability during excavation. A future remedial action is planned for the former MGP site located north and west of the Site. As a result, the sheet piling installed along the northern and western property boundary was provided by NYSEG and remained in place after the completion of the excavation activities. These sheet piles will be used and removed as part of the future MGP site remedial action. The sheet piles along the northern and western property boundary were installed just inside existing permanent chain link fence.

The sheet piles consisted of 50-ft long interlocking sheets. These sheets were hydraulically driven into the subsurface via specialty subcontractor to HES, Giammarino, Inc. Giammarino,

Inc. started delivering sheet piles to the Site on September 25, 2012, and continued throughout the sheet piling installation. The surveying contractor laid out the limits of the excavation prior to sheet pile driving. The sheet piling contractor started driving sheets along the north side of the excavation, progressing west from the northeast corner and installed around the perimeter.

During sheet pile installation along the northern property boundary, HES exposed the edge of the UST located in the northwest corner of the Site by carefully scraping away the overburden with an excavator and hand-digging with a post-hole digger. The northern edge of the UST was in line with the originally intended line of sheet piling in this area. The sheet piling line was routed north around the UST, approximately one foot to the north of the originally planned line. An excavator was used to dig a trench to aid in sheet pile installations along the southern perimeter of the excavation. Along the Ossian Street, HES also exposed and saw-cut the water line into the Site to address concerns that driving sheet piling through the line could agitate and potentially damage the water main along Ossian Street. A Village of Dansville Department of Public Works representative observed the activities.

The bottom depth of the sheet piling was at approximately 45 feet below grade and extended partially into the confining clay layer that begins 11-16 feet below grade. Approximately 400 linear feet of sheet piles were installed between October 1 and October 10, 2012.

2.4.2 Waste Characterization Sampling and Analyses

Soil waste characterization sampling was performed prior to excavation to characterize soil in-situ for the disposal purposes. As shown in Figure 3, a waste characterization sample was collected from in-situ soils representing one sample per approximately 750 tons of material. At each location, samples were collected from test pits excavated and composited from approximately 3, 8 and 13 ft bgs. Samples for VOCs analysis were transferred directly into the sample container, and for the remaining analyses, sub-volumes from each depth interval were homogenized in a bowl and then transferred into the sample containers. Initially, 10 waste characterization samples were collected and were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) analyses for select VOCs, SVOCs, metals, ignitability, percent moisture, and pH. Locations where the analytical soil sample results exceeded the allowable Resource Conservation and Recovery Act (RCRA) criteria were identified as potentially hazardous waste material and additional waste characterizations samples were collected during excavation. A summary of all the samples collected to characterize the waste, and associated analytical results, are provided in Table 1.

2.5 Excavation

As shown on the contract drawings, soil located within the limit of excavation was excavated and transported off-site for disposal. The contract specifications called for the excavation, transportation, and disposal of 6,633 tons of non-hazardous soil and 150 tons of hazardous soil. The excavation limit encompassed approximately 27% of the property and ran along the north

and west property lines that borders the former MGP site and covered an area of 9,127 square feet. The excavation depth was based on the depth of the confining silty-clay layer determined in the field at approximately 11 to 15 feet bgs. Along the northern and western excavation boundary that borders the former MGP Site, sidewall confirmation samples were not collected due to installed sheet piles, and along the eastern and southern excavation boundary, sidewall confirmation samples were not required since it was bounded by clean soil sample collected during PDI. Bottom confirmation samples for the excavation were not required since the Site is underlain with a silty-clay layer that impeded the downward migration of contamination. Impacted soil was excavated to this silty-clay layer and the top 6 inches of the silty-clay layer was scraped. The excavation was approximately 6 inches deeper in the hot spot areas (SB-31 and SB-08). Actual volumes of excavation were determined based on an as-built survey of the excavation area and depth performed by a New York State licensed Land Surveyor. Tonnages of excavation were based on truck scales located at the landfill disposal facility.

As shown in Figure 3, HES began excavation from Zone 1 located in northeast corner of the excavation area and confirmed that the gray silty-clay layer was present at approximately 13 feet bgs. Groundwater was observed flowing in at a significant rate from a cobble zone overlying silty-clay layer but the flow rate tapered off with time. Excavation was continued in Zone 1 and 2 and then, UST #1 (located in the northwest corner) was excavated to facilitate excavation in Zone 3. Excavated soil from Zone 1 through 3 was temporarily stockpiled near the southern portion of the excavation area for load out operations.

As expected, UST # 1 (1000-gallon steel) was encountered in the northwest corner of the excavation area. Tank was inspected and found to contain less than 5 gallons of water that had infiltrated and mixed with gravel, sand, and silt at the bottom of tank. The tank was already breached when exposed in grave and a couple of holes where steel had rusted through were noted with tank in place. Several shovels full of saturated sand and gravel were cleaned out of tank. The tank was excavated out and then crushed using the bucket of the excavator. PID readings less than 20 ppm were recorded from the tank as well as the material that was in the tank. Combustible gas monitoring was also conducted during excavation and inspection, with no responses noted. No odors were encountered during UST# 1 excavation.

HES continued excavation from Zone 3 through Zone 6 and loading out soil excavated from these zones. While excavating in southern portion of Zone 1, a 1-inch Polyvinyl Chloride (PVC) monitoring well approximately 11 feet deep was uncovered approximately 7 ft west of sheet piles. An excavator bucket with a chain was used to remove the well.

During the excavation from Zone 4, HES re-located the truck loading area from southern portion of the excavation area to the concrete pad located in the east of the excavation area near the office trailer.

Because the waste characterization sample (S-C-7 with PCE concentration of 0.75 milligrams per liter (mg/l) collected from Zone 4 exceeded the hazardous waste TCLP limit (0.70 mg/l) for PCE, a total of 53 tons of soil was excavated from the 10-foot area around the sample S-C-7 to

the silty clay layer. The excavated soil was stockpiled on two layers of 6-mil thick polyethylene sheeting and was covered until disposed as hazardous material. An additional waste characterization sample (S-C-7A) was collected from Zone 4 and remaining soil from Zone 4 was excavated and disposed off as non-hazardous material since the analytical results from the sample S-C-7A were less than TCLP limits.

HES continued excavation from the remaining excavation zones 5, 6 and 7 and load out operations. Prior to excavation, based on the numbers of waste characterization samples collected, Hyland Landfill located in Angelica, New York approved a landfill capacity of 7,500 tons. As the excavation from Zone 7 was continued, HES was reaching the maximum approved landfill capacity.

Due to the forecasted major storm Hurricane Sandy, HES excavated the soil located in the western portion of Zone 7 as well as scraping the material from the sides and bottoms of excavation zones 4, 5 and 6, and stockpiled it in the southeast corner of the excavation area as precautionary measures due to the pending hurricane. An additional waste characterization sample (S-C-11) was collected from approximately 800 tons of this stockpiled material. The waste characterization sample S-C-11 (with PCE concentration of 1.2 mg/l) exceeded the TCLP limit (0.7 mg/l) for PCE. Based on the field observations and screening, a total of 36 tons of soil representing sample S-C-11 was stockpiled separately and was disposed off as hazardous waste. From the remaining soil, two stockpiles were created and a waste characterization sample was collected from each stockpile from several locations around the stockpile and composited as one sample. The remaining stockpiled material was disposed of as non-hazardous material based on the analytical results from the samples (SP-1 and SP-2).

While excavating in Zone 7, an unidentified 500-gallon steel tank was discovered adjacent to the southern sheet pile wall. The tank was removed from the excavation and a small amount (less than 5 gallons) of water leaked out of the tank. No odor was noted from the water or from the tank itself. An inspection (visual, olfactory, PID) of the soil beneath the tank exhibited no indication of leaks or contamination (staining, odor, elevated ID readings).

Based on the final excavation depth survey, a total of 5,198 cubic yards of soil was excavated as part of the remedial action. The excavation as-built drawings located in Figure 2 and 4 depict the pre-excavation elevations and final excavation depths and limits. The excavation was completed by November 1, 2012.

2.6 UST #2 Removal

A total of three USTs were encountered and removed during excavation activities. Two of the USTs, UST # 1, located in the northwest corner of the excavation area, and an unidentified UST # 3, located in the southern portion of the excavation, were within the limits of excavation. Soils beneath and surrounding the USTs were removed as part of the remedial excavation activities. The limits of the remedial excavation were established by soil sampling conducted during the RI and PDI phase. Odor, staining or any signs of contamination were not observed during the tank

removal. Description of work performed regarding the UST#1 and UST #3 removals is provided in Daily Observation Report (Appendix H) prepared on October 17 and October 31, 2012 respectively.

As shown in Figure 4, UST#2, approximately 10 feet long, 5-foot diameter, steel tank was identified near Ossian Street outside the limits of excavation. HES collected a water sample from the inside of the tank and submitted the sample for VOCs analysis on October 11, 2012. Approximately 150 gallons of water inside the tank was pumped out and transferred to a frac tank. The water had no detectable odor or sheen. HES tested the tank atmosphere with multi-gas meter and minimal PID response (< 20 ppm) from the tank was noted. Combustible gas monitoring was also conducted during excavation and inspection, with no responses noted. The UST was removed and the soils beneath and surrounding the tank were inspected (visual, olfactory, PID). Staining, odor, elevated PID readings or any other evidence of soil contamination was not observed in the soils beneath and surrounding the tank. Two samples; consisting of a sidewall (S-T-2-SIDE) at approximately 2.5 feet bgs and a bottom (S-T-2-BOTTOM) at approximately 5 feet bgs were collected and analyzed for VOCs, SVOCs, TPHs, and PCBs. Sample results for the two confirmatory UST samples are provided in Table 2. Based on the soil sample results, there is no contamination present in the soils beneath and surrounding the UST.

Once out of the ground, the tank was crushed and staged with the other two tanks. The excavated area was backfilled and compacted with approved backfill material. There was no damage to the sidewalk during the tank removal operation.

Description of work performed regarding the UST#2 removal is provided in Daily Observation Report (Appendix H) prepared on November 1, 2012. A UST Closure Report for UST#2 located near Ossian Street is provided in Appendix K. Odor, staining or any signs of contamination were not observed during the UST#1 and UST#3 removals. No post excavation samples were collected because the soils beneath and surrounding UST#1 and UST#3 were removed as part of the larger remedial excavation activities. The limit of the remedial activities was defined by confirmatory samples collected during the PDI. Therefore, UST#1 and UST#3 were not included as part of the Closure Report.

2.7 Waste Disposal

2.7.1 Soil Disposal

As presented in Section 2.4.2, waste characterization sampling was conducted to classify the soils removed during excavation remedial activities. Classification of the soils was required prior to shipping to the approved disposal facility. Waste minimization, storage, handling, and load out procedures were conducted pursuant to the *Excavation and Material Handling Plan* (October 2012). Letters from HES to disposal facility owners and acceptance letters from disposal facility owners are attached in Appendix E.

A total of 8,191 tons of non-hazardous soil was excavated and transported off site for disposal to Hyland Landfill located in Angelica, New York. A total of 89 tons of hazardous soil excavated from the Site was transported off site to Biogénie facility located in Montreal, Canada. The hazardous material was transported by Laidlaw Trucking. The first two truck loads of 27 and 26 tons each were transported off site on October 29, and the final truck load of 36 tons was transported off site on November 7. Manifests and disposal documentation, including a daily truck log of exported material, are included in electronic format as Appendix L. Table 3 summarizes the total quantities of non-hazardous and hazardous soil removed from the Site to the disposal locations.

2.7.2 Concrete Disposal

The building was demolished by a separate contractor prior to the construction activities described in this report. The building concrete floor slab remained after the building demolition and was removed as part of the contaminated soil excavation. A portion of the concrete floor slab was removed to facilitate installation of the sheet pile wall. The concrete was characterized for off-site disposal. One concrete sample was collected and shipped to the Upstate Laboratories for TCLP analysis. Analytical results from the sample (Concrete) were less than TCLP limits and the concrete was classified as non-hazardous. The analytical results for the concrete sample are provided in Table 4. The remaining concrete floor slab remained in place during the excavation activities and was used as a truck loading platform. Upon completion of the soil load out, the remaining concrete pad was broken up using the tracked excavator and was stockpiled on-site. Approximately 375 tons of concrete was characterized and shipped to the Villager Recycling Center located in Fairport, New York. The total quantity of concrete removed from the Site and the disposal location are summarized in Table 3.

