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DELAWARE DRYCLEANER INITIATIVE REPORT

DRYCLEANERS AND THE CHLORINATED SOLVENT PROBLEM



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LIST OF ACRONYMNS

- CESQGs**= Conditionally exempt small quantity generators
- CT**= Carbon Tetrachloride
- DAQ**= Division of Air Quality
- DCA**= Dichloroethane
- DCE**= Dichloroethene
- DEN**= Delaware Environmental Navigator
- DHSS**= Delaware Health and Social Services
- DNAPL**= Dense nonaqueous phase liquid
- DNREC**= Delaware Department of Natural Resources and Environmental Control
- DWR**= Division of Water Resources
- ECU**= Environmental Crimes Unit
- EDR**= Environmental Data Resources
- EPRS**= Emergency Prevention and Response Section
- FOIA**= Freedom of Information Act
- GIS**= Geographical Information Systems
- HSCA**= Hazardous Substance Cleanup Act
- LQG**= Large quantity generators
- MCL**= Maximum Contaminant Level
- NWD**= Newark Water Department
- ODW**= Office of Drinking Water
- OU**= Operable unit
- PCE**= tetrachloroethylene (also known as Perchloroethylene and perc)
- ppb**= Parts per billion
- RCRA**= Resource Conservation and Recovery Act



SCRD= State Coalition for the Remediation of Drycleaners

SHWMS= Solid and Hazardous Waste Management Section

SIRS= Site Investigation and Restoration Section

SQGs= Small quantity generators

SSD= DNREC Site Status Database

SWA= Source Water Assessment

TCA= Trichloroethane

TCE= Trichloroethylene

TMS= Tank Management Section

USEPA= United States Environmental Protection Agency

USGS= United States Geological Survey

VC= Vinyl chloride

VOC= Volatile organic compound



EXECUTIVE SUMMARY

BrightFields was retained by the Delaware Department of Natural Resources and Environmental Control, Site Investigation and Restoration Section (DNREC-SIRS) under Contract No. #NAT-10374 to collect, analyze, and map various datasets pertaining to businesses that currently use and/or may have potentially used chlorinated solvents within the state of Delaware. The objectives of the investigation were to identify current and former potential sources of chlorinated solvent contamination, particularly, drycleaning facilities in the municipalities of Dover, Georgetown, and Newark; and to collect, analyze, and input the data into a working geographical information system (GIS) application to evaluate the impact of the operations on groundwater.

A total of 332 records (telephone directory listings, United States Environmental Protection Agency (USEPA)/DNREC records, Sanborn maps, etc.) were reviewed in relation to 223 unique properties that potentially housed drycleaning operations and/or were impacted by chlorinated solvents within the Dover, Georgetown, and Newark project study areas. All data was entered into a database and mapped using GIS for spatial analysis.

Key findings include:

- Of the 223 unique properties reviewed, the study identified 27 “confirmed current or historic on-site drycleaner sites”, 84 “potential drycleaning sites”, and 112 “non-drycleaner sites” Based on the data, it is estimated that there are between 27 to 111 sites within the three study areas that may have housed drycleaning operations.
- Of the 64 sites reported as Resource Conservation and Recovery Act (RCRA) Hazardous Waste Generators of chlorinated solvents 14% are related to the drycleaning industry and 86% are related to automotive and other industries.
- Of the 27 “confirmed drycleaner sites”, six have been investigated under the DNREC-SIRS Hazardous Substance Cleanup Act (HSCA) Program and all six exhibit evidence of chlorinated solvent impacts to groundwater and other media.
- Twenty-nine HSCA sites, without records of dry cleaners operating on them, exhibit solvent impacts. Of these 29 sites, 16 (55 %) of them were within 1,000 feet of a “confirmed drycleaner site”. Fourteen of the 16 were sampled for PCE in groundwater. Of the 14 sampled, 71% contained PCE exceeding DNREC screening levels and half of them exceeded by greater than ten times.
- During two separate studies in 2002, pretreated (raw) groundwater samples were collected from eight drinking water source wells in the Dover, Newark, and Georgetown study areas. All eight groundwater samples contained one or more chlorinated solvent. Four of the eight groundwater samples contained concentrations of at least one chlorinated solvent above



the current Delaware Maximum Contaminant Level (MCL). At least six of the eight wells (2 in Georgetown and 4 in Newark) are located within approximately 500 to 1,000 feet of a “confirmed current or historic on-site drycleaner site”. Citing safety reasons, the coordinates to one well sampled in Dover were not released by the water supplier and therefore could not be spatially assessed.

Based on the Findings the following conclusions were made:

- Current and historic commercial chlorinated solvent use appears widespread over multiple industries.
- A small percentage of the total “confirmed drycleaner sites” have been investigated under the DNREC-SIRS HSCA Program. Based on laboratory evidence of chlorinated solvent contamination at each of the drycleaner sites investigated, there appears to be a need for a more expansive investigation of identified drycleaner sites.
- Chlorinated solvents are impacting a portion of the public drinking water; however, public water suppliers within the study areas are effectively treating the raw water. Property owners with private potable wells who are not treating their water may be ingesting water above Delaware MCL standards.
- Available sample analytical data indicates that chlorinated solvents from drycleaner sites are impacting groundwater in Delaware; however, it is possible that drycleaners are not the driving source of chlorinated solvent contamination of Delaware groundwater. A lack of sufficient data combined with the fact that chlorinated solvents have been and still are used in various industries (i.e. many potential source locations), have a long history of production and use, and have the ability to persist and migrate, makes it difficult to assess a specific driving industrial/commercial source of chlorinated solvent contamination.

Based on the conclusions of this report, the following recommendations were developed:

1. Develop a pilot study to further assess chlorinated solvent contamination and groundwater flow at select potential “elevated risk” uninvestigated drycleaner properties.
2. Conduct a review of all DNREC-SIRS sites that have historically operated as an automotive repair facility to assess any relation to chlorinated solvent contamination.
3. Develop a study aimed at understanding the use and disposal of chlorinated solvents in the automotive service industry.
4. Investigate the water quality of private potable wells in the vicinity of “confirmed drycleaner” site locations.
5. Utilize the GIS data developed as part of this study to assist in the ongoing tracking of chlorinated solvent users and potential human health threats related to solvent contamination.



6. Develop a program to educate commercial property owners and managers about the risks of leasing property to chlorinated solvent users and the precautions that should be implemented to ensure proper handling and management of the solvents.
7. Consider applying any new legislation related to the use of chlorinated solvents, specifically tetrachloroethylene (PCE), to all commercial and industrial users of the solvent, and not limited to the drycleaning industry.



DRYCLEANER INITIATIVE REPORT

1.0 INTRODUCTION

BrightFields, Inc. (BrightFields) was retained by the Delaware Department of Natural Resources and Environmental Control, Site Investigation and Restoration Section (DNREC-SIRS) under Contract No. #NAT-10374 to collect, analyze, and map various datasets pertaining to drycleaning operations that currently use and/or may have used chlorinated solvents within the state of Delaware.

1.1 Objectives of the Investigation

The objectives of the investigation were as follows: to identify current and former potential sources of chlorinated solvent contamination, particularly drycleaning facilities, in the municipalities of Dover, Georgetown, and Newark; and to collect, analyze, and input the data into a working geographical information system (GIS) application in order to evaluate the impact of the operations on groundwater.

1.2 Project Activities

Current and former potential sources of chlorinated solvent contamination, particularly drycleaning facilities, were located by:

- Utilizing internet searches, phone calls, and site visits to verify current drycleaner locations and whether or not solvents are used in on-site drycleaning operations.
- Reviewing historical sources of information, including Sanborn[®] maps, city directories, business licenses, Chamber of Commerce listings, and historic telephone directories to identify former locations where solvents may have been used.
- Utilizing Environmental Data Resources, Inc. (EDR) to conduct a search of DNREC and US Environmental Protection Agency (EPA) databases to find properties registered as Resource Conservation and Recovery Act (RCRA) small and large quantity hazardous waste generators.
- Conducting a Freedom of Information Act (FOIA) search of relevant DNREC data to identify the location of potential sources of chlorinated solvent contamination in groundwater especially drycleaners, and to determine solvent use by the selected drycleaners.



- Performing a search of the DNREC water well files to locate abandoned wells, drinking water wells, and drinking water surface water intakes (if any) within the chosen municipalities.
- Displaying potential sources of chlorinated solvent contamination, especially dry-cleaning locations, through GIS mapping.
- Conducting spatial analyses with the data collected.
- Developing a report summarizing the project results, including:
 - The identification of potential sources of chlorinated solvent contamination, especially dry-cleaning locations.
 - A summary of the relevant FOIA data.

1.3 Areas of Investigation

The study areas of the project were limited to the approximate city limits of Newark in New Castle County, Dover in Kent County, and Georgetown in Sussex County. Figures 1, 9, and 17 display the study boundaries for each city.



2.0 BACKGROUND

Chlorinated solvents, especially those solvents associated with the drycleaning industry, are some of the most frequently occurring contaminants found in soil and groundwater, not only at Superfund sites, but also at other contaminated waste sites across the United States.

According to the United States Department of Commerce 2012 Economic Census, there were 35,821 drycleaner and laundry service facilities operating in the United States, with 103 of them operating in Delaware. Most of these facilities use tetrachloroethylene (PCE), a chlorinated compound, as their drycleaning solvent. PCE contamination has been reported at many former and/or current drycleaner and laundry service facilities. Some of the other chlorinated compounds that have also been used in drycleaning operations include: Carbon Tetrachloride (CT), 1,1,1-Trichloroethane (1,1,1-TCA), and Trichloroethylene (TCE). Petroleum solvents, such as naphtha, benzene, white gasoline, and Stoddard solvent, have also been used in drycleaning operations in the past. More environmentally friendly types of solvents, such as carbon dioxide and silicon-based solvents, have been introduced into the drycleaning industry in recent years.

Prior to their regulation in the mid 1980's, PCE and other chlorinated solvents were released to the environment during delivery, transfer, and storage; through operation and maintenance of equipment; and disposal of PCE contaminated wastewater into sanitary and storm sewers, septic tanks, and by dumping it on the ground outside the facility. Spent filters and sludge were also thrown into the trash. These practices have resulted in wide-spread contamination of soil and groundwater (especially in urban areas where large concentrations of commercial properties exist) and impacts to drinking water aquifers.

The costly remediation of contaminated soil and groundwater, at both active and inactive drycleaners and other chlorinated solvent facilities, is an issue facing state governments and drycleaners alike, especially in areas where groundwater serves as the primary drinking water source. In addition, the migration of chlorinated solvents into the indoor air in homes and buildings from underlying contamination in soil and groundwater through vapor intrusion is a growing concern in Delaware, as well as elsewhere in the United States.



2.1 A Brief History of the Drycleaning Process

The brief history of drycleaning process that follows is based on the information presented in the Drycleaning Virtual Tour (2006) of a typical drycleaning operation, which can be found on the State Coalition for the Remediation of Drycleaners (SCRD) website at <https://drycleancoalition.org/tour/>. The State Coalition for the Remediation of Drycleaners (SCRD) is a United States Environmental Protection Agency (USEPA) sponsored group of representatives from states with established drycleaner remediation programs. A very detailed chronological history of the drycleaning industry was prepared by the SCRCD in 2007 and has been included as Appendix A.

The process of washing of fabrics, such as clothing and textiles, in nonaqueous solvents is referred to as drycleaning. Drycleaning is physically similar to the home laundry process with the exception that the clothes are washed in a drycleaning solvent instead of water in order to remove dirt, stains, grease, oil, etc. from the fabric.

The drycleaning process was discovered in the 19th Century when Jean Baptiste Jolly, a French dyemaker, accidentally spilled kerosene on a tablecloth and found that it removed stubborn stains. Commercial drycleaning operations began in Paris in the 1840s and by 1879 there was at least one drycleaning plant operating in the United States.

The fabric cleaning process consists of three core functions: cleaning, drying and finishing. Heavily stained garments are typically “pre-cleaned” or “pre-spotted” using a wide variety of spotting agents whose primary constituents include, or have included: PCE, TCE, TCA, CT, methylene chloride, amyl acetate, and petroleum solvents. “Spot bleaching” is also used in stain removal when other spotting techniques have failed to remove a stain.

After being pre-treated for stains, the garments are machine washed in a solution of a solvent, soaps, and detergents after which the solvent is extracted by draining and spinning the clothes. The garments are then dried through a combination of aeration, heat, and tumbling before being pressed.

Drycleaners will also “refresh” a garment, concentrating mainly on finishing. Sizing, composed of hydrocarbon resins such as polymers and polymer blends, along with antistatic agents and



optical brighteners, is a finish used to impart body to a fabric after the original finish has been depleted by several fabric cleanings.

Historically, some drycleaners also performed garment waterproofing using a waterproofing agent that usually was a wax base product utilizing PCE and petroleum solvent as the carrying agents.

2.2 Chlorinated Drycleaning Solvents and Solvent Use

PCE and TCE are part of a larger group of chlorinated solvents that have been in widespread use throughout the U.S. and the world as industrial degreasers and spot removers. They are among the most common chlorinated solvents used in the drycleaning industry.

Commercial drycleaning was established in the U.S. in 1879 but it was not until the 1930s that chlorinated solvents came into use as a drycleaning solvent. Prior to the 1930s, petroleum solvents were used as the drycleaning solvent.

The history of the various chlorinated solvents that have been used in the drycleaning industry can be found in Appendix A and is summarized below:

- CT was the first chlorinated solvent used in drycleaning operations. It was sold as a drycleaning solvent and spot-removing agent in the 1930s but it was eventually phased out as a drycleaning solvent in the early 1950s because of its toxicity and corrosivity.
- In 1930, TCE was introduced as a drycleaning solvent in the U.S. but it was never widely used as a primary drycleaning solvent because it caused bleeding of dyes in acetate fabrics and corrosion of equipment. TCE is, however, still widely used as a dry-side pre-cleaning or spotting agent and in water repellent agents.
- PCE was first used as a drycleaning solvent in the U.S. in 1934. By 1962, PCE became the drycleaning solvent of choice in the U.S.
- In 1940, chlorinated solvent use by the U.S. drycleaning industry was estimated to be 6.2 million gallons of CT, 0.9 million gallons of PCE, and 0.4 million gallons of TCE.
- In 1950, a study by the National Institute of Cleaning and Dyeing determined that chlorinated solvent use by the U.S. drycleaning industry was approximately 5.0 million gallons of PCE and 2.1 million gallons of CT.
- In 1955, the U.S. drycleaning industry used an estimated 145 million gallons of Stoddard solvent, 4 million gallons of 140-F solvent, and 8.5 million gallons of PCE.
- In 1980, PCE production in the U.S. peaked at approximately 800 million pounds (59.1 million gallons) and has been declining since then (McCarty, 2010). According to the



Drycleaning Coalition (2009), PCE was being used in approximately 86.7% of U.S. drycleaners.

- In 1999 alternatives to PCE first appeared on the market as drycleaning solvents.
- In 2007, PCE was used by approximately 70% of commercial drycleaners in the United States; however, only 10% of the total PCE used in the United States was used by the drycleaning/textile processing industries.

2.3 Human Health Risks Associated with Chlorinated Drycleaning Solvents

Drycleaning is the only acceptable method for cleaning many types of garments, such as silk, polyester, and wool, since drycleaning solvents are able dissolve grease and oils without shrinking or impacting color as would happen with a traditional water cleaning. However, drycleaning chlorinated solvents, such as PCE and its degradation products, TCE and VC, are known to be harmful to both human health and the environment.

The USEPA has published toxicological reviews of the chlorinated solvents that have been used over the years in the drycleaning industry such as CT, PCE and TCE. The most recent Toxicological Reviews regarding their effects on human health have been summarized below.

- The USEPA concluded that PCE is “likely to be carcinogenic in humans by all routes of exposure” with inhalation of PCE vapors and ingestion of contaminated water being the primary exposure routes. Based on animal testing and other data, the USEPA also concluded that lifetime daily ingestion at low levels of PCE could cause neurological, kidney, immune, and other problems (EPA, 2012).
- TCE has been characterized as “carcinogenic in humans by all routes of exposure by USEPA (EPA, 2011).” USEPA concluded that “TCE poses a potential human health hazard for noncancer toxicity to the central nervous system, kidney, liver, immune system, male reproductive system, and the developing fetus.” In December 2016, USEPA announced that it is proposing to ban certain uses of TCE due to health risks when used as a degreaser and a spot removal agent in drycleaning.
- USEPA has determined that there is “inadequate information to assess the carcinogenic potential” of cis- or trans-1,2-DCE because of the lack of human epidemiological investigations or chronic animal bioassays (USEPA, 2011).
- VC is considered by USEPA to be “a known human carcinogen by the inhalation and oral routes of exposure” and is also considered as “highly likely to be carcinogenic by the dermal exposure route” (USEPA, 2000). Exposure to VC has shown to have produced an increased risk of liver, brain, lung cancer, and some cancers of the blood in workers who have breathed VC over many years.



- Since CT is rapidly absorbed by any route of exposure, USEPA considers it “likely to be carcinogenic to humans” by all routes of exposure (USEPA, 2010). Exposure to high concentrations of CT by dermal contact, ingestion, or by inhalation can cause liver, kidney, and central nervous system damage.

2.4 Fate & Transport of Chlorinated Drycleaning Solvents

The mobility and persistence of chlorinated solvents, such as PCE and other drycleaning chemicals, are determined by the chemical and physical properties of the solvents. Those properties include: high fluid density, high volatility, low viscosity, solubility that is low in absolute terms but high relative to drinking water standards, low partitioning to soil, and low degradability which means that subsurface lifetimes of these chemicals can be very long. These properties make them difficult not only to find in the subsurface but also to remediate once released into groundwater. Cohen and Mercer (1993), Pankow and Cherry (1996), and Cwiertny and Scherer (2010) provide comprehensive descriptions of the properties and the physics of dense nonaqueous phase liquids (DNAPL) movement in the environment.

At room temperature, chlorinated solvents, such as PCE, are liquids that have densities greater than water (1 gm/cm^3) which enables them to penetrate through asphalt and concrete surfaces and to travel downward through the pore spaces and fractures in soil and rock as a DNAPL under the influence of gravity. Eventually the DNAPL can extend down into a groundwater aquifer.

As a chlorinated solvent migrates through the vadose zone, portions of the solvent may be retained by capillary forces in pore and/or fracture spaces as residual DNAPL. At this point the DNAPL may volatilize into soil gas and/or dissolve into water. Chlorinated solvents, such as PCE, evaporate easily and can volatilize into soil gas vapors which may rise up through cracks in building foundations and crawl spaces into the indoor air of overlying structures.

In fractured media, DNAPL movement is controlled by the same properties and processes as in granular material. DNAPL entry and movement in fractures filled with residuum is controlled by the pore size of the material filling the fracture. Capillary forces may be insignificant in large open fractures allowing DNAPL to drain freely through the fractures under the influence of gravity.

Once a DNAPL is present in an aquifer, it becomes a source for dissolved-phase contamination of groundwater that can enter drinking water supplies. At this stage it is still also able to volatilize into soil gas and threaten human health through vapor intrusion into buildings. Most chlorinated



solvents, such as PCE, are moderately mobile and have aqueous solubilities in the parts per million (mg/L) range that increase as dechlorination occurs. For example, the aqueous solubility of PCE is 200 mg/L while the aqueous solubility of TCE is 1,100 mg/L as compared to the drinking water standards for chlorinated solvents such as PCE, TCE and VC which are typically orders of magnitude lower than their solubility in water.

Most chlorinated solvents such as PCE are not readily degraded in groundwater and may naturally degrade under anaerobic conditions into compounds that are toxic and more difficult to degrade than the parent. In addition, the chlorinated solvents may actively destroy the structure of some clayey minerals making them more permeable to dissolved contaminants.

PCE contamination of soil and groundwater at drycleaner sites has occurred as the result of spills of solvent/pre-cleaning agents; improperly handled waste such as spent filters, still bottoms, muck, lint and wastewater; as well as from leaking pipes, tanks, or machines.

2.5 Environmental Impacts of Chlorinated Drycleaning Solvents in Delaware

DNREC-Division of Air Quality (DAQ) published a report in 2007 titled *Evaluation of the State of Delaware Dry Cleaners Using Perchloroethylene* (Goldsberry, 2007). DNREC reported that there were 75 active drycleaning facilities in the state of Delaware in 2007; of which, 45 utilized PCE in their cleaning process. The total quantity of defunct drycleaners operating in the State spanning back to the 1940s (when PCE began being used regularly in drycleaning operations) is unknown.

The Delaware Environmental Navigator (DEN) is a dynamic database used to provide public access to DNREC site data including, but not limited to: facility information, violations, enforcement actions and monitoring results associated with, but not limited to air quality, waste water, water supply, hazardous waste, solid waste, contaminated site cleanup, underground and above ground tank management, and corrective action sites. As of May 2016, a search of the Delaware Environmental Navigator (DEN) by DNREC-SIRS found there were 143 drycleaning and laundry facilities (both active and non-active, historic). DNREC-SIRS uses the Site Status Database (SSD) to manage the identification, evaluation and remediation of hazardous substance release sites within the state of Delaware. As of May 2016, a search of the SSD found that there were 101 DNREC-SIRS sites in the database where chlorinated solvents have been detected in either soil and/or groundwater. Twenty-three of the sites in SSD are identified as drycleaners.



Since PCE, and its degradation products, TCE and VC are classified as hazardous substances, they must be disposed as such. Prior to the enactment of the Safe Drinking Water Act in 1974, chlorinated solvents were unregulated and were routinely disposed by pouring the solvents onto the ground or rinsing machine components that came in contact with the solvent in outside areas, which resulted in the eventual introduction of large quantities of solvents into the groundwater.

As explained in Section 2.4, the mobility and persistence of PCE and other chlorinated solvents makes them not only difficult to find in the subsurface but also difficult to remediate once they have migrated into groundwater. Even small amounts of drycleaning solvent can cause significant groundwater contamination. Since these solvents are denser than water, they can “sink” to the base of an aquifer thereby increasing the difficulty and cost of ground water cleanup and restoration.

Under USEPA’s Drinking Water regulations, MCLs have been established for these contaminants in drinking water that is distributed through public water systems. The USEPA has established the MCL for PCE and TCE at 5 µg/L, and the MCL for VC at 2 parts per billion (µg/L). The Delaware Health and Social Services (DHSS) Division of Public Health lowered the state MCL for PCE, TCE and VC in drinking water that is distributed through public water systems to 1 part per billion (µg/L) on January 1, 2013.

According to the DHSS (2014), 77.6% of Delaware’s population of 935,614 is served by 485 public water systems while the remaining 22.4% is served by individual wells. Of Delaware’s 485 public water systems, 214 are community water systems¹, 84 are non-transient non-community systems², and 187 are transient non-community water systems³. Three of the public water systems

¹ “Community Water System” means a public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents. (Delaware Administrative Code, Title 16 Health and Safety, 4463 Licensing and Registration of Operators of Public Water Supply Systems)

² “Non-Transient Non-Community Water System” means a public-water system that is not a community water system and regularly serves at least 25 of the same persons over 6 months per year. (Delaware Administrative Code, Title 16 Health and Safety, 4463 Licensing and Registration of Operators of Public Water Supply Systems)

³ “Transient Non-Community Water System” means a public-water system which has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. (Delaware Administrative Code, Title 16 Health and Safety, 4463 Licensing and Registration of Operators of Public Water Supply Systems)



use surface water and the remaining 482 systems use groundwater to supply the public. The number of gallons of public water used in Delaware is approximately 101 million gallons per day.

The presence of chlorinated solvents has been reported in public supply wells in Delaware since the 1980s. The results from the most recent published studies (cite reference) regarding the impact of chlorinated solvents on public drinking water wells in Delaware is summarized below. It should be noted that at the time of the studies, the Delaware MCL was 5 ppb and drinking water with levels up to 5 ppb was considered safe for ingestion.

- Ferrari (2002) collected 30 groundwater samples from randomly selected public drinking water supply wells in the surficial aquifer in Delaware in 2000 including two (2) of the City of Newark's public wells and one (1) of Georgetown's public wells. PCE was present in 20 of the 30 samples and TCE was present in 12 of the 30 samples. However, neither of the chlorinated solvents was detected at concentrations above the MCL of 5 ppb (the Delaware MCL at the time of the study) in any of the wells.
- Robertson (2002) collected groundwater samples from 39 public supply wells for those public water systems that possessed a treatment system including five (5) of the City of Newark's public wells and two (2) of Georgetown's public wells. Of the raw untreated groundwater samples, PCE was present in groundwater samples collected from 16 of the 39 wells. TCE was present in groundwater samples collected from 15 of the 39. The concentration of PCE in the raw untreated groundwater samples in 5 of the 39 wells exceeded the 2002 MCL of 5 ppb. Using the current MCL of 1 ppb, 9 of the 39 wells (23%) would have exceeded. PCE was present in 6 of the treated groundwater samples and TCE was present in 4 of the treated groundwater samples. With the exception of 1 sample where PCE exceeded the MCL of 5 ppb (the Delaware MCL at the time of the study), all of the remaining treated water samples were found to be safe for consumption.
- Pellerito, et al, (2008) evaluated existing water quality data from more than 200 domestic and small public water supply wells. The report concluded that although PCE and TCE were detected in 4 % and 2 %t of the samples respectively, only 2 samples of PCE and 1 sample of TCE exceeded the MCL of 5 ppb.
- Kasper (2014) summarized and reported raw or apparently raw groundwater-quality data collected from public water-supply wells in Delaware during calendar years 2012 and 2013. PCE was detected in 21 of the 73 analyses while TCE was detected in 12 of the 74 analyses. Seven of the PCE samples exceeded the MCL of 5 ppb while none of the TCE samples exceeded the MCL of 5 ppb.

Unlike drinking water from public water systems that is regulated and tested regularly by the Office of Drinking Water (ODW) in the Delaware Division of Public Health, the safety of drinking water from a private well is the responsibility of the well owner. For private wells, the USEPA,



the Center for Disease Control and Prevention, and the Delaware ODW recommend annual sampling to ensure optimal water quality and annual inspections to ensure there are no mechanical problems. Since there are no requirements to collect samples or conduct inspections, there is little data available to evaluate the presence of chlorinated solvents in private wells.

2.6 Environmental Impact from Drycleaning Solvents in Delaware and Associated Cleanup Costs

As previously mentioned, according to the United States Department of Commerce Economic Census, there were 103 drycleaner and laundry service facilities in Delaware in 2012.

As of May 2016, a search of the DEN conducted by DNREC-SIRS found 143 drycleaning and laundry facilities (both active and non-active, historic) and a search of the SSD found that there were 101 DNREC-SIRS sites in the SSD where chlorinated solvents have been detected in either soil and/or groundwater. Twenty-three of the sites in SSD are identified as drycleaners. Of the 101 sites where chlorinated solvents have been detected, 13 sites have either been or are being addressed primarily with DNREC-SIRS Hazardous Substance Cleanup Act (HSCA) Program funds. The sites and costs associated with each were provided by DNREC-SIRS and are summarized below.

Site ID	DNREC Site Name	Drycleaner?	Time Frame	HSCA Costs
DE-0113	Georgetown Cleaners	Yes	07/01/89 – 06/30/15	\$ 796,840.56
DE-0173	Syntech	No	07/01/89 – 09/17/16	\$ 2,029,910.75
DE-1005	Toni Cleaners	Yes	07/01/89 – 03/31/16	\$ 1,773,454.33
DE-1018	Capitol Cleaners	Yes	07/01/89 – 12/31/15	\$ 48,716.39
DE-1075	New Market Village Trailer Park	No	07/01/89 – 12/31/15	\$ 103,317.56
DE-1343	Newark VOC Treatment	No	07/01/89 – 12/31/15	\$ 541,427.00
DE-1351	Homestead Campground	No	10/01/06 – 06/30/16	\$ 856,235.92
DE-1361	Millsboro Public Well TCE	No	07/01/89 – 03/31/14	\$ 2,852,907.44
DE-1407	Georgetown GW	No	07/01/99 – 12/31/15	\$ 99,232.84
DE-1411	Pearsons Corner	No	04/01/07 – 06/30/16	\$ 283,851.85
DE-1435	Royal Drycleaners	Yes	01/01/12 – 03/31/16	\$ 306,363.00
DE-1464	Former Classic Image	Yes	03/01/09 – 06/30/16	\$ 192,783.15
DE-1531	Chestnut Run PCE	No	10/01/12 – 12/31/15	\$ 27,736.94
			Total	\$ 9,912,777.73



To date, DNREC has spent nearly 10 million dollars to investigate and remediate these thirteen (13) sites. This total does not include HSCA Program funds that were spent for the investigation and remediation of Brownfield sites impacted by migrating chlorinated solvents. Unfortunately, most of the responsible parties for these sites lack the resources to pay for the investigation and remediation of their sites. However, DNREC recovered \$2.75 million in past remediation costs from the responsible parties for the Millsboro Public Well TCE Site in 2015.

2.7 Other Applications for Chlorinated Solvents

Although most commonly known for drycleaning applications, chlorinated solvents are/were also utilized in the aerospace, automotive, military, metal-working industries, and others for a variety of purposes, including degreasers, cleaning solutions, paint thinners, brake cleaners, pesticides, resins, glues, thinning solutions, and the production of fluorinated compounds (Morrison, 2006). Their chlorine-containing chemical structure helps them to efficiently dissolve organic materials like fats and greases and to serve as raw materials or intermediates in the production of other chemicals. Although this study focuses on drycleaners, many of the industries listed above utilize chlorinated solvents as part of their own service or manufacturing tasks.



3.0 DATA SOURCES AND COLLECTION METHODS

To meet the project objectives (discussed in Section 1.2), BrightFields utilized databases from Environmental Data Resources, Inc. (EDR), an environmental data collection service; reviewed library sources (historic telephone directories); reviewed DNREC Section files; communicated with employees of suspected drycleaner sites; and conducted site visits of potential former/current drycleaning operations. The following subsections summarize the sources and methods used to obtain the project data.

3.1 Environmental Data Resources, Inc.

BrightFields subcontracted EDR, a company that specializes in providing a broad range of current and historical environmental risk management information typically used for environmental due diligence investigations. BrightFields utilized EDR to provide available records and data to identify current and historical operations that may use or may have used chlorinated solvents within the selected target cities. The following subsections summarize the data sets that were requested from EDR.

3.1.1 “United States Historical Cleaners” - EDR Proprietary Records

BrightFields requested EDR’s “US Historical Cleaners” records for target cities; Newark, Dover, and Georgetown. The “US Historical Cleaners” records data set is a proprietary list developed by EDR and comprised of a collected listing of potential drycleaner sites based on the analyses of keywords and data categories within various historical business directories. The sites that were identified included, but were not limited to: drycleaners, cleaners, laundry services, laundromats, cleaning/laundry, and wash & dry businesses. The “US Historical Cleaners” records identified potential drycleaner sites within the following years for each target city:

- Dover: 2000 – 2005, 2007, 2008, 2010 through 2012
- Georgetown: 1999 through 2001, 2003, 2004, 2007, 2010
- Newark: 1999 through 2012

BrightFields reviewed the “US Historical Cleaners” records to identify facilities performing potential drycleaning services. A summary of the potential drycleaner sites identified from each of the target cities is discussed in sections 4.1.1.1, 4.2.1.1, and 4.3.1.1.



3.1.2 RCRA Hazardous Waste Generator Records

To identify facilities within the targeted cities that generate chlorinated solvent waste, BrightFields requested that EDR provide a list of sites identified by the USEPA as hazardous waste generators under RCRA. EDR utilized the USEPA's RCRAInfo system to identify hazardous waste generators in each of the target cities based on the amount of hazardous waste reported. The RCRAInfo system database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by RCRA. A definition of each waste generator classification is listed below.

- Conditionally exempt small quantity generators (CESQGs) are defined as sites that generate less than 100 kilograms (kg) of hazardous waste, or less than 1 kg of acutely hazardous waste per month.
- Small quantity generators (SQGs) are defined as sites that generate between 100 kg and 1,000 kg of hazardous waste per month.
- Large quantity generators (LQG) are defined as sites that generate over 1,000 kg of hazardous waste, or over 1 kg of acutely hazardous waste per month.

BrightFields utilized the database information to identify facilities generating chlorinated solvent waste. For the purposes of this study CESQGs were classified as SQGs. A summary of the SQG and LQG sites identified in each of the target cities is discussed in sections 4.1.1.2, 4.2.1.2, and 4.3.1.2.

3.1.3 Sanborn® Maps

BrightFields utilized EDR to provide all available historic Sanborn® fire insurance maps produced after 1930 for each of the target cities. EDR completed a search using the Sanborn® Library, LLC, which includes Sanborn® fire insurance maps from such databases as the Library of Congress, University Publications of America, and EDR's private Sanborn® map collection. Maps produced prior to 1930 were not selected for review since they predate the mainstream use of chlorinated solvents in commercial drycleaning operations. A list of dates corresponding to the available Sanborn® maps that were selected for each of the target cities is summarized below.

- Dover: 1950 and 1969
- Georgetown: 1959
- Newark: 1949 and 1961



BrightFields reviewed the Sanborn® maps and identified potential drycleaning services, automotive services, and other facilities that may have utilized chlorinated solvents. A summary of the sites identified during Sanborn® map review is discussed in sections 4.1.1.3, 4.2.1.3, and 4.33.1.3.

3.2 The Delaware Public Archives Library

BrightFields visited the Delaware Public Archives Library in Dover, Delaware to review historic telephone directories for each of the target cities. The historic telephone directories were reviewed for business listings under drycleaners, cleaners, laundry, laundromat, cleaning/laundry, and wash & dry businesses. General information for each site including the name, location, and service type were recorded. A list of the available historic telephone directories for each of the target cities, indicated by the year of publications, is outlined below.

- Dover: 1936, 1937, 1942, 1946, 1952, 1962, 1966, 1968, 1969, 1972, 1974, 1975 1976, 1979, 1981, and 1985
- Georgetown: 1933, 1936, 1938, 1939, 1940, 1948, and 1955
- Newark: 1959 through 1982

A summary of the relevant historic telephone directory listings for each of the target cities is discussed in sections 4.1.2, 4.2.2, and 4.3.2.

3.3 Delaware Department of Natural Resources and Environmental Control

BrightFields reviewed available data from DNREC sections related to potential drycleaner activities or sample detections of chlorinated solvents within the target cities. The following subsections summarize the source and data that were obtained from DNREC.

3.3.1 DNREC Delaware Environmental Navigator

BrightFields utilized DNREC's online web-based tool, the DEN, which provides public access to several DNREC environmental data sets. Using the DEN, BrightFields reviewed all listed DNREC-SIRS sites within each of the target cities to identify DNREC-SIRS HSCA Program sites with detections of chlorinated solvents. For each site identified with detections of chlorinated solvents, BrightFields recorded the maximum detection of each chlorinated solvent, sample media in which the chlorinated solvent was detected, and other pertinent information.



A summary of the DNREC-SIRS sites identified using the DEN for each of the target cities is discussed in sections 4.1.3.1, 4.2.3.1, and 4.3.3.1.

3.3.2 DNREC Freedom of Information Act Requests

FOIA requests were submitted to DNREC on November 17, 2014 requesting to view files related sites associated with drycleaning activities in each of the target cities. Requests were submitted to sections within DNREC's Division of Waste and Hazardous Substances, including the Emergency Prevention and Response Section (EPRS), the Site Investigation and Restoration Section (SIRS), the Solid and Hazardous Waste Management Section (SHWMS), the Tank Management Section (TMS); the Division of Air Quality (DAQ) (formerly Air Quality Management Section); and the Office of Community Services - Environmental Crimes Unit (ECU). The divisions/sections that responded by indicating that documents were available for review included DAQ, SIRS, SHWMS, and TMS. The ECU and EPRS responded that they did not have files related to drycleaning activities within the target study areas.

The purpose of submitting the FOIA request was to review any records from sites within each of the target study cities related to:

- Permits issued in relation to drycleaning operations,
- Drycleaner operation compliance statuses and annual drycleaning compliance inspection reports (including name address of facilities, owner and contact info, installed drycleaning machine info, and amounts of PERC consumed per year at each facility),
- Other records related to the operation of a drycleaning service.

Most of the DNREC Sections responded to the FOIA request with a list of sites that were obtained by conducting a keyword search for the term "drycleaners" for all files found within the DEN database. Site files related to projects managed by DAQ, SIRS, SHWMS, and TMS were reported. The DNREC FOIA response is attached as Appendix B.