2.7.3 USTs Disposal

A total of three steel USTs were encountered and removed during excavation activities. All USTs were removed and disposed of off site in accordance with the *UST Removal Plan* submitted by HES. After the removal of each tank, it was crushed and staged on-site for salvage pick up. Approximately 4,340 pounds of crushed tanks were picked up by Enviro-Metal Recycling facility located in Bath, New York. The total quantity of USTs removed from the Site and the disposal location are provided in Table 3. Disposal receipts are provided in Appendix L.

2.7.4 Construction Water Management and Disposal

The depth to groundwater at the Site is approximately 8 to 13 feet bgs and the excavation depth was approximately 16 ft bgs or 3-8 ft below the groundwater table. Overall, the installed sheet piles along the perimeter of excavation, and the underlying clay layer significantly reduced the rate of groundwater infiltration into the excavation.

To collect the groundwater infiltration and storm water runoff water during excavation, a small sump area in the northeast corner of the excavation was prepared by excavating a couple of feet deeper into the silty-clay layer. A thin shallow channel was scraped within the excavation area leading to this sump to provide drainage as excavation proceeded from east to west along the northern tier of the excavation area. During the initial phase of excavation, active dewatering from the sump area was not required.

HES collected a water sample (ID: Pappas-W-EX-1) from the sump area on October 19, 2012 and analyzed for VOCs as well as other parameters such as total petroleum hydrocarbons (TPH), pesticides/Polychlorinated Biphenyls (PCBs), SVOCs, and metals. Sample results indicated that total VOC concentrations (1.2 ppm) exceeded the sewer discharge standard of 1 ppm. Water from the sump was then transferred into a frac tank via sump pump. Substantial amounts of storm water accumulated within the excavation area after Hurricane Sandy. A second sump was excavated within the excavation to facilitate water removal. Water was then transferred from sumps into the frac tank after filtering through a series to two bag filters to remove finer particles.

Water from the excavation area, as well as from the two USTs, was stored in the 21,000-gallon frac tank staged at the Site during construction. Before discharging into the municipal sanitary sewer water system, the collected water was treated for VOC contamination by continuously re-circulating it through a 55-gallon granular activated carbon drum. HES collected a water sample (ID: Pappas-Frac) from the frac tank and analyzed for VOCs. Sample results indicated that VOC concentrations were non-detect, meeting the required standard of 1 ppm for disposal. Water stored in the frac tank was discharged to the municipal sanitary sewer system at a flow rate approved by the Dansville Village WWTP. The water was discharged via hose to a sewer manhole located in the driveway of the adjacent property to the west of the Site. An email containing an approval from the Dansville Village WWTP permitting the discharge of the water to sanitary sewer system is provided in Appendix E. Sample results for water sample collected from the excavation area as well as from the frac tank are provided in Table 5.

2.8 Backfill

Material was imported to the Site to backfill the remedial excavation and to restore the Site to the pre-construction grades. Imported material included:

- Material for backfill of the remedial excavations consisted of glacially derived sediments from an in-situ deposit from Crouch Pit located on Route 371 in Cohocton, New York. A total of 5,211 cubic yards of backfill material was used to backfill the excavation. The backfill material was placed in 12 inch lifts using Komatsu bulldozer (EX35) and compacted using a Dynapac Roller. Backfill was placed within 4 to 6 inches of the final grade as shown on Figure 5.
- HES installed piping runs for future injections to address potential groundwater contamination. Stone used for constructing the gravel bed for this piping was # 2

limestone supplied by Hanson Aggregates of Honeoye Falls, New York. Approximately 35 tons of stone was used during the injection piping installation.

- Topsoil was used to restore the Site and to support vegetation. Approximately 248 cubic yards of topsoil was imported to the Site from American Topsoil located in Bloomfield New York. Topsoil was used to bring the backfill to the final grades as shown in Figure 5.

2.9 Sampling and Analysis

All Site sampling and analytical procedures were conducted in accordance with the *Sampling and Analysis Plan*, dated October 2012. HES performed the field sampling and Upstate Laboratories, subcontracted by HES, performed the sample analysis. Laboratory reports for all samples collected during the remedial actions are included in Appendix M. The samples collected during the remedial actions included:

- Waste Characterization Samples: A total of 14 samples were collected to characterize soil for off-site disposal and were analyzed using TCLP for select VOCs, SVOCs, metals, ignitability, reactivity, percent moisture, and pH analyses. Sample results for all the waste characterization samples are provided in Table 1.
 - 10 initial soil waste characterization samples were collected in-situ as part of the pre-excavation activities.
 - Based on the pre-excavation sampling results, one area around sample (S-C-7) was identified as characteristically hazardous based on the TCLP analytical results. As a result, after soil was removed from this area, one additional sample was collected (S-C-7A) to verify that all hazardous soil was removed from the area.
 - At the end of excavation activities, Sample S-C-11 was collected to meet the disposal facility's sample frequency requirements, because the volume of waste initially accepted by the disposal facility based on the 10 samples was nearing its limit. S-C-11 was identified as characteristically hazardous based on the TCLP analytical results. As a result, two additional samples (SP-1 & SP-2) were collected to characterize soil separated into two stockpiles.
- UST # 2 Samples: The collection of confirmation samples was required for the UST # 2 closure located outside the excavation limits. Two discrete samples consisting of a sidewall (S-T-2-SIDE) at approximately 2.5 ft bgs and bottom (S-T-2-BOTTOM) at approximately 5 feet bgs were collected after removing the 500 gallon tank. Samples were analyzed for VOCs, SVOCs, TPHs, and PCBs. Sample results for the two confirmatory UST samples are provided in Table 2.
- Concrete Sample: One sample was collected to characterize the concrete for disposal. The sample was analyzed using TCLP for select VOCs, SVOCs, metals, ignitability, reactivity, percent moisture, and pH analyses. Sample results for the concrete sample are provided in Table 4.

- **Water Disposal Samples:** Two samples were collected to characterize construction water generated during the remedial action. One sample was collected directly from the open excavation. The second was collected after pumping the collected water to a frac tank and treating it using a 10 micron filter bag and activated carbon. The initial sample was analyzed for TPHs, pesticides, PCBs, metals, VOCs, SVOCs, biological oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), and total organic carbon (TOC). The second sample was analyzed only for select VOCs. Sample results for water disposal samples are provided in Table 5.
- **Backfill and Topsoil Samples:** Chemical analyses (VOCs, SVOCs, metals, Pesticides/PCBs, pH and moisture content) were performed at a rate of one sample per borrow source for backfill and topsoil material. A sample collected from the first topsoil supplier (Riccelli Enterprises) exceeded NYS Part 375 6.8(a) Unrestricted Soil Cleanup Objectives for metal concentrations. Therefore, a second topsoil sample was collected from American Topsoil for analysis and was approved based on the analytical results. Sample results of one backfill source sample as well as two topsoil samples are provided in Table 6.
- **Trip Blanks:** Trip blank samples, consisting of two 40-millimeter glass vials filled with deionized water, were collected to document contamination attributable to shipping and field handling procedures. The trip blanks accompanied the sample bottles from laboratory to the field, and then with the soil samples back to the laboratory in the same sample cooler. Sample results of all the trip blank samples collected during the remedial action are provided in Table 7.

2.10 Site Restoration

Upon completion of the excavation activities, the Site was backfilled with clean, approved, fill material. The final grading of the site matched, as closely as possible, the existing drainage patterns preventing storm water from ponding on Site. Backfill was placed 4 to 6 inches below final grade, followed by clean topsoil. Additional details of the site restoration activities included:

- **Sheet Pile Extraction:** Sheet piles along the southern and eastern perimeter of the excavation area were extracted on December 5-6, 2012.
- **Final Survey:** Due to a winter storm and resulting snow fall, final survey of the Site was delayed until January 9, 2013.
- **Seeding:** Preliminary grading at the Site was conducted via skid steer, with final grading accomplished by dragging the area prior to broadcasting grass seed over the exposed topsoil in approximately 15,917 square feet area. HES had a narrow window of time to complete the final installation of the topsoil, grading, and seeding of the disturbed area. Final grading was accomplished before a major winter storm that hit the area the night after it was completed. HDR conducted an inspection of the site the following day and the backfill and topsoil material was in relatively good condition with a limited amount of

standing water and no erosion issues. It is anticipated that filling in some low spot areas and supplemental grading of the surface may be required in spring 2013 once settling of the underlying backfill occurs over the winter.

- **Sidewalk Repairs:** HES repaired a section of sidewalk and the ramp that formerly lead into the driveway along the west side of the building, completing on December 20, 2012. Prior to pouring the cement, HES constructed a wooden form for the sidewalk and driveway ramp. Two loads of cement were delivered and poured using a cement mixer truck and HES conducted the subsequent masonry work to replace the missing sections. A total of 6.5 cubic yards of cement was used during the repairs.

2.11 Groundwater Reagent Injection System Installation

HES installed three piping runs for future injections to address potential groundwater contamination remaining after the implementation of the soil remedy. Each piping run consisted of a horizontal length of 4 inch SDR17 HDPE Schedule PVC, perforated with 0.25 inch slot spacing, glued at 90 degree joints to two upright sections of solid PVC, one at each end of the perforated section of PVC. The piping run was configured in the subsurface such that the perforated section was set horizontally with the solid uprights extending upwards to the surface where they were covered with a flush mount protective cap secured with bolts. First, trenches were excavated 4 to 6 inches deep into the confining silty clay layer and horizontal section of the pipes were installed on top of a gravel bed placed at the bottom of the trenches. The gravel bed was used as a conductive layer surrounding the perforated PVC pipe to promote migration of an oxidation agent into the silty clay layer. The trenches were backfilled with gravel first, surrounding the perforated PVC pipes, and then backfilled to the surface using clean fill.

As shown in Figure 5, HES installed a total of three injection system pipings which were located in the vicinity of the highest concentrations of contamination detected during the PDI and remedial activities. Pipe # 1 was installed in the northwest corner of the Site where PDI results indicated elevated levels of PCE contamination at the top of the silty clay layer. Pipe # 2 was installed in the southwest corner where the waste characterization sample exhibited PCE concentration slightly higher than the TCLP criteria. Pipe # 3 was installed in the middle of the Site where PDI results indicated elevated levels of PCE contamination at the top of the silty clay layer.

2.12 Substantial Completion Inspection and Certifications

A substantial completion inspection of the Site was held on November 20, 2012. Representatives from the NYSDEC, HES and HDR were in attendance. No deficiencies were noted. There were six punch list items as described below to be addressed as part of the final restoration activities.

- Demobilization of trailers, equipments, storage shed and removal of the temporary fence.
- Sheet piling extraction along the eastern and southern perimeter of the excavation

area.

- Completion of injection pipes with a flush mount protective cap secured with bolts.
- Placement of topsoil.
- Hydro-seed and re-Hydro seed in the spring, if needed.
- Repair sidewalk.

These punch list items were addressed as part of the final restoration activities conducted from December 2012 to January 2013.

2.13 Field Changes

Field changes were generally associated with or results from unforeseen field conditions such as unknown impacts. All field changes were documented in the Daily Observations Reports prepared by HDR and communicated with the NYSDEC. No deviations from the remedial design were executed for the project Site. Based on the field conditions, the following field changes were encountered and change orders were issued during the remedial action activities:

- **Change # 1 – Additional Soil Disposal Costs for Non-Hazardous Material:** The original contract specifications called for the transportation and disposal of 6,633 tons of non-hazardous soil. Based on the field soil density, water content and additional volume of silty clay layer excavated resulted in an increased disposal quantity from 6,633 tons to 8,190.65 tons of non-hazardous soil. This item accounted for an increase in contract cost of \$73,209.55.
- **Change # 2 – UST # 3:** An unidentified 500-gallon UST#3 was encountered just at the edge of southern sheet piling wall inside the excavation area. This UST was removed and disposed off as per the contract specifications. This item accounted for an increase in contract cost of \$2,000 for removal and disposal of the UST.
- **Change # 3 – Backfill:** The original contract specifications called for the backfill of 5,100 cubic yards of clean fill material. Based on the as-built excavation volume, the quantity of backfill material increased from 5,100 cubic yards to 5,190 cubic yards. This item accounted for an increase in contract cost of \$2,391.20.
- **Change # 4 – Stockpile Samples:** At the end of excavation activities two additional samples (SP-1 & SP-2) were collected to characterize soil separated into two stockpiles. Sampling and analyses was not included as part of the original contract specifications. This item is new in the contract and accounted for an increase of \$1,075.00.

3.0 CHRONOLOGY OF THE EVENTS

A tabular summary that lists the major events for the remedial activities, and associated dates of those events, starting with ROD signature is provided below:

ACTIVITY	START	END
Record of Decision	March 30, 2009	
Notice To Proceed Construction	June 15, 2013	
Pre-Construction Meeting	August 1, 2012	
Preparation, Submittal, and Approval of Construction Work Plans	October 1, 2012	November 20, 2012
Mobilization and Site Preparation		
Temporary Facility	October 1, 2012	December 28, 2012
Site Survey	October 1, 2012	
Sheet Pile Installation	October 1, 2012	October 10, 2012
Perimeter Air Monitoring	October 1, 2012	December 21, 2012
Traffic Control	October 1, 2012	December 21, 2012
Decontamination	October 1, 2012	December 21, 2012
Remedial Activities		
Pre-Excavation Sampling and Analyses	October 4, 2012	October 19, 2012
Excavation	October 15, 2012	November 1, 2012
UST# 1 Removal	October 17, 2012	
UST# 2 Removal	November 1, 2012	
UST# 3 Removal	October 31, 2012	
Dewatering Operation	November 13, 2012	November 14, 2012
Backfill	November 1, 2012	December 19, 2012
Grading and Placing Topsoil	December 19, 2012	December 20, 2012
Walkway Repairs	December 20, 2012	December 20, 2012
Seeding	December 21, 2012	December 21, 2012
Extraction of Sheet Piles (South and East Perimeter)	December 5, 2012	December 6, 2012
Transportation and Disposal (T & D)		
T & D of Non-Hazardous Waste Material	October 16, 2012	November 14, 2012
T & D of Hazardous Waste Material	October 29, 2012	November 7, 2012
T & D of USTs	November 7, 2012	
T & D of Concrete	October 24, 2012	November 19, 2012
Inspection and Certification		
Substantial Completion Inspection	November 20, 2012	
Final Inspection	May 29, 2013	
Post-Construction Survey	January 9, 2013	

4.0 REFERENCES

EA Engineering, P.C. and Its Affiliate, September 2008. Remedial Investigation Report for Operable Unit 1, Pappas Dry Cleaners (8-26-018), Dansville, New York.

EA Engineering, P.C. and Its Affiliate, October 2008. Feasibility Study for Operable Unit 1, Pappas Dry Cleaners (8-26-018), Dansville, New York.

Ish Inc., October 2007. Final Feasibility Study Report for Operable Unit 1 and Final Feasibility Study Report Addendum for Operable Unit 1, NYSEG Former MGP Site, Dansville, New York.

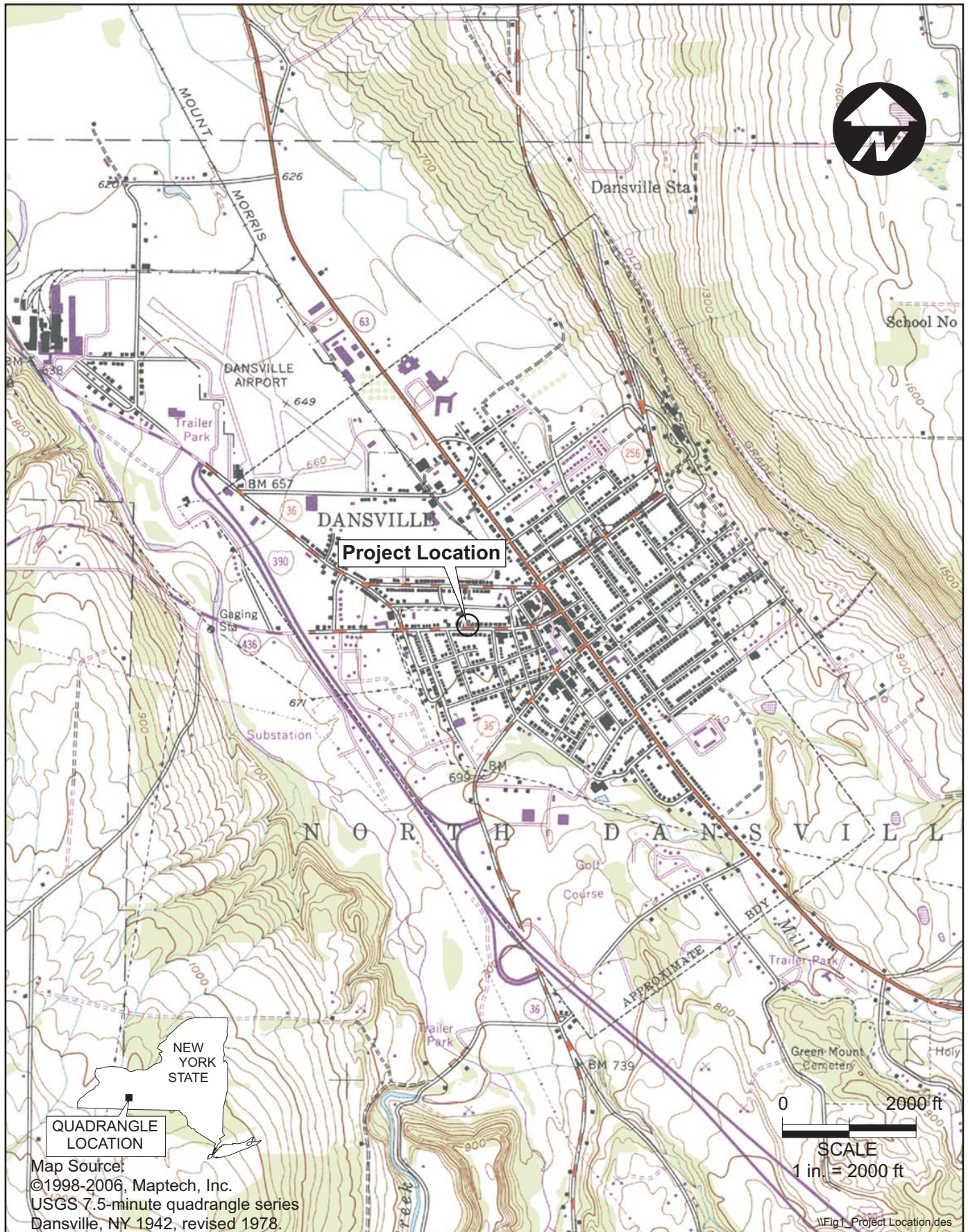
Labella Associates, P.C., April 2005. Phase II Environmental Site Assessment, Preliminary Site Characterization, Pappas Cleaners.

NYSDEC, March 2009. Record of Decision, Pappas Dry Cleaners Site, Dansville, Livingston County, New York, Site Number 826018.

NYSDEC, May 2010. DER-10, Technical Guidance for Site Investigation and Remediation.

HDR, June 2011. Remedial Design Report, NYSDEC Standby Engineering Contract # D006129-01, Work Assignment No. 4.

FIGURES



Henningson, Durham & Richardson
Architecture and Engineering, P.C.
One Blue Hill Plaza
Pearl River, NY 10965

Site Location Map

Former Pappas Dry Cleaners - 46 Ossian St., Dansville, NY 14437

Figure
1

1

2

3

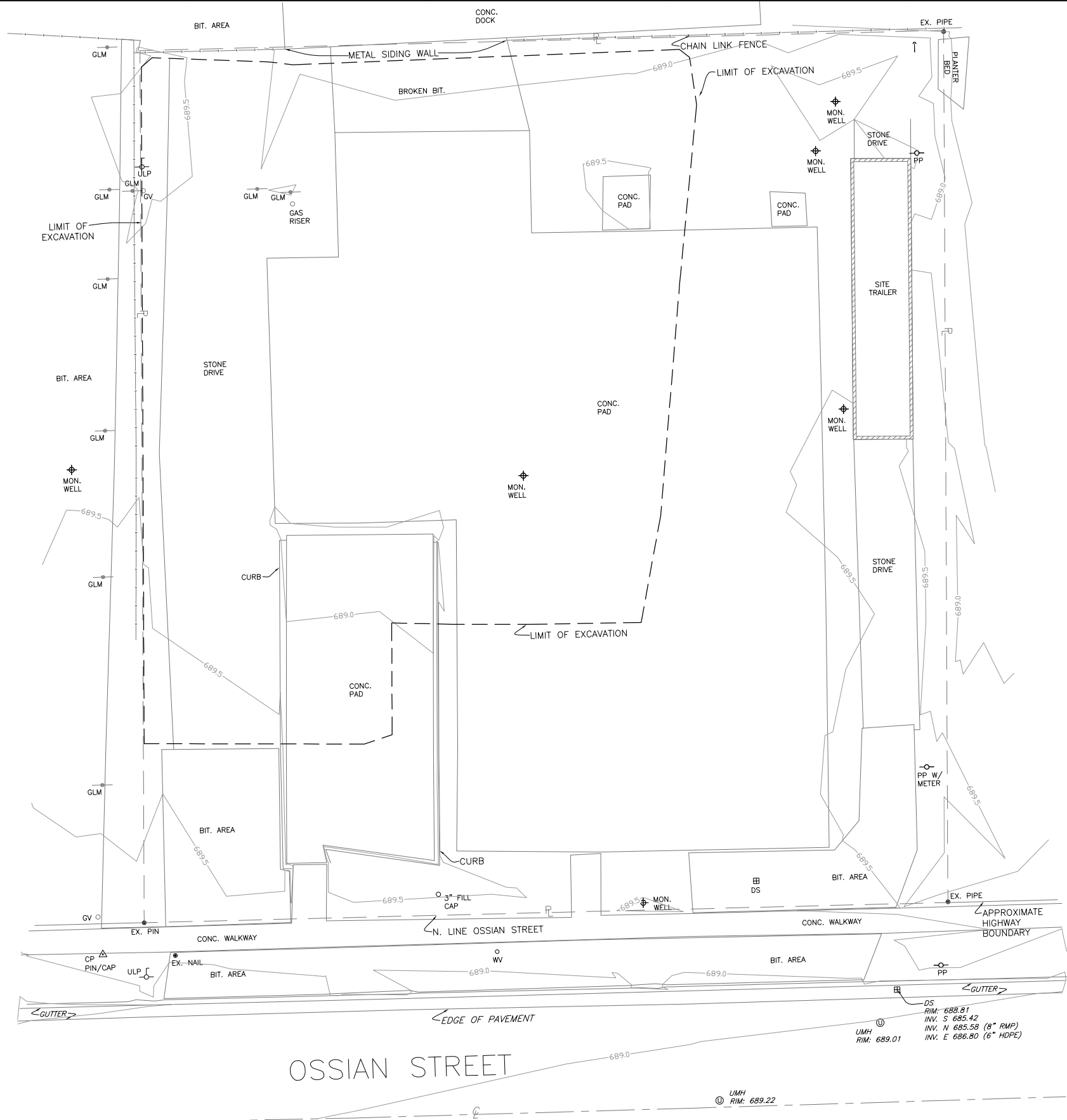
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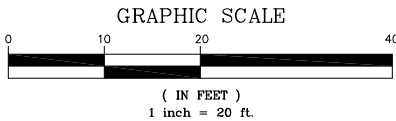
7

8



LEGEND:

- BUILDING/STRUCTURE
- EDGE OF PAVEMENT
- CHAIN LINK FENCE
- PROPERTY LINE
- CENTERLINE
- APPROXIMATE LIMIT OF EXCAVATION
- GROUNDWATER MONITORING WELL
- GAS VALVE
- GUY WIRE
- HYDRANT
- POWER POLE
- WATER VALVE
- UTILITY MANHOLE
- DRAINAGE STRUCTURE
- CONTROL POINT
- GAS LINE MARKER
- UTILITY POLE WITH LIGHT
- CONTOUR (0.5 FT)



- NOTES:
- DATA SHOWN ON THIS MAP WAS SURVEYED BY WENDEL ON OCTOBER 1, 2012
 - HORIZONTAL DATUM: REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM NAD83 (CORS), WESTERN ZONE, US SURVEY FEET
 - VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), US SURVEY FEET, ESTABLISHED FROM EXISTING SITE GRADES SHOWN ON DESIGN PLANS.