In addition, DNREC-DAQ also responded to the FOIA request with a list of facilities permitted under 7 DE Admin. Code 1138.5.0, *Perchloroethylene (PCE) Air Emission Standards for Drycleaning Facilities*. These facilities had applied for and received a permit to use PCE at each site as stated in the application. Drycleaner sites included in the DNREC-DAQ list are discussed in detail in sections 4.1.3.2, 4.2.3.2, and 4.3.3.2; and are depicted for each of the target cities on Figures 7, 15, and 23.



3.3.3 DNREC – Division of Water Resources Reports

As required under the 1996 amendments to the Safe Drinking Water Act, DNREC-Division of Water Resources completed Source Water Assessment (SWA) Report for public water supply wells across the State of Delaware to assess the susceptibility of each source of public drinking water to various types of contamination. The SWA Reports for information on the public supply wells for each of the target cities which were published between 2001 and 2003.

In 2002, the DNREC-DWR published a report titled, *The Impact of Known and Suspected Contaminant Sources on Select Public Drinking Water Supplies in Delaware* (Robertson, 2002). The document reported levels of chlorinated solvent samples collected from the pretreated drinking water in 39 public supply wells across the state. Wells from the City of Newark and the Town of Georgetown were utilized in the study.

Also in 2002, the U.S. Geological Survey in cooperation with DNREC-DWR published a report titled *Occurrence and Distribution of Selected Contaminants in Public Drinking-Water Supplies in the Surficial Aquifer in Delaware* (Ferrari, 2002). The report summarized a four-month investigation that took place in 2000 in which groundwater samples were collected from 30 public drinking-water supply wells screened in the unconfined aquifer in Delaware, and analyzed to assess the occurrence and distribution of selected pesticide compounds, volatile organic compounds (VOCs), major inorganic ions, and nutrients. For the purposes of this report, the concentrations of chlorinated solvents in the pretreated drinking water samples from wells located the three study areas (Dover, Georgetown, and Newark) were reviewed.

A summary of the findings pertaining to groundwater quality in each of the target cities are discussed in Section 4.

3.4 City Water Department Annual Drinking Water Quality Reports and Laboratory Data

The USEPA requires public water suppliers to provide Annual Water Quality Reports to their customers. The reports summarize water sources used by the supplier, detected contaminants. Compliance, and educational efforts. BrightFields reviewed the available Annual Water Quality Reports from the City/Town Water Departments each study area to determine the maximum concentrations of chlorinated solvents detected in finished water during each calendar year. Annual



Water Quality Reports from privately owned water utilities were not reviewed as part of this study. PCE was the only chlorinated solvent reported in the annual reports. The Annual Water Quality Reports were downloaded from the following locations:

- Dover - <https://www.cityofdover.com/public-services> (only current year supplied)
- Georgetown - www.georgetowndel.com/Water
- Newark - <https://newarkde.gov/Archive.aspx>

In addition, BrightFields utilized the Delaware Health and Social Services – Drinking Water Branch Drinking Water Watch website (<https://drinkingwater.dhss.delaware.gov/>). The Drinking Water Watch website is a searchable database that was used to review water quality sample results from each target city based on analytes sampled.

DNREC-SIRS provided tables of source water sample data that was collected for the wells in the Newark South Wellfield by the City of Newark, the DHSS-ODW, USGS and DNREC between 2000 and 2013.

3.5 Site Visits and Google Street View™

BrightFields assessed the status of identified potential active drycleaner sites by either performing a site visit or utilizing the Google Street View™ website (<https://www.google.com/maps/streetview/>) for visual confirmation that they still operated at the address indicated. Sites that were identified as having a potentially active on-site drycleaner business were contacted via phone to confirm if drycleaning operations took place at the site. Through phone interviews, BrightFields documented the type of service the business provided, including: on-site drycleaning, off-site drycleaning, or laundromat/other services.



4.0 DATA SUMMARY

The data sets summarized in Section 3.0 were analyzed to assist in the identification two types of sites: 1) properties that currently or historically generated chlorinated solvent waste with an emphasis on identifying those that have/had on-site drycleaning services; and 2) locations that have been impacted by chlorinated solvent use.

Identifying Potential On-site Drycleaner Sites

To attempt to identify properties in each of the study areas that currently or historically generated chlorinated solvent waste by way of on-site drycleaning, the following data sets were analyzed:

- EDR’s “US Historical Cleaners” Proprietary List
- Resource Conservation and Recovery Act (RCRA) Hazardous Waste Generator Records
- Sanborn® Maps
- Historic telephone directory listings
- DNREC-DAQ list of registered drycleaners permitted to use PCE

The sites identified in the data sets were then categorized as “confirmed”, “potential”, or “non-drycleaner sites” based on the following criteria:

“Confirmed Current or Historic On-Site Drycleaner Sites”

Sites were identified as “confirmed current or historic on-site drycleaners” based on a combination of the following criteria:

- Site included in the DNREC-DAQ list of registered drycleaners permitted to use PCE.
- Site listed as a generator of chlorinated solvent waste on EDR’s list of RCRA hazardous waste generators AND the business title, directory information, signage, or other visual cue/business description indicated that the business operates as a drycleaner or laundry service.
- Business staff indicated that dry-cleaning operations occurred on-site during a phone interview.
- Signage, or other visual cue/business description indicated that the business an on-site drycleaning service.



“Potential Drycleaner Sites”

Sites that were unable to be confirmed as current or historic on-site drycleaners were labeled as potential historic on-site/current off-site drycleaner sites based on a combination of the following criteria:

- Site was confirmed as a current off-site drycleaner and/or drop off facility, and may have had on-site drycleaning at some point.
- Visual observations made through a site visit or Google Street View™ indicate potential drycleaner activity at the site; however, the site owner or operator could not be contacted for confirmation and no other records reviewed confirm the existence of historic or current on-site drycleaning operations at the site address.
- Historic drycleaning or laundromat operations were identified at the site address in a historic directory or Sanborn Map; however, the business no longer exists at the identified location and no other records reviewed confirm the existence of historic or current on-site drycleaning operations at the site address.
- Other records indicate potential drycleaner activity at the site, but confirmation could not be made utilizing any of the methods described above.

“Non-Drycleaner Sites”

Sites were considered neither confirmed nor potential drycleaner sites if there was no evidence indicating that drycleaning operations have occurred at the site. Many historic sites were listed on Sanborn maps or directories as providing laundry services, maid services, or other cleaning services, however; there was no definitive evidence or indication that they housed on-site drycleaning services. Additionally, sites listed in the RCRA Hazardous Waste Generator Records as using chlorinated solvents but clearly not for drycleaning purposes (e.g. automotive repair shops) or sites specifically labeled in historic data as businesses other than laundry/drycleaning as were identified as “non-drycleaner sites”.

Identifying Sites Impacted by Chlorinated Solvent Use

To identify properties that have been impacted by the use of chlorinated solvents, either originating from on-site or offsite sources, the following data sets were analyzed:

- DNREC-SIRS’ HSCA Program site data
- DNREC – Division of Water source water assessment report data
- City Drinking Water Quality Report Data

The data sets reviewed for each study area and a summary of the findings are discussed in the following sections. Section 5.0

4.1 Dover Study Area Data

The following sections summarize the data collected for sites identified as being within the designated Dover study area as depicted on Figure 1.

4.1.1 Environmental Data Resources Data – Dover Study Area

This subsection summarizes the data obtained from EDR that was utilized in the identification of current and historical operations that have or may have used chlorinated solvents within the Dover study area.

4.1.1.1 “US Historical Cleaners” List - EDR Proprietary Records

A total of 32 sites were identified within the Dover study area based on EDR’s “US Historical Cleaners” proprietary records data set. The 32 sites are summarized in Table 1 and displayed on Figure 2.

BrightFields confirmed that at least 7 of the 32 “US Historical Cleaners” proprietary records sites have historically and/or currently operate on-site drycleaning services at their listed locations. The 7 confirmed historic and/or currently operating on-site drycleaning operations are listed on the following table:

Confirmed Current and/or Historic On-site Drycleaning Operation Locations Within the Dover Study Area

Site Name	Address
A-1 Cleaners	1660 South Governors Avenue
ACE Cleaners	1030 Forrest Avenue
Brite Cleaners	11 South DuPont Highway
Capitol Cleaners & Launderers, Inc.	217 South New Street
Commerce Cleaners	211 Dover Street



Site Name	Address
Harry Louie Laundry & Drycleaning	129 South Governors Avenue
Speed Queen Laundromat	1255 South State Street

BrightFields has identified 19 of the 32 “US Historical Cleaners” proprietary records sites as potential historic on-site drycleaning operations and/or current off-site drycleaner sites. These sites may have historically performed on-site drycleaning services and/or currently perform off-site drycleaning services at their listed locations. The 19 potential historic on-site / current off-site drycleaning operations are listed in the following table:

**Potential Historic On-site/Current Off-site Drycleaning Operation Locations
 Within the Dover Study Area**

Site Name	Address
A-1 Cleaners	1624 South Governors Avenue
A-1 Cleaners	600 Jefferic Boulevard
Capitol Cleaners & Launderers, Inc.	1221 South Governors Avenue
Capitol Cleaners & Launderers, Inc.	1064 Forrest Avenue
Capitol Cleaners & Launderers, Inc.	1102 South State Street
Capitol Cleaners & Launderers, Inc.	1011 Walker Road
Capitol Cleaners & Launderers, Inc.	178 North DuPont Highway
Capitol Cleaners & Launderers, Inc.	220 Gateway South Boulevard
Coin Laundry	431 South New Street
Dover Mart Laundromat	272 South DuPont Highway
Dry Clean Central, Inc.	122 North DuPont Highway
E Y Coin Laundromat	772 Walker Road
East Dover Laundromat	1022 South Little Creek Road
Emerald City Wash World	730 West Division Street



Site Name	Address
Emily Cleaners	264 South DuPont Highway
Greentree Cleaners	59 Greentree Avenue
M & S Cleaning Services LLC	630 West Division Street
Speed Queen Laundromat & Drycleaners	1324 Forrest Avenue
Towne & Country Cleaners	321 Independence Boulevard

Based on the collected data and site visits, the remaining 6 sites (those not highlighted on Table 1) were not currently conducting on-site drycleaning operations and were considered unlikely to have historically operated as an on-site drycleaner based on a complete review and assessment of all the project data collected.

4.1.1.2 Resource Conservation and Recovery Act Hazardous Waste Generator Records

Small Quantity Generators of Hazardous Waste

A total of 26 sites within the City of Dover study area were identified as small quantity generators (SQGs) of hazardous waste. The 26 sites identified were listed as SQGs of chlorinated solvents including the drycleaning solvent PCE, and its breakdown products, TCE, and vinyl chloride.

Of the 26 sites identified as SQGs of chlorinated solvents:

- 4 were identified as drycleaner industry sites.
- 11 were identified as automotive-related industry sites.
- 11 were identified as other industry.

Based on the total number of sites identified as SQGs, a total of 4 of the 26 sites, or approximately 15%, were identified as confirmed current or historic on-site drycleaners. No SQGs were identified as potential historic on-site or current offsite drycleaners. The remaining 22 SQGs were identified with an industry unrelated to drycleaning.

The four sites identified as SQGs of chlorinated solvents that are/were identified as drycleaner industry sites are listed below:

Drycleaning Operations Identified as SQGs of Chlorinated Solvents Within the Dover Study Area

Site Name	Address
ACE Cleaners	1030 Forrest Avenue
Capitol Cleaners & Launderers, Inc.	217 South New Street
Master Drycleaners, Inc.	211 Dover Street
Speed Queen Laundromat	1255 South State Street

Large Quantity Generators of Hazardous Waste

A total of 4 sites within the City of Dover study area were identified as LQGs of hazardous waste. Of the 4 identified LQGs, none of the sites were listed as LQGs of chlorinated solvents including the drycleaning solvent PCE, and its breakdown products, TCE, and vinyl chloride.

Of the 4 sites identified as LQGs of chlorinated solvents:

- 0 were identified as drycleaner industry sites.
- 1 was identified as automotive-related industry sites.
- 3 were identified as other industry.

The 26 SQG and 4 LQG sites identified within the City of Dover study are included in Tables 2 and 3 respectively and are depicted on Figure 3.

4.1.1.3 Sanborn® Map Data

BrightFields reviewed historical Sanborn® maps of Dover from 1950 and 1969 and identified potential drycleaning services, automotive services, and other services that may have utilized chlorinated solvents.

Of the 22 identified historic sites that may have used chlorinated solvents:

- 4 sites were identified on the Sanborn® maps associated with the laundry service industry.
- 17 sites were identified on the Sanborn® maps associated with the automotive service industry.



- 1 additional site, a rug cleaning business, was also identified. This site was listed as associated with other service industry.

The four (4) sites that are/were identified as associated with the laundry service industry are listed below:

**Location of Drycleaning Operations as Identified on Sanborn® Maps
 Within the Dover Study Area**

Sanborn Description	Address
Cleaning	140 South Governors Avenue
Cleaning	217 South New Street
Drycleaning	28 ½ West Lockerman Avenue
Drycleaning	411 South Governors Avenue

The 22 Sanborn® map sites identified within the City of Dover are included in Table 4 and are depicted on Figure 4.

4.1.2 Historic City Directory Data – Dover Study Area

A review of the historic city telephone directories from the Delaware Public Archives identified a total of 22 potential historic city directory drycleaner sites within the Dover study area. The 22 potential historic drycleaner sites were identified between the years of 1936 to 1985.

BrightFields confirmed that 2 of the 22 Delaware Public Archive sites have historically and/or currently operated on-site drycleaning at the listed locations. The confirmed current and / or historic on-site drycleaning site is listed in the following table:

**Dover Historic City Directory Listings
 Confirmed Current and/or Historic On-site Drycleaning Operations**

Site Name	Address
Master Dry Cleansing	211 Dover Avenue
Dover Laundry & Cleaners	411 South Governors Avenue



BrightFields has identified 16 of the 22 sites listed in the city directories as potential historic on-site/current offsite drycleaner sites. These sites may have historically performed on-site drycleaning services and/or currently perform offsite drycleaning services at their listed locations. The 16 potential historic on-site/current offsite drycleaning sites are listed in the following table:

**Dover Historic City Directory Listings
 Potential Historic/Current On-site Drycleaning sOperations**

Site Name	Address
ABC Laundry	1064 Forrest Street
Betty Brite Cleaners & Shirt Laundry	South DuPont Highway / Corner of Cowgill Street
Bone's Drycleaning & Pressing	841 West Forrest Street
Capitol Cleaners & Dyers	140 South Governors Avenue
Capitol Laundromat	805 ½ Forest Street
Clements Cleaners, Inc.	26 Lockerman Street
Dover Discount Drycleaners	210 South Governors Avenue
Edgehill Cleaners	900 East Division Street
First State Laundromat	1181 (b) North DuPont Highway
Hastings Laundrette	725 South Governors Avenue
Hi-Way Cleaners	1181 North DuPont Highway
Marstellers Coin Laundry	1102 White Oak Road
Paul & Fran Enterprises	780 Walker Street
Professional Drycleaning and Alteration Shop	327 Martin Street
Round the Clock Laundry	1058 South DuPont Highway
Welter's Drycleaning	221 South State Street



Based on the collected data and site visits, the remaining four (4) sites (those not highlighted on Table 5) are not currently conducting on-site drycleaning operations and are considered unlikely to have historically operated as an on-site drycleaner.

A total of 11 locations were identified without a complete address listing (e.g. a street number was not provided) and could not be located, therefore they were not included in the study.

The 22 sites identified within the City of Dover historic city directories are included in Table 5 and are depicted on Figure 5.

4.1.3 DNREC Data – Dover Study Area

4.1.3.1 DNREC – SIRS Sites

Using the DEN online tool, BrightFields identified 48 DNREC-SIRS HSCA Program sites within the Dover study area. Of the 48 DNREC-SIRS sites identified, 21 of the sites had detections of chlorinated solvents in at least one sample media (soil, groundwater, or soil gas).

The following list characterizes the detections of chlorinated solvents within the 21 identified SIRS sites based on the sample media they were identified in:

- 17 sites had detections of chlorinated solvent(s) in groundwater samples.
- 9 sites had detections of chlorinated solvent(s) in soil samples.
- 2 sites had detections of chlorinated solvent(s) in soil gas samples.

The 21 SIRS sites identified with detections of chlorinated solvents are listed below:

DNREC-SIRS Sites with Chlorinated Solvent Detections Within the Dover Study Area

Site Name	DNREC-SIRS ID #	Maximum Chlorinated Solvent Detections
680 Forest Street	DE-1451	PCE in groundwater (3.6 µg/L)
742 South Governors Avenue	DE-1202	PCE in soil (260 µg/kg)
Atlantic Coast Environmental	DE-1379	PCE in groundwater (31 µg/L) TCE in groundwater (100 µg/L) DCE in groundwater (14 µg/L)



Site Name	DNREC-SIRS ID #	Maximum Chlorinated Solvent Detections
Braun Property	DE-1487	PCE in soil gas (10.17 µg/m ³)
Capital Cleaners	DE-1018	PCE in soil (640 µg/kg) PCE in groundwater (42,000 µg/L) TCE in soil (3,100 µg/kg) TCE in groundwater (630 µg/L) DCE in soil (69,000 µg/kg) DCE in groundwater (2,800 µg/L) Vinyl Chloride in groundwater (60 µg/L)
Capitol Scrap	DE-1171	PCE in groundwater (1 µg/L) TCE in groundwater (2 µg/L)
City of Dover – Public Works	DE-0152	PCE in groundwater (5 µg/L)
Dover Air Force Base	DE-0031	PCE in soil (100 µg/kg) PCE in groundwater (3,300 µg/L) TCE in soil (66 µg/kg) TCE in groundwater (21,000 µg/L) DCE in soil (1.1 µg/kg) DCE in groundwater (7,300 µg/L) Vinyl Chloride in groundwater (510 µg/L)
Dover Gas and Light CO.	DE-0057	PCE in soil (4,200 µg/kg) PCE in groundwater (7,300 µg/L) PCE in soil gas (1,221 µg/m ³) TCE in soil (160 µg/kg) TCE in soil gas (75.2 µg/m ³) DCE in soil (12,000 µg/kg) Vinyl Chloride in soil (1,400 µg/kg)
Dover Machine Works	DE-1314	PCE in groundwater (1 µg/L)
Dover West Side Area A	DE-1212	PCE in groundwater (0.9 µg/L) Vinyl Chloride in groundwater (0.6 µg/L)



Site Name	DNREC-SIRS ID #	Maximum Chlorinated Solvent Detections
Dover West Side Area B	DE-1213	PCE in groundwater (47 µg/L) TCE in groundwater (52 µg/L)
Dover West Side Area B – Coca Cola	DE-1213	PCE in groundwater (41 µg/L) TCE in groundwater (52 µg/L)
Dover West Side Area C	DE-1214	TCE in groundwater (12 µg/L)
Former Chesapeake Supply Company	DE-1334	PCE in groundwater (120 µg/L) TCE in groundwater (7 µg/L)
Former Dover Ice Plant	DE-1110	TCE in groundwater (260 µg/L)
Hastings Drycleaners	DE-1010	PCE in soil (590 µg/kg) PCE in groundwater (2,000 µg/L) TCE in groundwater (130 µg/L)
McKee Run Generating Station – Dover Power Plant	DE-0269	PCE in soil (180 µg/kg)
New Street	DE-1107	PCE in soil (3,200 µg/kg) PCE in groundwater (143µg/L) PCE in soil gas (14.35 µg/m ³) TCE in groundwater (26 µg/L) TCE in soil gas (0.17 µg/m ³) DCE in groundwater (750 µg/L)
P&F Motorcycles	DE-1093	PCE in soil (2 µg/kg) PCE in groundwater (812 µg/L) TCE in soil (4µg/kg) TCE in groundwater (8.3 µg/L)



Site Name	DNREC-SIRS ID #	Maximum Chlorinated Solvent Detections
Rodney Village Shopping Center	DE-1288	PCE in soil (150 µg/kg) PCE in groundwater (17 µg/L) PCE in soil gas (27,133 µg/m ³) TCE in soil gas (6,449 µg/m ³) DCE in soil gas (10,523 µg/m ³)

The 21 SIRS sites identified with detections of chlorinated solvents are further detailed on Table 6 and displayed on Figure 6.

4.1.3.2 DNREC – FOIA Data

Most of the DNREC Sections responded to the FOIA request for drycleaner records with a list of sites that were obtained by conducting a keyword search for the term “drycleaners” for all files found within DNREC’s DEN. Site files related to projects managed by DAQ, SIRS, SHWMS, and TMS were reported. The DNREC FOIA response is attached as Appendix B. DNREC-DAQ responded to the FOIA request with a list of facilities permitted under 7 DE Admin. Code 1138.5.0, *Perchloroethylene (PCE) Air Emission Standards for Drycleaning Facilities*, which is further discussed in Section 4.1.3.3. The sites provided by DNREC under the “drycleaner” keyword search for Dover are shown on Figure 7.

4.1.3.3 DNREC-DAQ Site Data

BrightFields obtained a list of facilities permitted under 7 DE Admin. Code 1138.5.0, *Perchloroethylene (PCE) Air Emission Standards for Drycleaning Facilities*. These facilities applied for and received a permit to use PCE at each site as stated in the application. From the list, a total of 5 sites were identified within the City of Dover and are listed below:

Registered DNREC-DAQ Active On-site Drycleaner Sites Within the Dover Study Area

Site Name	Address
A-1 Cleaners	1660 South Governors Avenue
ACE Cleaners	1030 Forrest Street



Site Name	Address
Brite Cleaners	11 South DuPont Highway
Capitol Cleaners & Launderers, Inc.	217 South New Street
Emily Cleaners	270 South DuPont Highway

The five sites identified from the DAQ FOIA list within the City of Dover are displayed on Figure 8.

4.1.3.4 DNREC – Division of Water Resources Report Data

According to the SWA for the City of Dover and the City of Dover Department of Public Works 2015 Drinking Water Quality Report (2016), there are 22 supply wells used by Dover for its drinking water supply. Nine wells are completed in the confined Cheswold aquifer, six wells are completed in confined Piney Point aquifer and seven wells are completed in the unconfined Columbia aquifer. The City of Dover wells that are completed in confined aquifers have a lower vulnerability to contaminants than the wells that are completed in unconfined aquifer. The report documented that the Dover public water supply well system had a high susceptibility to “other organics” (defined in the report as PCE, TCE, and vinyl chloride)

In 2002, the USGS in cooperation with DNREC-DWR published a report titled *Occurrence and Distribution of Selected Contaminants in Public Drinking-Water Supplies in the Surficial Aquifer in Delaware* (Ferrari, 2002). The report also indicated that low levels of chlorinated solvents were found in samples collected from the raw pretreated drinking water in source wells. The chlorinated solvents (PCE, TCE) were reported in groundwater samples collected from the Dover Well #10735 at concentrations below their respective MCLs. The results from the studies are displayed in the table below.



**Chlorinated Solvent Concentrations in Raw (Untreated) Public Supply Water Samples
 within the Dover Study Area**

Water Provider	Well ID	2002 USGS Chlorinated Solvent Detections
City of Dover	10735	PCE – M TCE – 0.01 µg/L J Cis-1,2 DCE – ND VC – ND

BOLD – equal to or greater than the current respective MCL level

M = presence of material verified but not quantified

ND = not detected

J = estimated concentration

4.1.4 City of Dover Drinking Water Quality Report

The City of Dover annual Drinking Water Quality Report summarizes the water quality post-treatment process. The maximum concentration observed for each analyte is reported in the Drinking Water Quality Report when an analyte sample result exceeds its respective reporting level (half of its MCL).

The City of Dover Department of Public Works Drinking Water Quality Reports were reviewed for 2014, 2015, and 2016 (City of Dover, 2017, 2016, and 2015). No chlorinated solvents were detected above their respective reporting level in any of the three years reviewed.

4.2 Georgetown Study Area Data

The following sections summarize the data collected for sites identified as being within the designated Georgetown study area as depicted on Figure 9.

4.2.1 Environmental Data Resources Data – Georgetown Study Area

The following subsections summarize the data obtained from EDR that was utilized in the identification of current and historical operations that may or may have used chlorinated solvents within the Georgetown study area.

4.2.1.1 US Historical Cleaners - EDR Proprietary Records

A total of three potential drycleaner sites, based on EDR’s “US Historical Cleaners” proprietary records data set, were identified within the Georgetown study area.

BrightFields confirmed that at least 1 of the 3 “US Historical Cleaners” proprietary records sites have historically and/or currently operated on-site drycleaning at their listed locations. The one confirmed current and/or historic on-site drycleaning site is listed below:

Confirmed Historic On-site Drycleaning Operation Location

Site Name	Address
Thoro Kleen Drycleaning & Laundry	11 North Railroad Avenue

BrightFields identified two of the three “US Historical Cleaners” proprietary records sites as potential historic on-site / current offsite drycleaner sites. These sites may have historically performed on-site drycleaning services and/or currently perform offsite drycleaning services at their listed locations. The two potential historic on-site/current offsite drycleaning sites are listed in the following table:

Potential Historic On-site/Current Offsite Drycleaning Operation Locations

Site Name	Address
Georgetown Square Laundry	432 East Market Street
Ottomat Laundromat Service General Corp	111 North Race Street

The three “US Historical Cleaners” proprietary records sites identified within the City of Georgetown are included in Table 7 and are depicted on Figure 10.

4.2.1.2 Resource Conservation and Recovery Act Hazardous Waste Generator Records

Small Quantity Generators of Hazardous Waste

A total of nine sites within the City of Georgetown study area were identified as SQGs of hazardous waste. The nine sites identified were listed as SQGs of chlorinated solvents including the drycleaning solvent PCE, and its breakdown products, TCE, and VC.



Of the nine sites identified as SQGs of chlorinated solvents:

- 2 were identified as drycleaner industry sites.
- 5 were identified as automotive-related industry sites.
- 2 were identified as other industry.

Based on the total number of sites identified as SQGs, a total of two of the nine sites or approximately 22% were identified as confirmed current or historic on-site drycleaners. No SQGs were identified as potential historic on-site or current offsite drycleaners. The remaining 7 SQGs were identified with an industry unrelated to drycleaning. The 9 SQG sites identified within the City of Georgetown study are included in Table 8 and are depicted on Figure 11.

The two sites identified as SQGs of chlorinated solvents that are/were identified as drycleaner industry sites are listed below:

**Georgetown Drycleaning Operations Identified as SQGs of Chlorinated Solvents
(Classified as “Confirmed On-site Drycleaners” for the Purposes of this Report)**

Site Name	Address
Georgetown Cleaners	315 North Race Street
Georgetown Laundry & Drycleaning.	7 Georgetown Plaza

Large Quantity Generators of Hazardous Waste

No large quantity generators were identified within the City of Georgetown.

4.2.1.3 Sanborn® Map Data

BrightFields reviewed historical Sanborn® maps from 1959 and identified potential drycleaning services, automotive services, and other facilities that may have utilized chlorinated solvents within the Georgetown study area.

Of the nine identified historic sites that may have used chlorinated solvents:

- 2 sites identified on the Sanborn® maps were associated with the laundry service industry.
- 7 sites identified on the Sanborn® maps were associated with the automotive service industry.



The two sites that are/were identified as associated with the laundry service industry are listed below:

Location of Drycleaning Operations as Identified on Sanborn® Maps

Sanborn Description	Address
Cleaning	305 North Race Street
Cleaning	13 North Railroad Avenue

The nine Sanborn® map sites identified within the City of Georgetown are included in Table 9 and are depicted on Figure 12.

4.2.2 Historic City Directory Data – Georgetown Study Area

A review of the historic telephone directories from the Delaware Public Archives identified a total of four sites within the Georgetown study area. The four sites were identified between the years of 1936 to 1955.

BrightFields confirmed that at least one of the four sites obtained from the historic city directories have historically and/or currently operated on-site drycleaning at the listed locations. The confirmed current and/or historic on-site drycleaning site is listed in the following table:

Georgetown Historic City Directory Listings

Confirmed Current and/or Historic On-site Drycleaning Operations

Site Name	Address
Thoro-Kleen Drycleaning Works	11 North Railroad Avenue

BrightFields identified two of the four Delaware Public Archive sites as potential historic on-site/current offsite drycleaner sites. These sites may have historically performed on-site drycleaning services and/or currently perform offsite drycleaning services at their listed locations. The two potential historic on-site/current off-site drycleaning sites are listed in the following table:

Georgetown Historic City Directory Listings Potential Historic/Current On-site Drycleaning Operations

Site Name	Address
Georgetown Cleaners	522 East Market Street
Georgetown Cleaners	370 North Race Street

Based on the collected data and site visits, the one remaining site (not highlighted on Table 10) was not currently conducting on-site drycleaning operations and was considered unlikely to have historically operated as an on-site drycleaner.

A total of three locations were identified without a complete address listing (e.g. an exact street number was not provided) and could not be located, therefore the site was not included in the study.

The four sites identified within the Town of Georgetown historic city directories are included in Table 10 and are depicted on Figure 13.

4.2.3 DNREC Data – Georgetown Study Area

4.2.3.1 DNREC – SIRS Sites

Using the DEN online tool, BrightFields identified 13 DNREC-SIRS HSCA Program sites within the Georgetown study area. Of the 13 DNREC-SIRS sites identified, 6 of the sites had detections of chlorinated solvents in at least one sample media.

The following list characterizes the detections of chlorinated solvents within the six identified SIRS sites based on the sample media they were identified in:

- 6 sites had detections of chlorinated solvent(s) in groundwater samples.
- 3 sites had detections of chlorinated solvent(s) in soil samples.
- 3 sites had detections of chlorinated solvent(s) in soil gas samples.
- 1 site had detections of chlorinated solvent(s) in indoor air samples.

The six SIRS sites identified with detections of chlorinated solvents are listed below:



**DNREC-SIRS Sites with Chlorinated Solvent Detections
 Within the Georgetown Study Area**

Site Name	DNREC-SIRS ID #	Maximum Chlorinated Solvent Detections
Former Pep-Up Site	DE-1491	PCE in groundwater (341 µg/L) PCE in soil gas (1.09 µg/m ³ estimated) TCE in groundwater (65.4 µg/L)
Georgetown Cleaners	DE-0113	PCE in soil (21,000 µg/kg) PCE in groundwater (680 µg/L) PCE in soil gas (14.24 µg/m ³) TCE in soil (490 µg/kg) TCE in groundwater (130 µg/L) DCE in soil (820 µg/kg) DCE in groundwater (690 µg/L)
Georgetown Coal Gas	DE-0188	PCE in groundwater (37 µg/L) TCE in groundwater (0.36 µg/L estimated) DCE in groundwater (0.61 µg/L estimated)
Georgetown Groundwater Operable Unit (OU)	DE-1407	PCE in groundwater (480 µg/L) TCE in groundwater (60 µg/L estimated)
JG Townsend Cannery	DE-0208	PCE in groundwater (0.001 µg/L)
Thoro-Kleen Drycleaning & Laundry	DE-0207	PCE in soil (320,000 µg/kg) PCE in groundwater (3,100 µg/L diluted) PCE in soil gas (370,000 µg/m ³) PCE in indoor air (17 µg/m ³) TCE in soil (700 µg/kg estimated) TCE in groundwater (25 µg/L estimated) DCE in groundwater (37 µg/L) VC in groundwater (3 µg/L estimated)

The six SIRS sites identified with detections of chlorinated solvents are detailed on Table 11 and displayed on Figure 14.



4.2.3.2 DNREC FOIA Data

Most of the DNREC Sections responded to the FOIA request for drycleaner records with a list of sites that were obtained by conducting a keyword search for the term “drycleaners” for all files found within DNREC’s Environmental Navigator database. Site files related to projects managed by DAQ, SIRS, SHWMS, and TMS were reported. The DNREC FOIA response is attached as Appendix X. DNREC-DAQ responded to the FOIA request with a list of facilities permitted under 7 DE Admin. Code 1138.5.0, *Perchloroethylene (PCE) Air Emission Standards for Drycleaning Facilities*, which is further discussed in Section 4.2.3.3. The sites provided by DNREC under the “drycleaner” keyword search for Georgetown are shown on Figure 15.

4.2.3.3 DNREC-DAQ Site Data

BrightFields obtained a list of facilities permitted under 7 DE Admin. Code 1138.5. 0, *Perchloroethylene (PCE) Air Emission Standards for Drycleaning Facilities*. These facilities had applied for and received a permit to use PCE at each site as stated in the application. From the list, one site was identified within the City of Georgetown and is listed below:

**Registered DNREC-DAQ Active On-site Drycleaner Sites
 Within the Georgetown Study Area**

Site Name	Address
Georgetown Plaza Laundry	US Route 113 & Route 9 (7 Georgetown Plaza)

The one site identified from the DAQ FOIA list within the town of Georgetown is displayed on Figure 16.

4.2.3.4 DNREC – Division of Water Resources Report Data

Georgetown Water uses six wells to provide drinking water to the system; four wells are completed in the unconfined Columbia aquifer and two wells are completed in the confined Manokin aquifer (Town of Georgetown, 2016). This public water supply system provides water to an average population of 6,000 residential consumers.



According to the DNREC-DWR Assessment for Georgetown Water (DNREC, 2003) there are six supply wells used by Georgetown for their drinking water supply. This public water supply system provides water to an average population of 6,000 residential consumers. Two of the wells are considered to have low vulnerability because they withdraw water from the confined Manokin aquifer where significant clay layers exist between the ground surface and the well screens. Two wells were found to have moderate vulnerability because they withdraw water from the unconfined Columbia aquifer. These wells are classified as 'Deep Unconfined' because they are greater than 100 feet deep and no significant clay layers exist between the ground surface and the well screens. Two wells that withdraw water from the unconfined Columbia aquifer were found to have a high vulnerability. Of the two “high vulnerability” wells, one is classified as having “poor integrity” because the construction predates State well construction regulations and the other is classified as “shallow unconfined” because it extends less than 100 feet deep with no significant clay layers existing between the ground surface and the well screen. The assessment, based on a vulnerability determination process and a review of existing and contamination sources concluded that Georgetown water has a very high susceptibility to “other organic compounds” (defined as PCE, TCE, and vinyl chloride).

The DNREC-DWR’s 2002 report titled, *The Impact of Known and Suspected Contaminant Sources on Select Public Drinking Water Supplies in Delaware* (Robertson, 2002) reported levels of chlorinated solvents in samples collected from the raw pretreated drinking water in source wells. As part of the study, public supply wells from the Town of Georgetown were sampled. Robertson (2002) reported the detection of TCE, PCE and DCA in the untreated source water sample from the Georgetown Well #2R, with lower concentrations of TCE and PCE in the Town of Georgetown Well #1. However, none of the concentrations of the chlorinated solvents in the untreated source water samples from either Georgetown well exceeded their respective MCLs. Robertson also reported that chlorinated solvents were not detected in the finished sample from the Georgetown system.

In 2002, the USGS, in cooperation with DNREC-DWR, published a report titled *Occurrence and Distribution of Selected Contaminants in Public Drinking-Water Supplies in the Surficial Aquifer in Delaware* (Ferrari, 2002). The report also found elevated levels of chlorinated solvents in samples collected from the raw pretreated drinking water in source wells. The chlorinated solvents (PCE, TCE and cis-DCE) were reported in groundwater samples collected from the Georgetown



Well #1 in 2000 but the concentrations did not exceed their respective MCLs at the time of the investigation. The results from the studies are displayed in the table below.

Chlorinated Solvent Concentrations in Untreated Public Supply Water Samples within the Georgetown Study Area

Water Provider	Well ID	2002 DNREC-DWR Chlorinated Solvent Detections	2002 USGS Chlorinated Solvent Detections
Town of Georgetown	Well 1 (10325)	PCE – 1.4 µg/L TCE – 0.2 µg/L J	PCE – 1 µg/L TCE – 0.17 µg/L Cis-1,2 DCE – 0.06 µg/L J VC – ND
	Well 2R (62576)	PCE - 2.1 µg/L J TCE – 0.3 µg/L J	NA

BOLD – equal to or greater than the current respective MCL

NA = not analyzed

ND = not detected

J = estimated concentration

4.2.4 Town of Georgetown Drinking Water Quality Report

The Town of Georgetown annual Drinking Water Quality Report summarizes the drinking water quality post-treatment process. The maximum concentration observed for each analyte is reported in the Drinking Water Quality Report when an analyte sample result exceeds its respective reporting level (half of the MCL).

The Town of Georgetown Department of Public Works Drinking Water Quality Reports were reviewed for 2014, 2015, and 2016. PCE was detected at 1.62 ppb in 2014, 1 ppb in 2015, and not detected above the reporting level in 2016. No other chlorinated solvents were detected above their respective reporting levels. The State of Delaware lowered the MCL for PCE, TCE, and VC from the Federal level of 5 µg/L to 1 µg/L effective January 1, 2013; however, Systems that met the federal MCL of 5 µg/L but did not comply with the new 1 µg/L state MCL had until January 1, 2015 to reach compliance.