HDR

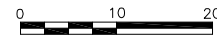
HDR Engineering, Inc.

1	03/2013	FINAL ENGINEERING REPORT
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	A. PATEL
CAD	D. LINDSAY
QA/QC	J. PHILIP
PROJECT NUMBER	147-178617

FINAL ENGINEERING REPORT
PAPPAS DRY CLEANERS SUPERFUND SITE
DANSVILLE, NEW YORK

PRE-CONSTRUCTION SURVEY MAP



FILENAME	OOC-01.DWG
SCALE	1" = 10'

SHEET
FIGURE 2

TABLES

Table 1
Waste Characterization Soil Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	Maximum Concentration for Toxicity Characteristic	S-C-1		S-C-2		S-C-3		S-C-4	
Sampling Date	(ppm)	10/4/2012		10/4/2012		10/4/2012		10/11/2012	
Analyte		Results (ppm)	Qual	Results (ppm)	Qual	Results (ppm)	Qual	Results (ppm)	Qual
1,1-Dichloroethene	0.7	< 0.03	U	< 0.03	U	< 0.03	U	< 0.03	U
1,2-Dichloroethane	0.5	< 0.03	U	< 0.03	U	< 0.03	U	< 0.03	U
1,4-Dichlorobenzene	7.5	< 0.03	U	< 0.03	U	< 0.03	U	< 0.03	U
2,4,5-Trichlorophenol	400	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
2,4,6-Trichlorophenol	2	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
2,4-Dinitrotoluene	0.13	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
2-Methylphenol (O-Cresol)	200	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
3-Methylphenol	200	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Arsenic	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U
Barium	100	0.61		0.46		0.6		0.3	J
Benzene	0.5	< 0.03	U	< 0.03	U	< 0.03	U	< 0.03	U
Cadmium	1	< 0.005	U	< 0.005	U	< 0.005	U	< 0.005	U
Carbon Tetrachloride	0.5	< 0.03	U	< 0.03	U	< 0.03	U	< 0.03	U
Chlorobenzene	100	< 0.03	U	< 0.03	U	< 0.03	U	< 0.03	U
Chloroform	6	< 0.03	U	< 0.03	U	< 0.03	U	< 0.03	U
Chromium, Total	5	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Hexachlorobenzene	0.13	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Hexachlorobutadiene	0.5	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Hexachloroethane	3	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Lead	5	0.087	J	0.11		0.11		0.04	J
Mercury	0.2	< 0.0004	U	< 0.0004	U	< 0.0004	U	< 0.0004	U
Methyl Ethyl Ketone	200	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U
Nitrobenzene	2	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Pentachlorophenol	100	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U
Pyridine	5	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Selenium	1	0.24	J	0.2	J	0.18	J	0.2	J
Silver	5	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U
Tetrachloroethylene (PCE)	0.7	0.11		0.45		0.038		0.057	
Trichloroethylene (TCE)	0.5	< 0.03	U	0.021	J	< 0.03	U	< 0.03	U
Vinyl Chloride	0.2	< 0.02	U	< 0.02	U	< 0.02	U	< 0.02	U
Reactive Cyanide		< 0.01	U	< 0.01	U	< 0.01	U	< 0.2	U
Reactive Sulfide		< 0.01	U	< 0.01	U	< 0.01	U	< 0.2	U
Ph		8.6		8.3		8.9		8.8	
Moisture, Percent (%)									
Ignitability		60	E	60	E	60	E	60	E

Notes:

U - Analytical Non-Detect Value

J - Analyte detected below quantitation limits

E - Value above quantitation range

ppm - parts per million (mg/l)

• Values that are **bold and highlighted** exceed Maximum Concentration of Contaminants for Toxicity Characteristic, for example

110

Table 1
Waste Characterization Soil Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	Maximum Concentration for Toxicity Characteristic	S-C-5		S-C-6		S-C-7		S-C-7A	
Sampling Date	(ppm)	10/11/2012		10/11/2012		10/15/2012		10/24/2012	
Analyte		Results (ppm)	Qual	Results (ppm)	Qual	Results (ppm)	Qual	Results (ppm)	Qual
1,1-Dichloroethene	0.7	< 0.03	U	< 0.03	U	<0.03	U	< 0.03	U
1,2-Dichloroethane	0.5	< 0.03	U	< 0.03	U	<0.03	U	< 0.03	U
1,4-Dichlorobenzene	7.5	< 0.03	U	< 0.03	U	<0.03	U	< 0.03	U
2,4,5-Trichlorophenol	400	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
2,4,6-Trichlorophenol	2	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
2,4-Dinitrotoluene	0.13	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
2-Methylphenol (O-Cresol)	200	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
3-Methylphenol	200	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
Arsenic	5	< 0.5	U	< 0.5	U	<2.5	U	< 0.5	U
Barium	100	0.52		0.76		<1.5	U	2.7	
Benzene	0.5	< 0.03	U	< 0.03	U	<0.03	UQ	< 0.03	U
Cadmium	1	< 0.005	U	< 0.005	U	<0.025	U	< 0.005	U
Carbon Tetrachloride	0.5	< 0.03	U	< 0.03	U	<0.03	UQ	< 0.03	U
Chlorobenzene	100	< 0.03	U	< 0.03	U	<0.03	UQ	< 0.03	U
Chloroform	6	< 0.03	U	< 0.03	U	<0.03	UQ	< 0.03	U
Chromium, Total	5	< 0.05	U	< 0.05	U	<0.25	U	< 0.05	U
Hexachlorobenzene	0.13	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
Hexachlorobutadiene	0.5	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
Hexachloroethane	3	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
Lead	5	0.074	J	0.08	J	<0.5	U	0.073	J
Mercury	0.2	< 0.0004	U	< 0.0004	U	<0.0004	U	< 0.0004	U
Methyl Ethyl Ketone	200	< 0.1	U	< 0.1	U	<0.1	U	< 0.1	U
Nitrobenzene	2	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
Pentachlorophenol	100	< 0.1	U	< 0.1	U	<0.1	U	< 0.1	U
Pyridine	5	< 0.05	U	< 0.05	U	<0.05	U	< 0.05	U
Selenium	1	0.31	J	0.2	J	<0.5	UQ	0.25	J
Silver	5	< 0.05	U	< 0.05	U	<0.25	UQ	< 0.05	U
Tetrachloroethylene (PCE)	0.7	0.29		0.088		0.75		< 0.03	U
Trichloroethylene (TCE)	0.5	< 0.03	U	< 0.03	U	<0.03	U	< 0.03	U
Vinyl Chloride	0.2	< 0.02	U	< 0.02	U	<0.02	U	< 0.02	U
Reactive Cyanide		< 0.2	U	< 0.2	U	<0.664	U	< 0.6	U
Reactive Sulfide		< 0.2	U	< 0.2	U	<0.221	U	< 0.2	U
Ph		9.3		8.7		8.6		8.7	
Moisture, Percent (%)						9.69			
Ignitability		60	E	60	E	60	E	60	E

Notes:

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ppm - parts per million (mg/l)

• Values that are **bold and highlighted** exceed Maximum
for example

110

Table 1
Waste Characterization Soil Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	Maximum Concentration for Toxicity Characteristic	S-C-8		S-C-9		S-C-10		S-C-11	
Sampling Date	(ppm)	10/15/2012		10/15/2012		10/19/2012		10/30/2012	
Analyte		Results (ppm)	Qual	Results (ppm)	Qual	Results (ppm)	Qual	Results (ppm)	Qual
1,1-Dichloroethene	0.7	<0.03	U	<0.03	U	< 0.03	U	< 0.06	U
1,2-Dichloroethane	0.5	<0.03	U	<0.03	U	< 0.03	U	< 0.06	U
1,4-Dichlorobenzene	7.5	<0.03	U	<0.03	U	< 0.03	U	< 0.06	U
2,4,5-Trichlorophenol	400	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
2,4,6-Trichlorophenol	2	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
2,4-Dinitrotoluene	0.13	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
2-Methylphenol (O-Cresol)	200	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
3-Methylphenol	200	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
Arsenic	5	<2.5	U	<2.5	U	< 0.5	U	< 0.5	U
Barium	100	<1.5	U	<1.5	U	0.59		1.9	
Benzene	0.5	<0.03	UQ	<0.03	UQ	< 0.03	U	< 0.06	U
Cadmium	1	<0.025	U	<0.025	U	< 0.005	U	< 0.005	U
Carbon Tetrachloride	0.5	<0.03	UQ	<0.03	UQ	< 0.03	U	< 0.06	U
Chlorobenzene	100	<0.03	UQ	<0.03	UQ	< 0.03	U	< 0.06	U
Chloroform	6	<0.03	UQ	<0.03	UQ	< 0.03	U	< 0.06	U
Chromium, Total	5	<0.25	U	<0.25	U	< 0.05	U	< 0.05	U
Hexachlorobenzene	0.13	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
Hexachlorobutadiene	0.5	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
Hexachloroethane	3	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
Lead	5	<0.5	U	<0.5	U	0.095	J	0.06	J
Mercury	0.2	<0.0004	U	<0.0004	U	< 0.0004	U	< 0.0004	U
Methyl Ethyl Ketone	200	<0.1	U	<0.1	U	< 0.1	U	< 0.2	U
Nitrobenzene	2	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
Pentachlorophenol	100	<0.1	U	<0.1	U	< 0.1	U	< 0.1	U
Pyridine	5	<0.05	U	<0.05	U	< 0.05	U	< 0.05	U
Selenium	1	<0.5	UQ	<0.5	UQ	0.53	U	0.22	J
Silver	5	<0.25	UQ	<0.25	UQ	< 0.05	U	< 0.05	U
Tetrachloroethylene (PCE)	0.7	0.14		0.052		0.078		1.2	
Trichloroethylene (TCE)	0.5	<0.03	U	<0.03	U	< 0.03	U	< 0.06	U
Vinyl Chloride	0.2	<0.02	U	<0.02	U	< 0.02	U	< 0.04	U
Reactive Cyanide		<0.693	U	<0.448	U	< 0.237	U	< 0.457	U
Reactive Sulfide		<0.231	U	<0.224	U	< 0.237	U	< 0.229	U
Ph		8.7		8.5		9		7.7	
Moisture, Percent (%)		13.5		10.7		15.5		12.5	
Ignitability		60	E	60	E	60	E	60	E

Notes:

U - Analytical Non-Detect Value

J - Analyte detected below quantitation limits

E - Value above quantitation range

ppm - parts per million (mg/l)

• Values that are **bold and highlighted** exceed Maximum
for example

110

Table 1
Waste Characterization Soil Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	Maximum Concentration for Toxicity Characteristic	SP-1		SP-2	
Sampling Date	(ppm)	11/6/2012		11/6/2012	
Analyte		Results (ppm)	Qual	Results (ppm)	Qual
1,1-Dichloroethene	0.7	< 0.03	U	< 0.03	U
1,2-Dichloroethane	0.5	< 0.03	U	< 0.03	U
1,4-Dichlorobenzene	7.5	< 0.03	U	< 0.03	U
2,4,5-Trichlorophenol	400	< 0.05	U	< 0.05	U
2,4,6-Trichlorophenol	2	< 0.05	U	< 0.05	U
2,4-Dinitrotoluene	0.13	< 0.05	U	< 0.05	U
2-Methylphenol (O-Cresol)	200	< 0.05	U	< 0.05	U
3-Methylphenol	200	< 0.05	U	< 0.05	U
Arsenic	5	< 0.5	U	< 0.5	U
Barium	100	2.1		2.9	
Benzene	0.5	< 0.03	U	< 0.03	U
Cadmium	1	< 0.005	U	< 0.005	U
Carbon Tetrachloride	0.5	< 0.03	U	< 0.03	U
Chlorobenzene	100	< 0.03	U	< 0.03	U
Chloroform	6	< 0.03	U	< 0.03	U
Chromium, Total	5	< 0.05	U	0.013	J
Hexachlorobenzene	0.13	< 0.05	U	< 0.05	U
Hexachlorobutadiene	0.5	< 0.05	U	< 0.05	U
Hexachloroethane	3	< 0.05	U	< 0.05	U
Lead	5	0.05	J	0.057	J
Mercury	0.2	< 0.0004	U	0.0005	
Methyl Ethyl Ketone	200	< 0.1	U	< 0.1	U
Nitrobenzene	2	< 0.05	U	< 0.05	U
Pentachlorophenol	100	< 0.1	U	< 0.1	U
Pyridine	5	< 0.05	U	< 0.05	U
Selenium	1	0.26	J	< 0.5	U
Silver	5	< 0.05	U	< 0.05	U
Tetrachloroethylene (PCE)	0.7	0.08		0.36	
Trichloroethylene (TCE)	0.5	< 0.03	U	< 0.03	U
Vinyl Chloride	0.2	< 0.02	U	< 0.02	U
Reactive Cyanide		< 1.13	U	< 1.13	U
Reactive Sulfide		< 0.226	U	< 0.226	U
Ph		8.6		8.7	
Moisture, Percent (%)		11.6		11.3	
Ignitability		60	E	60	E

Notes:

U - Analytical Non-Detect Value

J - Analyte detected below quantitation limits

E - Value above quantitation range

ppm - parts per million (mg/l)

• Values that are **bold and highlighted** exceed Maximum
for example

110

Table 2
Underground Storage Tank #2 Confirmatory Soil Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(a) Unrestr SCO	S-T-2-BOTTOM		S-T-2-SIDE	
Sample Date		11/1/2012		11/1/2012	
Analyte		Results	Qual	Results	Qual
VOLATILE ORGANIC COMPOUNDS (VOCs) - Results in ppb					
1,1,1-Trichloroethane	680	< 12	U	< 5.9	U
1,1,2,2-Tetrachloroethane		< 12	U	< 5.9	U
1,1,2-Trichloro-1,2,2-Trifluoroethane		< 12	U	< 5.9	U
1,1,2-Trichloroethane		< 12	U	< 5.9	U
1,1-Dichloroethane	270	< 12	U	< 5.9	U
1,1-Dichloroethene	330	< 12	U	< 5.9	U
1,2,3-Trichlorobenzene		< 12	U	< 5.9	U
1,2,4-Trichlorobenzene		< 12	U	< 5.9	U
1,2,4-Trimethylbenzene	3600	< 12	U	< 5.9	U
1,2-Dibromo-3-Chloropropane		< 12	U	< 5.9	U
1,2-Dibromoethane		< 12	U	< 5.9	U
1,2-Dichlorobenzene	1100	< 12	U	< 5.9	U
1,2-Dichloroethane	20	< 12	U	< 5.9	U
1,2-Dichloropropane		< 12	U	< 5.9	U
1,3,5-Trimethylbenzene	8400	< 12	U	< 5.9	U
1,3-Dichlorobenzene	2400	< 12	U	< 5.9	U
1,4-Dichlorobenzene	1800	< 12	U	< 5.9	U
1,4-Dioxane (P-Dioxane)	100	< 240	U	< 120	U
2-Hexanone		< 24	U	< 12	U
Benzene	60	< 12	U	< 5.9	U
Bromochloromethane		< 12	U	< 5.9	U
Bromodichloromethane		< 12	U	< 5.9	U
Bromoform		< 12	U	< 5.9	U
Bromomethane		< 12	U	< 5.9	U
Carbon Disulfide		< 12	U	< 5.9	U
Carbon Tetrachloride	760	< 12	U	< 5.9	U
Chlorobenzene	1100	< 12	U	< 5.9	U
Chloroethane		< 12	U	< 5.9	U
Chloroform	370	< 12	U	< 5.9	U
Chloromethane		< 12	U	< 5.9	U
Cis-1,2-Dichloroethylene	250	< 12	U	< 5.9	U
Cis-1,3-Dichloropropene		< 12	U	< 5.9	U
Cyclohexane		< 12	U	< 5.9	U
Dibromochloromethane		< 12	U	< 5.9	U
Dichlorodifluoromethane		< 12	U	< 5.9	U
Dimethyl Benzene/ Xylenes, Total	260	< 12	U	< 5.9	U
Ethylbenzene	1000	< 12	U	< 5.9	U
Isopropylbenzene (Cumene)		< 12	U	< 5.9	U
Methyl Acetate		< 12	U	< 5.9	U
Methyl Isobutyl Ketone		< 24	U	< 12	U
Methylcyclohexane		< 12	U	< 5.9	U
Methylene Chloride	50	< 12	U	< 5.9	U
N-Butylbenzene	12000	< 12	U	< 5.9	U
N-Propylbenzene	3900	< 12	U	< 5.9	U
O-Xylene (1,2-Dimethylbenzene)		< 12	U	< 5.9	U
Sec-Butylbenzene	11000	< 12	U	< 5.9	U
Styrene		< 12	U	< 5.9	U
T-Butylbenzene	5900	< 12	U	< 5.9	U

Table 2
Underground Storage Tank #2 Confirmatory Soil Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(a) Unrestr SCO	S-T-2-BOTTOM		S-T-2-SIDE	
Sample Date		11/1/2012		11/1/2012	
Analyte		Results	Qual	Results	Qual
Tert-Butyl Methyl Ether	930	< 12	U	< 5.9	U
Tetrachloroethylene (PCE)	1300	5.8	J	14	
Toluene	700	< 12	U	< 5.9	U
Trans-1,2-Dichloroethene	190	< 12	U	< 5.9	U
Trans-1,3-Dichloropropene		< 12	U	< 5.9	U
Trichloroethylene (TCE)	470	< 12	U	< 5.9	U
Trichlorofluoromethane		< 12	U	< 5.9	U
Vinyl Chloride	20	< 12	U	< 5.9	U
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs) - Results in ppb					
1,2,4,5-Tetrachlorobenzene		< 200	U	< 200	U
1,2,4-Trichlorobenzene		< 200	U	< 200	U
1,2-Dichlorobenzene	1100	< 200	U	< 200	U
1,3-Dichlorobenzene	2400	< 200	U	< 200	U
1,4-Dichlorobenzene	1800	< 200	U	< 200	U
2,4,5-Trichlorophenol		< 390	U	< 390	U
2,4,6-Trichlorophenol		< 200	U	< 200	U
2,4-Dichlorophenol		< 200	U	< 200	U
2,4-Dimethylphenol		< 200	U	< 200	U
2,4-Dinitrophenol		< 390	U	< 390	U
2,4-Dinitrotoluene		< 200	U	< 200	U
2,6-Dinitrotoluene		< 200	U	< 200	U
2-Chloronaphthalene		< 200	U	< 200	U
2-Chlorophenol		< 200	U	< 200	U
2-Methylnaphthalene		< 200	U	< 200	U
2-Methylphenol (O-Cresol)	330	< 200	U	< 200	U
2-Nitroaniline		< 390	U	< 390	U
2-Nitrophenol		< 200	U	< 200	U
3,3'-Dichlorobenzidine		< 200	U	< 200	U
3-Methylphenol	330	< 200	U	< 200	U
3-Nitroaniline		< 390	U	< 390	U
4,6-Dinitro-2-Methylphenol		< 390	U	< 390	U
4-Bromophenyl Phenyl Ether		< 200	U	< 200	U
4-Chloro-3-Methylphenol		< 200	U	< 200	U
4-Chloroaniline		< 200	U	< 200	U
4-Chlorophenyl Phenyl Ether		< 200	U	< 200	U
4-Nitroaniline		< 390	U	< 390	U
4-Nitrophenol		< 390	U	< 390	U
Acenaphthene	20000	< 200	U	< 200	U
Acenaphthylene	100000	75	J	< 200	U
Acetophenone		< 200	U	< 200	U
Anthracene	100000	< 200	U	< 200	U
Atrazine		< 200	U	< 200	U
Benzaldehyde		< 200	U	< 200	U
Benzo(A)Anthracene	1000	500		< 200	U
Benzo(A)Pyrene	1000	600		< 200	U
Benzo(B)Fluoranthene	1000	740		< 200	U
Benzo(G,H,I)Perylene	100000	620		< 200	U
Benzo(K)Fluoranthene	800	510		< 200	U
Benzyl Butyl Phthalate		< 200	U	< 200	U

Table 2
Underground Storage Tank #2 Confirmatory Soil Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(a) Unrestr SCO	S-T-2-BOTTOM		S-T-2-SIDE	
Sample Date		11/1/2012		11/1/2012	
Analyte		Results	Qual	Results	Qual
Biphenyl (Diphenyl)		< 200	U	< 200	U
Bis(2-Chloroethoxy) Methane		< 200	U	< 200	U
Bis(2-Chloroethyl) Ether		< 200	U	< 200	U
Bis(2-Chloroisopropyl) Ether		< 200	U	< 200	U
Bis(2-Ethylhexyl) Phthalate		320		170	J
Caprolactam		< 200	U	< 200	U
Carbazole		< 200	U	< 200	U
Chrysene	1000	530		< 200	U
Dibenz(A,H)Anthracene	330	< 200	U	< 200	U
Dibenzofuran	7000	< 200	U	< 200	U
Diethyl Phthalate		< 200	U	< 200	U
Dimethyl Phthalate		< 200	U	< 200	U
Di-N-Butyl Phthalate		89	J	73	J
Di-N-Octylphthalate		< 200	U	< 200	U
Fluoranthene	100000	550		< 200	U
Fluorene	30000	< 200	U	< 200	U
Hexachlorobenzene	330	< 200	U	< 200	U
Hexachlorobutadiene		< 200	U	< 200	U
Hexachlorocyclopentadiene		< 200	U	< 200	U
Hexachloroethane		< 200	U	< 200	U
Indeno(1,2,3-C,D)Pyrene	500	500		< 200	U
Isophorone		< 200	U	< 200	U
Naphthalene	12000	< 200	U	< 200	U
Nitrobenzene		< 200	U	< 200	U
N-Nitrosodi-N-Propylamine		< 200	U	< 200	U
N-Nitrosodiphenylamine		< 200	U	< 200	U
Pentachlorophenol	800	< 390	U	< 390	U
Phenanthrene	100000	210		< 200	U
Phenol	330	< 200	U	< 200	U
Pyrene	100000	1200		< 200	U
PETROLEUM HYDROCARBON (PHC) COMPOUNDS - Results in ppm					
PHC as Diesel Fuel		< 20	U	< 20	U
PHC as Gasoline		< 0	U	< 0	U
PHC as Kerosene		< 3.9	U	< 3.9	U
PHC as Lube Oil		< 0	U	< 0	U
PHC as Unknown/Waste Product		< 1.2	U	< 1.2	U
CHEMISTRY PARAMETERS					
Moisture, Percent (%)		16		15	

Notes:

U - Analytical Non-Detect Value

J – Analyte detected below quantitation li

ppm - parts per million (mg/kg)

ppb - parts per billion (ug/kg)

• Values that are **bold and highlighted** exceed the NYS Part 375 6.8(a) Unrestricted Soil Cleanup Objectives (SCOs), for example

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Table 3
Summary of Off-Site Soil/Waste Disposal
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Waste Stream	Quantity Disposed	Units	Disposal Facility Name and Address	Permit Number	Transporters
Construction and Demolition Debris (C&D) - Concrete	375	tons	Villager Recycling Center 244 Lake Avenue, Rochester, NY 14608	DEC Registration # 28W14	Riccelli Enterprises
Treated Water from Dewatering (Groundwater & Rainwater)	20,500	gallons	Dansville WWTP 1 Commerce Drive, Dansville, NY 14437		None
Soil, Non-hazardous	8,191.65	tons	Hyland Landfill 6653 Herdman Road Angelica, NY 14709	9-0232-00003/00002	Riccelli Enterprises
Soil, Hazardous	89	tons	Biogénie Quebec, Canada	NYD986969947	Laidlaw Trucking
Underground Storage Tanks	4,340	pounds	Enviro-Metal Recycling, LLC. 6308 Fritz Hill Road Bath, NY 14810		Hobar Enterprises