Maximum PCE Concentrations Detected in Treated Drinking Water Town of Georgetown

Annual Report Year	Maximum PCE Concentration Detected (ppb)
2014	PCE – 1.62
2015	PCE - 1
2016	PCE -ND

BOLD – exceeds current MCL

ND – not detected above reporting level (half of the MCL value)

4.3 Newark Study Area Data

The following sections summarize the data collected within the designated Newark study area as depicted on Figure 17.

4.3.1 Environmental Data Resources Data – Newark Study Area

The following subsections summarize the data obtained from EDR that was utilized in the identification of current and historical operations that may or have used chlorinated solvents within the Newark study area.

4.3.1.1 US Historical Cleaners - EDR Proprietary Records

A total of 16 sites, based on EDR’s “US Historical Cleaners” proprietary records data set, were identified within the Newark study area.

BrightFields confirmed that at least 6 of the 16 “US Historical Cleaners” proprietary records sites have historically and/or currently operated on-site drycleaning at their listed locations. The six confirmed current and/or historic on-site drycleaning sites are listed in the following table:



**“Confirmed” Current and/or Historic On-site Drycleaning Operation Locations
 Within the Newark Study Area**

Site Name	Address
College Square Cleaners	150 College Square
Heritage Cleaners	409 New London Road
K & L Cleaners	231 College Square, Shopping Center
Pencader Plaza Drycleaners	160 Pencader Plaza
Thompson Cleaners, Inc.	718 Paper Mill Road
Thompson II Cleaners	386 Possum Park Road

BrightFields identified 8 of the 16 “US Historical Cleaners” proprietary records sites as potential historic on-site/current offsite drycleaner sites. These sites may have historically performed on-site drycleaning services and/or currently perform offsite drycleaning services at their listed locations. The eight potential historic on-site/current offsite drycleaning sites are listed in the following table:

**Potential Historic On-site/Current Offsite Drycleaning Operation Locations
 Within the Newark Study Area**

Site Name	Address
Great American Cleaners	624 Newark Shopping Center
Italo’s Tailor Shop & Cleaners	64 East Main Street
Main Street Cleaners	179 East Main Street
Newark Chinese Laundry and Drycleaners	260 East Main Street
Newark Cleaners	129 Beverly Road
Newark Cleaners	129 Elkton Road
Parkway Cleaners	308 Suburban Drive
Surf N Suds	147 Elkton Road



Based on the collected data and site visits, the remaining two sites (those not highlighted on Table 12) were not currently conducting on-site drycleaning operations and were considered unlikely to have historically operated as an on-site drycleaner.

The 16 “US Historical Cleaners” proprietary records sites identified within the City of Newark are included in Table 12 and are depicted on Figure 18.

4.3.1.2 Resource Conservation and Recovery Act Hazardous Waste Generator Records

Small Quantity Generators of Hazardous Waste

A total of 25 sites within the City of Newark study area were identified as SQGs of hazardous waste. The 25 sites identified were listed as SQGs of chlorinated solvents including the drycleaning solvent PCE, and its breakdown products, TCE and vinyl chloride.

Of the 25 sites identified as SQGs of chlorinated solvents:

- 3 were identified as drycleaner industry sites.
- 10 were identified as automotive-related industry sites.
- 12 were identified as other industry.

Based on the total number of sites identified as SQGs, 2 of the 25 sites, or approximately 8%, were identified as confirmed current or historic on-site drycleaners and 1 of the 25 sites, or approximately 4%, were identified as potential historic on-site or current offsite drycleaners. The remaining 22 SQGs were identified with an industry unrelated to drycleaning.

The three sites identified as SQGs of chlorinated solvents that are/were identified as drycleaner industry sites are listed below:

Newark Drycleaning Operations Identified as SQGs of Chlorinated Solvents (Classified as “Confirmed On-site Drycleaners” for the Purposes of this Report)

Site Name	Address
JC Heritage Cleaners	409 New London Road
K & L Cleaners	231 College Square Shopping Center



Site Name	Address
Newark Cleaners	129 Elkton Road

Large Quantity Generators of Hazardous Waste

A total of 5 sites within the City of Newark study area were identified as LQGs of hazardous waste. Of the 5 identified LQGs, none of the sites were listed as SQGs of chlorinated solvents including the drycleaning solvent PCE, and its breakdown products, TCE, and VC.

Of the five sites identified as LQGs of chlorinated solvents:

- 0 were identified as drycleaner industry sites.
- 0 were identified as automotive-related industry sites.
- 5 were identified as other industry.

The 25 SQG and 5 LQG sites identified within the City of Newark study are included in Tables 13 and 14 respectively and are depicted on Figure 19.

4.3.1.3 Sanborn® Map Data

BrightFields reviewed historical Sanborn® maps from 1949 and 1961 and identified potential drycleaning services, automotive services, and other facilities that may have utilized chlorinated solvents within the Newark study area.

Of the 10 identified historic sites that may have used chlorinated solvents:

- 2 sites identified on the Sanborn® maps were associated with the laundry service industry.
- 5 sites identified on the Sanborn® maps were associated with the automotive service industry.
- 3 additional sites, listed as machine shops, were also identified. These sites were listed as associated with other industry.

The 2 sites that are/were identified as associated with the laundry service industry are listed below:



Location of Drycleaning Operations as Identified on Sanborn® Maps

Sanborn Description	Address
Drycleaning	171 East Main Street
Laundry and Drycleaning	27 North Street

The 10 Sanborn® map sites identified within the City of Newark are included in Table 15 and are depicted on Figure 20.

4.3.2 Historic City Directory Data – Newark Study Area

A review of the historic telephone directories from the Delaware Public Archives identified a total of 39 sites within the Newark study area. The 39 sites were identified between the years of 1959 to 1982.

BrightFields confirmed that at least 2 of the 39 sites obtained from the historic city directories have historically and/or currently operated on-site drycleaning at the listed locations. The confirmed current and/or historic on-site drycleaning site is listed in the following table:

**Newark Historic City Directory Listings
 Confirmed Current and/or Historic On-site Drycleaning Operations**

Site Name	Address
Heritage Cleaners	409 New London Road
M & M Drive In s	Limestone Road and Kirkwood Highway

BrightFields identified 30 of the 39 Delaware Public Archive sites as potential historic on-site/current offsite drycleaner sites. These sites may have historically performed on-site drycleaning services and/or currently perform offsite drycleaning services at their listed locations. The 30 potential historic on-site/current offsite drycleaning sites are listed in the following table:



**Newark Historic City Directory Listings
 Potential Historic/Current On-site Drycleaning Operations**

Site Name	Address
Betty Brite Cleaners	506 Christiana Road
Blue Hen Laundry & Cleaners	27 North Street
Carroll's Laundry & Drycleaning	39 East Main Street
Clever Cleaners, Inc.	10 Possum Park Mall/Liberty Plaza
Custom Care Cleaners	1015 South College Avenue
Dalco, Inc. Laundromat	249 Park-N-Shop Shopping Center/ Elkton Road
Dove Cleaners	77 Brookside Shopping Center
Gilbert's Drycleaning	16 Academy Street
Hollywood Cleaners	79 Brookside Shopping Center
Italo Tailor & Cleaner	64 East Main Street
L & N Laundromat	University Plaza Shopping Center
Launder Center	141 Elkton Road
Launderall Self Service Laundry	124 East Main Street
Launderall Self Service Laundry	125 East Main Street
Launderama	255 Elkton Road
Laundromat	87 Brookside Shopping Center
M & M Cleaners	279 Elkton Road
M & M Cleaners	109 Newark Shopping Center
M & M Drive In Cleaners	11 North Chapel Street
Mc Spadden Cleaners	748 Chestnut Hill Road
Newark Chinese Laundry	260 East Main Street



Site Name	Address
Newark Cleaners & Dyers, Inc.	176 East Main Street
Newark Cleaners & Dyers, Inc.	137 Elkton Road
One Hour Martinizing	2620 Capitol Trail/Kirkwood Highway
Parkway Cleaners Laundry & Shoe Repair	33 Chestnut Hill Plaza
Pastel Cleaners	1 Possum Park Mall/Liberty Plaza
Pastel Cleaners	1 ½ Possum Park Mall/Liberty Plaza
Star Brite Cleaners	21 Possum Park Mall/Liberty Plaza
Violet Ray Laundry	181 East Main Street
Webb's Cleaners	26 Chapman Road

Based on the collected data and site visits, the remaining seven sites (those not highlighted on Table 16) were not currently conducting on-site drycleaning operations and were considered unlikely to have historically operated as an on-site drycleaner.

One location was identified without a complete address listing (a street number was not provided) and could not be located, therefore the site was not included in the study.

The 39 sites identified within the City of Dover historic city directories are included in Table 16 and are depicted on Figure 21.

4.3.3 DNREC Data – Newark Study Area

4.3.3.1 DNREC – SIRS Sites

Using the DEN online tool, BrightFields identified 28 DNREC-SIRS HSCA Program sites within the Newark study area. Of the 28 sites identified, eight of them had detections of chlorinated solvents in at least one sample media.

The following list characterizes the detections of chlorinated solvents within the eight identified SIRS sites based on the sample media they were identified in:



- 7 sites had detections of chlorinated solvent(s) in groundwater samples.
- 1 sites had detections of chlorinated solvent(s) in soil samples.
- 1 site had detections of chlorinated solvent(s) in soil gas samples.
- 2 sites had detections of chlorinated solvent(s) in sub-slab samples.
- 2 sites had detections of chlorinated solvent(s) in indoor air samples.

The eight SIRS sites identified with detections of chlorinated solvents are listed below:

DNREC-SIRS Sites with Chlorinated Solvent Detections in the Newark Study Area

Site Name	DNREC-SIRS ID #	Maximum Chlorinated Solvent Detections
Chrysler Assembly Plant “Science and Technology Campus’	DE-0105	PCE in soil gas (0.10 µg)* TCE in soil gas (0.03 µg)*
City of Newark Bikeway	DE-1194	PCE in groundwater (0.60 µg/L) TCE in groundwater (12 µg/L) Cis-1,2-DCE in groundwater (30 µg/L)
Del Chapel (OU3)	DE-1125 / DE-0163	TCE in groundwater (5.5 µg/L) Cis-1,2-DCE in groundwater (4.6 µg/L) Vinyl chloride in groundwater (7.5 µg/L)
Del Chapel Place	DE-0163	PCE in soil (310 µg/kg) PCE in groundwater (8 µg/L) TCE in soil (310 µg/kg) Cis-1,2-DCE in soil (310 µg/kg) Vinyl chloride in soil (310 µg/kg)
Former Permaflex Rollers Site	DE-1512	PCE in groundwater (179 µg/L) TCE in groundwater (39 µg/L) Cis-1,2-DCE in groundwater (550 µg/L)
Newark Landfill	DE-0039	PCE in groundwater (<5 µg/L) TCE in groundwater (27 µg/L) Cis-1,2-DCE in groundwater (10 µg/L) Vinyl chloride in groundwater (19 µg/L)



Site Name	DNREC-SIRS ID #	Maximum Chlorinated Solvent Detections
Pencader Plaza Cleaners	DE-1551	PCE in groundwater (5 J $\mu\text{g/L}$) PCE in sub-slab (5,200 $\mu\text{g/m}^3$) PCE in indoor air (9.1 $\mu\text{g/m}^3$) TCE in sub-slab (720 $\mu\text{g/m}^3$) Cis-1,2-DCE in sub-slab (3.3 J $\mu\text{g/m}^3$)
Any Garment Cleaners	DE-1629	PCE in groundwater (11 $\mu\text{g/L}$) PCE in sub-slab (2,400 $\mu\text{g/m}^3$) PCE in indoor air (7 $\mu\text{g/m}^3$) TCE in sub-slab (20 $\mu\text{g/m}^3$) TCE in sub-slab (1 $\mu\text{g/m}^3$)

* indicates samples collected using Gore Sorber[®] passive soil gas collection devices for screening purposes.

The eight SIRS sites identified with detections of chlorinated solvents are detailed on Table 17 and displayed on Figure 22.

4.3.3.2 DNREC FOIA Data

Most of the DNREC Sections responded to the FOIA request for drycleaner records with a list of sites that were obtained by conducting a keyword search for the term “drycleaners” for all files found within the DNREC DEN. Site files related to projects managed by DAQ, SIRS, SHWMS, and TMS were reported. The DNREC FOIA response is attached as Appendix B. DNREC-DAQ responded to the FOIA request with a list of facilities permitted under 7 DE Admin. Code 1138.5.0, *Perchloroethylene (PCE) Air Emission Standards for Drycleaning Facilities*, which is further discussed in Section 4.3.3.3. The sites provided by DNREC under the “drycleaner” keyword search for Newark are shown on Figure 23.

4.3.3.3 DNREC-DAQ Site Data

BrightFields obtained a list of facilities permitted under 7 DE Admin. Code 1138.5.0, *PCE air emission standards for drycleaning facilities*. These facilities had applied for and received a permit to use PCE at each site as stated in the application. From the list, a total of 10 sites were identified within the City of Newark and are listed below:



Registered DNREC-DAQ Active On-site Drycleaner Sites

Site Name	Address
Any Garment Drycleaners	27 C Possum Park Mall /Liberty Plaza
Heritage Cleaners	409 New London Road
New York Cleaners	1109 Churchmans Plaza
Nice Cleaners	Route 896 & Four Seasons Highway
Omega Cleaners, Inc.	4625 Stanton-Ogletown Road
Pencader Plaza Drycleaners	160 Pencader Plaza
Polly Drummond Drycleaners	11 Polly Drummond Shopping Center
Salem Drycleaners	16 Salem Village Square
Thompson II Cleaners	386 Possum Park Road
VIP Cleaners	2430 Pulaski Highway

The 10 sites identified from the DNREC-DAQ FOIA list within the City of Newark are displayed on Figure 24.

4.3.3.3 DNREC –DWR Report Data- City of Newark

The City of Newark Water Department (NWD) uses 14 groundwater supply wells and 1 surface water intake for their drinking water supply. According to the City of Newark Department of Public Works and Water Resources Annual Water Quality Report (City of Newark, 2016), 37% of the water that the Department distributes to a population of nearly 33,000 comes from groundwater.

According to the DNREC-DWR Source Water Assessment for Newark Water (DNREC, 2001), four (4) of Newark’s wells (20, 21, 23 and 25) are completed in the Wissahickon fractured crystalline bedrock aquifer of the Piedmont province; six (6) wells (8, 10, 12, 14, 16, and 19) are completed in the Cretaceous Potomac sediments of the Coastal Plain province, and four (4) wells (11, 13, 15 and 17) are completed in the Quaternary sediments of the Columbia Formation. Wells 10, 11, 12, 13, 14, and 15 are the primary sources of supply for the system. Wells 16, 19, 20, 21,



and 23 are used for back-up supply. The wells in the Potomac Formation are in the confined to semi confined aquifer while the Columbia Formation wells are in the unconfined aquifer. Because of their setting and well construction these wells have a medium to high vulnerability to contaminants. The vulnerability to “Other organics” for the primary source wells was classified as moderate to very high. It was noted that well 14 contained levels of PCE above the MCL of 5 µg/L (the current MCL is 1 µg/L).

The DNREC-DWR 2002 report titled, *The Impact of Known and Suspected Contaminant Sources on Select Public Drinking Water Supplies in Delaware* (Robertson, 2002) reported levels of chlorinated solvents in samples collected from the raw pretreated drinking water source wells. As part of the study, public supply wells from the City of Newark (Newark South Wellfield) were sampled. The report indicated that PCE, TCE, several DCE and DCA isomers, and 1,1,1-TCA were found in the Newark South Wellfield raw drinking water samples from wells 10, 11, 13, 14, and 16. Of these, only PCE in the untreated sample from Well 14 exceeded its MCL of 5 µg/L at a concentration of 14 µg/L. The observed PCE concentration following treatment was 2.7 µg/L, below the then current MCL of 5 µg/L. TCE and 1,1,1-TCA were also detected in the finished sample at low concentrations.

In 2002, the USGS in cooperation with DNREC-DWR published a report titled, *Occurrence and Distribution of Selected Contaminants in Public Drinking-Water Supplies in the Surficial Aquifer in Delaware* (Ferrari, 2002) The report did not indicate that any of the Newark wells exceeded the former MCLs for chlorinated solvents, however, Well 13 would exceed the MCL by current standards and Well 11 would come close. The results are displayed in the table below.

Since 2000, PCE has been detected in eight (8) of the wells and TCE has been reported in five (5) of the wells on at least one occasion (Ferrari, 2002, Robertson 2002, Zimmerman, 2009). DCE, DCA, and chloroform have also been detected from source water samples collected from the wells. Contamination is present in both the Columbia and Potomac Aquifers. In 2006, DNREC provided funding to the City of Newark for treatment to remove VOCs from the source water in the Newark South Well Field. DNREC-SIRS performed a Site Inspection of the Columbia Aquifer in the Newark South Well Field in 2015 and found that the area impacted by chlorinated solvents is extensive (Hendershot, 2015). The USEPA is currently evaluating the Newark South Well Field for nomination to the National Priority List.



Chlorinated Solvent Concentrations in Untreated Public Supply Water Samples within the Newark Study Area

Water Provider	Well ID	2002 DNREC-DWR Chlorinated Solvent Detections	2002 USGS Chlorinated Solvent Detections
City of Newark	Well 10 (10622)	PCE – 0.6 µg/L J TCE – 0.4 µg/L J Cis-1,2 DCE – ND	NA
	Well 11 (10003)	PCE – 0.4 µg/L J TCE – ND Cis-1,2 DCE – ND	PCE – 0.7 µg/L TCE – 0.04 µg/L J Cis-1,2 DCE – ND VC – ND
	Well 13 (10004)	PCE – 0.9 µg/L TCE – 0.2 µg/L J Cis-1,2 DCE – ND	PCE – 1.1 µg/L TCE – 0.1 µg/L J Cis-1,2 DCE – 0.08 µg/L J VC – ND
	Well 14 (10005)	PCE – 14 µg/L J TCE – 0.2 µg/L J Cis-1,2 DCE – 0.2 µg/L J	NA
	Well 16 (00181)	PCE – ND J TCE – ND Cis-1,2 DCE – 0.2 µg/L J	NA

BOLD – exceeds current respective MCL level

ND = not detected

J = Estimated concentration

NA = not analyzed

4.3.4 City of Newark Water Quality Data

The City of Newark annual Drinking Water Quality Report summarizes the drinking water quality post-treatment process. The maximum concentration observed for each analyte is reported in the Drinking Water Quality Report when an analyte sample result exceeds its respective reporting level (half of the MCL).



The 2016 Water Quality Report (City of Newark Department of Public Works and Water Resources, 2016) sample results of treated drinking water indicate that the maximum PCE concentration was detected at 0.91 µg/L in 2014, 0.68 µg/L in 2015, and below the reporting level (0.5 µg/L) in 2016. The current Delaware MCL for PCE is 1 ppb. No other chlorinated solvents were detected above their respective reporting levels.

**Maximum PCE Concentrations Detected in Treated Drinking Water
 City of Newark**

Annual Report Year	Maximum PCE Concentration Detected (ppb)
2014	PCE – 0.91
2015	PCE – 0.68
2016	PCE -ND

BOLD – exceeds current MCL

ND – not detected above reporting level (half of the MCL value)

5.0 DATA ASSESSMENT

A total of 332 records (telephone directory listings, USEPA/DNREC records, Sanborn maps, etc.) were reviewed in relation to 223 unique properties that potentially housed drycleaning operations and/or were impacted by chlorinated solvents within the Dover, Georgetown, and Newark project study areas. Tables 18, 19, and 20 summarize all of the study data collected for each target city.

5.1 Quantification of Current and Historic Potential Drycleaner Sites

Of the 332 total records reviewed, 223 unique sites were identified. The table below displays the quantity of unique sites categorized as a “Confirmed Current or Historic On-Site Drycleaner Site”, “Potential Drycleaner Site” or “Non-Drycleaner Site” based on the data collected as outlined in Section 4.0.

**Quantity of Unique Sites per Classification
 within the Dover, Georgetown, and Newark Study Areas**

Site Identification	Sites Identified in Each Target City			Total Unique Sites
	Dover	Georgetown	Newark	
Confirmed Current or Historic On-Site Drycleaner Sites	10	3	14	27
Potential Drycleaner Sites	38	5	41	84
Non-Drycleaner Sites	53	15	44	112
Total Unique Sites Reviewed	101	23	99	223

As shown on the table, 27 sites were identified as “confirmed drycleaner” sites and 84 were identified as “potential drycleaner” sites. Based on this data there are between 27 and 111 sites within the three study areas that may have housed dry cleaning operations.



5.2 Current Consumers of Chlorinated Solvents

As shown in the table below, the data collected for this study indicates that only 16% (9 out of 55) of reported SQGs of chlorinated solvents in the study areas are related to the drycleaning industry; 38% are related the automotive service industry and 45% are related to other industries. Out of the 9 reported LQGs of chlorinated solvents in the study areas none were related to the drycleaning industry, one was related the automotive service industry and eight (89%) were related to other industries. Although the records do not indicate the specific amount of solvent waste disposed by each facility, the volume of drycleaning facilities reporting as a hazardous waste generator compared to the automotive industry and all other industries, indicate that drycleaners may not be the largest users of the solvents or the driving source of solvent contamination in the environment.

RCRA Hazardous Waste Generators of Chlorinated Solvents Characterized by Industry Type within the Dover, Georgetown, and Newark Study Areas

	Drycleaner	Automotive-related	Other	Total
SQG of Chlorinated Solvents	9	21	25	55
LQG of Chlorinated Solvents	0	1	8	9

Conversely, drycleaner facilities may be under-reporting as hazardous waste generators. Comparing the volume of drycleaners reporting as RCRA SQG sites to sites permitted by DNREC-DAQ to use PCE shows that eight more sites have registered for a permit to use PCE than have registered as a RCRA SQG (for the purposes of this study SQGs also includes CESQGs). The quantity of registered DNREC-DAQ drycleaner sites permitted to use PCE is displayed on the table below.

Quantity of Registered DNREC-DAQ Sites Permitted to use PCE within the Dover, Georgetown, and Newark Study Areas

	Dover	Georgetown	Newark	Total
Registered DNREC-DAQ Drycleaner Sites Permitted to use PCE	5	1	10	16



5.3 Identification of Sites with Documented Chlorinated Solvent Impacts

As discussed in Section 3.3, investigation data from DNREC-SIRS HSCA sites was reviewed to identify reported detections of chlorinated solvents within the three study areas.

A total of 89 DNREC-SIRS HSCA Sites were identified within the three study areas. Of the 89 sites identified:

- 55 sites had soil samples that were analyzed for VOCs
- 56 sites had groundwater samples that were analyzed for VOCs
- 7 sites had soil gas data samples that were analyzed for VOCs
- 2 sites had sub-slab air samples that were analyzed for VOCs
- 2 sites had indoor air samples that were analyzed for VOCs

As seen in the table below and on Tables 6, 11, and 17 there was a total of 35 out of 89 HSCA sites within the study areas that had documented chlorinated solvent impacts.

Quantity of DNREC-SIRS HSCA Sites with Documented Chlorinated Solvent Impacts within the Dover, Georgetown, and Newark Study Areas

Site Classification	Sites Identified in Each Target City			Total
	Dover	Georgetown	Newark	
Total HSCA Sites	48	13	28	89
HSCA Sites with chlorinated solvent detections	21	6	8	35

Of the 35 HSCA sites with documented chlorinated solvent impacts, 6 of the sites were identified as “confirmed” current or historic on-site dry cleaners. These six sites are listed in the table below.

DNREC-SIRS HSCA Sites with “Confirmed” Dry Cleaner Sites Within the Dover, Georgetown, and Newark Study Areas



Site Name	DNREC-SIRS ID#	Address	City	Maximum Chlorinated Solvent Detections
Capitol Cleaners	DE-1018	411 South Governors Avenue	Dover	PCE in soil (640 µg/kg) PCE in groundwater (42,000 µg/L) TCE in soil (3,100 µg/kg) TCE in groundwater (630 µg/L) DCE in soil (69,000 µg/kg) DCE in groundwater (2,800 µg/L) VC in groundwater (60 µg/L)
Capitol Cleaners & Launderers, Inc. "New Street"	DE-1107	217 South New Street	Dover	PCE in soil (3,200 µg/kg) PCE in groundwater (143 µg/L) PCE in soil gas (14.35 µg/m³) TCE in groundwater (26 µg/L) TCE in soil gas (0.17 µg/m³) DCE in groundwater (750 µg/L)
Hastings Dry Cleaners	DE-1010	US Route 113 & Lebanon Road	Dover	PCE in soil (590 µg/kg) PCE in groundwater (2,000 µg/L) TCE in groundwater (130 µg/L)
Thoro-Kleen Dry Cleaning & Laundry	DE-0207	11 North Railroad Avenue	Georgetown	PCE in groundwater (8.4 µg/L) TCE in groundwater (1.3 µg/L)
Any Garment Dry Cleaners	DE-1629	27 C - Possum Park Mall / Liberty Plaza	Newark	PCE in groundwater (11 µg/L) PCE in sub-slab (2,400 µg/m³) PCE in indoor air (7 µg/m³)
Pencader Plaza Dry Cleaners	DE-1551	160 Pencader Plaza	Newark	PCE in groundwater (5 J µg/L) PCE in sub-slab (5,200 µg/m³) PCE in indoor air (9.1 µg/m³) TCE in sub-slab (720 µg/m³) DCE in sub-slab (3.3 J µg/m³)

BOLD – exceeds the 2017 DNREC screening level

Of the 27 sites identified as “confirmed” current/historic on-site drycleaner locations, only 6 of the sites (22%) have been investigated under a DNREC-SIRS HSCA Program. All six DNREC SIRS-HSCA sites with “confirmed” drycleaner operations contained chlorinated solvent contamination in at least one media type (soil, groundwater, soil gas, or air,). All six sites (100%) reported PCE in groundwater that exceeded the DNREC screening level of 1 µg/L. The data is limited; however, based on these results, it is a fair assumption that more environmental investigation of additional drycleaner facilities is needed to further assess and remediate the potential impacts on surrounding groundwater.



DNREC SIRS-HSCA sites within the study areas with chlorinated solvent detections but no records indicating drycleaners operated on them were also reviewed to assess the relationship between the contamination and potential off-site drycleaner sources.

**DNREC-SIRS HSCA Sites with Chlorinated Solvent Detections
 that are not “Confirmed” Dry Cleaner Sites
 Within the Dover, Georgetown, and Newark Study Areas**

Site Name	DNREC -SIRS ID#	City	Maximum Chlorinated Solvent Detections	Approximate Distance to closest Confirmed Dry Cleaner Site (feet)
680 Forest Street (680 Forest Street)	DE-1451	Dover	PCE in groundwater (3.6 µg/L)	~1,200' North of Capitol Cleaners (217 South New Street)
742 South Governors Avenue (742 South Governors Avenue)	DE-1202	Dover	PCE in soil (260 µg/kg)	<50' North of Commerce Cleaners
Atlantic Coast Environmental (225 State College Road)	DE-1379	Dover	PCE in groundwater (31 µg/L) TCE in groundwater (100 µg/L) DCE in groundwater (14 µg/L)	~8,500' North of Ace Cleaners
Braun Property (West Water & South Governors Avenue)	DE-1487	Dover	PCE in soil gas (10.17 µg/m ³)	~100' South of Capitol Cleaners (411 South Governors Avenue)
Capitol Scrap (39 South West Street)	DE-1171	Dover	PCE in groundwater (1 µg/L) TCE in groundwater (2 µg/L)	~1,200' West of Harry Louie Laundry & Dry Cleaning
City of Dover – Public Works (Water Street)	DE-0152	Dover	PCE in groundwater (5 µg/L)	~1,500 East of Capitol Cleaners (411 South Governors Avenue)
Dover Air Force Base (Dover Air Force Base)	DE-0031	Dover	PCE in soil (100 ppb) PCE in groundwater (3,300 µg/L) TCE in soil (66 ppb) TCE in groundwater (21,000 µg/L) DCE in soil (1.1 ppb) DCE in groundwater (7,300) VC in groundwater (510 µg/L)	~500' East of Hastings Dry Cleaners
Dover Gas and Light Co. (300 South New Street)	DE-0057	Dover	PCE in soil (4,200 µg/kg) PCE in groundwater (7,300 µg/L) PCE in soil gas (1,221 µg/m ³) TCE in soil (160 µg/kg) TCE in soil gas (75.2 µg/m ³) DCE in soil (12,000 µg/kg) Vinyl Chloride in soil (1,400 µg/kg)	~150' South of Capitol Cleaners (217 South New Street)
Dover Machine Works (Lookerman St. & New St. Southwest Corner)	DE-1314	Dover	PCE in groundwater (1 µg/L)	~150' South of Capitol Cleaners (217 South New Street)



Site Name	DNRE C-SIRS ID#	City	Maximum Chlorinated Solvent Detections	Approximate Distance to closest Confirmed Dry Cleaner Site (feet)
Dover West Side Area – A (Multiple – See Table 6)	DE-1212		PCE in groundwater (0.9 ppb) VC in groundwater (0.6 ppb)	~<50' West of Capitol Cleaners (217 South New Street)
Dover West Side Area – B (DWB/Coca Cola) (Multiple – See Table 6)	DE-1213	Dover	PCE in groundwater (41 µg/L) TCE in groundwater (52 µg/L)	~450' West of Capitol Cleaners (217 South New Street)
Dover West Side Area – B (Multiple – See Table 6)	DE-1213	Dover	PCE in groundwater (47 ppb) TCE in groundwater (52 ppb)	~450' West of Capitol Cleaners (217 South New Street)
Dover West Side Area – C (Multiple – See Table 6)	DE-1214	Dover	TCE in groundwater (12 ppb)	~1,550' West of Capitol Cleaners (217 South New Street)
Former Chesapeake Supply Company (238 Railroad Ave.)	DE-1334	Dover	PCE in groundwater (120 µg/L) TCE in groundwater (7 µg/L)	~1,300' West of Capitol Cleaners (217 South New Street)
Former Dover Ice Plant (645 West North Street)	DE-1110	Dover	TCE in groundwater (260 µg/L)	~1,350' West of Capitol Cleaners (217 South New Street)
McKee Run Generating Station – Dover Power Plant (860 Buttner Place)	DE-0269	Dover	PCE in groundwater (180 µg/L)	~5,500' North of Ace Cleaners
Site Name	DNRE C-SIRS ID#	City	Maximum Chlorinated Solvent Detections	Approximate Distance to closest Confirmed Dry Cleaner Site (feet)
P & F Motorcylces (4200 North DuPont Highway)	DE-1093	Dover	PCE in soil (2 µg/kg) PCE in groundwater (812 µg/L) TCE in soil (4 µg/kg) TCE in groundwater (8.3 µg/L)	~900' South of Hastings Dry Cleaner
Rodney Village Shopping Center (1724 South Governors Avenue)	DE-1288	Dover	PCE in soil (150 µg/kg) PCE in groundwater (17 µg/L) PCE in soil gas (27,133 µg/m³) TCE in soil gas (6,449 µg/m³) DCE in soil gas (10,523 µg/m ³)	~800' South of A-1 Cleaners
Former Pep-Up Site (310 North Race Street)	DE-1491	Georgetown	PCE in groundwater (341 µg/L) PCE in soil gas (1.09 µg/m ³) TCE in groundwater (65.4 µg/L)	~<50' Northeast of Georgetown Cleaners (305 North Race Street)



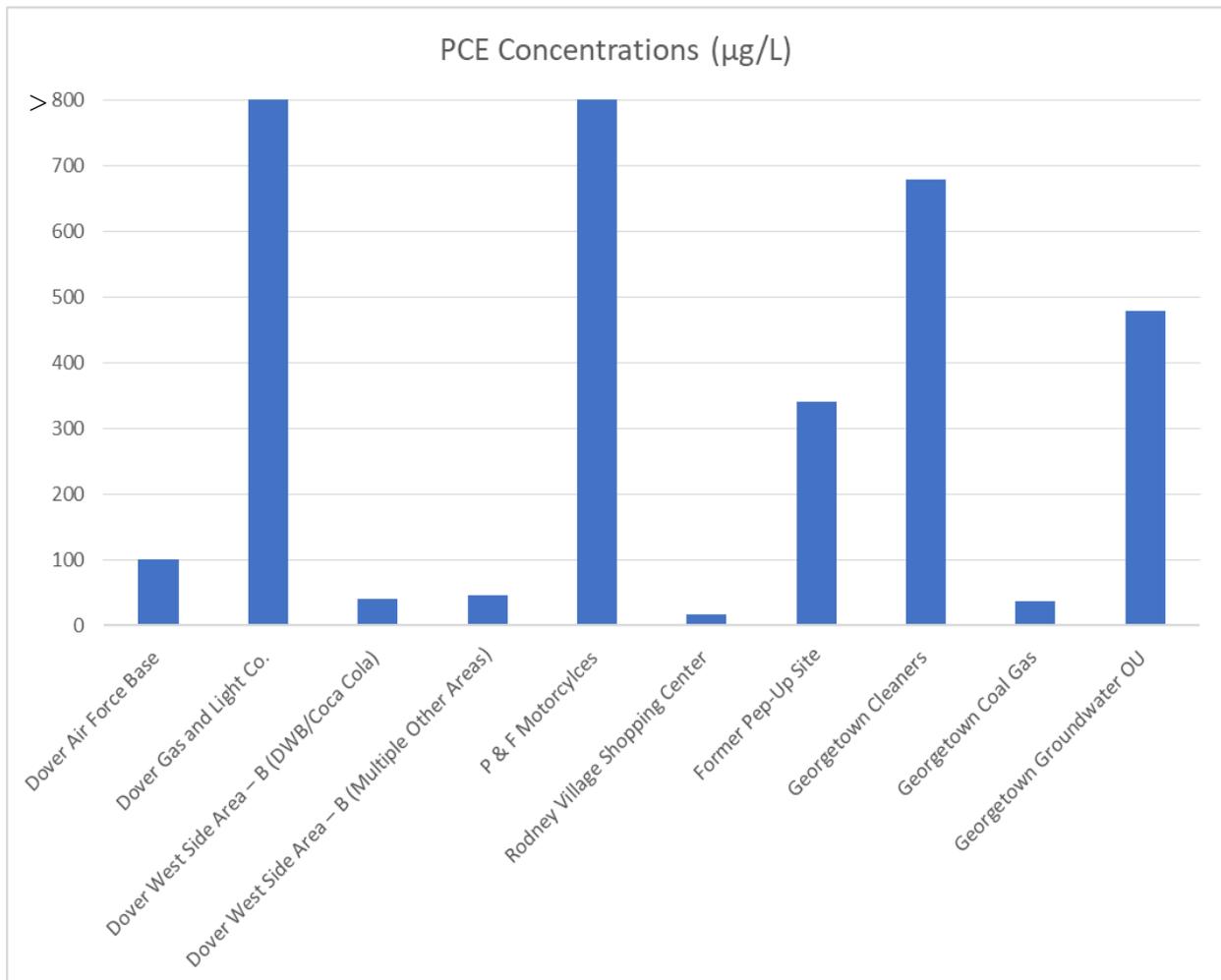
Site Name	DNRE C-SIRS ID#	City	Maximum Chlorinated Solvent Detections	Approximate Distance to closest Confirmed Dry Cleaner Site (feet)
Georgetown Cleaners (305 N. Race Street)	DE-0113	Georgetown	PCE in soil (21,000 µg/kg) PCE in groundwater (680 µg/L) PCE in soil gas (14.24 µg/m³) TCE in soil (490 µg/kg) TCE in groundwater (130 µg/L) DCE in soil (820 µg/kg) DCE in groundwater (690 µg/L)	~<50' Northwest of Georgetown Cleaners (315 North Race Street)
Georgetown Coal Gas (316 N. Race Street)	DE-0188	Georgetown	PCE in groundwater (37 µg/L) TCE in groundwater (0.36 µg/L) DCE in groundwater (0.61 µg/L)	~250' Northeast of Georgetown Cleaners 315 North Race Street)
Georgetown Groundwater OU (North Race Street)	DE-1407	Georgetown	PCE in groundwater (480 µg/L) TCE in groundwater (60 µg/L)	~50' Northeast of Georgetown Cleaners 315 North Race Street)
JG Townsend Cannery (316 North Race Street)	DE-0208	Georgetown	PCE in groundwater (0.001 µg/L)	~900' North of Georgetown Cleaners 315 North Race Street)
Chrysler Assembly Plant "Science and Technology Campus" (550 South College Avenue)	DE-0105	Newark	PCE in soil gas (0.10 µg)* TCE in soil gas (0.03 µg)*	~5,250' Northwest of Pencader Plaza Dry Cleaner
City of Newark Bikeway (Parcel B & Parcel C, Amtrak Railroad Track)	DE-1194	Newark	PCE in groundwater (0.6 µg/L) TCE in groundwater (12 µg/L) DCE in groundwater (30 µg/L)	~2,450' East of K&L Cleaners
Del Chapel OU3 (203 East Main Street & 70 South Chapel Street)	DE-1125 & DE-0163 (West Parcel)	Newark	TCE in groundwater (5.5 µg/L) DCE in groundwater (4.6 µg/L) Vinyl Chloride in groundwater (7.5 µg/L)	~1,750' East of K&L Cleaners
Del Chapel Place (70 South Chapel Street)	DE-0163	Newark	PCE in soil (310 µg/kg) PCE in groundwater (8 µg/L) TCE in soil (310 µg/kg) DCE in soil (310 µg/kg) Vinyl Chloride in soil (310 µg/kg)	~1,750' East of K&L Cleaners
Former Permaflex Rollers Site (375 Bellevue Road)	DE-1512	Newark	PCE in groundwater (179 µg/L) TCE in groundwater (39 µg/L) DCE in groundwater (550 µg/L)	~2,800' South of Pencader Plaza Dry Cleaner
Newark Landfill (300 Farm Lane, University of Delaware Agricultural Farm)	DE-0039	Newark	PCE in groundwater (<5 µg/L) TCE in groundwater (27 µg/L) DCE in groundwater (10 µg/L) Vinyl Chloride in groundwater (19 µg/L)	~415' Northwest of Pencader Plaza Dry Cleaner

BOLD – exceeds the 2017 DNREC screening level

* indicates samples collected using Gore Sorber® passive soil gas collection devices for screening purposes.

Twenty nine DNREC-SIRS HSCA sites within the study areas had chlorinated solvent detections but no records indicating drycleaners had operated on them. Sixteen of the 29 sites (55%) were located within 1,000 feet of a “confirmed drycleaner” location. Of the sixteen sites, 14 had groundwater sample analytical data. Ten of the 14 sites (71%) reported exceedances for PCE. As seen below more than half of the sites had exceedances of over one-hundred times greater than the DNREC screening level of 1µg/L.

PCE Concentrations found on HSCA Sites with Chlorinated Solvent Detections within 1,000 Feet of a “Confirmed Drycleaner” Site





5.4 Assessment of “Elevated Risk” Dry Cleaner Sites

As stated in the previous section, there are 27 “confirmed” drycleaner sites in the three combined study areas. Six of the “confirmed” sites have been previously investigated by DNREC-SIRS, leaving 21 uninvestigated “confirmed” dry cleaner sites. The remaining 21 uninvestigated sites were reviewed to assess “elevated risk” sites that should receive priority if investigations are initiated by DNREC.

The “elevated risk sites” were selected by reviewing the project data master lists from each study area (Tables 18, 19, and 20). Only sites that had not been previously investigated were assessed. All “confirmed” sites were reviewed and assessed based first on clear PCE-user indicators, such as sites that are DNREC-DAQ permitted PERC users and/or registered RCRA hazardous waste generators. Secondary data sets reviewed included those that would indicate long-term operations, such historic city directory listings, and Sanborn Map listings. Lastly, other DNREC-FOIA data were reviewed as supporting evidence of a potential “elevated risk” site.

Based on the assessment the following five sites were selected as “elevated risk” sites

1. Heritage Cleaners, Newark
2. Ace Cleaners, Dover
3. Georgetown Laundry and Dry Cleaning, Georgetown
4. Master Dry Cleaners, Inc., Dover
5. K&L Cleaners, Newark

These sites should receive priority for any future drycleaner assessments.

5.5 Assessment of Chlorinated Solvent Impacts on Drinking Water

The two reports published in 2002 (*The Impact of Known and Suspected Contaminant Sources on Select Public Drinking Water Supplies in Delaware* (Robertson, 2002) and *Occurrence and Distribution of Selected Contaminants in Public Drinking-Water Supplies in the Surficial Aquifer in Delaware* (Ferrari, 2002)) were utilized for this study to assess solvent contamination in untreated public drinking water wells in the groundwater of the study areas. The 2002 reports indicate that all the wells located within the current Dover, Georgetown and Newark study areas had detections of one or more chlorinated solvent. Four of the eight wells had concentrations of chlorinated solvents above the current MCL of 1 µg/L.



**Chlorinated Solvent Detections in Raw Water Samples Collected
 During Previous Studies from Select Source Water Wells
 within the Dover, Georgetown, and Newark Study Areas**

Water Provider	Well ID	Solvent Detections Exceeding a Current MCL?	Solvent Detections Not Exceeding a Current MCL?	No solvent Detections?
Dover	10735		X	
Georgetown	Well 1 (10325)	X		
Georgetown	Well 2R (62576)	X		
Newark	Well 10 (10622)		X	
Newark	Well 11 (10003)		X	
Newark	Well 13 (10004)	X		
Newark	Well 14 (10005)	X		
Newark	Well 16 (00181)		X	

The coordinates of the public drinking water source wells for Georgetown and Newark are shown on Figure 26 and 27, respectively. Due to public safety concerns, the coordinates of the source water wells for Dover were not accessible.



Based on the well locations, the following observations have been made:

Georgetown Wells

- Wells 1 and 2R in Georgetown are both within 500 to 600 feet of the Thoro-Kleen Dry Cleaning & Laundry Site.
 - In 2002, raw water samples collected from Well 1 contained PCE concentrations at 1.4 $\mu\text{g/L}$; Well 2R contained PCE at 2.1 $\mu\text{g/L}$.
 - Thoro-Kleen Dry Cleaning & Laundry is a drycleaner site that has been investigated under the DNREC-SIRS HSCA Program. Elevated levels chlorinated solvents were detected on the site in groundwater.

Newark Wells

- Wells 10, 11, 13, and 14 in Newark are all within 400 to 1,000 feet from the Pencader Plaza Dry Cleaner.
 - In 2002, raw water samples collected from Well 14 contained PCE at 14 $\mu\text{g/L}$; Well 13 contained PCE at 0.9 $\mu\text{g/L}$ (just below the current MCL), Well 11 contained PCE at 0.7 $\mu\text{g/L}$, and Well 10 contained PCE at 0.6 $\mu\text{g/L}$.
 - Pencader Plaza Dry Cleaner is a drycleaner site that has been investigated under the DNREC-SIRS HSCA Program. Elevated levels of chlorinated solvents were detected in site groundwater, sub-slab air, and indoor air.
- Well 16 is not located in the vicinity of a drycleaner; however, two RCRA SQGs of chlorinated solvents are located within 1,000 feet.
 - In 2002, raw water samples collected from Well 16 contained an estimated concentration of 1,2 DCE at 0.2 $\mu\text{g/L}$.

Based on the limited data, it is not possible to determine if the chlorinated solvent impacts to the groundwater are due, all or in part, to drycleaning activities. However, based on the contamination evidence discussed above; it seems fair to assume that drycleaning activities are at least a partial contributor to solvent impacts.

It should be noted that although raw drinking water appears to be impacted to some degree by the use of chlorinated solvents, the Annual Water Quality Reports provided by the public water suppliers within the study areas show that they have been effectively treating the raw water so that finished water samples have been consistently lower than the MCL levels. However, properties that obtain drinking water from private potable wells are not subject to the treatment process unless they provide filtration methods themselves. No private wells were sampled as part of this study.



The assumption is made that private wells located and screened in the vicinity of the public wells listed in the table above would yield similar results unless a filtration device was utilized.



6.0 CONCLUSIONS

A total of 332 records (telephone directory listings, USEPA/DNREC records, Sanborn maps, etc.) were reviewed in relation to 223 unique properties that potentially housed drycleaning operations and/or were impacted by chlorinated solvents within the Dover, Georgetown, and Newark project study areas.

Based on the assessment of the data collected during this study, the following conclusions have been made:

1. Current and Historic Commercial Chlorinated Solvent Use Appears Widespread Over Many Industries.

PCE was first used as a drycleaning solvent in the United States in 1934; and by 1948 was the leading chlorinated solvent used in drycleaning, which holds true to this day. Of the 223 unique sites reviewed within the three study areas, 27 properties were identified as “confirmed” drycleaner sites that either currently or historically operated as an on-site drycleaner. An additional 84 properties were identified as sites that potentially operated as an on-site drycleaner at some point in the past. The locations of current and historic confirmed/potential drycleaning operations are widespread over the study areas as seen in Figures 25, 26 and 27.

In addition to the drycleaning industry, the automotive industry also utilizes chlorinated solvent containing products such as degreasers and brake cleaners. Furthermore, chlorinated solvents have been or are currently used in a variety of other commercial applications including cleaning solutions, paint thinners, pesticides, resins, glues, thinning solutions, and the production of fluorinated compounds (Morrison, 2006). RCRA Hazardous Waste Generator data indicates that of the 64 total SQG and LQG sites within the study area, only 14% of reported generators are related to the drycleaning industry with 34% related the automotive service industry and 52% related other industries. Also of note is that out of the 9 reported LQGs of chlorinated solvents in the study areas, none were related to the drycleaning industry.

2. There has been a limited amount of environmental investigation of properties that have housed drycleaning operations; however, based on the available laboratory data of those sites investigated, there is a need for the investigation of additional identified drycleaner sites



Although, there was a large amount of historic data that could be used to assess potential sources of chlorinated solvent use, there was a lack of sufficient analytical data on chlorinated solvent contamination in soil, air, and groundwater media on “confirmed” or “potential” on-site drycleaning facilities within the three study areas. Of the 111 sites reviewed that were identified in this study as either “confirmed” or “potential” current/historic on-site drycleaner locations, only 5% (6 of 111) of the sites have been investigated and/or reviewed by DNREC-SIRS under the HSCA Program. All six “confirmed” drycleaner HSCA sites contained PCE concentrations in groundwater above the current DNREC screening value of 1 $\mu\text{g/L}$, and most had detections of PCE breakdown products as well as chlorinated solvent detections in multiple media such as soil and soil gas. It is unknown how many may have had investigations implemented outside of the HSCA Program. Based on the available analytical data from all six of the “confirmed” drycleaner sites, it appears that standard drycleaner operation procedures are/were not conducted in a manor sufficiently protective of the environment and there is a clear need for environmental assessments of additional uninvestigated “confirmed” drycleaner sites.

3. Chlorinated solvents are impacting public drinking water; however, public water suppliers within the study areas are effectively treating the raw water. Property owners with private potable wells who are not treating their water may be ingesting water above Delaware MCL standards.

Two studies published in 2002 that assessed contamination in untreated public drinking water wells were utilized as part of this study to review chlorinated solvent impacts on the groundwater of the three study areas. All eight of the combined selected wells within the Dover, Georgetown, and Newark areas for both studies indicated at a detection of one or more chlorinated solvent and half of the wells had concentrations of chlorinated solvents above the current MCL of 1 $\mu\text{g/L}$. Six of the wells were located within 1,000 feet of a drycleaner site with documented solvent releases. Although raw drinking water appears to be impacted to some degree by the use of chlorinated solvents, the Annual Water Quality Reports provided by the public water suppliers within the study areas show that they have been effectively treating the raw water so that finished water samples have been consistently lower than the MCL levels.



No private wells were sampled as part of this study. The assumption is made that private wells located and screened in the vicinity of the public wells listed in the table above would yield similar results unless a filtration device was utilized.

4. Although available groundwater sample analytical data indicates that chlorinated solvents from drycleaner sites are impacting groundwater in Delaware, sufficient data does not exist to identify drycleaners as the driving source.

Data from DNREC-SIRS HSCA Program investigations of the “confirmed drycleaner sites” show that there are clear impacts to the groundwater from the use of chlorinated solvents. However, based on the wide industrial use of chlorinated solvents (i.e. many potential source locations), their relatively long history of production and use, and the ability for the solvents to persist and migrate; it will be difficult to assess a specific driving industrial/commercial source of the chlorinated solvent contamination.



7.0 RECOMMENDATIONS

Based on the conclusions of this report, the following recommendations have been developed:

1. Develop a pilot study to further assess chlorinated solvent contamination and groundwater flow at select potential “elevated risk” uninvestigated drycleaner properties

A pilot study is recommended to further assess the groundwater conditions on properties identified as “confirmed” on-site drycleaning service providers that have not been previously investigated. Five to ten “confirmed” drycleaner sites should be selected from those identified in this project based on “elevated risk” metrics (e.g. amount of years drycleaners have operated at a site, evidence of solvent contamination on-site and/or on surrounding properties, population density around target location, location relative to public water sources). The study should include the installation of at least three permanent groundwater monitoring wells on every selected property that can be used to gauge groundwater flow direction and collect groundwater samples to be analyzed for chlorinated solvents. This focused drycleaner study/investigation in conjunction with the existing data from DNREC-SIRS investigations of drycleaner properties could provide hard data to help further evaluate the drycleaner industry’s environmental impact on groundwater and ensure the human health is not being impacted by the continued operation of these sites. Section 5.4 of this report identifies five “elevated risk” drycleaner sites that should receive priority for investigation activities.

2. Conduct a study to review all DNREC-SIRS sites that have historically operated as an automotive repair facility to assess relationship to chlorinated solvent contamination.

The study should assess if evidence of chlorinated solvent contamination has been found on the site, the years the site was active in automotive repair, what kind of automotive repair activities occurred, and if records of chlorinated solvent use exist.

3. Develop a study aimed at understanding the handling and disposal of chlorinated solvents in the automotive service industry.

A study aimed at comparing the use of chlorinated solvents in the automotive service could be used to assess the approximate amount of solvent product that is consumed in the industry and how it is handled to evaluate factors such as volume of material consumed, amount of facilities



consuming the material, industry-specific storage practices, disposal practices, and employee training.

4. Investigate the water quality of private potable wells in the vicinity of “confirmed drycleaner” site locations.

Conduct a study to survey a 0.5-mile radius around confirmed drycleaner sites to identify active private potable drinking wells. A sampling plan should be devised to sample all or a statistically appropriate number of wells to assess chlorinated solvent impacts, if any to the wells.

5. Utilize the GIS data developed as part of this study to assist in the ongoing tracking of chlorinated solvent users and potential human health threats related to solvent contamination.

The GIS data provided in this report can be updated and managed to assist in tracking:

- New detections of chlorinated solvent contamination during environmental investigations;
- Updates of RCRA Hazardous Waste generators records;
- Updates to permitted PCE users; and
- Chlorinated solvent users who may not be properly registering as RCRA hazardous waste generators or obtaining state permits to use PCE (drycleaners only).

Tracking this information will help in the continuing assessment of chlorinated solvent contamination and may assist in identifying health risks to the public.

6. Develop a program to educate commercial property owner and managers about the risks of leasing property to chlorinated solvent users and the precautions that should be implemented to ensure the proper handling and management of the solvents.

As previously stated, chlorinated solvents are used in many industries. This study indicates that current and historical commercial and industrial users of the solvents are numerous and wide spread throughout the study areas, potentially impacting surrounding properties and residential drinking water. Many of the properties that these commercial and industrial business are/were operating on are leased. A program should be developed to educate commercial property owners and managers of the risks related to chlorinated solvent on their properties and the precautions that should be implemented to keep the surrounding community safe and protect themselves from liability issues.



7. Any new legislation related to the use of PCE should be applied to all commercial and industrial users of the solvent, and not limited to the drycleaning industry.

Any new legislation related to the use of PCE (including taxation of goods, material handling requirements, usage reporting, permitting, etc.) should be applied to all commercial and industrial users of the solvent. As stated previously, only 14% of RCRA Hazardous Waste Generator records for chlorinated solvents are related to the drycleaning industry. A tax on the sale of PCE could assist in funding future studies and education programs.



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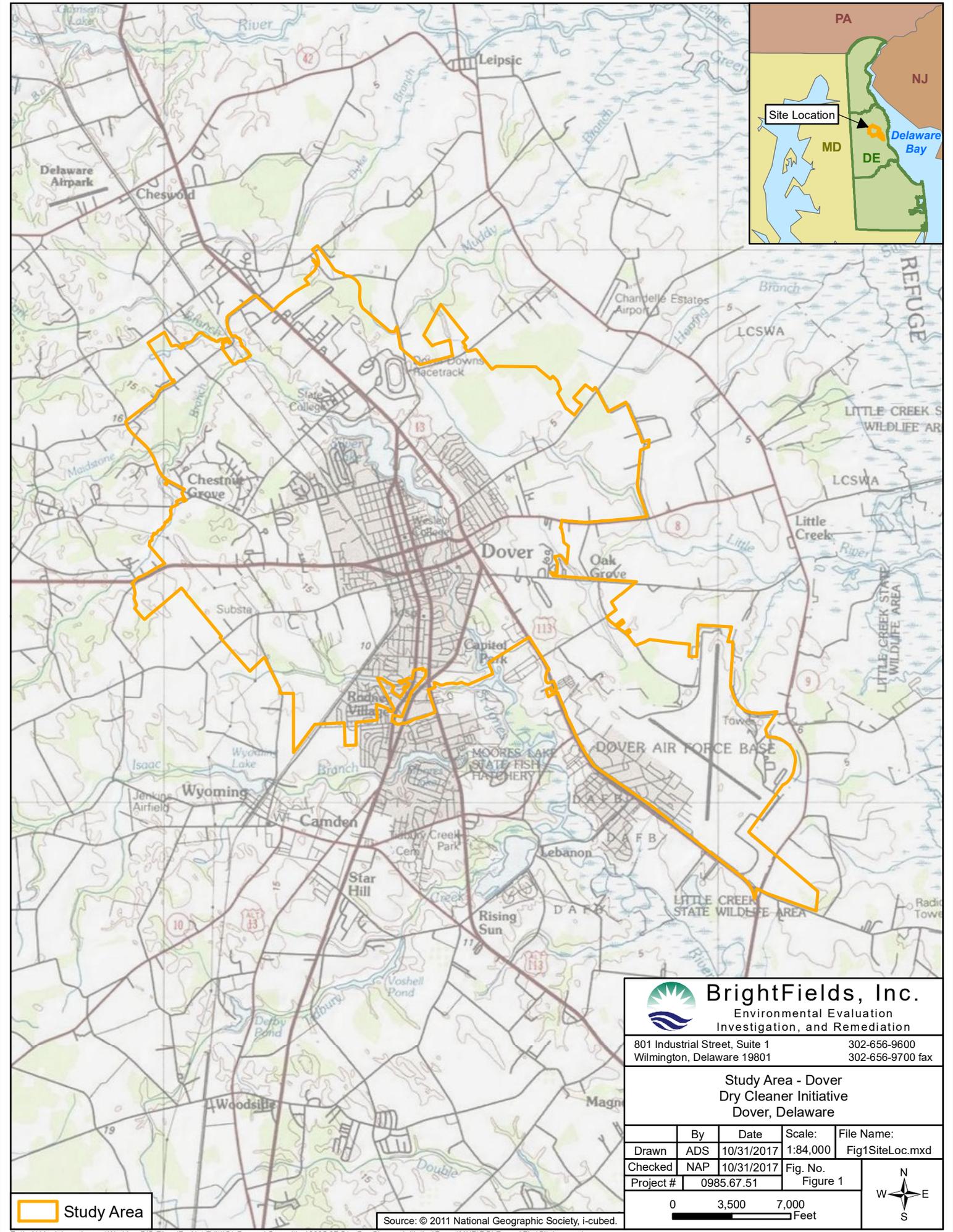
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FIGURES



 Study Area

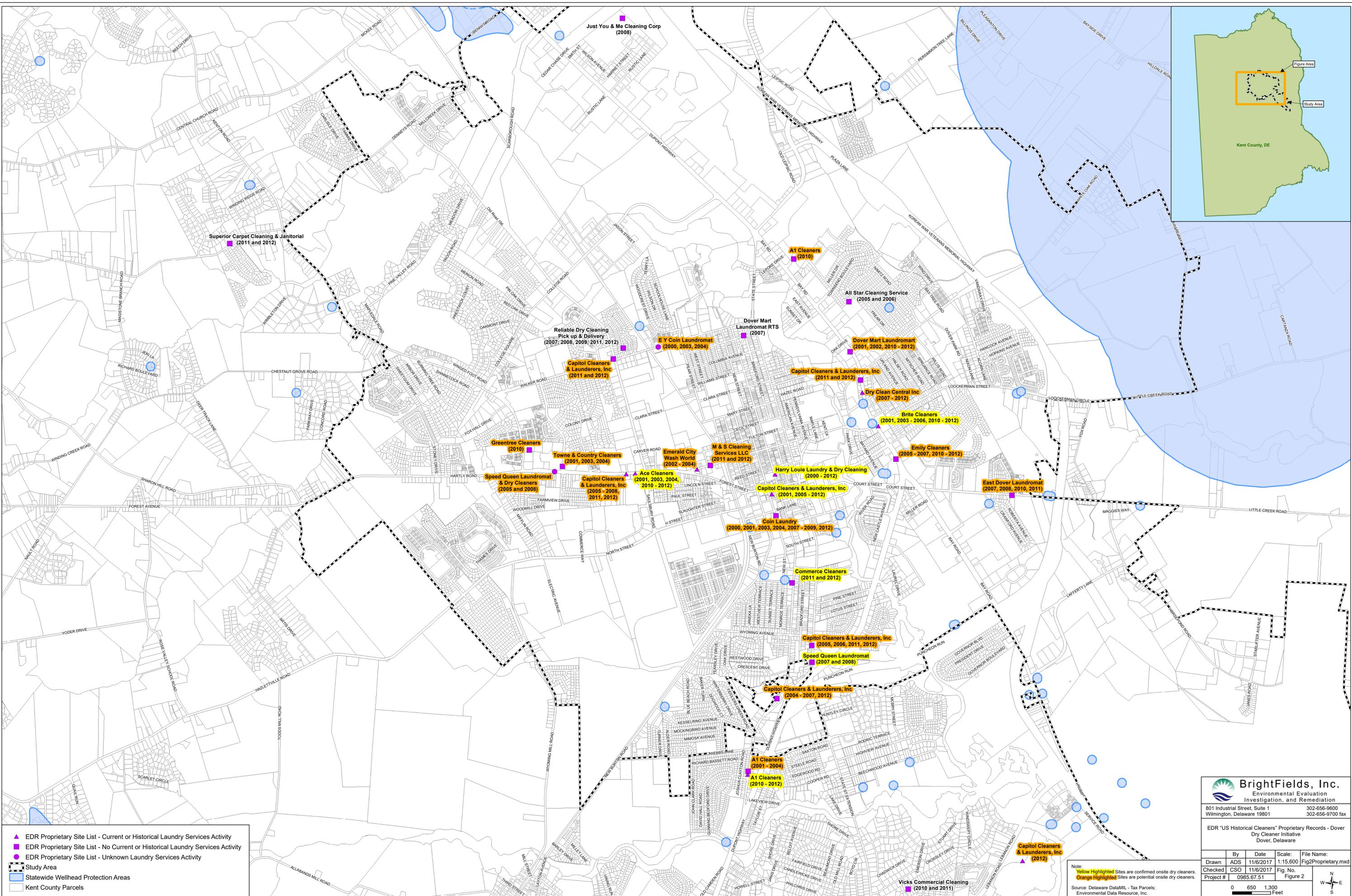
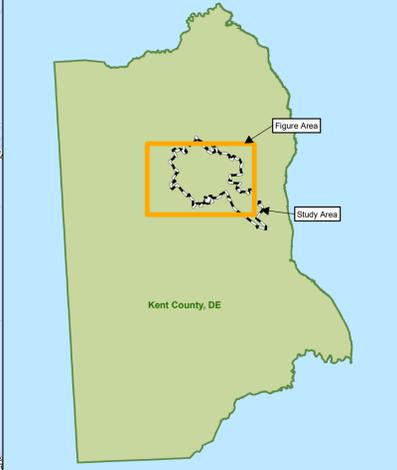
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 801 Industrial Street, Suite 1
 Wilmington, Delaware 19801
 302-656-9600
 302-656-9700 fax

Study Area - Dover
Dry Cleaner Initiative
Dover, Delaware

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Source: © 2011 National Geographic Society, i-cubed.



- ▲ EDR Proprietary Site List - Current or Historical Laundry Services Activity
- EDR Proprietary Site List - No Current or Historical Laundry Services Activity
- EDR Proprietary Site List - Unknown Laundry Services Activity
- Study Area
- Statewide Wellhead Protection Areas
- Kent County Parcels

Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.

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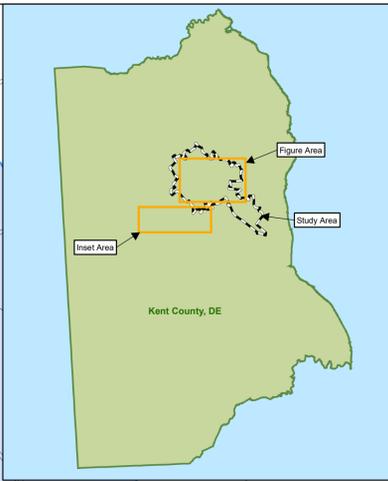
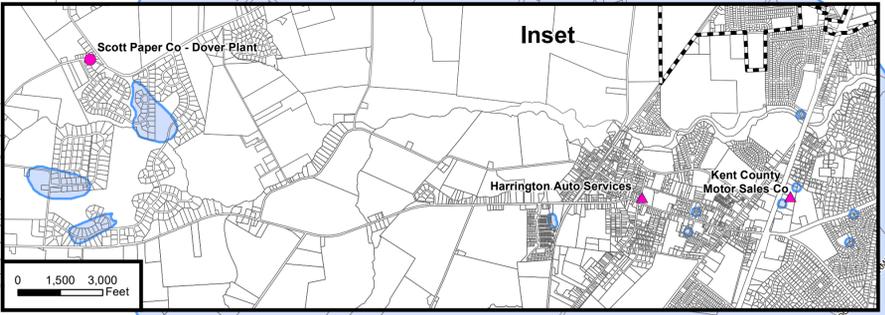
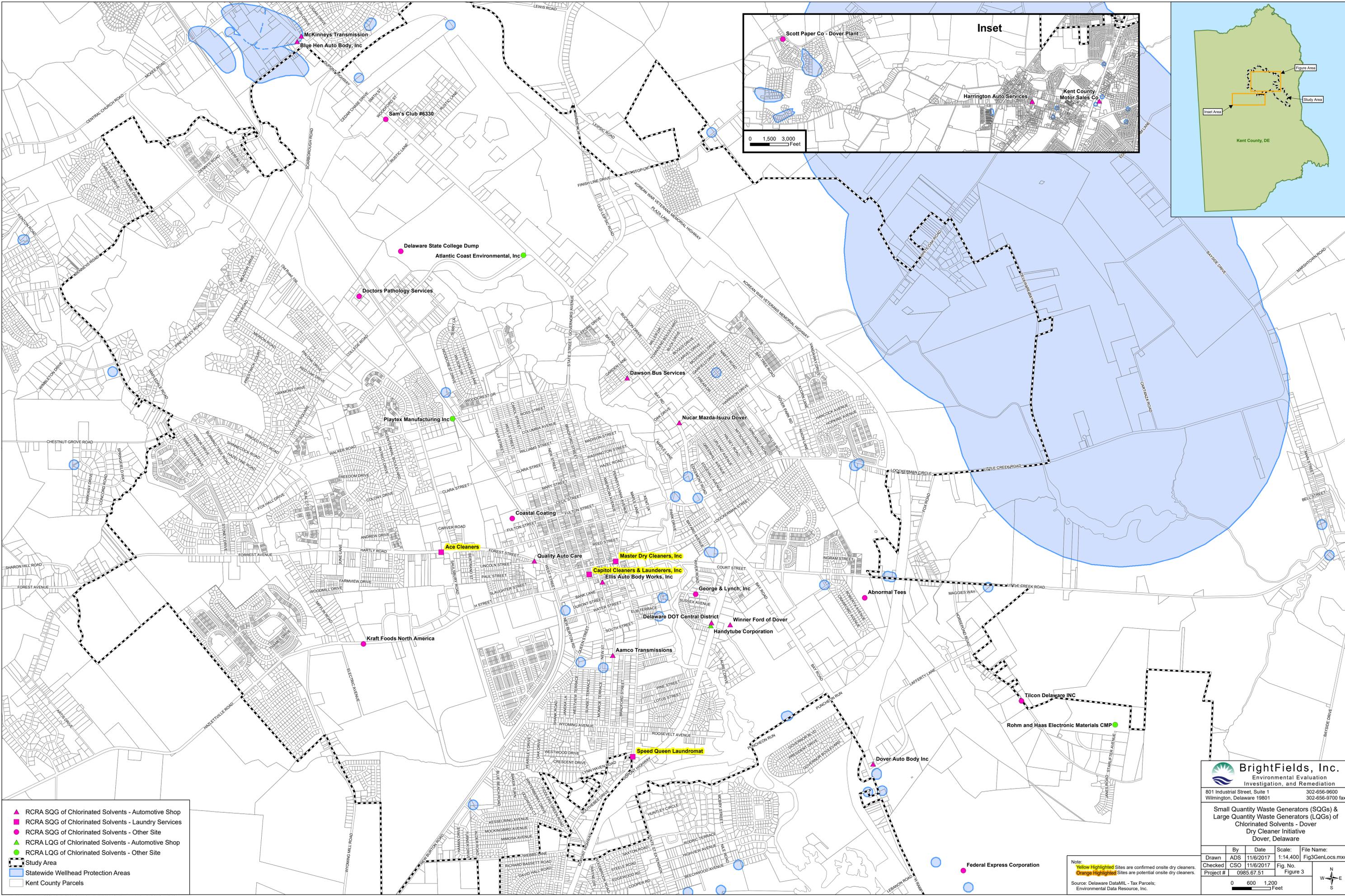
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EDR "US Historical Cleaners" Proprietary Records - Dover
 Dry Cleaner Initiative
 Dover, Delaware

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Source: Delaware DataMIL - Tax Parcels
 Environmental Data Resource, Inc.



- ▲ RCRA SQG of Chlorinated Solvents - Automotive Shop
- ▲ RCRA SQG of Chlorinated Solvents - Laundry Services
- ▲ RCRA SQG of Chlorinated Solvents - Other Site
- ▲ RCRA LQG of Chlorinated Solvents - Automotive Shop
- ▲ RCRA LQG of Chlorinated Solvents - Other Site
- Study Area
- Statewide Wellhead Protection Areas
- Kent County Parcels

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Small Quantity Waste Generators (SQGs) & Large Quantity Waste Generators (LQGs) of Chlorinated Solvents - Dover Dry Cleaner Initiative
 Dover, Delaware

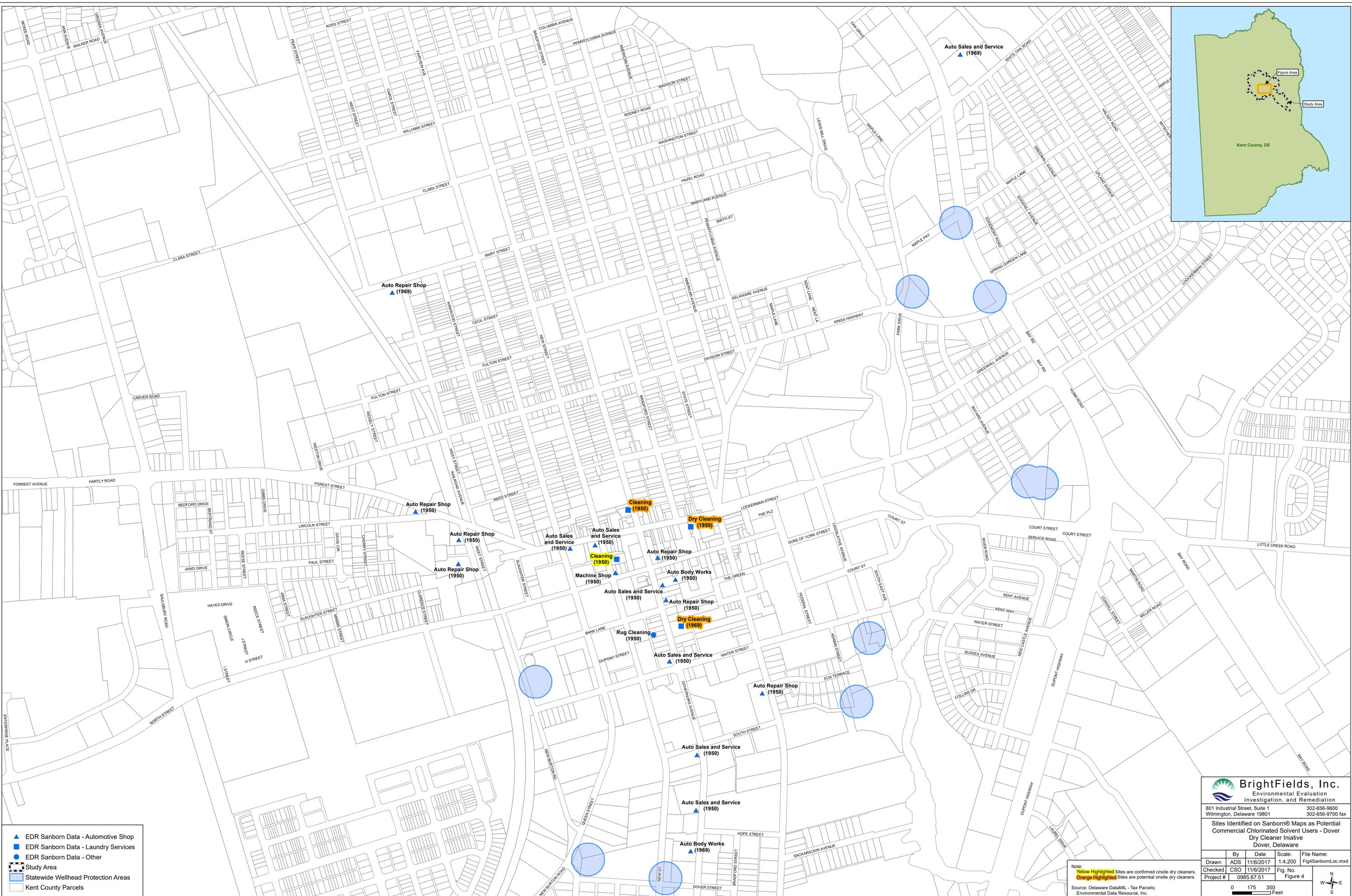
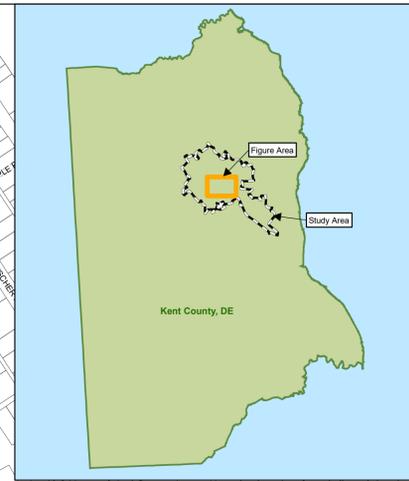
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Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

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- ▲ EDR Sanborn Data - Automotive Shop
- EDR Sanborn Data - Laundry Services
- EDR Sanborn Data - Other
- ▭ Study Area
- ▭ Statewide Wellhead Protection Areas
- ▭ Kent County Parcels

Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.