Table 4
Waste Characterization Concrete Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	Maximum Concentration for Toxicity Characteristic	Concrete	
Sampling Date	(ppm)	10/15/2012	
Analyte		Results (ppm)	Qual
1,1-Dichloroethene	0.7	< 0.03	U
1,2-Dichloroethane	0.5	< 0.03	U
1,4-Dichlorobenzene	7.5	< 0.03	U
2,4,5-Trichlorophenol	400	< 0.05	U
2,4,6-Trichlorophenol	2	< 0.05	U
2,4-Dinitrotoluene	0.13	< 0.05	U
2-Methylphenol (O-Cresol)	200	< 0.05	U
3-Methylphenol	200	< 0.05	U
Arsenic	5	< 2.50	U
Barium	100	< 1.50	U
Benzene	0.5	< 0.03	UQ
Cadmium	1	< 0.025	U
Carbon Tetrachloride	0.5	< 0.03	UQ
Chlorobenzene	100	< 0.03	UQ
Chloroform	6	< 0.03	UQ
Chromium, Total	5	< 0.25	U
Hexachlorobenzene	0.13	< 0.05	U
Hexachlorobutadiene	0.5	< 0.05	U
Hexachloroethane	3	< 0.05	U
Lead	5	< 0.50	U
Mercury	0.2	< 0.004	U
Methyl Ethyl Ketone (2-Butanone)	200	< 0.10	U
Nitrobenzene	2	< 0.05	U
Pentachlorophenol	100	< 0.10	U
Pyridine	5	< 0.05	U
Selenium	1	< 0.50	UQ
Silver	5	< 0.25	UQ
Tetrachloroethylene (PCE)	0.7	< 0.03	U
Trichloroethylene (TCE)	0.5	< 0.03	U
Vinyl Chloride	0.2	< 0.02	U
Reactive Cyanide		< 0.20	U
Reactive Sulfide		< 0.20	U
Ph		9.54	U
Moisture, Percent (%)		4.91	U
Ignitability		> 60	U

Notes:

U - Analytical Non-Detect Value

Q – Outlying QC recoveries were associated with this parameter

ppm - parts per million (mg/l or mg/kg)

Table 5
Construction Dewatering Water Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	FRAC		W-EX-1		W-T-1		W-T-1 (Re-Analysis)	
Sample Date	11/6/2012		10/19/2012		10/11/2012		10/11/2012	
Analyte	Results	Qual	Results	Qual	Results	Qual	Results	Qual
VOLATILE ORGANIC COMPOUNDS (VOCs) - Results in ppb								
1,1,1-Trichloroethane			< 3	U				
1,1,2,2-Tetrachloroethane			< 3	U				
1,1,2-Trichloroethane			< 3	U				
1,1-Dichloroethane			< 3	U				
1,1-Dichloroethene			< 3	U				
1,2,4-Trimethylbenzene	< 3	U			8.2		< 3	U
1,2-Dichlorobenzene			< 3	U				
1,2-Dichloroethane			< 3	U				
1,2-Dichloropropane			< 3	U				
1,3,5-Trimethylbenzene	< 3	U			< 3	U	< 3	U
1,3-Dichlorobenzene			< 3	U				
1,4-Dichlorobenzene			< 3	U				
2-Chloroethyl Vinyl Ether			< 3	U				
Acrolein			< 50	U				
Acrylonitrile			< 50	U				
Benzene	< 3	U	< 3	U	< 3	U	< 3	U
Bromodichloromethane			3.4					
Bromoform			< 3	U				
Bromomethane			< 3	U				
Carbon Tetrachloride			< 3	U				
Chlorobenzene			< 3	U				
Chloroethane			< 3	U				
Chloroform			< 3	U				
Chloromethane			< 3	U				
Cis-1,2-Dichloroethylene			110	J				
Cis-1,3-Dichloropropene			< 3	U				
Cymene	< 3	U			< 3	U	< 3	U
Dibromochloromethane			< 3	U				
Dichlorodifluoromethane			< 3	U				
Dimethyl Benzene/ Xylenes, Total	< 3	U	< 3	U	3.2		2.6	J
Ethylbenzene	< 3	U	4		< 3	U	< 3	U
Isopropylbenzene (Cumene)	< 3	U			< 3	U	< 3	U
Methylene Chloride			< 3	U				
Naphthalene	< 3	U			2.6	J	< 3	U
N-Butylbenzene	< 3	U			< 3	U	< 3	U
N-Propylbenzene	< 3	U			< 3	U	< 3	U
O-Xylene (1,2-Dimethylbenzene)	< 3	U	< 3	U	< 3	U	< 3	U
Sec-Butylbenzene	< 3	U			< 3	U	< 3	U
T-Butylbenzene	< 3	U			< 3	U	< 3	U
Tert-Butyl Methyl Ether	< 3	U			< 3	U	< 3	U
Tetrachloroethylene (PCE)	< 3	U	840					
Toluene	< 3	U	< 3	U	< 3	U	< 3	U
Trans-1,2-Dichloroethene			13					
Trans-1,3-Dichloropropene			< 3	U				
Trichloroethylene (TCE)	< 3	U	250					
Trichlorofluoromethane			< 3	U				
Vinyl Chloride			15	U				

Table 5
Construction Dewatering Water Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	FRAC		W-EX-1		W-T-1		W-T-1 (Re-Analysis)	
Sample Date	11/6/2012		10/19/2012		10/11/2012		10/11/2012	
Analyte	Results	Qual	Results	Qual	Results	Qual	Results	Qual
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs) - Results in ppb								
1,2,4-Trichlorobenzene			< 5.3	U				
2,4,6-Trichlorophenol			< 5.3	U				
2,4-Dichlorophenol			< 5.3	U				
2,4-Dimethylphenol			< 5.3	U				
2,4-Dinitrophenol			< 11	U				
2,4-Dinitrotoluene			< 5.3	U				
2,6-Dinitrotoluene			< 5.3	U				
2-Chloronaphthalene			< 5.3	U				
2-Chlorophenol			< 5.3	U				
2-Nitrophenol			< 5.3	U				
3,3'-Dichlorobenzidine			< 5.3	U				
4,6-Dinitro-2-Methylphenol			< 11	U				
4-Bromophenyl Phenyl Ether			< 5.3	U				
4-Chloro-3-Methylphenol			< 5.3	U				
4-Chlorophenyl Phenyl Ether			< 5.3	U				
4-Nitrophenol			< 11	U				
Acenaphthene			20		< 5.1	U		
Acenaphthylene			4.7	J	< 5.1	U		
Anthracene			4.2	J	< 5.1	U		
Benzidine			< 11	U				
Benzo(A)Anthracene			1.8	J	< 5.1	U		
Benzo(A)Pyrene			1.3	J	< 5.1	U		
Benzo(B)Fluoranthene			< 5.3	U	< 5.1	U		
Benzo(G,H,I)Perylene			< 5.3	U	< 5.1	U		
Benzo(K)Fluoranthene			< 5.3	U	< 5.1	U		
Benzyl Butyl Phthalate			< 5.3	U				
Bis(2-Chloroethoxy) Methane			< 5.3	U				
Bis(2-Chloroethyl) Ether			< 5.3	U				
Bis(2-Chloroisopropyl) Ether			< 5.3	U				
Bis(2-Ethylhexyl) Phthalate			2.8	BJ				
Chrysene			1.6	J	< 5.1	U		
Dibenz(A,H)Anthracene			< 5.3	U	< 5.1	U		
Diethyl Phthalate			< 5.3	U				
Dimethyl Phthalate			< 5.3	U				
Di-N-Butyl Phthalate			< 5.3	U				
Di-N-Octylphthalate			< 5.3	U				
Fluoranthene			5.8		< 5.1	U		
Fluorene			9.9		< 5.1	U		
Hexachlorobenzene			< 5.3	U				
Hexachlorobutadiene			< 5.3	U				
Hexachlorocyclopentadiene			< 5.3	U				
Hexachloroethane			< 5.3	U				
Indeno(1,2,3-C,D)Pyrene			< 5.3	U	< 5.1	U		
Isophorone			< 5.3	U				
Naphthalene			< 5.3	U				
Nitrobenzene			< 5.3	U				
N-Nitrosodimethylamine			< 5.3	U				
N-Nitrosodi-N-Propylamine			< 5.3	U				

Table 5
Construction Dewatering Water Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	FRAC		W-EX-1		W-T-1		W-T-1 (Re-Analysis)	
Sample Date	11/6/2012		10/19/2012		10/11/2012		10/11/2012	
Analyte	Results	Qual	Results	Qual	Results	Qual	Results	Qual
N-Nitrosodiphenylamine			< 5.3	U				
Pentachlorophenol			< 11	U				
Phenanthrene			18		< 5.1	U		
Phenol			< 5.3	U				
Pyrene			8.4		< 5.1	U		
METALS - Results in ppm								
Antimony			0.23					
Arsenic			< 0.25	U				
Beryllium			< 0.005	U				
Cadmium			< 0.005	U				
Chromium, Total			< 0.05	U				
Copper			< 0.02	U				
Cyanide			< 0.01	U				
Lead			0.19					
Mercury			< 0.0004	U				
Nickel			< 0.03	U				
Selenium			0.21					
Silver			< 0.05	U				
Thallium			0.19					
Zinc			0.015					
PESTICIDES / PCBs - Results in ppb								
Aldrin			< 0.054	U				
Alpha BHC			< 0.054	U				
Alpha Endosulfan			< 0.054	U				
Alpha-Chlordane			< 0.054	U				
Beta BHC			< 0.11	U				
Beta Endosulfan			< 0.11	U				
Delta BHC			< 0.11	U				
Dieldrin			< 0.11	U				
Endosulfan Sulfate			< 0.11	U				
Endrin			< 0.11	U				
Endrin Aldehyde			< 0.11	U				
Endrin Ketone			< 0.11	U				
Gamma BHC (Lindane)			< 0.054	U				
Gamma-Chlordane			< 0.054	U				
Heptachlor			< 0.054	U				
Heptachlor Epoxide			< 0.054	U				
Methoxychlor			< 0.54	U				
P,P'-DDD			< 0.11	U				
P,P'-DDE			< 0.11	U				
P,P'-DDT			< 0.11	U				
PCB-1016 (Aroclor 1016)			< 1.1	U	< 0.052	U		
PCB-1221 (Aroclor 1221)			< 1.1	U	< 0.052	U		
PCB-1232 (Aroclor 1232)			< 1.1	U	< 0.052	U		
PCB-1242 (Aroclor 1242)			< 1.1	U	< 0.052	U		
PCB-1248 (Aroclor 1248)			< 1.1	U	< 0.052	U		
PCB-1254 (Aroclor 1254)			< 1.1	U	< 0.052	U		
PCB-1260 (Aroclor 1260)			< 1.1	U	< 0.052	U		
Toxaphene			< 5.4	U				

Table 5
Construction Dewatering Water Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	FRAC		W-EX-1		W-T-1		W-T-1 (Re-Analysis)	
Sample Date	11/6/2012		10/19/2012		10/11/2012		10/11/2012	
Analyte	Results	Qual	Results	Qual	Results	Qual	Results	Qual
PETROLEUM HYDROCARBON (PHC) COMPOUNDS - Results in ppm								
PHC as Diesel Fuel			< 0.53	U	< 0.54	U		
PHC as Gasoline			< 0	U	< 0	U		
PHC as Kerosene			< 0.11	U	7.4			
PHC as Lube Oil			< 0	U	< 0	U		
PHC as Unknown/Waste Product			< 0	U	< 0	U		
CHEMISTRY PARAMETERS								
pH			8.2	H				
Total Suspended Solids (TSS)			23					
Biochemical Oxygen Demand (BOD)			< 8	UH				
Chemical Oxygen Demand (COD)			26					
Total Carbon			5.3					

Notes:

U - Analytical Non-Detect Value

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

H - Holding times for preparation or analysis exceeded

ppm - parts per million (mg/l)

ppb - parts per billion (ug/l)

Table 6
Backfill and Topsoil Source Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(b) Restricted SCO	NYS Part 375 6.8(a) Unrestr SCO	BACK FILL		PAPPAS-TOPSOIL-2		TOP SOIL	
Sample Date			10/19/2012		11/1/2012		10/19/2012	
Analyte			Results	Qual	Results	Qual	Results	Qual
VOLATILE ORGANIC COMPOUNDS (VOCs) - Results in ppb								
1,1,1-Trichloroethane	100000	680	< 5.4	U	< 5.1	U	< 8.5	U
1,1,2,2-Tetrachloroethane			< 5.4	U	< 5.1	U	< 8.5	U
1,1,2-Trichloro-1,2,2-Trifluoroethane			< 5.4	U	< 5.1	U	< 8.5	U
1,1,2-Trichloroethane			< 5.4	U	< 5.1	U	< 8.5	U
1,1-Dichloroethane	26000	270	< 5.4	U	< 5.1	U	< 8.5	U
1,1-Dichloroethene	100000	330	< 5.4	U	< 5.1	U	< 8.5	U
1,2,3-Trichlorobenzene			< 5.4	U	< 5.1	U	< 8.5	U
1,2,4-Trichlorobenzene			< 5.4	U	< 5.1	U	< 8.5	U
1,2,4-Trimethylbenzene	52000	3600	< 5.4	U	< 5.1	U	< 8.5	U
1,2-Dibromo-3-Chloropropane			< 5.4	U	< 5.1	U	< 8.5	U
1,2-Dibromoethane			< 5.4	U	< 5.1	U	< 8.5	U
1,2-Dichlorobenzene	100000	1100	< 5.4	U	< 5.1	U	< 8.5	U
1,2-Dichloroethane	3100	20	< 5.4	U	< 5.1	U	< 8.5	U
1,2-Dichloropropane			< 5.4	U	< 5.1	U	< 8.5	U
1,3,5-Trimethylbenzene (Mesitylene)	52000	8400	< 5.4	U	< 5.1	U	< 8.5	U
1,3-Dichlorobenzene	49000	2400	< 5.4	U	< 5.1	U	< 8.5	U
1,4-Dichlorobenzene	13000	1800	< 5.4	U	< 5.1	U	< 8.5	U
1,4-Dioxane (P-Dioxane)	13000	100	< 110	U	< 100	U	< 160	U
2-Hexanone			< 11	U	< 10	U	< 16	U
Benzene	4800	60	< 5.4	U	< 5.1	U	< 8.5	U
Bromochloromethane			< 5.4	U	< 5.1	U	< 8.5	U
Bromodichloromethane			< 5.4	U	< 5.1	U	< 8.5	U
Bromoform			< 5.4	U	< 5.1	U	< 8.5	U
Bromomethane			< 5.4	U	< 5.1	U	< 8.5	U
Carbon Disulfide			< 5.4	U	< 5.1	U	< 8.5	U
Carbon Tetrachloride	2400	760	< 5.4	U	< 5.1	U	< 8.5	U
Chlorobenzene	100000	1100	< 5.4	U	< 5.1	U	< 8.5	U

Table 6
Backfill and Topsoil Source Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(b) Restricted SCO	NYS Part 375 6.8(a) Unrestr SCO	BACK FILL		PAPPAS-TOPSOIL-2		TOP SOIL	
Sample Date			10/19/2012		11/1/2012		10/19/2012	
Analyte			Results	Qual	Results	Qual	Results	Qual
Chloroethane			< 5.4	U	< 5.1	U	< 8.5	U
Chloroform	49000	370	< 5.4	U	< 5.1	U	< 8.5	U
Chloromethane			< 5.4	U	< 5.1	U	< 8.5	U
Cis-1,2-Dichloroethylene	100000	250	< 5.4	U	< 5.1	U	< 8.5	U
Cis-1,3-Dichloropropene			< 5.4	U	< 5.1	U	< 8.5	U
Cyclohexane			< 5.4	U	< 5.1	U	< 8.5	U
Dibromochloromethane			< 5.4	U	< 5.1	U	< 8.5	U
Dichlorodifluoromethane			< 5.4	U	< 5.1	U	< 8.5	U
Dimethyl Benzene/ Xylenes, Total	100000	260	< 5.4	U	4.3	J	< 8.5	U
Ethylbenzene	41000	1000	< 5.4	U	< 5.1	U	< 8.5	U
Isopropylbenzene (Cumene)			< 5.4	U	< 5.1	U	< 8.5	U
Methyl Acetate			< 5.4	U	< 5.1	U	< 8.5	U
Methyl Isobutyl Ketone			< 11	U	< 10	U	< 16	U
Methylcyclohexane			< 5.4	U	< 5.1	U	< 8.5	U
Methylene Chloride	100000	50	< 5.4	U	< 5.1	U	< 8.5	U
N-Butylbenzene	100000	12000	< 5.4	U	< 5.1	U	< 8.5	U
N-Propylbenzene	100000	3900	< 5.4	U	< 5.1	U	< 8.5	U
O-Xylene (1,2-Dimethylbenzene)			< 5.4	U	< 5.1	U	< 8.5	U
Sec-Butylbenzene	100000	11000	< 5.4	U	< 5.1	U	< 8.5	U
Styrene			< 5.4	U	< 5.1	U	< 8.5	U
T-Butylbenzene	100000	5900	< 5.4	U	< 5.1	U	< 8.5	U
Tert-Butyl Methyl Ether	100000	930	< 5.4	U	< 5.1	U	< 8.5	U
Tetrachloroethylene (PCE)	19000	1300	< 5.4	U	< 5.1	U	< 8.5	U
Toluene	100000	700	< 5.4	U	2.8	J	< 8.5	U
Trans-1,2-Dichloroethene	100000	190	< 5.4	U	< 5.1	U	< 8.5	U
Trans-1,3-Dichloropropene			< 5.4	U	< 5.1	U	< 8.5	U
Trichloroethylene (TCE)	21000	470	< 5.4	U	< 5.1	U	< 8.5	U
Trichlorofluoromethane			< 5.4	U	< 5.1	U	< 8.5	U
Vinyl Chloride	900	20	< 5.4	U	< 5.1	U	< 8.5	U

Table 6
Backfill and Topsoil Source Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(b) Restricted SCO	NYS Part 375 6.8(a) Unrestr SCO	BACK FILL		PAPPAS-TOPSOIL-2		TOP SOIL	
Sample Date			10/19/2012		11/1/2012		10/19/2012	
Analyte			Results	Qual	Results	Qual	Results	Qual
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs) - Results in ppb								
1,2,4,5-Tetrachlorobenzene			< 190	U	< 190	U	< 280	U
1,2,4-Trichlorobenzene			< 190	U	< 190	U	< 280	U
1,2-Dichlorobenzene	100000	1100	< 190	U	< 190	U	< 280	U
1,3-Dichlorobenzene	49000	2400	< 190	U	< 190	U	< 280	U
1,4-Dichlorobenzene	13000	1800	< 190	U	< 190	U	< 280	U
2,4,5-Trichlorophenol			< 360	U	< 360	U	< 540	U
2,4,6-Trichlorophenol			< 190	U	< 190	U	< 280	U
2,4-Dichlorophenol			< 190	U	< 190	U	< 280	U
2,4-Dimethylphenol			< 190	U	< 190	U	< 280	U
2,4-Dinitrophenol			< 360	U	< 360	U	< 540	U
2,4-Dinitrotoluene			< 190	U	< 190	U	< 280	U
2,6-Dinitrotoluene			< 190	U	< 190	U	< 280	U
2-Chloronaphthalene			< 190	U	< 190	U	< 280	U
2-Chlorophenol			< 190	U	< 190	U	< 280	U
2-Methylnaphthalene			< 190	U	< 190	U	< 280	U
2-Methylphenol (O-Cresol)	100000	330	< 190	U	< 190	U	< 280	U
2-Nitroaniline			< 360	U	< 360	U	< 540	U
2-Nitrophenol			< 190	U	< 190	U	< 280	U
3,3'-Dichlorobenzidine			< 190	U	< 190	U	< 280	U
3-Methylphenol	100000	330	< 190	U	< 190	U	< 280	U
3-Nitroaniline			< 360	U	< 360	U	< 540	U
4,6-Dinitro-2-Methylphenol			< 360	U	< 360	U	< 540	U
4-Bromophenyl Phenyl Ether			< 190	U	< 190	U	< 280	U
4-Chloro-3-Methylphenol			< 190	U	< 190	U	< 280	U
4-Chloroaniline			< 190	U	< 190	U	< 280	U
4-Chlorophenyl Phenyl Ether			< 190	U	< 190	U	< 280	U
4-Nitroaniline			< 360	U	< 360	U	< 540	U
4-Nitrophenol			< 360	U	< 360	U	< 540	U
Acenaphthene	100000	20000	< 190	U	< 190	U	< 280	U

Table 6
Backfill and Topsoil Source Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(b) Restricted SCO	NYS Part 375 6.8(a) Unrestr SCO	BACK FILL		PAPPAS-TOPSOIL-2		TOP SOIL	
Sample Date			10/19/2012		11/1/2012		10/19/2012	
Analyte			Results	Qual	Results	Qual	Results	Qual
Acenaphthylene	100000	100000	< 190	U	< 190	U	< 280	U
Acetophenone			< 190	U	< 190	U	< 280	U
Anthracene	100000	100000	< 190	U	< 190	U	< 280	U
Atrazine			< 190	U	< 190	U	< 280	U
Benzaldehyde			< 190	U	< 190	U	< 280	U
Benzo(A)Anthracene	1000	1000	< 190	U	< 190	U	84	J
Benzo(A)Pyrene	1000	1000	< 190	U	< 190	U	< 280	U
Benzo(B)Fluoranthene	1000	1000	< 190	U	< 190	U	160	J
Benzo(G,H,I)Perylene	100000	100000	< 190	U	< 190	U	< 280	U
Benzo(K)Fluoranthene	3900	800	< 190	U	< 190	U	< 280	U
Benzyl Butyl Phthalate			< 190	U	< 190	U	< 280	U
Biphenyl (Diphenyl)			< 190	U	< 190	U	< 280	U
Bis(2-Chloroethoxy) Methane			< 190	U	< 190	U	< 280	U
Bis(2-Chloroethyl) Ether			< 190	U	< 190	U	< 280	U
Bis(2-Chloroisopropyl) Ether			< 190	U	< 190	U	< 280	U
Bis(2-Ethylhexyl) Phthalate			200		< 190	U	240	J
Caprolactam			< 190	U	< 190	U	< 280	U
Carbazole			< 190	U	< 190	U	< 280	U
Chrysene	3900	1000	< 190	U	< 190	U	71	J
Dibenz(A,H)Anthracene	330	330	< 190	U	< 190	U	< 280	U
Dibenzofuran	59000	7000	< 190	U	< 190	U	< 280	U
Diethyl Phthalate			< 190	U	< 190	U	< 280	U
Dimethyl Phthalate			< 190	U	< 190	U	< 280	U
Di-N-Butyl Phthalate			62	J	< 190	U	< 280	U
Di-N-Octylphthalate			< 190	U	< 190	U	< 280	U
Fluoranthene	100000	100000	< 190	U	< 190	U	140	J
Fluorene	100000	30000	< 190	U	< 190	U	< 280	U
Hexachlorobenzene	1200	330	< 190	U	< 190	U	< 280	U
Hexachlorobutadiene			< 190	U	< 190	U	< 280	U
Hexachlorocyclopentadiene			< 190	U	< 190	U	< 280	U