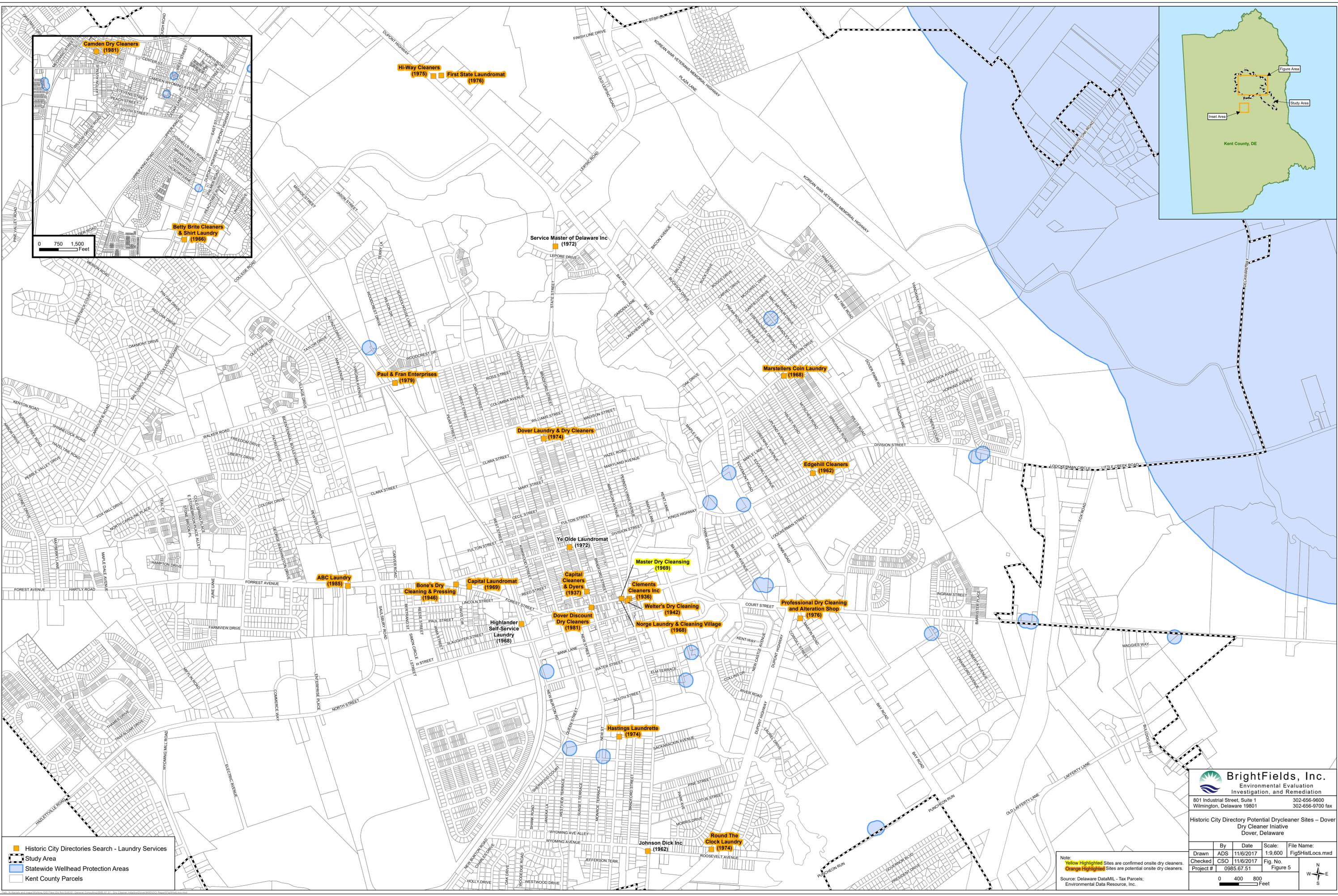
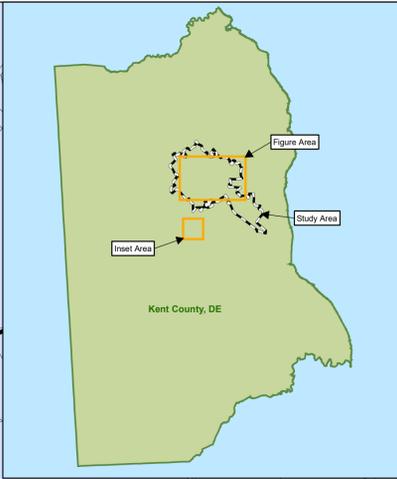
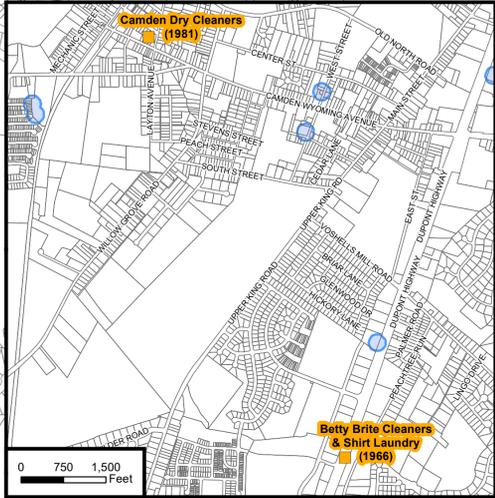
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Sites Identified on Sanborn® Maps as Potential
 Commercial Chlorinated Solvent Users - Dover
 Dry Cleaner Initiative
 Dover, Delaware

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Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

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■ Historic City Directories Search - Laundry Services
 Study Area
 Statewide Wellhead Protection Areas
 Kent County Parcels

Note:
■ Yellow Highlighted Sites are confirmed onsite dry cleaners.
■ Orange Highlighted Sites are potential onsite dry cleaners.

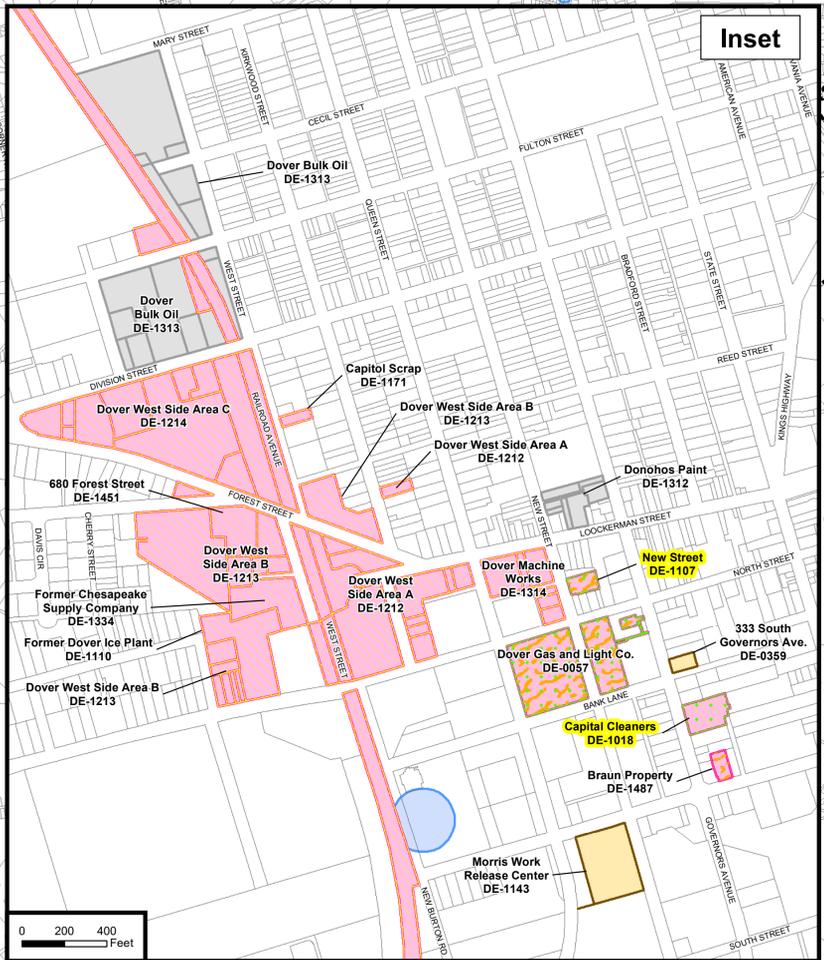
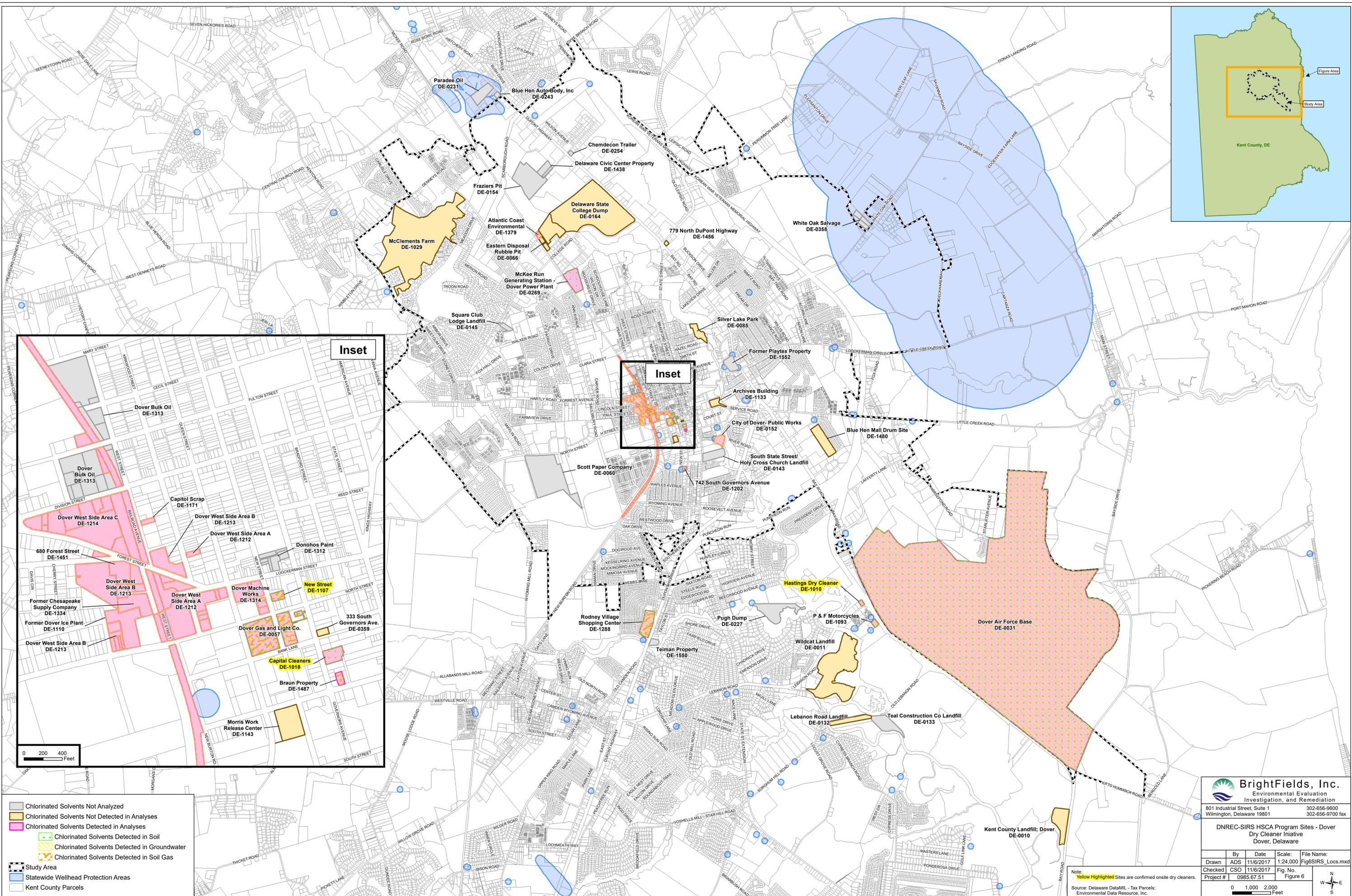
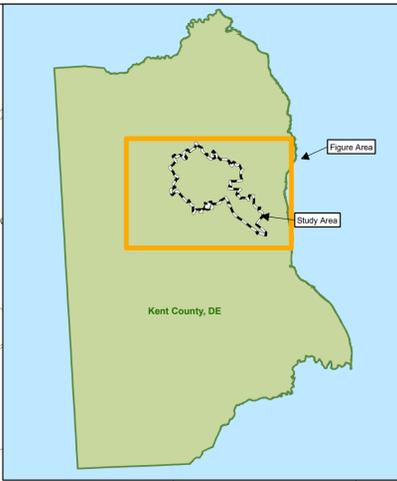
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Historic City Directory Potential Drycleaner Sites – Dover
 Dry Cleaner Initiative
 Dover, Delaware

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Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

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- Chlorinated Solvents Not Analyzed
- Chlorinated Solvents Not Detected in Analyses
- Chlorinated Solvents Detected in Analyses
- Chlorinated Solvents Detected in Soil
- Chlorinated Solvents Detected in Groundwater
- Chlorinated Solvents Detected in Soil Gas
- Study Area
- Statewide Wellhead Protection Areas
- Kent County Parcels

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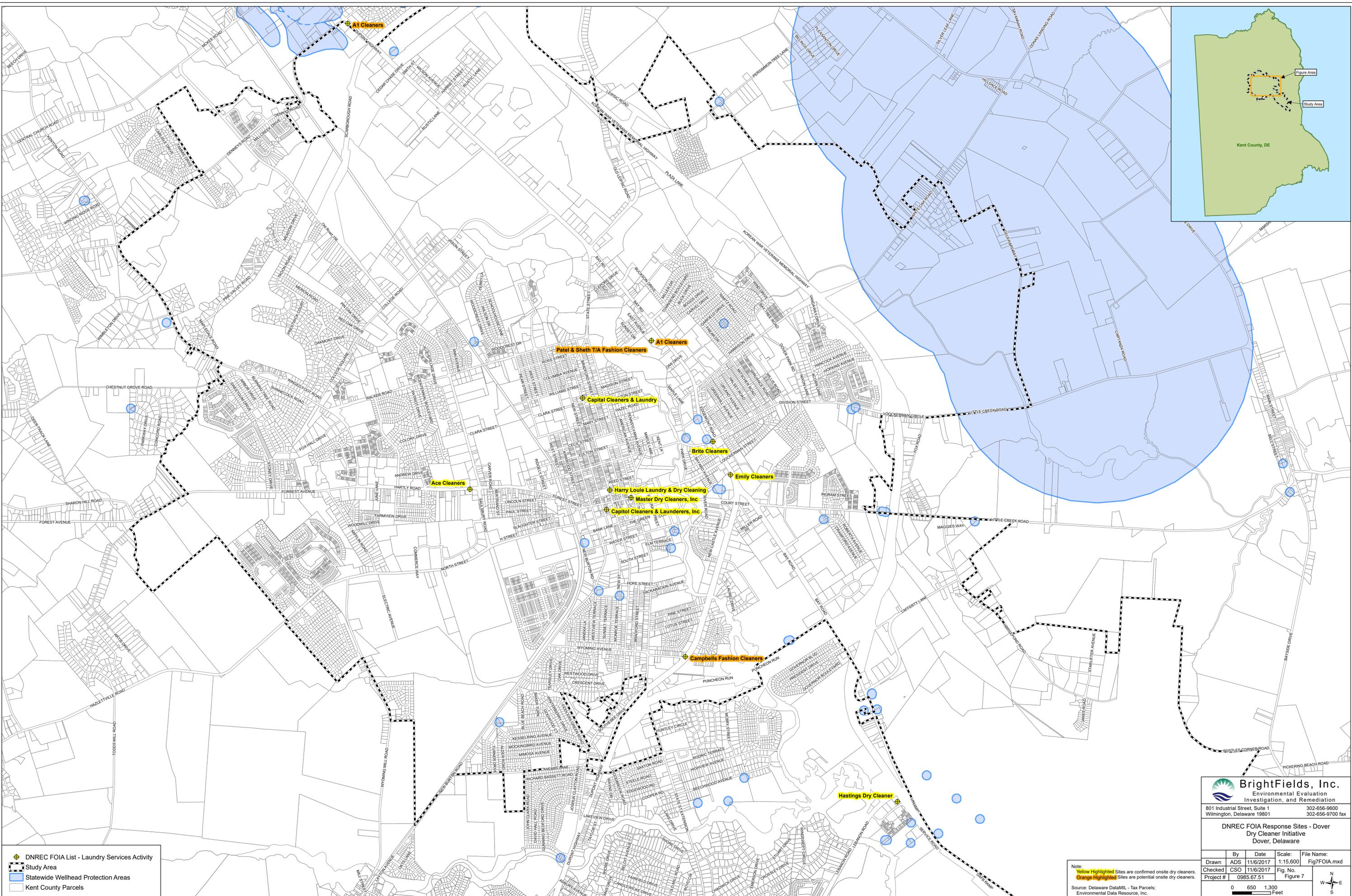
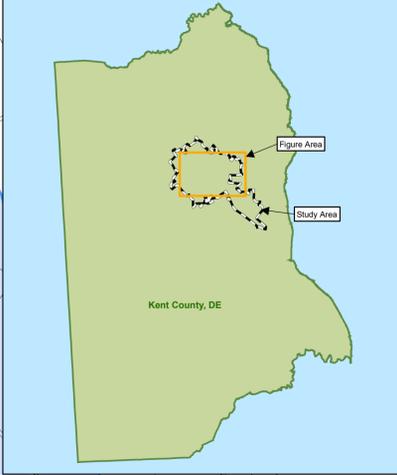
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**DNREC-SIRS HSCA Program Sites - Dover
 Dry Cleaner Initiative
 Dover, Delaware**

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Project #	0985.67.51	11/6/2017	Fig. No.	Figure 6

Note: **Yellow Highlighted** Sites are confirmed onsite dry cleaners.
 Source: Delaware DataMIL - Tax Parcels
 Environmental Data Resource, Inc.

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◆ DNREC FOIA List - Laundry Services Activity
 Study Area
 Statewide Wellhead Protection Areas
 Kent County Parcels

Note:
◆ Yellow Highlighted Sites are confirmed onsite dry cleaners.
◆ Orange Highlighted Sites are potential onsite dry cleaners.

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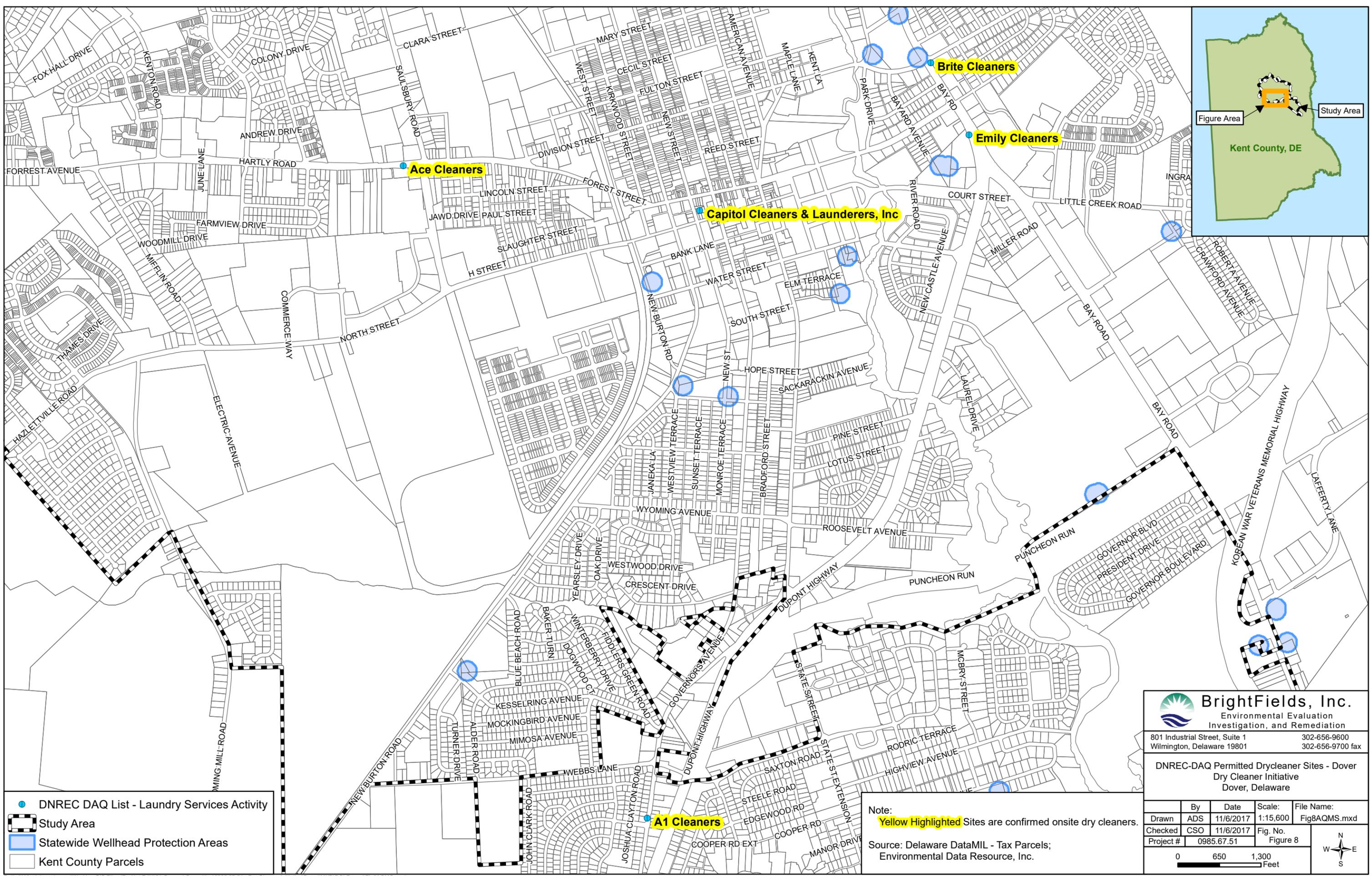
DNREC FOIA Response Sites - Dover
 Dry Cleaner Initiative
 Dover, Delaware

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Project #	0985.67.51	11/6/2017	Fig. No.	Figure 7

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

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- DNREC DAQ List - Laundry Services Activity
- Study Area
- Statewide Wellhead Protection Areas
- Kent County Parcels

Note:
Yellow Highlighted Sites are confirmed onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.



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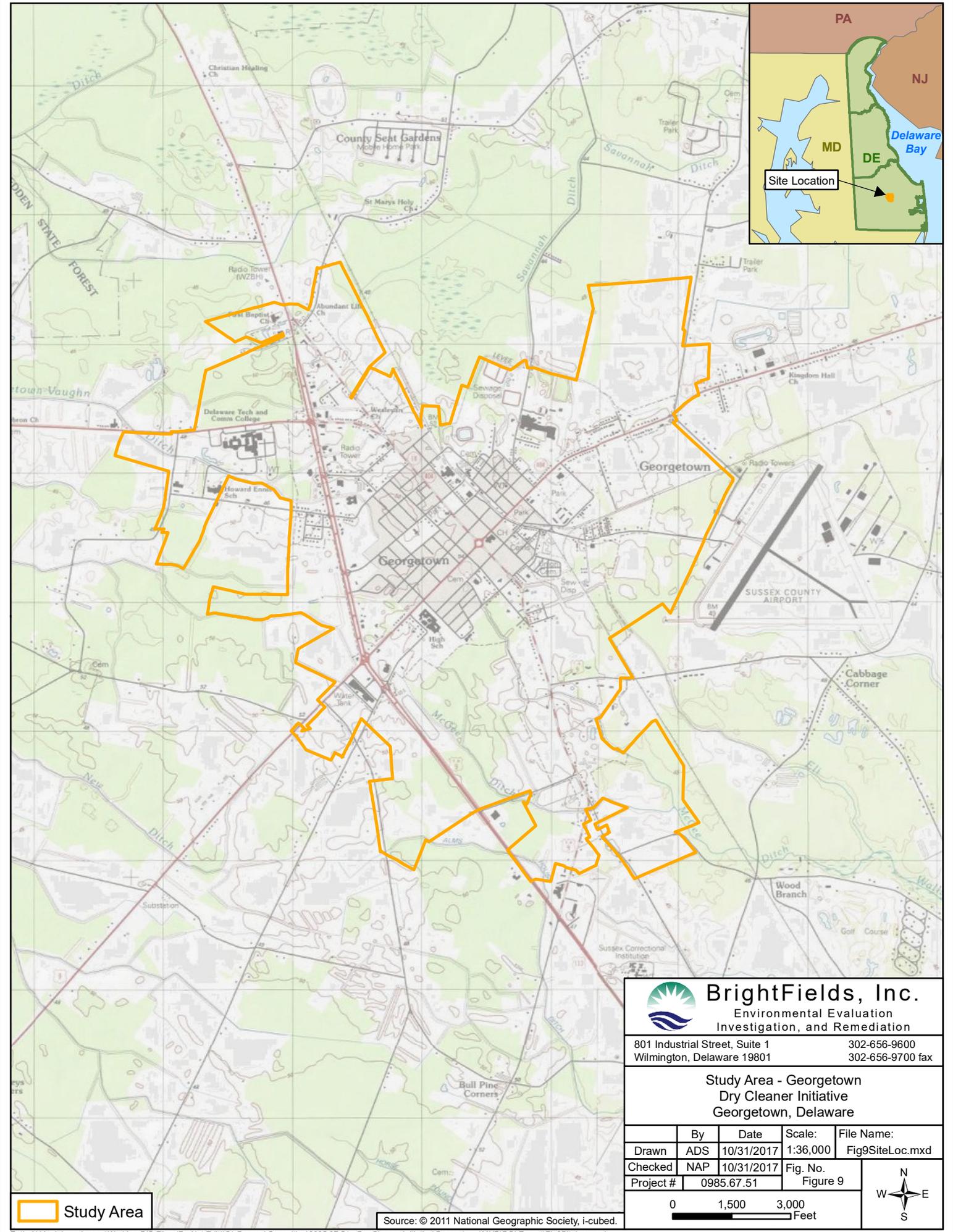
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 Dry Cleaner Initiative
 Dover, Delaware**

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Project #	CSO	11/6/2017	Fig. No.	
	0985.67.51		Figure 8	

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 Study Area

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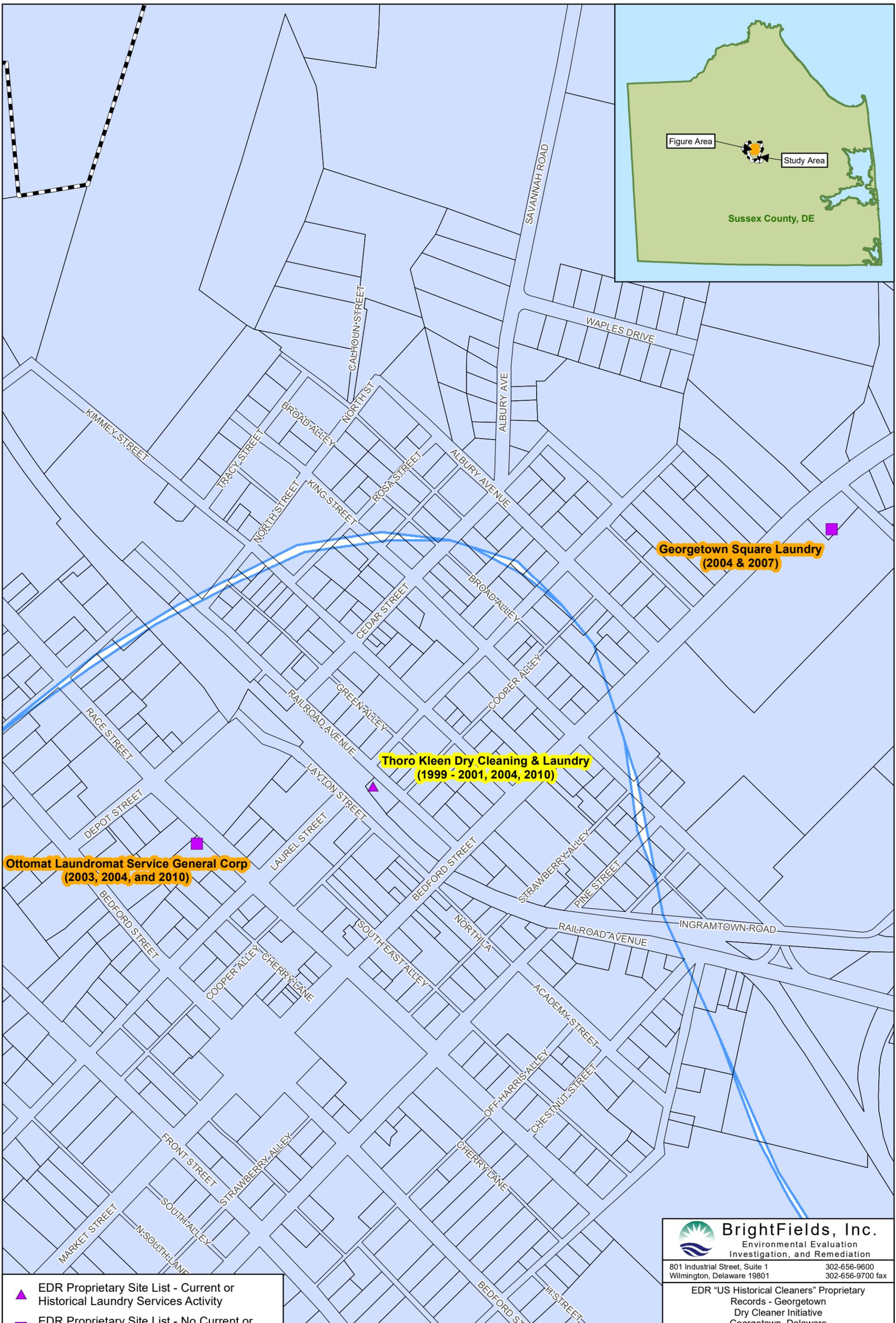
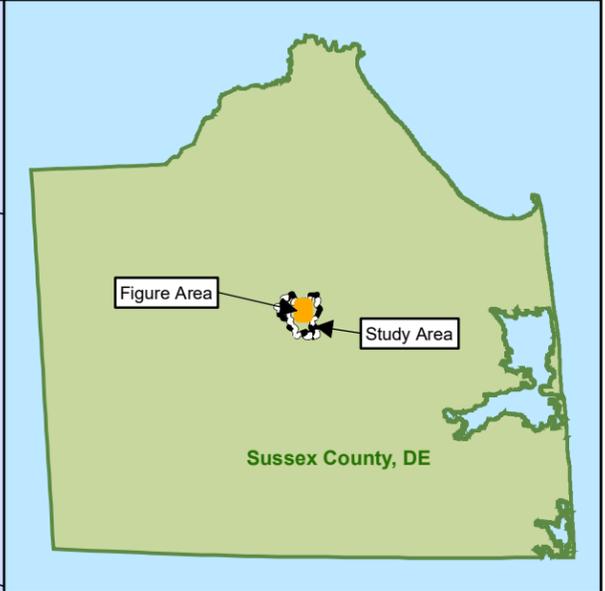
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 Georgetown, Delaware**

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Source: © 2011 National Geographic Society, i-cubed.



Ottomat Laundromat Service General Corp
(2003, 2004, and 2010)

Thoro Kleen Dry Cleaning & Laundry
(1999 - 2001, 2004, 2010)

Georgetown Square Laundry
(2004 & 2007)

- EDR Proprietary Site List - Current or Historical Laundry Services Activity
- EDR Proprietary Site List - No Current or Historical Laundry Services Activity
- Study Area
- Sussex County Parcels
- Statewide Wellhead Protection Areas

Note:
Yellow Highlighted Sites are confirmed onsite dry cleaners.
Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

BrightFields, Inc.
 Environmental Evaluation
 Investigation, and Remediation

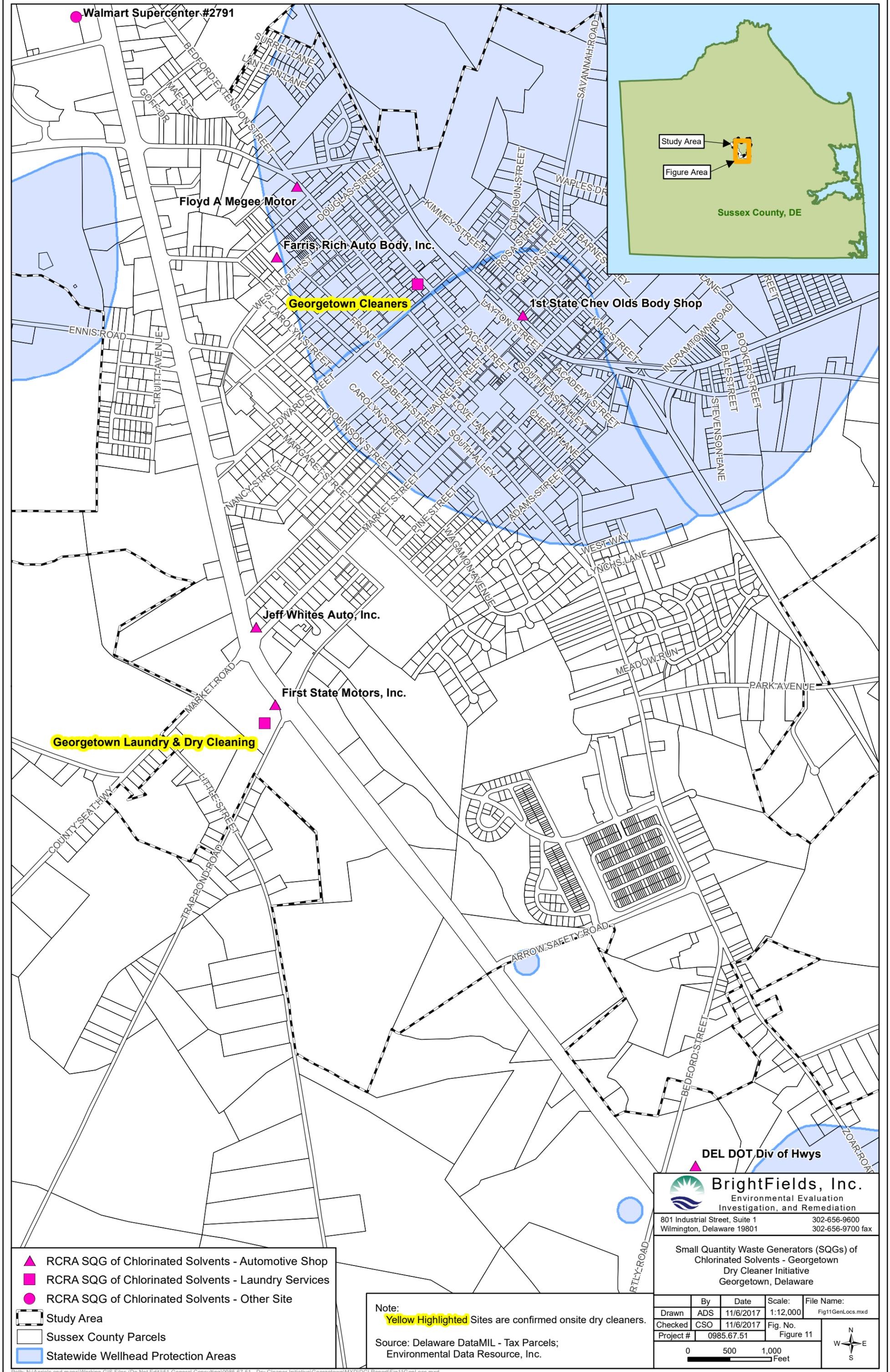
801 Industrial Street, Suite 1
 Wilmington, Delaware 19801

302-656-9600
 302-656-9700 fax

EDR "US Historical Cleaners" Proprietary
 Records - Georgetown
 Dry Cleaner Initiative
 Georgetown, Delaware

	By	Date	Scale:	File Name:
Drawn	ADS	11/6/2017	1:3,600	Fig10Proprietary.mxd
Checked	CSO	11/6/2017	Fig. No.	
Project #	0985.67.51		Figure 10	

0 150 300 Feet



- ▲ RCRA SQG of Chlorinated Solvents - Automotive Shop
- RCRA SQG of Chlorinated Solvents - Laundry Services
- RCRA SQG of Chlorinated Solvents - Other Site
- ▭ Study Area
- ▭ Sussex County Parcels
- ▭ Statewide Wellhead Protection Areas

Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

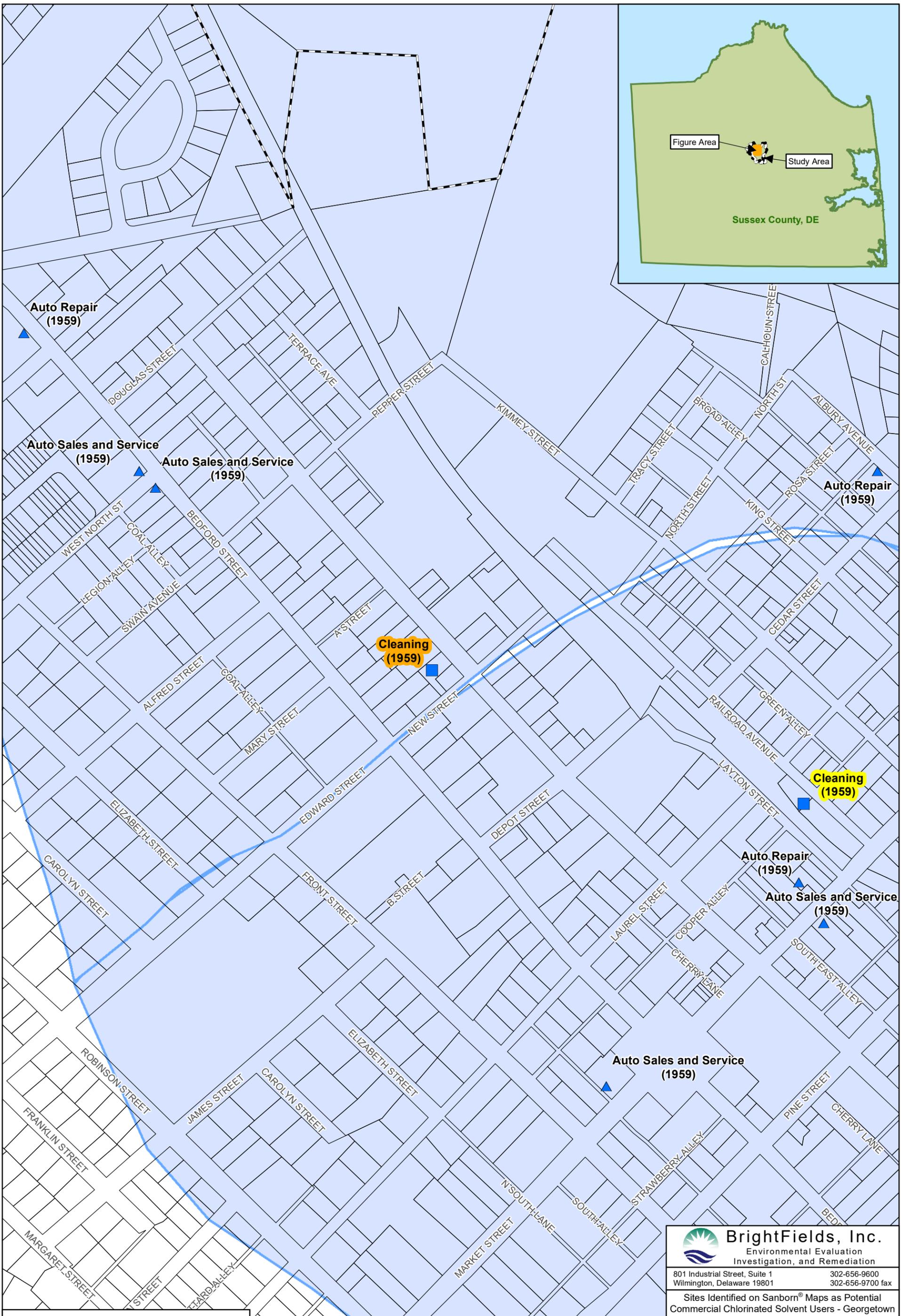
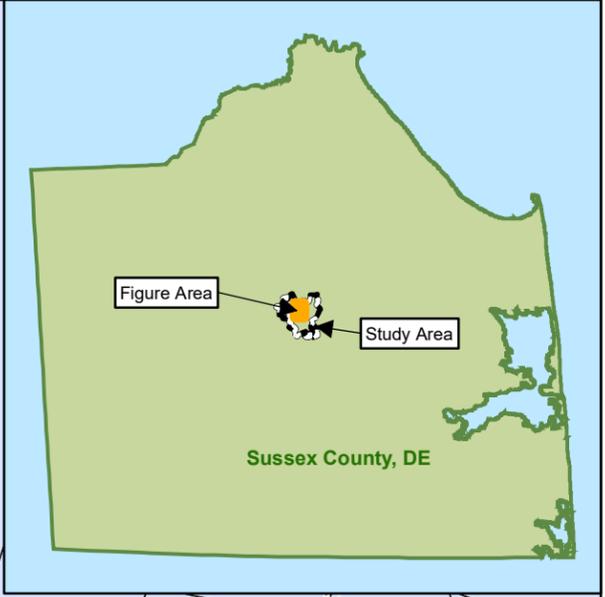
DEL DOT Div of Hwys

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 Environmental Evaluation
 Investigation, and Remediation
 801 Industrial Street, Suite 1
 Wilmington, Delaware 19801
 302-656-9600
 302-656-9700 fax

Small Quantity Waste Generators (SQGs) of
 Chlorinated Solvents - Georgetown
 Dry Cleaner Initiative
 Georgetown, Delaware

By	Date	Scale:	File Name:
Drawn ADS	11/6/2017	1:12,000	Fig11GenLocs.mxd
Checked CSO	11/6/2017	Fig. No.	
Project #	0985.67.51	Figure 11	

0 500 1,000 Feet



- ▲ EDR Sanborn Data - Automotive Shop
- EDR Sanborn Data - Laundry Services
- Study Area
- Sussex County Parcels
- Statewide Wellhead Protection Areas

Note:
Yellow Highlighted Sites are confirmed onsite dry cleaners.
Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

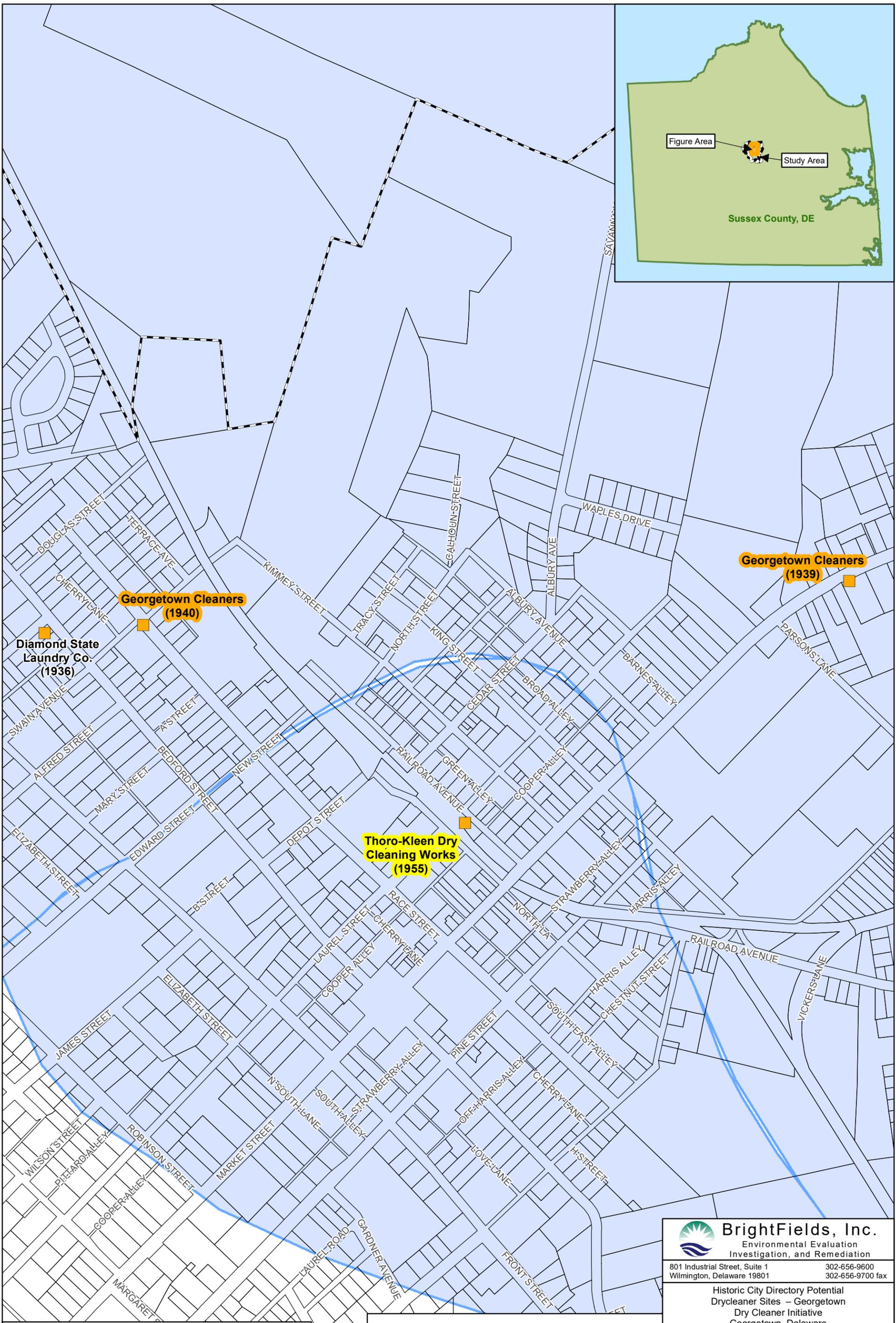
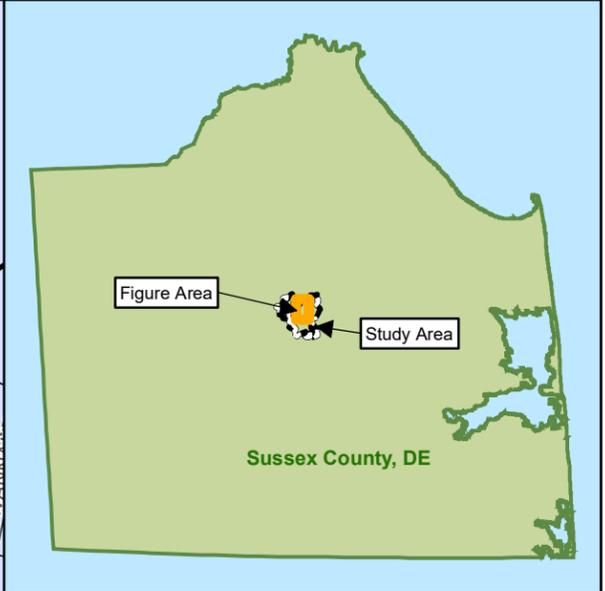
BrightFields, Inc.
 Environmental Evaluation
 Investigation, and Remediation

801 Industrial Street, Suite 1 302-656-9600
 Wilmington, Delaware 19801 302-656-9700 fax

Sites Identified on Sanborn® Maps as Potential
 Commercial Chlorinated Solvent Users - Georgetown
 Dry Cleaner Initiative
 Georgetown, Delaware

	By	Date	Scale:	File Name:
Drawn	ADS	11/6/2017	1:3,600	Fig12SanbornLoc.mxd
Checked	CSO	11/6/2017	Fig. No.	
Project #	0985.67.51		Figure 12	

0 150 300
 Feet



- Historic City Directories Search - Laundry Services
- Study Area
- Sussex County Parcels
- Statewide Wellhead Protection Areas

Note:
Yellow Highlighted Sites are confirmed onsite dry cleaners.
Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

BrightFields, Inc.
 Environmental Evaluation
 Investigation, and Remediation

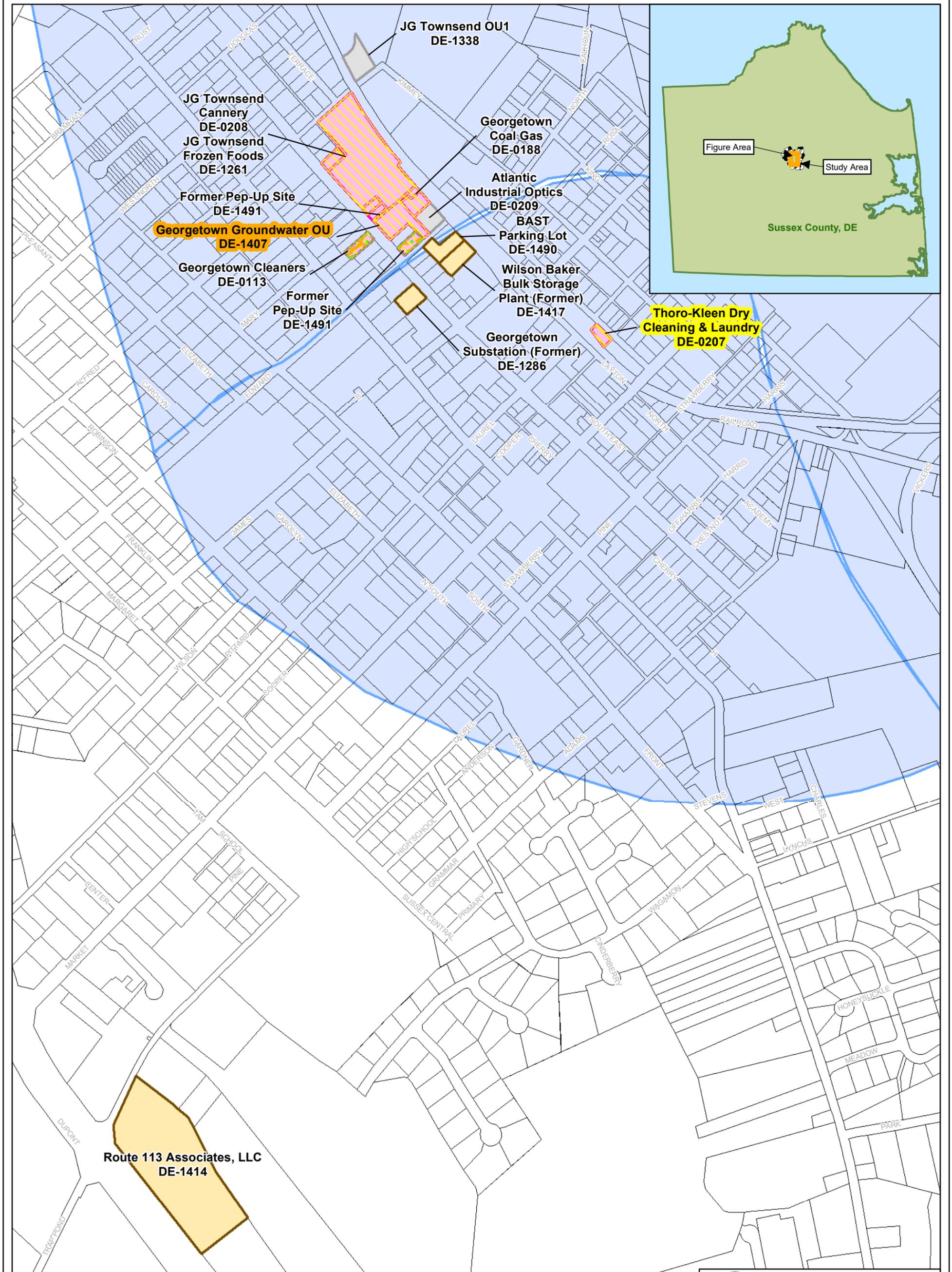
801 Industrial Street, Suite 1
 Wilmington, Delaware 19801

302-656-9600
 302-656-9700 fax

Historic City Directory Potential
 Drycleaner Sites – Georgetown
 Dry Cleaner Initiative
 Georgetown, Delaware

	By	Date	Scale:	File Name:
Drawn	ADS	11/6/2017	1:5,400	Fig13HistLocs.mxd
Checked	CSO	11/6/2017	Fig. No.	
Project #	0985.67.51		Figure 13	

0 225 450 Feet



JG Townsend OU1 DE-1338

JG Townsend Cannery DE-0208

JG Townsend Frozen Foods DE-1261

Former Pep-Up Site DE-1491

Georgetown Groundwater OU DE-1407

Georgetown Cleaners DE-0113

Former Pep-Up Site DE-1491

Georgetown Coal Gas DE-0188

Atlantic Industrial Optics DE-0209

BAST

Parking Lot DE-1490

Wilson Baker Bulk Storage Plant (Former) DE-1417

Georgetown Substation (Former) DE-1286

Thoro-Kleen Dry Cleaning & Laundry DE-0207

Route 113 Associates, LLC DE-1414

- Chlorinated Solvents Not Detected in Analyses
- Chlorinated Solvents Not Analyzed
- Chlorinated Solvents Detected in Analyses
- Chlorinated Solvents Detected in Soil
- Chlorinated Solvents Detected in Soil Gas
- Chlorinated Solvents Detected in Groundwater
- Study Area
- Sussex County Parcels
- Statewide Wellhead Protection Areas

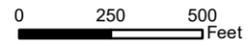
Note:
Yellow Highlighted Sites are confirmed onsite dry cleaners.
Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

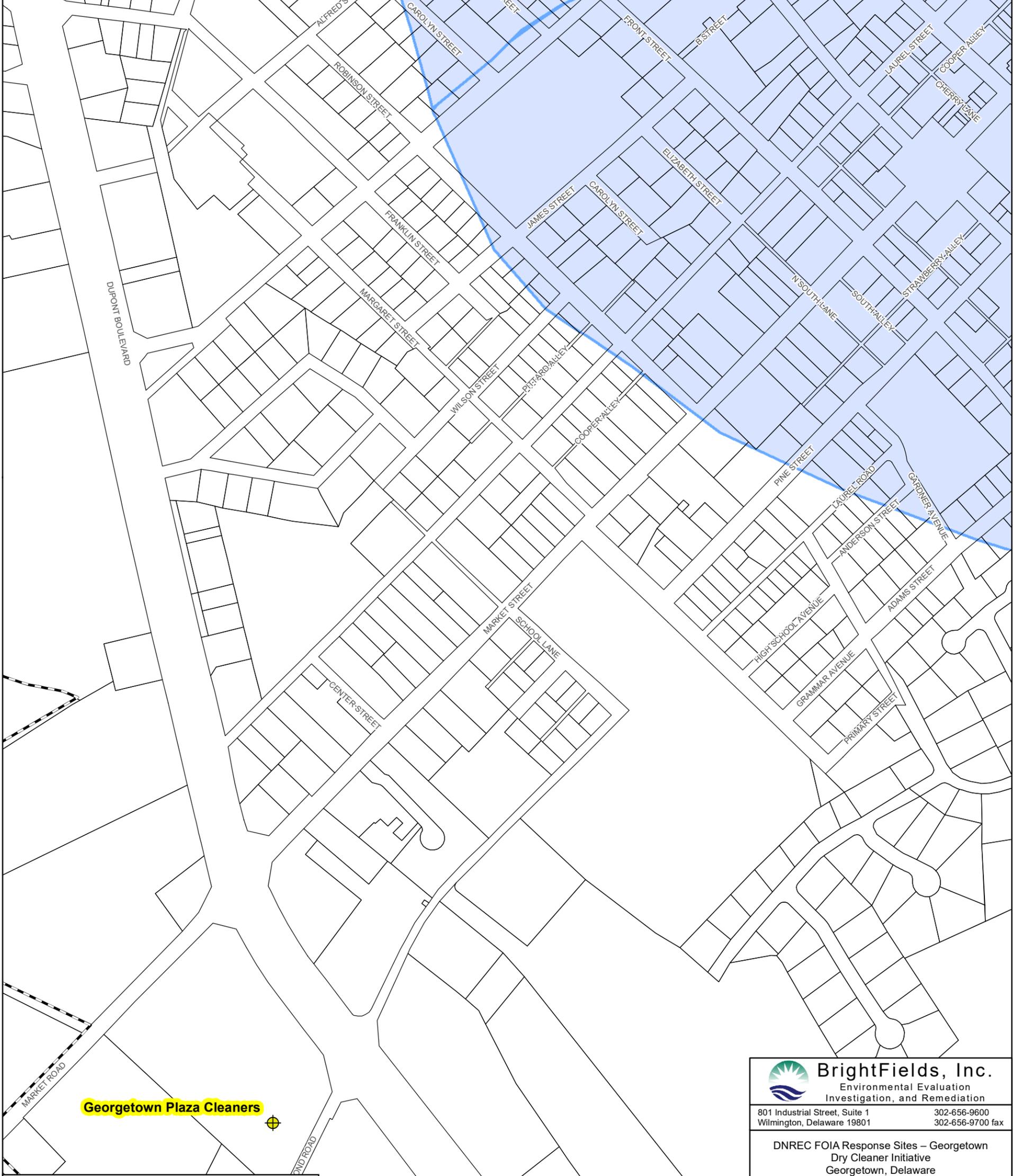
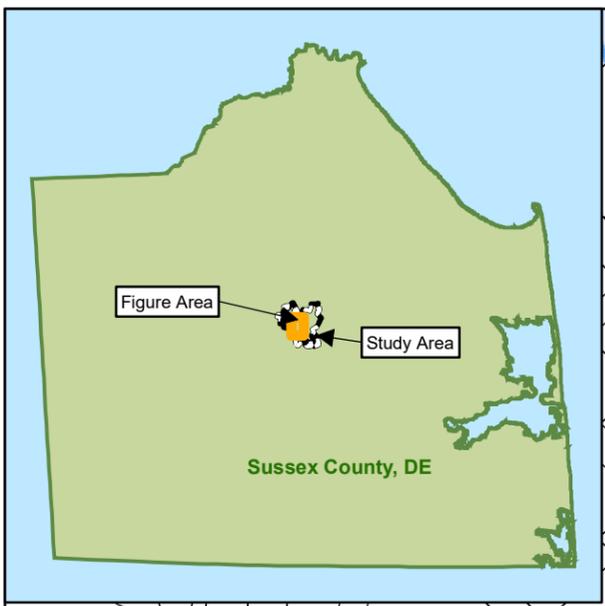


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DNREC-SIRS HSCA Program Sites- Georgetown Dry Cleaner Initiative Georgetown, Delaware			
Drawn	By	Date	Scale:
Checked	CSO	11/6/2017	1:6,000
Project #	0985.67.51	Figure No.	Figure 14
		File Name: Fig14SIRS_Locs.mxd	







- DNREC FOIA List - Laundry Services Activity
- Study Area
- Sussex County Parcels
- Statewide Wellhead Protection Areas

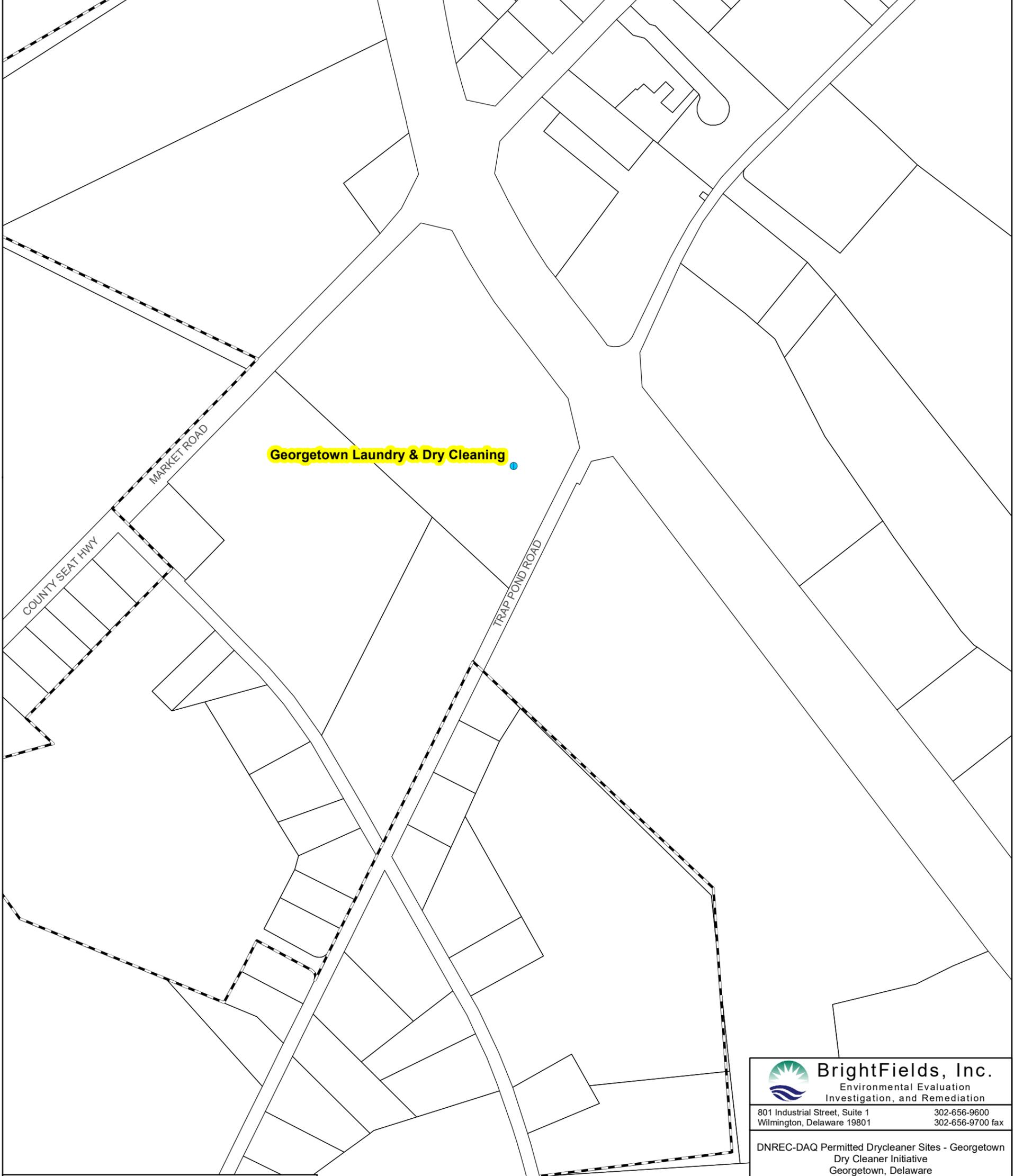
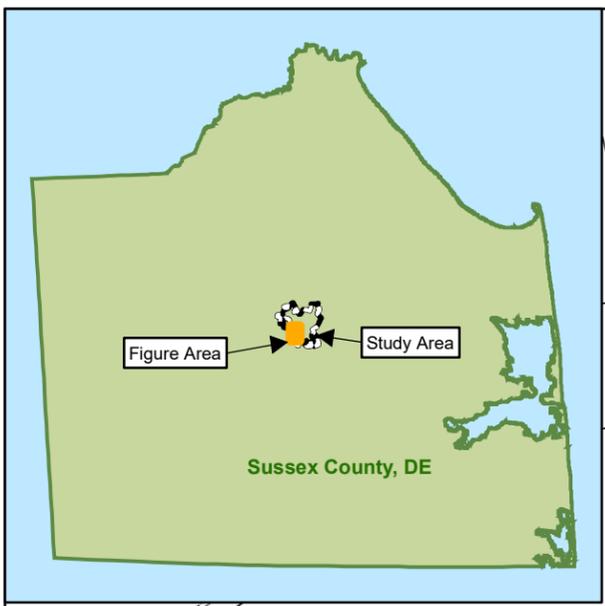
Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.



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 Investigation, and Remediation

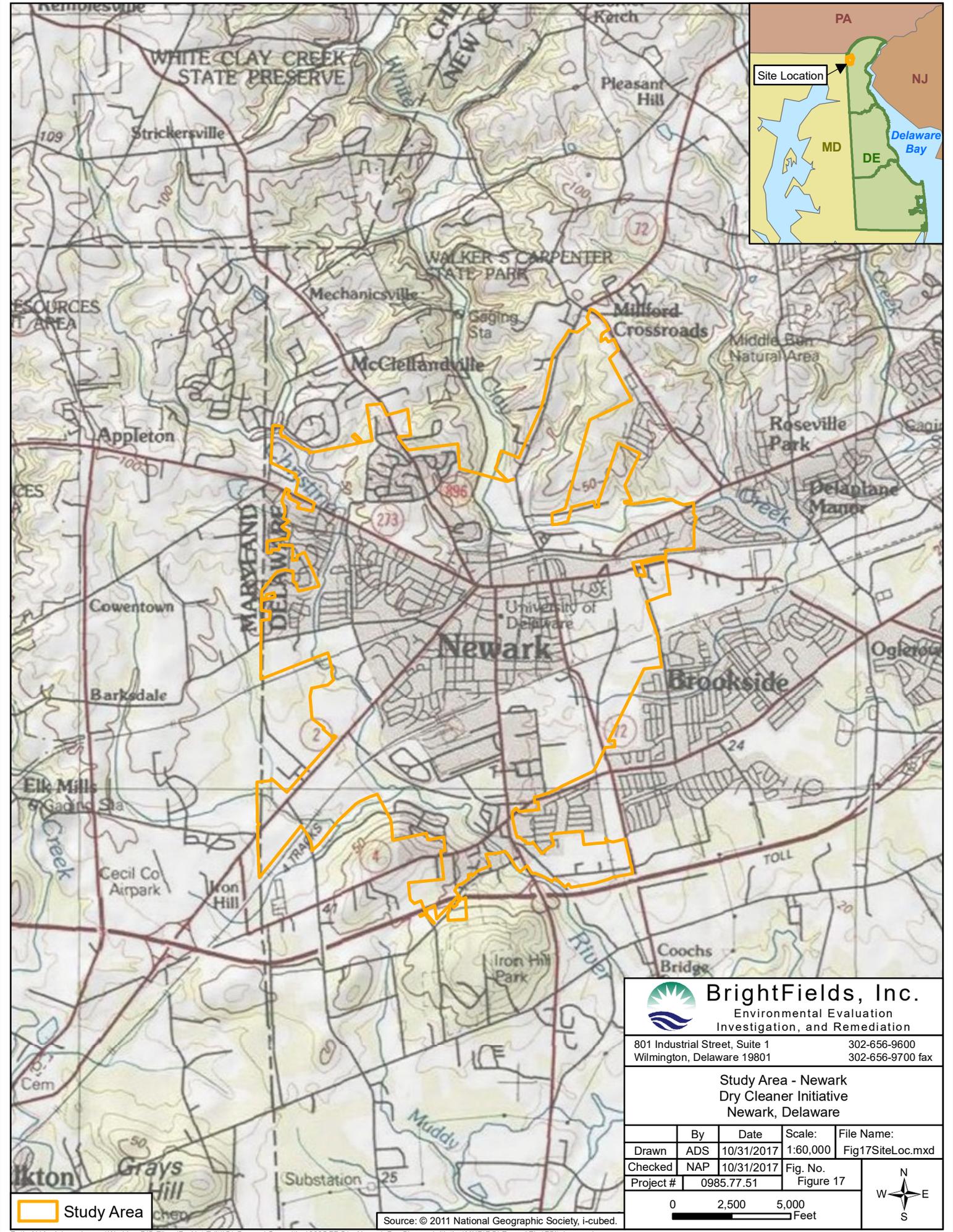
801 Industrial Street, Suite 1 Wilmington, Delaware 19801		302-656-9600 302-656-9700 fax		
DNREC FOIA Response Sites – Georgetown Dry Cleaner Initiative Georgetown, Delaware				
	By	Date	Scale:	File Name:
Drawn	ADS	11/6/2017	1:4,800	Fig15FOIA.mxd
Checked	CSO	11/6/2017	Fig. No.	
Project #	0985.67.51		Figure 15	
0 200 400 Feet				



- DNREC DAQ List - Laundry Services Activity
- Study Area
- Sussex County Parcels
- Statewide Wellhead Protection Areas

Note:
Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

BrightFields, Inc. Environmental Evaluation Investigation, and Remediation			
801 Industrial Street, Suite 1 Wilmington, Delaware 19801		302-656-9600 302-656-9700 fax	
DNREC-DAQ Permitted Drycleaner Sites - Georgetown Dry Cleaner Initiative Georgetown, Delaware			
	By	Date	Scale:
Drawn	ADS	11/6/2017	1:3,600
Checked	CSO	11/6/2017	Fig. No.
Project #	0985.67.51	Figure 16	
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0 150 300 Feet			

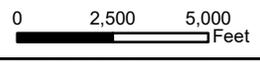


 Study Area

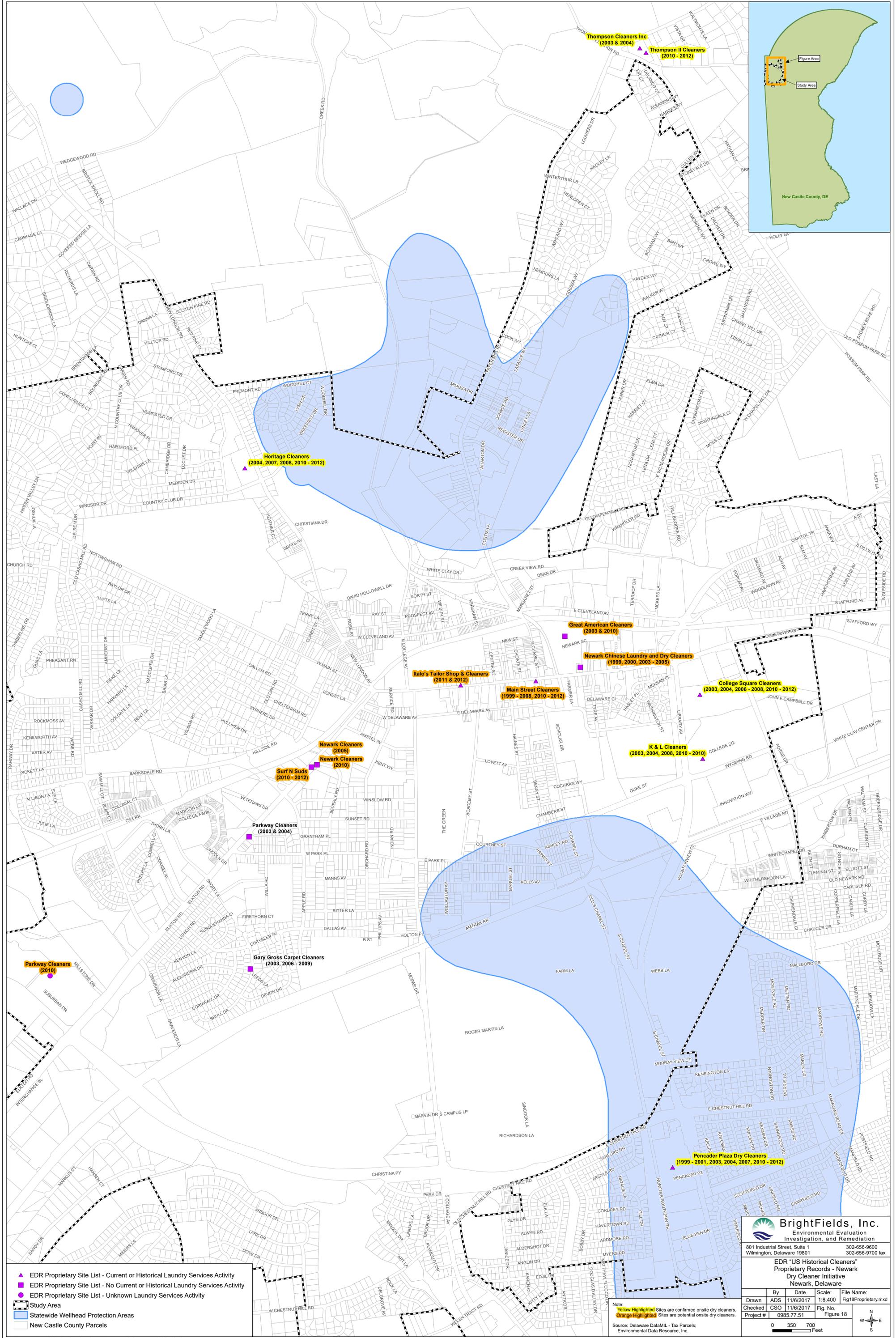
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 Investigation, and Remediation
 801 Industrial Street, Suite 1
 Wilmington, Delaware 19801
 302-656-9600
 302-656-9700 fax

**Study Area - Newark
 Dry Cleaner Initiative
 Newark, Delaware**

By	Date	Scale:	File Name:
Drawn ADS	10/31/2017	1:60,000	Fig17SiteLoc.mxd
Checked NAP	10/31/2017	Fig. No.	
Project # 0985.77.51		Figure 17	



Source: © 2011 National Geographic Society, i-cubed.