Table 6
Backfill and Topsoil Source Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(b) Restricted SCO	NYS Part 375 6.8(a) Unrestr SCO	BACK FILL		PAPPAS-TOPSOIL-2		TOP SOIL	
Sample Date			10/19/2012		11/1/2012		10/19/2012	
Analyte			Results	Qual	Results	Qual	Results	Qual
Hexachloroethane			< 190	U	< 190	U	< 280	U
Indeno(1,2,3-C,D)Pyrene	500	500	< 190	U	< 190	U	< 280	U
Isophorone			< 190	U	< 190	U	< 280	U
Naphthalene	100000	12000	< 190	U	< 190	U	< 280	U
Nitrobenzene			< 190	U	< 190	U	< 280	U
N-Nitrosodi-N-Propylamine			< 190	U	< 190	U	< 280	U
N-Nitrosodiphenylamine			< 190	U	< 190	U	< 280	U
Pentachlorophenol	6700	800	< 360	U	< 360	U	< 540	U
Phenanthrene	100000	100000	< 190	U	< 190	U	< 280	U
Phenol	100000	330	< 190	U	< 190	U	< 280	U
Pyrene	100000	100000	< 190	U	< 190	U	170	J
METALS - Results in ppm								
Aluminum			3590		6690		10900	
Antimony			< 8.72	U	< 2.52	U	< 15.3	U
Arsenic	16	13	< 8.72	U	3.59		< 15.3	U
Barium	400	350	26		53.9		95.6	
Beryllium	72	7.2	< 0.523	U	< 0.302	U	< 0.921	U
Cadmium	4.3	2.5	< 0.872	U	1.79		14	
Calcium			70000		10600		7890	
Chromium, Total	180		5.72		8.95		14.8	
Cobalt			< 3.49	U	5.1		6.92	
Copper	270	50	78		10.9		482	
Cyanide	27	27	< 1.09	U	< 1.1	U	< 1.63	U
Iron			9650		9880		19300	
Lead	400	63	< 5.24	U	12.3		33.1	
Magnesium			12100		4980		4610	
Manganese	2000	1600	263		396		602	
Mercury	0.81	0.18	< 0.0458	U	< 0.045	U	< 0.0747	U
Nickel	310	30	11.5		11.4		14	
Potassium			973		1000		1060	

Table 6
Backfill and Topsoil Source Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(b) Restricted SCO	NYS Part 375 6.8(a) Unrestr SCO	BACK FILL		PAPPAS-TOPSOIL-2		TOP SOIL	
Sample Date			10/19/2012		11/1/2012		10/19/2012	
Analyte			Results	Qual	Results	Qual	Results	Qual
Selenium	180	3.9	< 5.24	U	< 1.51	U	< 9.21	U
Silver	180	2	< 1.74	U	< 1.01	U	< 3.07	U
Sodium			485		< 252	U	2760	
Thallium			< 5.24	U	< 1.51	U	< 9.21	U
Vanadium			6.94		12.4		24	
Zinc	10000	109	45.4		34.8		271	
PESTICIDES / PCBs - Results in ppb								
Aldrin	97	5	< 19	U	< 19	U	< 28	U
Alpha Bhc	480	20	< 19	U	< 19	U	< 28	U
Alpha Endosulfan	24000	2400	< 19	U	< 19	U	< 28	U
Alpha-Chlordane	4200	94	< 19	U	< 19	U	< 28	U
Beta Bhc	360	36	< 19	U	< 19	U	< 28	U
Beta Endosulfan	24000	2400	< 35	U	< 36	U	< 54	U
Chlorobiphenyl			< 350	U	< 360	U	< 540	U
Delta Bhc	100000	40	< 19	U	< 19	U	< 28	U
Dieldrin	200	5	< 35	U	< 36	U	< 54	U
Endosulfan Sulfate	24000	2400	< 35	U	< 36	U	< 54	U
Endrin	11000	14	< 35	U	< 36	U	< 54	U
Endrin Aldehyde			< 35	U	< 36	U	< 54	U
Endrin Ketone			< 35	U	< 36	U	< 54	U
Gamma Bhc (Lindane)	1300	100	< 19	U	< 19	U	< 28	U
Gamma-Chlordane			< 19	U	< 19	U	< 28	U
Heptachlor	2100	42	< 19	U	< 19	U	< 28	U
Heptachlor Epoxide			< 19	U	< 19	U	< 28	U
Methoxychlor			< 190	U	< 190	U	< 280	U
P,P'-DDD	13000	3.3	< 35	U	< 36	U	< 54	U
P,P'-DDE	8900	3.3	< 35	U	< 36	U	< 54	U
P,P'-DDT	7900	3.3	< 35	U	< 36	U	< 54	U
PCB-1016 (Aroclor 1016)			< 350	U	< 360	U	< 540	U
PCB-1221 (Aroclor 1221)			< 350	U	< 360	U	< 540	U

Table 6
Backfill and Topsoil Source Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	NYS Part 375 6.8(b) Restricted SCO	NYS Part 375 6.8(a) Unrestr SCO	BACK FILL		PAPPAS-TOPSOIL-2		TOP SOIL	
Sample Date			10/19/2012		11/1/2012		10/19/2012	
Analyte			Results	Qual	Results	Qual	Results	Qual
PCB-1232 (Aroclor 1232)			< 350	U	< 360	U	< 540	U
PCB-1242 (Aroclor 1242)			< 350	U	< 360	U	< 540	U
PCB-1248 (Aroclor 1248)			< 350	U	< 360	U	< 540	U
PCB-1254 (Aroclor 1254)			< 350	U	< 360	U	< 540	U
PCB-1260 (Aroclor 1260)			< 350	U	< 360	U	< 540	U
PCB-1268 (Aroclor 1268)			< 350	U	< 360	U	< 540	U
Toxaphene			< 1900	U	< 1900	U	< 2800	U
CHEMISTRY PARAMETERS								
pH			9.3		8.7		8.1	
Moisture, Percent			8.12		9.08		38.5	

Notes:

U - Analytical Non-Detect Value

J - Analyte detected below quantitation limits

ppm - parts per million (mg/kg)

ppb - parts per billion (ug/kg)

- Values that are **highlighted** exceed the Unrestricted Use Soil Cleanup Objectives (SCOs), for example
- Values that are ***bold, italic, and highlighted*** exceed both the Restricted and Unrestricted Use SCOs, for example

78

482

Table 7
Trip Blank Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID	HOLDING BLANK-28		HOLDING BLANK-29		HOLDING BLANK-30		ULI TRIP BLANK	
Sample Date	10/22/2012		11/1/2012		11/6/2012		10/19/2012	
Analyte	Results (ppb)	Qual	Results (ppb)	Qual	Results (ppb)	Qual	Results (ppb)	Qual
VOLATILE ORGANIC COMPOUNDS (VOCs) - Results in ppb								
1,1,1-Trichloroethane	< 5	U	< 5	U	< 5	U	< 5	U
1,1,2,2-Tetrachloroethane	< 5	U	< 5	U	< 5	U	< 5	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	< 5	U	< 5	U	< 5	U	< 5	U
1,1,2-Trichloroethane	< 5	U	< 5	U	< 5	U	< 5	U
1,1-Dichloroethane	< 5	U	< 5	U	< 5	U	< 5	U
1,1-Dichloroethene	< 5	U	< 5	U	< 5	U	< 5	U
1,2,3-Trichlorobenzene	< 5	U	< 5	U	< 5	U	< 5	U
1,2,4-Trichlorobenzene	< 5	U	< 5	U	< 5	U	< 5	U
1,2,4-Trimethylbenzene	< 5	U	< 5	U	< 5	U	< 5	U
1,2-Dibromo-3-Chloropropane	< 5	U	< 5	U	< 5	U	< 5	U
1,2-Dibromoethane	< 5	U	< 5	U	< 5	U	< 5	U
1,2-Dichlorobenzene	< 5	U	< 5	U	< 5	U	< 5	U
1,2-Dichloroethane	< 5	U	< 5	U	< 5	U	< 5	U
1,2-Dichloropropane	< 5	U	< 5	U	< 5	U	< 5	U
1,3,5-Trimethylbenzene (Mesitylene)	< 5	U	< 5	U	< 5	U	< 5	U
1,3-Dichlorobenzene	< 5	U	< 5	U	< 5	U	< 5	U
1,4-Dichlorobenzene	< 5	U	< 5	U	< 5	U	< 5	U
1,4-Dioxane (P-Dioxane)	< 100	U	< 100	U	< 100	U	< 100	U
2-Hexanone	< 10	U	< 10	U	< 10	U	< 10	U
Acetone	< 10	U	< 10	U	< 10	U	< 10	U
Benzene	< 5	U	< 5	U	< 5	U	< 5	U
Bromochloromethane	< 5	U	< 5	U	< 5	U	< 5	U
Bromodichloromethane	< 5	U	< 5	U	< 5	U	< 5	U
Bromoform	< 5	U	< 5	U	< 5	U	< 5	U
Bromomethane	< 5	U	< 5	U	< 5	U	< 5	U
Carbon Disulfide	< 5	U	< 5	U	< 5	U	< 5	U
Carbon Tetrachloride	< 5	U	< 5	U	< 5	U	< 5	U
Chlorobenzene	< 5	U	< 5	U	< 5	U	< 5	U
Chloroethane	< 5	U	< 5	U	< 5	U	< 5	U
Chloroform	< 5	U	< 5	U	< 5	U	< 5	U

Table 7
Trip Blank Sample Results
Pappas Dry Cleaners, NYSDEC Site Number: 826018
Village of Dansville, Livingston County, New York

Sample ID		HOLDING BLANK-28		HOLDING BLANK-29		HOLDING BLANK-30		ULI TRIP BLANK	
Sample Date		10/22/2012		11/1/2012		11/6/2012		10/19/2012	
Analyte		Results (ppb)	Qual	Results (ppb)	Qual	Results (ppb)	Qual	Results (ppb)	Qual
Chloromethane		< 5	U	< 5	U	< 5	U	< 5	U
Cis-1,2-Dichloroethylene		< 5	U	< 5	U	< 5	U	< 5	U
Cis-1,3-Dichloropropene		< 5	U	< 5	U	< 5	U	< 5	U
Cyclohexane		< 5	U	< 5	U	< 5	U	< 5	U
Dibromochloromethane		< 5	U	< 5	U	< 5	U	< 5	U
Dichlorodifluoromethane		< 5	U	< 5	U	< 5	U	< 5	U
Dimethyl Benzene/ Xylenes, Total		< 5	U	< 5	U	< 5	U	< 5	U
Ethylbenzene		< 5	U	< 5	U	< 5	U	< 5	U
Isopropylbenzene (Cumene)		< 5	U	< 5	U	< 5	U	< 5	U
Methyl Acetate		< 5	U	< 5	U	< 5	U	< 5	U
Methyl Ethyl Ketone (2-Butanone)		< 10	U	< 10	U	< 10	U	< 10	U
Methyl Isobutyl Ketone		< 10	U	< 10	U	< 10	U	< 10	U
Methylcyclohexane		< 5	U	< 5	U	< 5	U	< 5	U
Methylene Chloride		< 5	U	< 5	U	< 5	U	< 5	U
N-Butylbenzene		< 5	U	< 5	U	< 5	U	< 5	U
N-Propylbenzene		< 5	U	< 5	U	< 5	U	< 5	U
O-Xylene (1,2-Dimethylbenzene)		< 5	U	< 5	U	< 5	U	< 5	U
Sec-Butylbenzene		< 5	U	< 5	U	< 5	U	< 5	U
Styrene		< 5	U	< 5	U	< 5	U	< 5	U
T-Butylbenzene		< 5	U	< 5	U	< 5	U	< 5	U
Tert-Butyl Methyl Ether		< 5	U	< 5	U	< 5	U	< 5	U
Tetrachloroethylene (PCE)		< 5	U	< 5	U	< 5	U	< 5	U
Toluene		< 5	U	< 5	U	< 5	U	< 5	U
Trans-1,2-Dichloroethene		< 5	U	< 5	U	< 5	U	< 5	U
Trans-1,3-Dichloropropene		< 5	U	< 5	U	< 5	U	< 5	U
Trichloroethylene (TCE)		< 5	U	< 5	U	< 5	U	< 5	U
Trichlorofluoromethane		< 5	U	< 5	U	< 5	U	< 5	U
Vinyl Chloride		< 5	U	< 5	U	< 5	U	< 5	U

Notes:

U - Analytical Non-Detect Value

ppb - parts per billion (ug/L)