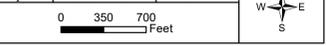
- ▲ EDR Proprietary Site List - Current or Historical Laundry Services Activity
- EDR Proprietary Site List - No Current or Historical Laundry Services Activity
- EDR Proprietary Site List - Unknown Laundry Services Activity
- ▭ Study Area
- ▭ Statewide Wellhead Protection Areas
- ▭ New Castle County Parcels

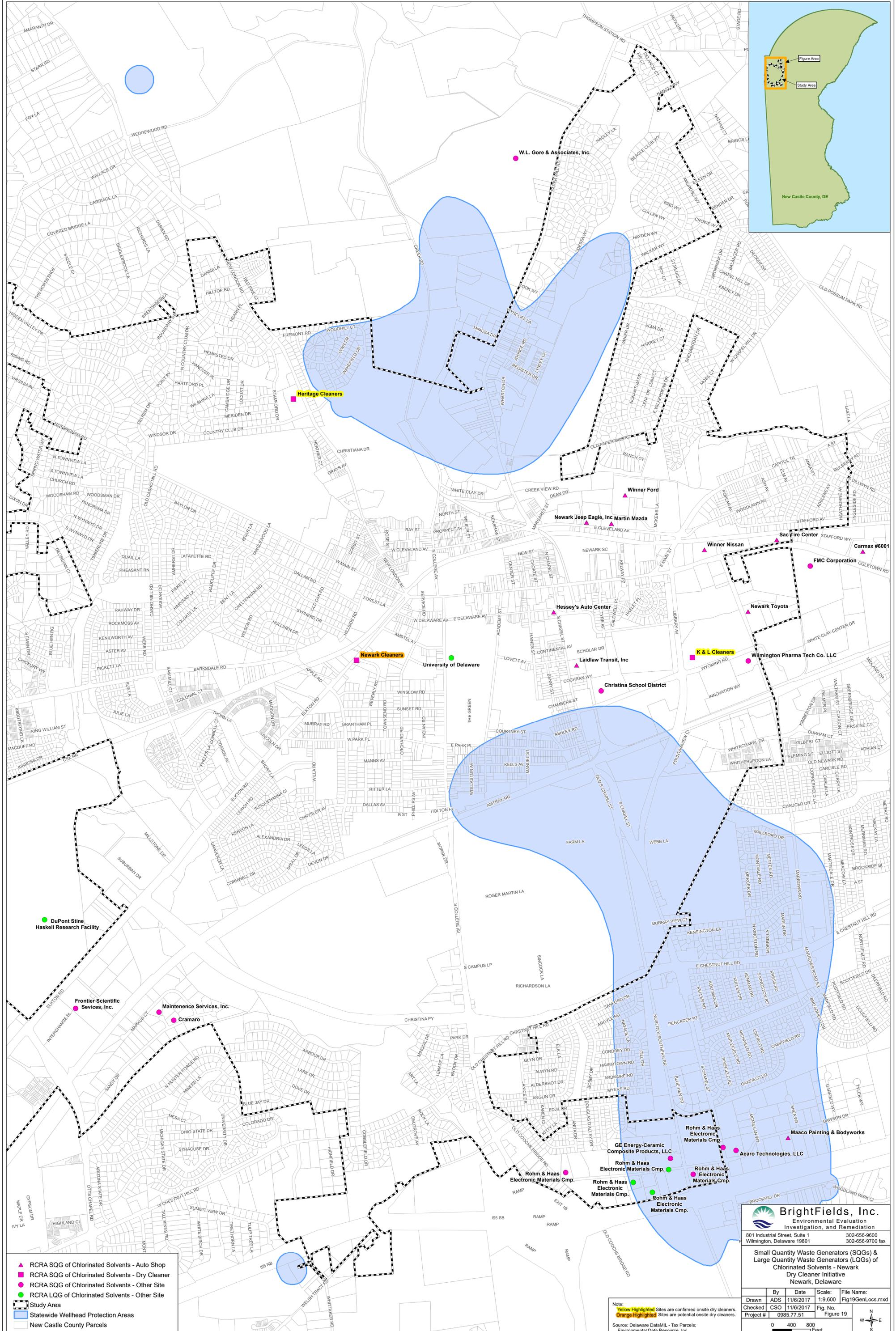
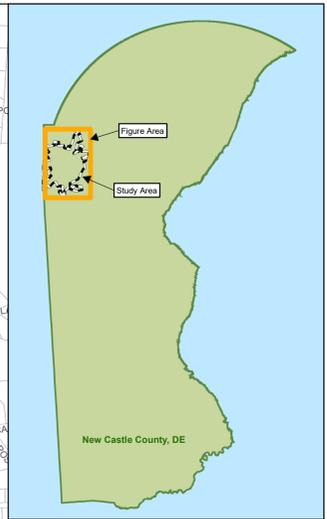
BrightFields, Inc.
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 Wilmington, Delaware 19801
 302-656-9600
 302-656-9700 fax

EDR "US Historical Cleaners" Proprietary Records - Newark Dry Cleaner Initiative Newark, Delaware				
Drawn	By	Date	Scale	File Name:
Checked	ADS	11/6/2017	1:8,400	Fig18Proprietary.mxd
Project #	CSO	11/6/2017	Fig. No.	Figure 18
	0985.77.51			

Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.





- ▲ RCRA SQG of Chlorinated Solvents - Auto Shop
- RCRA SQG of Chlorinated Solvents - Dry Cleaner
- RCRA SQG of Chlorinated Solvents - Other Site
- RCRA LQG of Chlorinated Solvents - Other Site
- ▭ Study Area
- ▭ Statewide Wellhead Protection Areas
- ▭ New Castle County Parcels

Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.

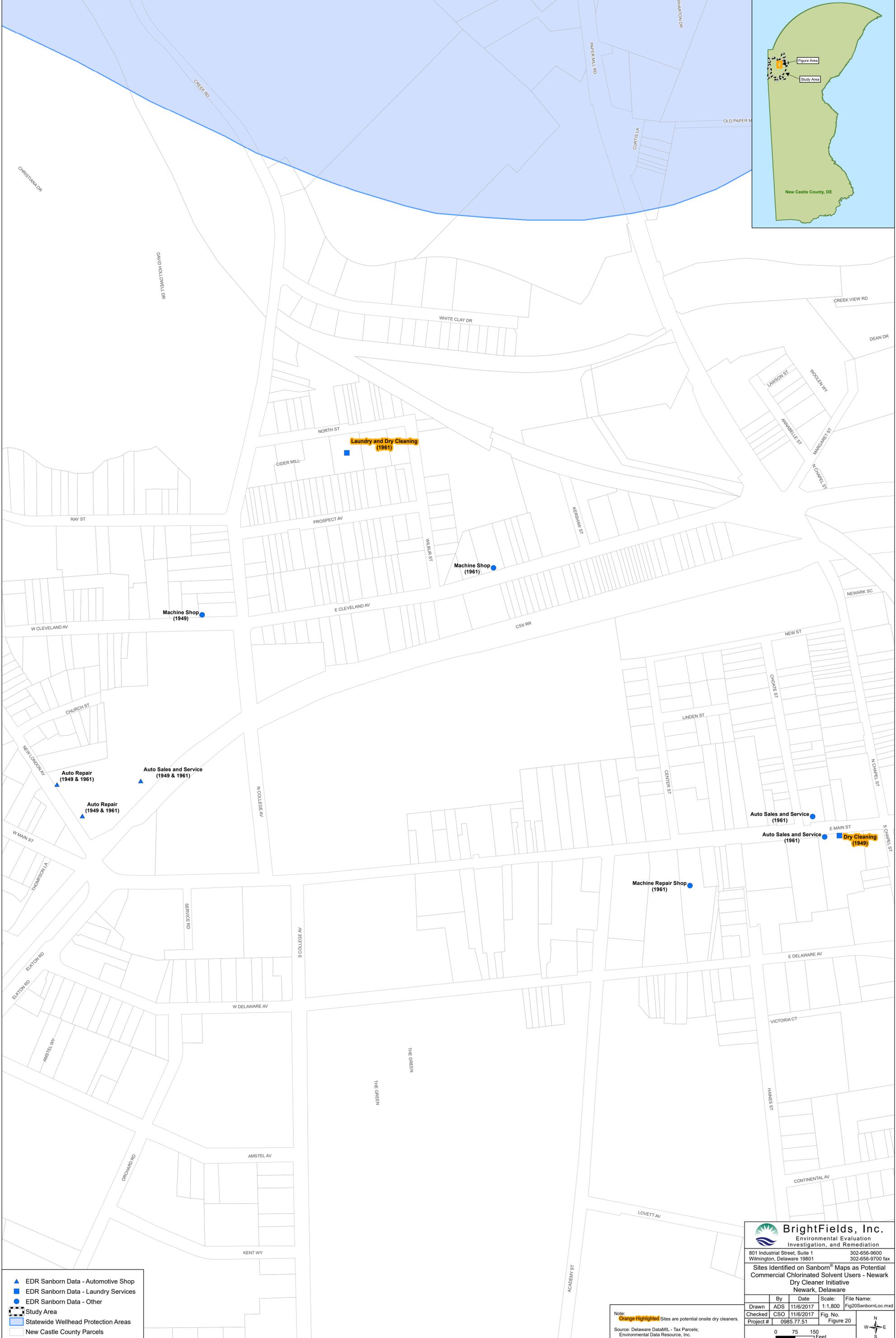
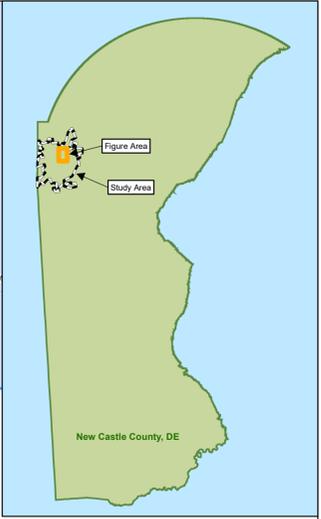
Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

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 Wilmington, Delaware 19801
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 302-656-9700 fax

Small Quantity Waste Generators (SQGs) &
 Large Quantity Waste Generators (LQGs) of
 Chlorinated Solvents - Newark
 Dry Cleaner Initiative
 Newark, Delaware

Drawn	By	Date	Scale	File Name:
Checked	ADS	11/6/2017	1:9,600	Fig19GenLocs.mxd
Project #	CSO	0985.77.51	Fig. No.	Figure 19





- ▲ EDR Sanborn Data - Automotive Shop
- EDR Sanborn Data - Laundry Services
- EDR Sanborn Data - Other
- ▣ Study Area
- ▭ Statewide Wellhead Protection Areas
- ▭ New Castle County Parcels

Note:
 Orange Highlighted Sites are potential onsite dry cleaners.
 Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

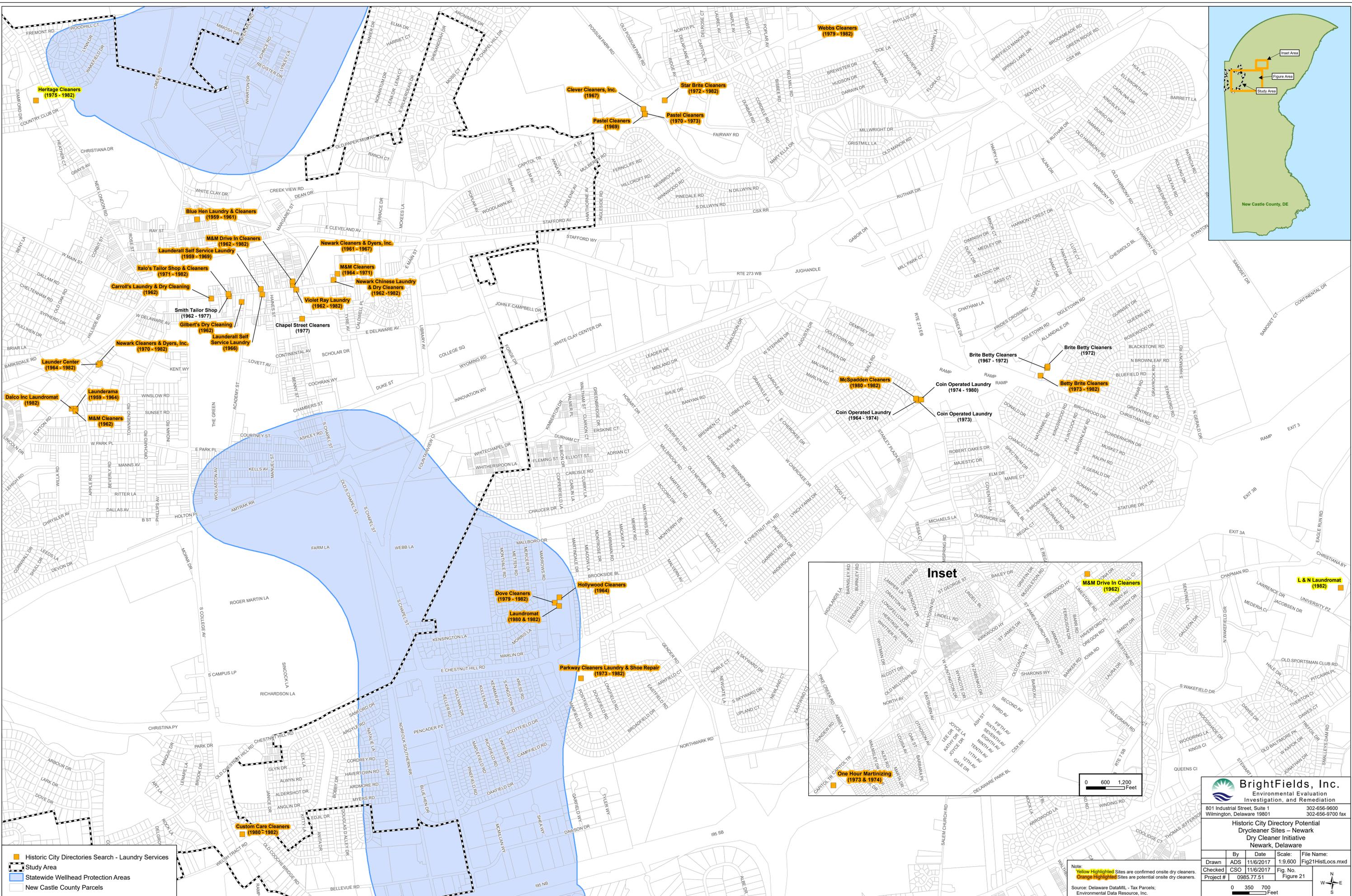
BrightFields, Inc.
 Environmental Evaluation
 Investigation, and Remediation
 801 Industrial Street, Suite 1 302-656-9600
 Wilmington, Delaware 19801 302-656-9700 fax

Sites Identified on Sanborn® Maps as Potential
 Commercial Chlorinated Solvent Users - Newark
 Dry Cleaner Initiative
 Newark, Delaware

Drawn	By	Date	Scale	File Name:
ADS	ADS	11/6/2017	1:1,800	Fig20SanbornLoc.mxd
Checked	CSO	11/6/2017	Fig. No.	Figure 20
Project #	0985.77.51		Figure No.	Figure 20

0 75 150 Feet

Path: W:\Archie and map\Workshop GIS Files\GIS\03011 General\03011008_P161 - Newark Dry Cleaners Initiative\MAP2001_Rawset\Fig20Sanborn.mxd



■ Historic City Directories Search - Laundry Services
 Study Area
 Statewide Wellhead Protection Areas
 New Castle County Parcels

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 302-656-9600
 302-656-9700 fax

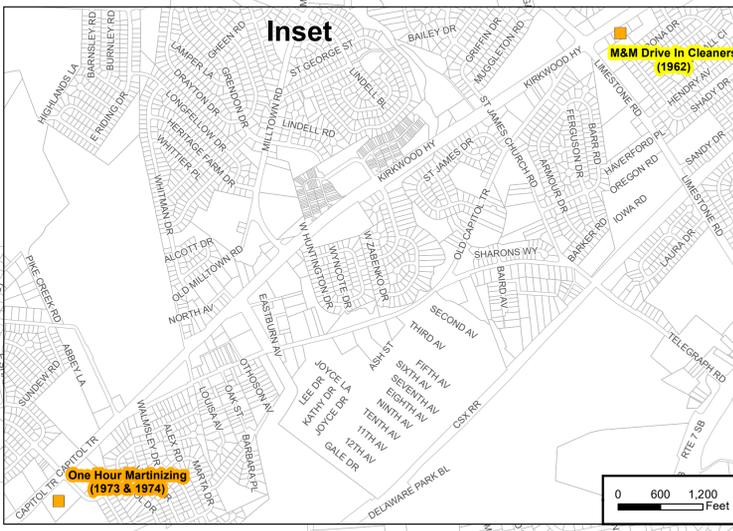
**Historic City Directory Potential
 Drycleaner Sites - Newark
 Dry Cleaner Initiative
 Newark, Delaware**

Drawn	By	Date	Scale	File Name:
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Project #	0985.77.51	Fig No	Figure 21	

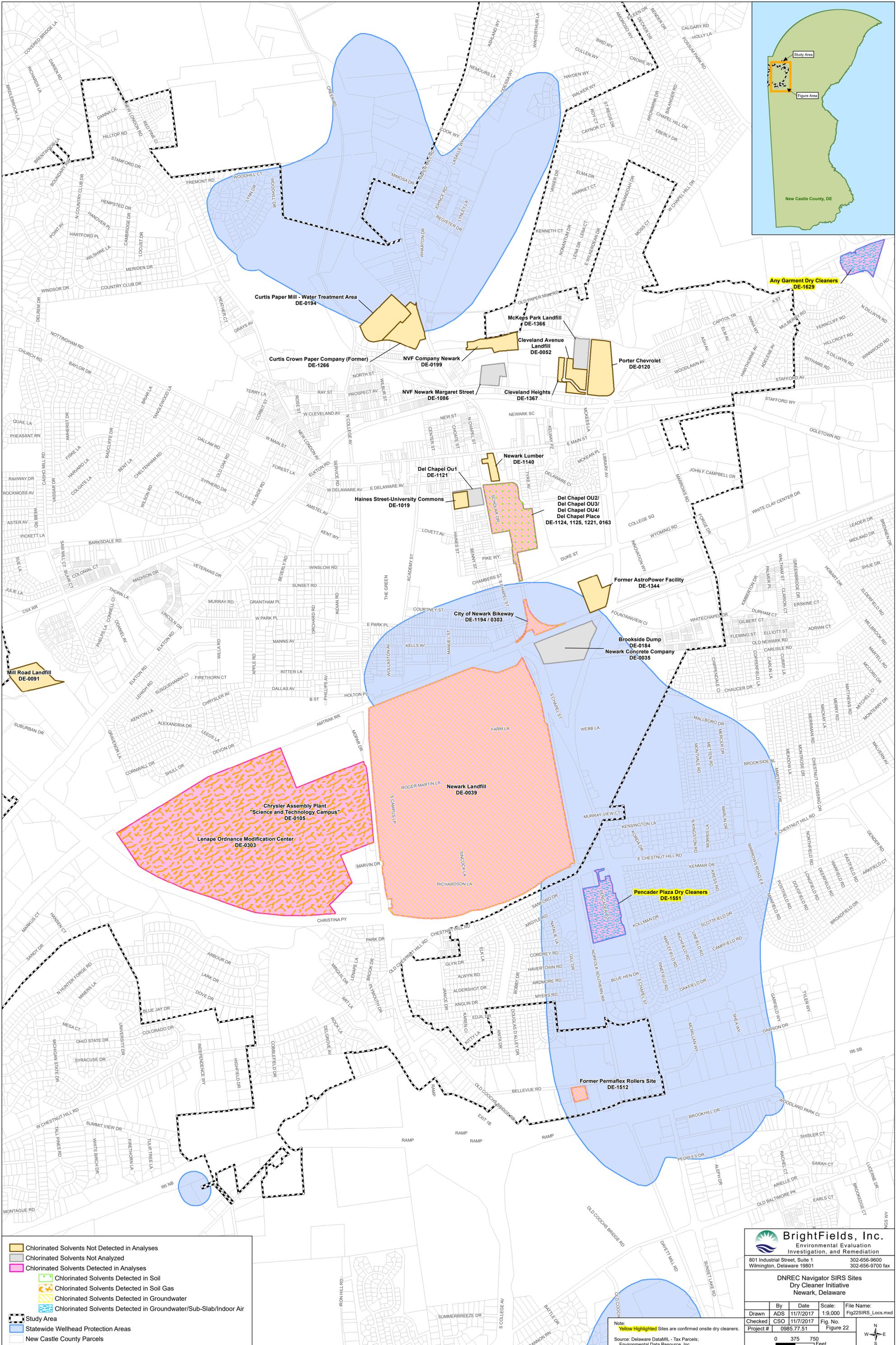
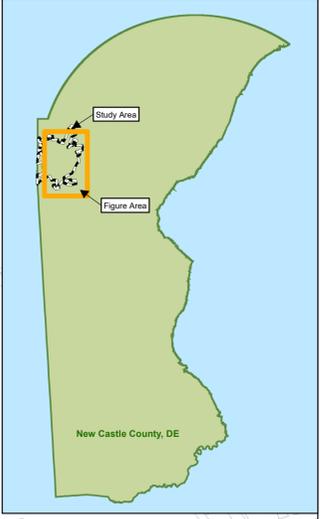
Note:
■ Yellow Highlighted Sites are confirmed onsite dry cleaners.
■ Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

0 350 700 Feet



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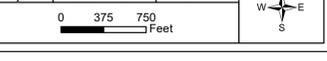
- Chlorinated Solvents Not Detected in Analyses
- Chlorinated Solvents Not Analyzed
- Chlorinated Solvents Detected in Analyses
- Chlorinated Solvents Detected in Soil
- Chlorinated Solvents Detected in Soil Gas
- Chlorinated Solvents Detected in Groundwater
- Chlorinated Solvents Detected in Groundwater/Sub-Slab/Indoor Air
- Study Area
- Statewide Wellhead Protection Areas
- New Castle County Parcels

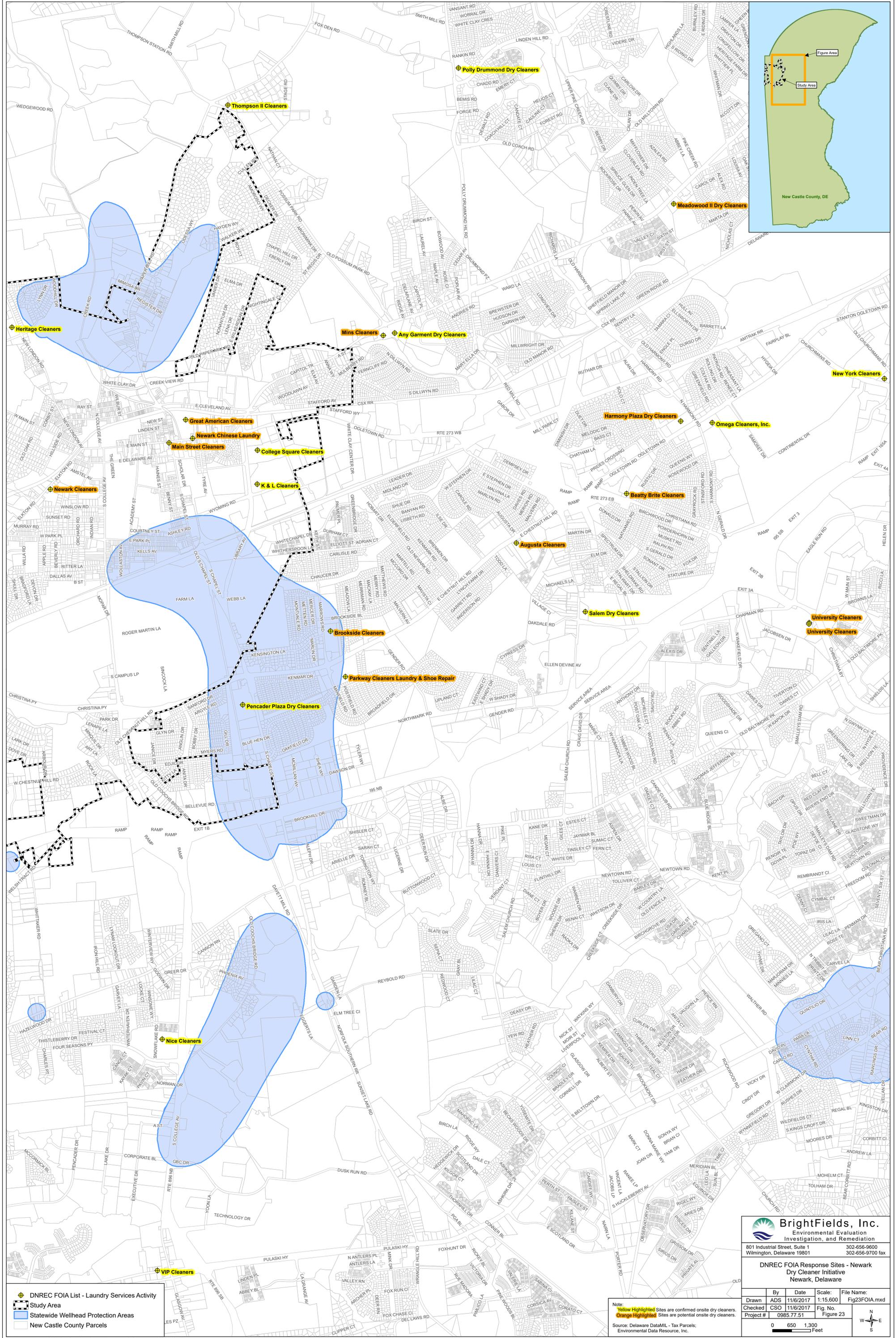
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 302-656-9700 fax

**DNREC Navigator SIRS Sites
 Dry Cleaner Initiative
 Newark, Delaware**

Drawn	By	Date	Scale	File Name:
Checked	ADS	11/7/2017	1:9,000	Fig22SIRS_Locs.mxd
Project #	0985.77.51	Fig. No.	Figure 22	

Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.





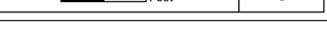
DNREC FOIA List - Laundry Services Activity
 Study Area
 Statewide Wellhead Protection Areas
 New Castle County Parcels

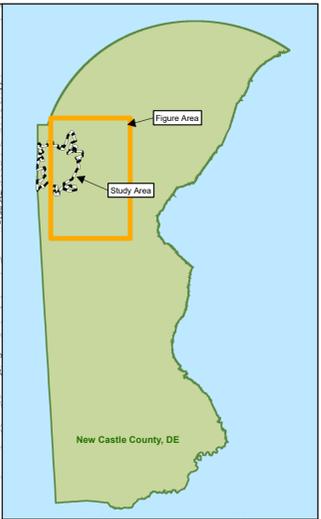
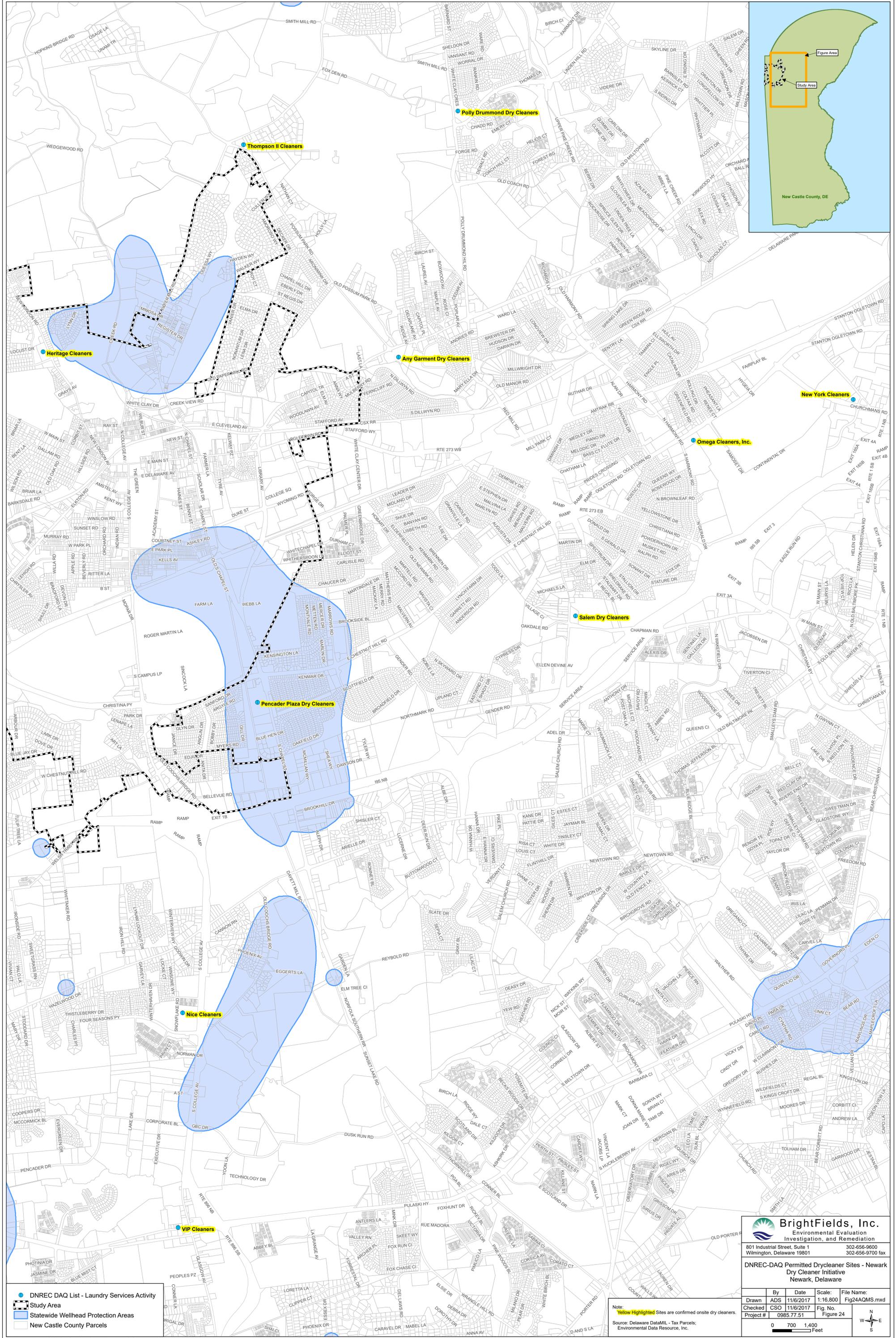
Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.
 Source: Delaware DataMIL - Tax Parcels;
 Environmental Data Resource, Inc.

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 Investigation, and Remediation
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 Wilmington, Delaware 19801 302-656-9700 fax

**DNREC FOIA Response Sites - Newark
 Dry Cleaner Initiative
 Newark, Delaware**

Drawn	By	Date	Scale	File Name:
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Project #	CSO	11/6/2017	Fig. No.	Figure 23
	0985.77.51			





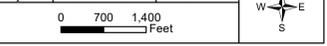
- DNREC DAQ List - Laundry Services Activity
- Study Area
- Statewide Wellhead Protection Areas
- New Castle County Parcels

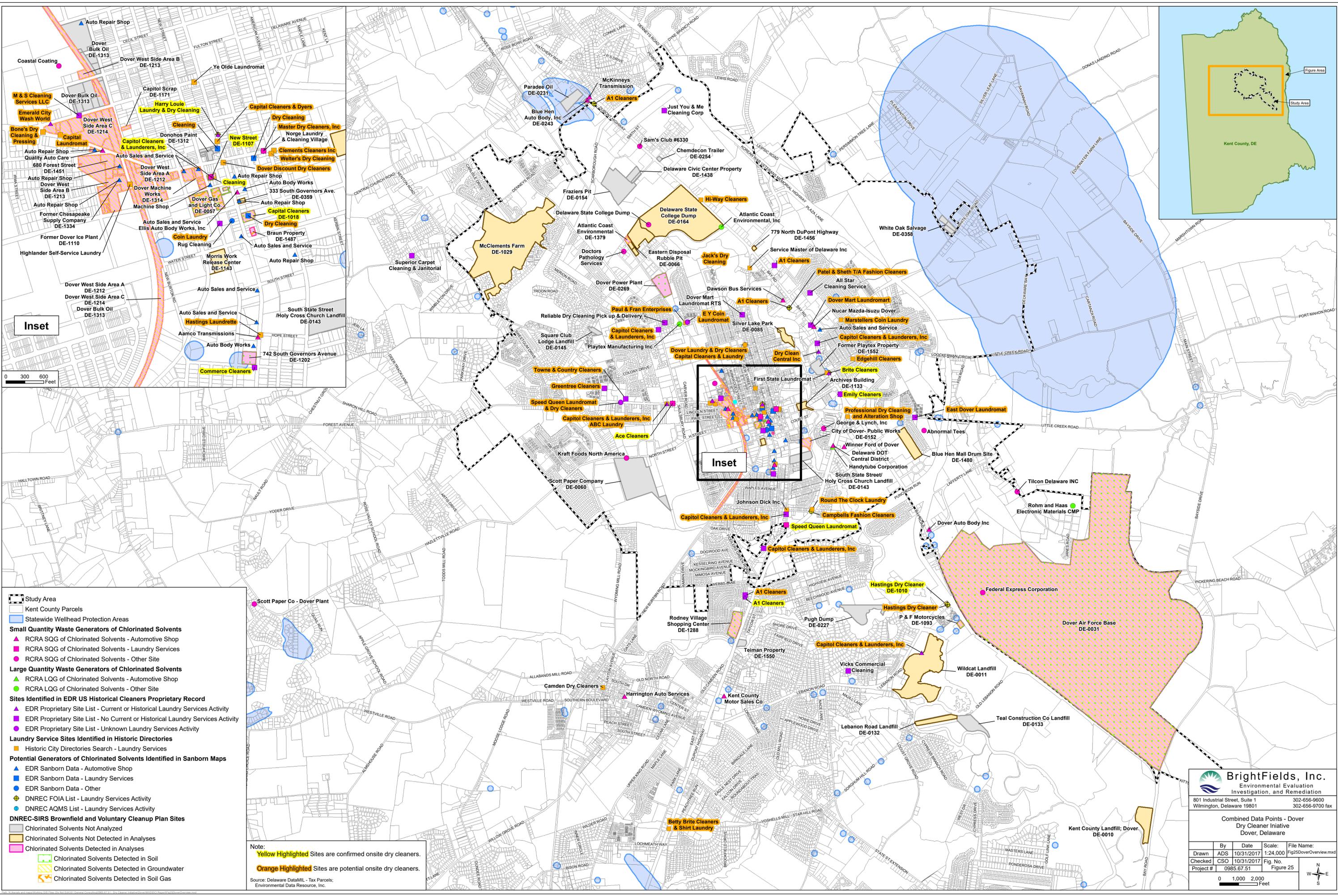
Note:
 Yellow Highlighted Sites are Confirmed onsite dry cleaners.
 Source: Delaware DataMIL - Tax parcels;
 Environmental Data Resource, Inc.

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**DNREC-DAQ Permitted Drycleaner Sites - Newark
 Dry Cleaner Initiative
 Newark, Delaware**

Drawn	By	Date	Scale	File Name:
Checked	ADS	11/6/2017	1:16,800	Fig24AQMS.mxd
Project #	0985.77.51	11/6/2017	Fig. No.	Figure 24





Study Area

- Kent County Parcels
- Statewide Wellhead Protection Areas

Small Quantity Waste Generators of Chlorinated Solvents

- RCRA SQG of Chlorinated Solvents - Automotive Shop
- RCRA SQG of Chlorinated Solvents - Laundry Services
- RCRA SQG of Chlorinated Solvents - Other Site

Large Quantity Waste Generators of Chlorinated Solvents

- RCRA LQG of Chlorinated Solvents - Automotive Shop
- RCRA LQG of Chlorinated Solvents - Other Site

Sites Identified in EDR US Historical Cleaners Proprietary Record

- EDR Proprietary Site List - Current or Historical Laundry Services Activity
- EDR Proprietary Site List - No Current or Historical Laundry Services Activity
- EDR Proprietary Site List - Unknown Laundry Services Activity

Laundry Service Sites Identified in Historic Directories

- Historic City Directories Search - Laundry Services

Potential Generators of Chlorinated Solvents Identified in Sanborn Maps

- EDR Sanborn Data - Automotive Shop
- EDR Sanborn Data - Laundry Services
- EDR Sanborn Data - Other
- DNREC FOIA List - Laundry Services Activity
- DNREC AQMS List - Laundry Services Activity

DNREC-SIRS Brownfield and Voluntary Cleanup Plan Sites

- Chlorinated Solvents Not Analyzed
- Chlorinated Solvents Not Detected in Analyses
- Chlorinated Solvents Detected in Analyses

Note:

- Yellow Highlighted Sites are confirmed onsite dry cleaners.
- Chlorinated Solvents Detected in Soil
- Chlorinated Solvents Detected in Groundwater
- Chlorinated Solvents Detected in Soil Gas

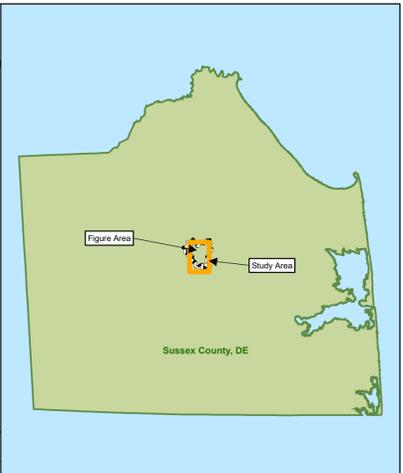
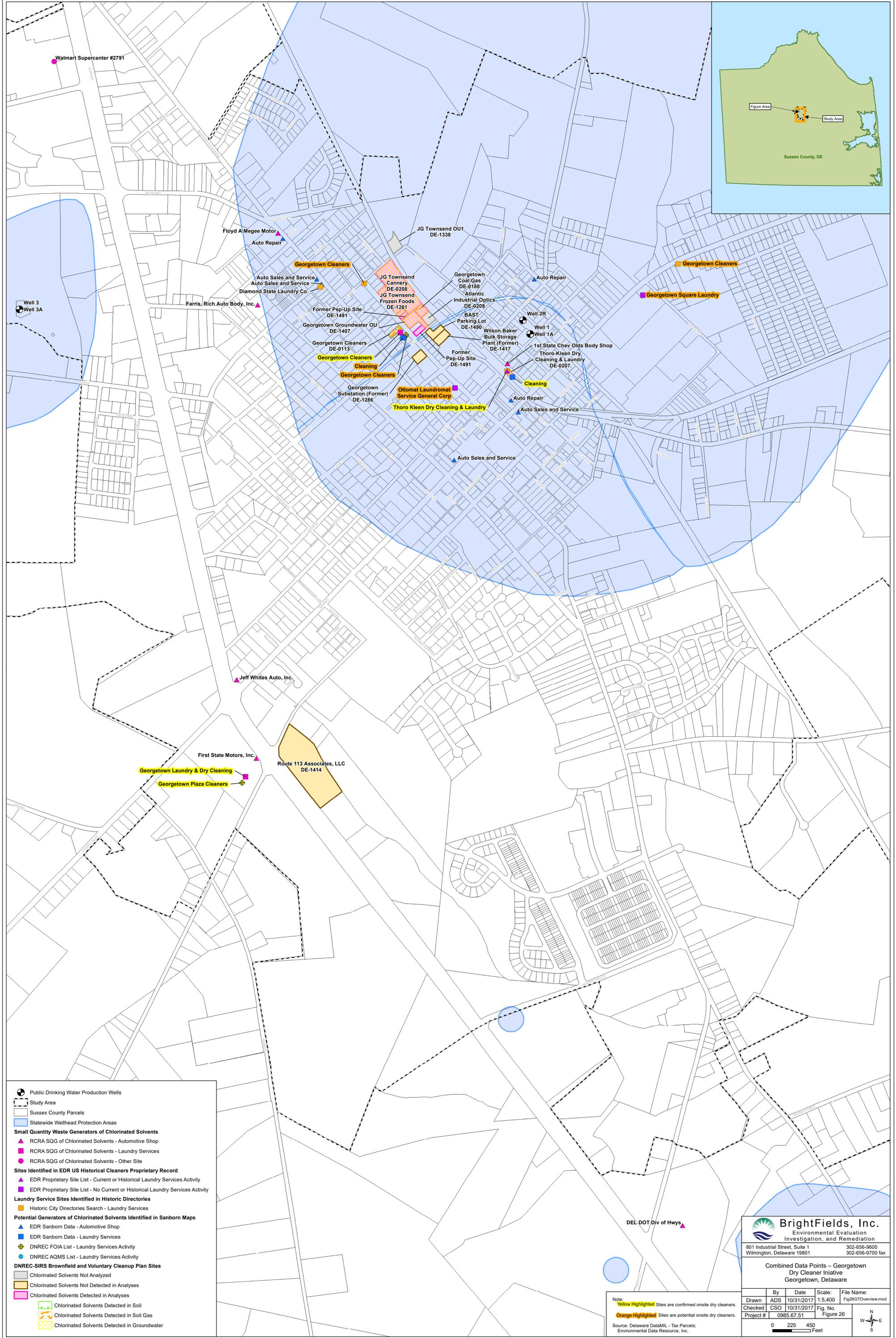
Source: Delaware DataMIL - Tax Parcels; Environmental Data Resource, Inc.

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 Environmental Evaluation
 Investigation, and Remediation
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 302-656-9600
 302-656-9700 fax

Combined Data Points - Dover
 Dry Cleaner Initiative
 Dover, Delaware

Drawn	By	Date	Scale:	File Name:
Checked	ADS	10/31/2017	1:24,000	Fig25DoverOverview.mxd
Project #	CSO	10/31/2017	Fig. No.	Figure 25
	0985.67.51			

0 1,000 2,000 Feet



- Public Drinking Water Production Wells
- Study Area
- Sussex County Parcels
- Statewide Wellhead Protection Areas
- Small Quantity Waste Generators of Chlorinated Solvents**
 - RCRA SQG of Chlorinated Solvents - Automotive Shop
 - RCRA SQG of Chlorinated Solvents - Laundry Services
 - RCRA SQG of Chlorinated Solvents - Other Site
- Sites Identified in EDR US Historical Cleaners Proprietary Record**
 - EDR Proprietary Site List - Current or Historical Laundry Services Activity
 - EDR Proprietary Site List - No Current or Historical Laundry Services Activity
- Laundry Service Sites Identified in Historic Directories**
 - Historic City Directories Search - Laundry Services
- Potential Generators of Chlorinated Solvents Identified in Sanborn Maps**
 - EDR Sanborn Data - Automotive Shop
 - EDR Sanborn Data - Laundry Services
 - DNREC FOIA List - Laundry Services Activity
 - DNREC AQMS List - Laundry Services Activity
- DNREC-SIRS Brownfield and Voluntary Cleanup Plan Sites**
 - Chlorinated Solvents Not Analyzed
 - Chlorinated Solvents Not Detected in Analyses
 - Chlorinated Solvents Detected in Analyses
 - Chlorinated Solvents Detected in Soil
 - Chlorinated Solvents Detected in Soil Gas
 - Chlorinated Solvents Detected in Groundwater

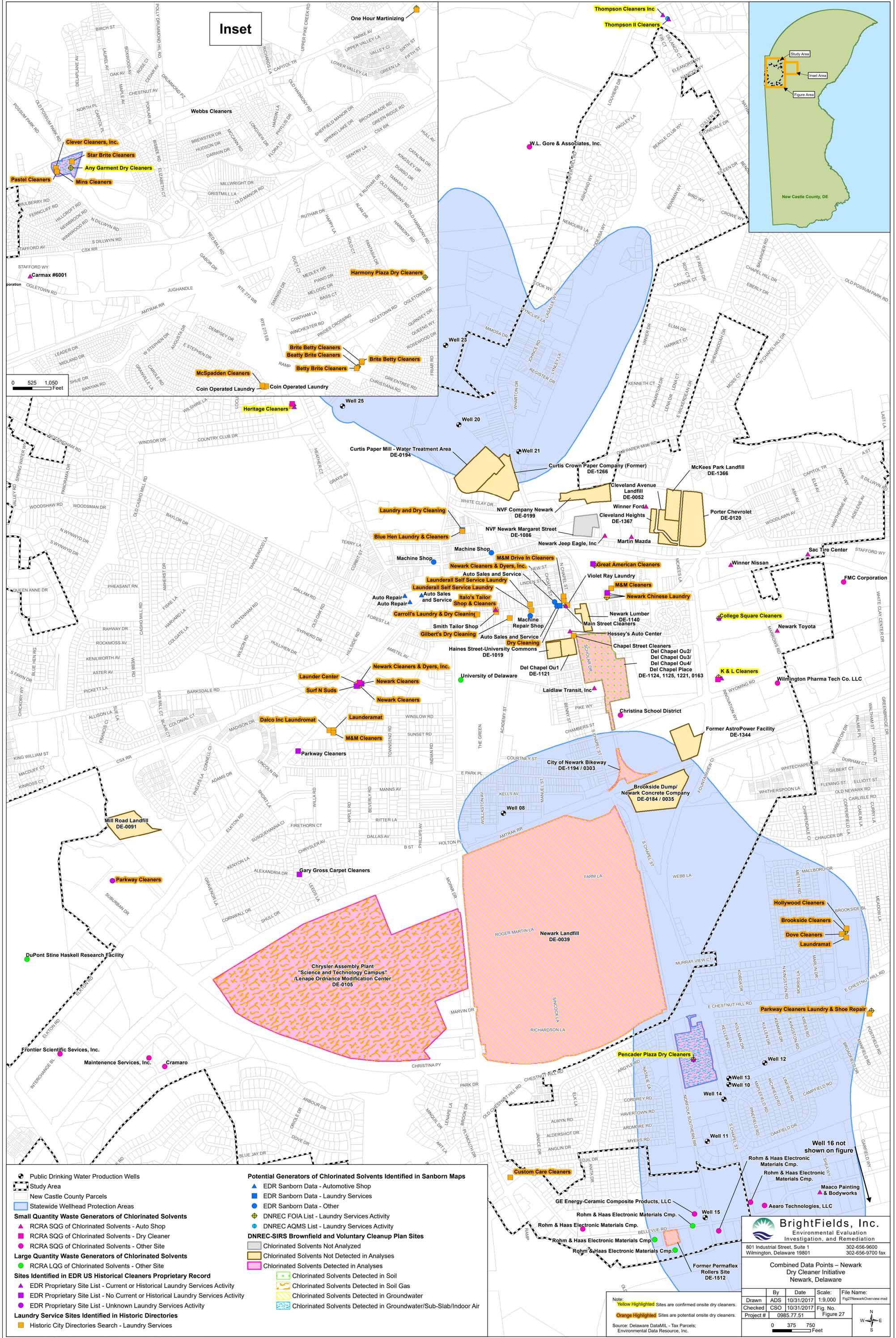
Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.
 Source: Delaware DataMIL - Tax Parcels; Environmental Data Resource, Inc.

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 Environmental Evaluation
 Investigation, and Remediation
 801 Industrial Street, Suite 1
 Wilmington, Delaware 19801
 302-656-9600
 302-656-9700 fax

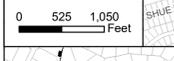
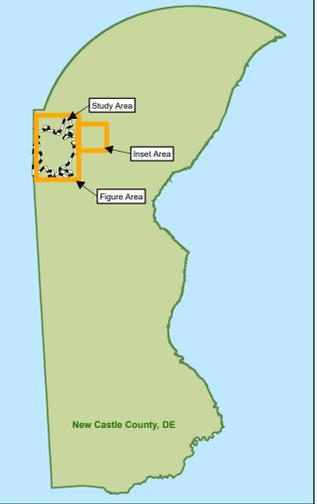
Combined Data Points - Georgetown
 Dry Cleaner Initiative
 Georgetown, Delaware

By	Date	Scale	File Name:
Drawn	ADS 10/31/2017	1:5,400	Fig26GTOverview.mxd
Checked	CSO 10/31/2017	Fig. No.	Figure 26
Project #	0985.67.51		

0 225 450 Feet



Inset



- Public Drinking Water Production Wells
- Study Area
- New Castle County Parcels
- Statewide Wellhead Protection Areas
- Small Quantity Waste Generators of Chlorinated Solvents**
 - RCRA SQG of Chlorinated Solvents - Auto Shop
 - RCRA SQG of Chlorinated Solvents - Dry Cleaner
 - RCRA SQG of Chlorinated Solvents - Other Site
- Large Quantity Waste Generators of Chlorinated Solvents**
 - RCRA LQG of Chlorinated Solvents - Other Site
- Sites Identified in EDR US Historical Cleaners Proprietary Record**
 - EDR Proprietary Site List - Current or Historical Laundry Services Activity
 - EDR Proprietary Site List - No Current or Historical Laundry Services Activity
 - EDR Proprietary Site List - Unknown Laundry Services Activity
- Laundry Service Sites Identified in Historic Directories**
 - Historic City Directories Search - Laundry Services

- Potential Generators of Chlorinated Solvents Identified in Sanborn Maps**
 - EDR Sanborn Data - Automotive Shop
 - EDR Sanborn Data - Laundry Services
 - EDR Sanborn Data - Other
 - DNREC FOIA List - Laundry Services Activity
 - DNREC AQMS List - Laundry Services Activity
- DNREC-SIRS Brownfield and Voluntary Cleanup Plan Sites**
 - Chlorinated Solvents Not Analyzed
 - Chlorinated Solvents Not Detected in Analyses
 - Chlorinated Solvents Detected in Analyses
 - Chlorinated Solvents Detected in Soil
 - Chlorinated Solvents Detected in Soil Gas
 - Chlorinated Solvents Detected in Groundwater
 - Chlorinated Solvents Detected in Groundwater/Sub-Slab/Indoor Air

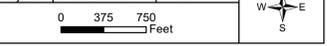
Note:
 Yellow Highlighted Sites are confirmed onsite dry cleaners.
 Orange Highlighted Sites are potential onsite dry cleaners.

Source: Delaware DataMIL - Tax Parcels; Environmental Data Resource, Inc.

BrightFields, Inc.
 Environmental Evaluation Investigation, and Remediation
 801 Industrial Street, Suite 1 302-656-9600
 Wilmington, Delaware 19801 302-656-9700 fax

Combined Data Points - Newark Dry Cleaner Initiative Newark, Delaware

By	Date	Scale	File Name:
Drawn	ADS 10/31/2017	1:9,000	Fig27NewarkOverview.mxd
Checked	CSO 10/31/2017	Fig. No.	
Project #	0985.77.51	Figure 27	



TABLES

**Table 1
EDR Proprietary Records
US Historical Cleaners
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	A-1 Cleaners	A-1 Cleaners	A-1 Cleaners	ACE Cleaners	All Star Cleaning Service	Brite Cleaners
Record Year(s)²	2001 - 2004	2010	2010 - 2012	2001, 2003, 2004, 2010 - 2012	2005 & 2006	2001, 2003 - 2006, 2010 - 2012
Site Address	1624 South Governors Avenue	600 Jefferic Boulevard	1660 South Governors Avenue	1030 Forrest Avenue	820 Carvel Drive	11 South Dupont Highway
Date Site Reviewed / Visited³	6/10/2013	6/10/2013	10/16/2015	10/16/2015	6/10/2013	10/16/2015
Business Telephone Number	Unavailable	Unavailable	302-677-0022	302-672-7799	302-677-0189	302-678-9374
Business Still Operating at Location?	No	No	Yes	Yes	No	Yes
Current Site Use⁴	Commercial-Other	Commercial-Other	Commercial-Laundry Services	Commercial-Laundry Services	Residential	Commercial-Laundry Services
Currently Providing Dry Cleaning Services?	No	No	Yes - on-site Dry Cleaning	Yes - on-site Dry Cleaning	No	Yes - on-site Dry Cleaning
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence
Potential Receptors⁵	Commercial Businesses & Residential Houses	Commercial Businesses & Residential Houses	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center	Residential Apartments	Commercial Businesses - Located in shopping center
Notes	Address located in middle of South Governors Avenue. "Artisans Bank" located on one side of street with "Penny Pinchers Pizza" on other side.	"Marriot Residence Inn" located at site address. Other businesses located in proximity to site address.	"A-1 Cleaners" operating at site address with "C-R Pets" and a pharmacy to left and "Atlantic Finance and Pawn" store to the right. Site confirmed current on-site dry cleaner via phone interview.	"ACE Cleaners" at site address (Suite #101) with "Snap Fitness" to the left and right as well as a "Jackson Hewitt" tax service to the right. Site confirmed current on-site dry cleaner via phone interview.	Residential apartments / condos located at site address. Residential / maid cleaning service - confirmed online.	Site located in Edgehill shopping center. "Brite Cleaners" at site address with "Sherwin-Williams, Paints" to left and nail salon and "MedExpress" to right. Site confirmed current on-site dry cleaner via phone interview.

Highlighted (yellow) - indicates confirmed current and /or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 1
EDR Proprietary Records
US Historical Cleaners
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	Capitol Cleaners & Launderers, Inc.	Capitol Cleaners & Launderers, Inc.	Capitol Cleaners & Launderers, Inc.	Capitol Cleaners & Launderers, Inc.	Capitol Cleaners & Launderers, Inc.	Capitol Cleaners & Launderers, Inc.
Record Year(s) ²	2001, 2005 - 2012	2004 - 2007, 2012	2005 - 2008, 2011, 2012	2005, 2006, 2011, 2012	2011 & 2012	2011 & 2012
Site Address	217 South New Street	1221 South Governors Avenue	1064 Forrest Avenue	1102 South State Street	1011 Walker Road	178 North DuPont Highway
Date Site Reviewed / Visited ³	10/16/2015	6/10/2013	6/10/2013	6/10/2013	6/10/2013	6/10/2013
Business Telephone Number	302-674-0500	302-674-5599	302-674-5536	Unavailable	302-674-5535	302-674-5534
Business Still Operating at Location?	Yes	No	Yes	No	No	No
Current Site Use ⁴	Commercial-Laundry Services	Commercial-Automobile Services	Commercial-Laundry Services	Commercial-Other	Commercial-Other	Commercial-Other
Currently Providing Dry Cleaning Services?	Yes - on-site Dry Cleaning	No	Yes - off-site Dry Cleaning	No	No	No
Evidence of Historic Dry Cleaning Operations?	Yes - Unknown if on-site/off-site (See Notes)	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence
Potential Receptors ⁵	Commercial Businesses	Commercial Businesses & Residential Houses	Commercial Businesses	Commercial Businesses	Commercial Businesses - Located in shopping center	Commercial Businesses
Notes	"Capitol Cleaners" located at site address. Site confirmed current on-site dry cleaner via phone interview. Site identified in 1950 Sanborn map as providing laundry services.	Address found in middle of South Governors Avenue. Car dealership / lot at address location. 1222 South Governors Avenue appears to be residential driveway. Groundwater monitoring well observed at front of driveway along road.	"Capitol Cleaners" located at site address. Site has been confirmed as a drop off facility through site visit.	"Access Labor Services" located at site address. "Schwartz & Schwartz Attorneys at Law" located to the right of site address.	Address located in Hamlet Shopping Center. No sign of dry cleaner business in shopping center.	Business located at site address appears to be an out of business "Music Store / Payday & Title Loans". "AI Insurance Agency" located to the left of site address.

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 1
EDR Proprietary Records
US Historical Cleaners
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	Capitol Cleaners & Launderers, Inc.	Coin Laundry	Commerce Cleaners	Dover Mart Laundromat	Dover Mart Laundromat RTS	Dry Clean Central, Inc.
Record Year(s) ²	2012	2000, 2001, 2003, 2004, 2007 -2009, 2012	2011 & 2012	2001, 2002, 2010 - 2012	2007	2007 - 2012
Site Address	220 Gateway South Boulevard	431 South New Street	211 Dover Street	272 South Dupont Highway	113 Ross Street	122 North DuPont Highway
Date Site Reviewed / Visited ³	10/16/2015	6/10/2013	6/10/2013	10/16/2015	6/10/2013	6/10/2013
Business Telephone Number	302-697-7236	302-736-8392	302-678-0458	302-736-6511	Unavailable	302-674-4300
Business Still Operating at Location?	Yes	No	No	Yes	No	No
Current Site Use ⁴	Commercial-Laundry Services	Commercial-Vacant	Commercial-Other	Commercial-Laundry Services	Residential	Commercial-Vacant
Currently Providing Dry Cleaning Services?	Yes - off-site Dry Cleaning	No	No	No	No	No
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence	Yes - Unknown if on-site/off-site (See Notes)
Potential Receptors ⁵	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center	Commercial Businesses	Commercial Businesses - Located in shopping center	Residential Neighborhood	Commercial Business
Notes	"Capitol Cleaners" at site address with "Walgreens Pharmacy" to left and "EZ Cash" to right in shopping center. Business employee confirmed current off-site dry cleaner via phone interview.	"Coin Laundry" at site address but appears abandoned with a "for lease" sign on door. Site is located in a shopping center with an out of business bakery to left and restaurants to right.	No dry cleaner located at site address. "First National Bank of Wyoming" located in proximity to address. Confirmed on-site dry cleaner based on RCRA waste generator records for alternate site name "Master Dry Cleaners, Inc."	Laundromat and Cleaners located at site address with "Beauty Mart" and "LA. Nails" to left and "Cash Advance" and restaurant to right in shopping center. Strip Mall. 264 - 272 South DuPont Highway. Sign lists "Emily Dry Cleaner". Confirmed laundry services only on-site.	No indication of dry cleaning operations occurring at site address. Site address located in residential neighborhood.	At the time of BrightFields site visit (6/10/13) the site was observed as out of business. "Dry Cleaning" and "For Lease" signs observed. Site has since been demolished based on Google Street View™ images reviewed on 10/16/15.

Highlighted (yellow) - indicates confirmed current and /or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

Table 1
EDR Proprietary Records
US Historical Cleaners
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	E Y Coin Laundromat	East Dover Laundromat	Emerald City Wash World	Emily Cleaners	Greentree Cleaners
Record Year(s) ²	2000, 2003, 2004	2007, 2008, 2010, 2011	2002 - 2004	2005 - 2007, 2010 - 2012	2010
Site Address	772 Walker Road	1022 South Little Creek Road	730 West Division Street	264 South DuPont Highway	59 Greentree Drive
Date Site Reviewed / Visited ³	6/10/2013	6/10/2013	10/16/2015	6/10/2013	6/10/2013
Business Telephone Number	302-730-9529	302-883-2060	302-734-1230	302-744-9898	302-734-7636
Business Still Operating at Location?	Yes	No	Yes	No	No
Current Site Use ⁴	Commercial-Laundry Services	Commercial-Laundry Services	Commercial-Laundry Services	Commercial-Other	Commercial-Vacant
Currently Providing Dry Cleaning Services?	Unknown	Unknown	Yes - off-site Dry Cleaning	No	No
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence
Potential Receptors ⁵	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center	Commercial Business & Residential Houses	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center
Notes	"Coin Operated Laundry" with restaurants to left and convenience store to right in shopping center. Site status was unable to be confirmed via phone interview. Contact information may no longer be up to date.	Laundromat at site address with restaurant on left and liquor and convenience store to right in shopping center (site listed for sale). BrightFields reviewed site online on 10/16/15. Site is currently listed online as both "Laundry Services Metro" or "Faith and Family Laundry". Brightfields was unable to confirm site status. Online contact information for site as of 10/16/15 may no longer be up to date.	"Capital Cleaners / Emerald City Wash World Laundromat" at site address. Includes years for incorrect address associated with 730 East Division Street. Site confirmed as laundry and off-site dry cleaning / drop off facility via phone interview with business employee.	Located in a strip mall. "Cash Advance" at site address with laundromat cleaners to left and restaurant to right. Also listed as 270 South DuPont Highway. Laundromat to left of site address confirmed as on-site laundry services only.	Vacant building in Greentree Shopping Center with "for lease" sign on door with nail salon and day spa to left and "AAA Insurance" to right.

Highlighted (yellow) - indicates confirmed current and /or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

Table 1
EDR Proprietary Records
US Historical Cleaners
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Harry Louie Laundry & Dry Cleaning	Just You & Me Cleaning Corp	M & S Cleaning Services LLC	Reliable Dry Cleaning Pick up & Delivery	Speed Queen Laundromat
Record Year(s)²	2000 -2012	2008	2011 & 2012	2007, 2008, 2009, 2011, 2012	2007 & 2008
Site Address	129 South Governors Avenue	465 Phoenix Drive	630 West Division Street	27 Ann Avenue	1255 South State Street
Date Site Reviewed / Visited³	10/16/2015	6/5/2013	6/10/2013	6/10/2013	10/16/2015
Business Telephone Number	302-734-8195	302-535-4606	302-883-3825	302-346-1877	302-678-8060
Business Still Operating at Location?	Yes	No	No	No	No
Current Site Use⁴	Commercial-Laundry Services	Residential	Commercial-Other	Residential	Commercial-Vacant
Currently Providing Dry Cleaning Services?	Yes - on-site Dry Cleaning	No	No	No	Yes - on-site Dry Cleaning
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence
Potential Receptors⁵	Commercial Business	Residential Neighborhood	Commercial Business	Residential Neighborhood	Commercial Businesses - Located in shopping center
Notes	"Harry Louie Laundry and Dry Cleaning" business operating at site address. Site confirmed current on-site dry cleaner via phone interview with business employee. Site is currently using alternative green solvent for dry cleaning purposes. Site address listed as 129 South Governors Boulevard as well as Avenue. Boulevard address was unable to be identified, therefore Boulevard record years were combined with 129 South Governors Avenue record years.	Site address located in residential neighborhood.	"Psychotherapeutic Services, Inc." located at site address. A "Westside Carwash" is located to the right of the site. The site is also in proximity to personal storage garages.	Site address located in residential neighborhood.	Site address is located in a shopping center. Several Businesses in proximity to site address. Was unable to confirm site status via phone interview due to out of date contact information. Confirmed on-site dry cleaner based on RCRA waste generator records.

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

Table 1
EDR Proprietary Records
US Historical Cleaners
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Speed Queen Laundromat & Dry Cleaners	Superior Carpet Cleaning & Janitorial	Towne & Country Cleaners	Vicks Commercial Cleaning
Record Year(s)²	2005 - 2008	2011 & 2012	2001, 2003, 2004	2010 & 2011
Site Address	1324 Forrest Avenue	3277 West Dennys Road	321 Independence Boulevard	378 Mannering Drive
Date Site Reviewed / Visited³	6/10/2013	6/5/2013	6/10/2013	6/10/2013
Business Telephone Number	Unavailable	302-674-5064	302-678-8883	302-697-6161
Business Still Operating at Location?	No	No	No	No
Current Site Use⁴	Commercial-Other	Residential	Commercial-Other	Residential
Currently Providing Dry Cleaning Services?	No	No	Unknown	No
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	No Evidence	No Evidence
Potential Receptors⁵	Commercial Business & Residential Houses	Residential Neighborhood	Commercial Businesses - Located in shopping center	Residential Neighborhood
Notes	Site address located in proximity to a "Valero" gas station, residential housing, and across from "Green Tree Village" shopping center.	Site address located in residential neighborhood.	Address located in "Olde Oak" shopping center. A "Campbell's Fashion Cleaners" is located in shopping center. Was unable to confirm site status via phone interview due to out of date contact information.	Site address located in residential neighborhood.

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Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

Table 2
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Aamco Transmissions	Abnormal Tees	Ace Cleaners	Blue Hen Auto Body Inc	Capitol Cleaners, Inc.
Site Address	718 South Governors Avenue	607 Otis Drive	1030 Forrest Avenue, Ste. 101	5825 West Dennys Road	217 South New Street
Date Site Reviewed / Visited ²	6/6/2013	6/6/2013	10/16/2015	6/5/2013	10/16/2015
Business Contact Name	Bill Smith	Cory Comer	Doug Meelina	Charlene Darling	David C Fulmer
Business Telephone Number	302-674-1620	302-677-1983	302-672-7799	(302) 674-4525	302-674-0500
Current Owner	Bill Smith	Cory Comer	Beiser Group LLC	James R. Scuse	Stuart E Outten, Jr
Current Owner Telephone Number	302-674-1620	215-555-1212	302-674-1965	(302) 674-4525	215-555-1212
Current Owner/Operator Start Date	Not reported	Not reported	Not reported	Not reported	Not reported
Current Site Use ³	Automotive	Other	Dry Cleaner	Automotive	Dry Cleaner
RCRA Waste Code(s) ⁴	D039	D039 and D040	F002, D039 and D040	F003 and F005	None of Concern
Notes			Site confirmed current on-site dry cleaner via phone interview.		Site confirmed current on-site dry cleaner via phone interview.

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

RCRA - Resource Conservation and Recovery Act

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

* - **Waste Codes:**

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 2
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Coastal Coating	Dawson Bus Services	Delaware DOT Central District	Delaware State College Dump	Doctors Pathology Services
Site Address	631 Ridgely Street, Ste. 14	405 East Camden-Wyoming	US 13 & River Road	1200 North DuPont Highway	1253 College Park Drive
Date Site Reviewed / Visited ²	6/6/2013	6/7/2013	6/6/2013	6/6/2013	6/6/2013
Business Contact Name	Bryce Mann	William R Dawson	Joseph Nuckerson Sr	Randy Jones	Connie L Bainbridge
Business Telephone Number	302-672-9380	302-697-9501	302-739-3867	(302) 857-6204	302-677-0000
Current Owner	Bryce Mann	Dawson Bus Services	State of DE DOT Div Hwys	Delaware State University	V. Raman Sukumar
Current Owner Telephone Number	Not reported	Not reported	302-739-3897	Not reported	Not reported
Current Owner/Operator Start Date	3/1/2003	5/11/2005	Not reported	1/1/1891	7/7/2003
Current Site Use ³	Other	Automotive	Other	Other	Other
RCRA Waste Code(s) [*]	D039	D0039	F001 and D039	F003 and F005	F003
Notes					

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

RCRA - Resource Conservation and Recovery Act

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

**Table 2
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	Dover Auto Body, Inc.	Ellis Auto Body Works, Inc.	Federal Express Corporation	George & Lynch, Inc.	Harrington Auto Services
Site Address	Lafferty Lane & Rt 113 North	313 South Governor Avenue	Dover Airforce Base	422 Water Street	4 Caesar Rodney Avenue
Date Site Reviewed / Visited ²	6/7/2013	6/6/2013	6/7/2013	6/6/2013	6/7/2013
Business Contact Name	Steve Campagnini	John Carr	Aulisio Burton	Wallace Matheson	Robert Harrington
Business Telephone Number	302-734-7303	302-734-5855	302-674-2772	302-734-5865	302-242-8103
Current Owner	Steve Campagnini	John Carr	Aulisio Burton	George & Lynch INC	Robert Harrington
Current Owner Telephone Number	215-555-1212	215-555-1212	215-555-1212	302-328-6275	302-242-8103
Current Owner/Operator Start Date	Not reported	Not reported	Not reported	Not reported	Not reported
Current Site Use ³	Automotive	Automotive	Other	Other	Automotive
RCRA Waste Code(s) [*]	F003 and F005	F003 and F005	F001 and F005	F003 and F005	F003, F005, D0039, and D0040
Notes					

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

RCRA - Resource Conservation and Recovery Act

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 2
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Kent County Motor Sales Co	Kraft Foods North America	Master Dry Cleaners, Inc.	McKinneys Transmission	Nucar Mazda-Isuzu Dover
Site Address	2181 South Dupont Highway	1250 West North Street	211 Dover Street	3140 North DuPont Highway DuPont Manor	225 North Dupont Highway
Date Site Reviewed / Visited ²	6/7/2013	6/6/2013	6/6/2013	6/5/2013	6/6/2013
Business Contact Name	R Whitby	Jake Wooleyhan	R. Gene Wollter	Clarence McKinney	Eugene Hoffman
Business Telephone Number	302-697-3000	302-734-6426	302-678-0458	(302) 734-7584	302-674-8900
Current Owner	R Whitby	Kraft Foods, Inc.	R. Gene Wollter	Clarence McKinney	C. Ronald Miller
Current Owner Telephone Number	215-555-1212	Not reported	215-555-1212	(302) 734-7584	302-322-2277
Current Owner/Operator Start Date	Not reported	1/1/1989	Not reported	Not reported	Not reported
Current Site Use ³	Automotive	Other	Dry Cleaner	Automotive	Automotive
RCRA Waste Code(s) ⁴	F003 and F005	F003 and F005	F002	D039 and D040	D039 and D040
Notes			Confirmed on-site dry cleaner based on RCRA waste generator records.		

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

RCRA - Resource Conservation and Recovery Act

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

* - **Waste Codes:**

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

**Table 2
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	Quality Auto Care	Sam's Club #6330	Scott Paper Co - Dover Plant	Speed Queen Laundromat	Tilcon Delaware, Inc.	Winner Ford of Dover
Site Address	700 Forest Street	1572 North DuPont Highway	Hazletville Road	1255 South State Street	1262 Horsepond Road	591 South Dupont Highway
Date Site Reviewed / Visited ²	6/6/2013	6/5/2013	6/6/2013	6/7/2013	6/7/2013	6/6/2013
Business Contact Name	Dan Minority	Chris Stewart	Daniel Shewell	Kirt Kelbs	James Malloy	Samuel McCracken
Business Telephone Number	302-730-4440	(479) 204-0402	302-678-2600	302-678-8060	302-678-8414	302-734-0445
Current Owner	Ralph Deblasi	Sam's East, Inc	P&G Dover Wipes Plant	Pete George	Tilcon Delaware INC	Samuel McCracken
Current Owner Telephone Number	302-730-4440	Not reported	Not reported	32-452-3103	302-678-8414	215-555-1212
Current Owner/Operator Start Date	Not reported	1/11/1994	1/1/1996	Not reported	Not reported	Not reported
Current Site Use ³	Automotive	Other	Other	Dry Cleaner	Other	Automotive
RCRA Waste Code(s) [*]	F003, F005, D039 and D040	D039 and D043	F003 and D039	F002	D039	F003 and F004
Notes				Confirmed on-site dry cleaner based on RCRA waste generator records.		

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

RCRA - Resource Conservation and Recovery Act

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039 - PCE (tetrachloroethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 3
RCRA Large Quantity Waste Generators of Chlorinated Solvents
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name¹	Atlantic Coast Environmental, Inc.	Handytube Corporation	Playtex Manufacturing, Inc.	Rohm and Haas Electronic Materials CMP
Site Address	225 State College Road	124 Vepco Boulevard	804 Walker Road	300 D&S Lane
Date Site Reviewed / Visited²	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Business Contact Name	Not Reported	Jeremy D. Weber	John Vasikonis	Andrew Franzone
Business Telephone Number	Not Reported	302-697-9521	302-678-6691	302-366-0500
Current Owner	Atlantic Coast Environmental Inc	Camdel Metals Corporation	Playtex Manufacturing Inc	Rohm and Haas Electronic Materials CMP
Current Owner Telephone Number	302-678-8232	302-697-9521	NA	NA
Current Owner/Operator Start Date	8/15/1980	1/1/1981	1/1/1994	2/7/2000
Current Site Use³	Other	Automotive	Other	Other
RCRA Waste Code(s)[*]	F001 and F002	F001, F002, D039 and D040	F002, F003, and F005	F003 and F005
Notes				

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

RCRA - Resource Conservation and Recovery Act.

1 - Site Name - business name as listed in the EDK historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039- PCE (tetrachlorethylene)

D043-Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 4
Delaware Sanborn Map Sites - Identified Cleaning and Automotive Services
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Approximate Address	Sanborn Description	Industry Type	Sanborn Map Year	Notes
526 South West Street	Auto Repair Shop	Automotive Services	1950	
521 South West Street	Auto Repair Shop	Automotive Services	1950	
140 South Governors Avenue	Cleaning	Laundry Services	1950	Site not currently operating as a laundry service business. Site identified in Historic City Directory Data Set as "Capitol Cleaners & Dyers" (Table 5).
217 South New Street	Cleaning	Laundry Services	1950	Currently operating as "Capitol Cleaners & Launderers, Inc." on-site dry cleaner. Site has been identified in EDR Proprietary Records (Table 1), Small Quantity Waste Generator records (Table 2), and DNREC FOIA response.
812 South New Street	Machine Shop	Automotive Services	1950	
300 West Lockerman Avenue	Auto Sales And Service	Automotive Services	1950	
328 West Lockerman Avenue	Auto Sales And Service	Automotive Services	1950	
28 1/2 West Lockerman Avenue	Dry Cleaning	Laundry Services	1950	Site not currently operating as a laundry service business. Site not identified in any alternate data set.
129 West North Street	Auto Repair Shop	Automotive Services	1950	
446 South Governors Avenue	Auto Sales And Service	Automotive Services	1950	
309 South Governors Avenue	Auto Body Works	Automotive Services	1950	
313 South Governors Avenue	Auto Sales And Service	Automotive Services	1950	
325 South Governors Avenue	Auto Repair Shop	Automotive Services	1950	
530 South State Street	Auto Repair Shop	Automotive Services	1950	
504 South Governors Avenue	Auto Sales And Service	Automotive Services	1950	
4 South Governors Ave Avenue	Auto Sales And Service	Automotive Services	1950	
712 Forest Street	Auto Repair Shop	Automotive Services	1950	
129 Shot Gun Alley	Rug Cleaning	Other	1950	
411 South Governors Avenue	Dry Cleaning	Laundry Services	1969	Site not currently operating as a laundry service business. Site identified in Historic City Directory Data Set as "Dover Laundry & Dry Cleaners" (Table 5) and has been identified as "Capitol Cleaners & Laundry" in DNREC FOIA response.
720 South Governors Avenue	Auto Body Works	Automotive Services	1969	
226 US Rt 13 & 113	Auto Sales And Service	Automotive Services	1969	
620 Mary Street	Auto Repair Shop	Automotive Services	1969	

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

**Table 5
Historic City Directory Data
Dover, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	ABC Laundry	Betty Brite Cleaners & Shirt Laundry	Bone's Dry Cleaning & Pressing	Camden Dry Cleaners	Capital Cleaners & Dyers
Directory Year ²	1985	1966	1946	1981	1937
Site Address	1064 Forrest Street	South DuPont Highway / Corner of Cowgill Street	841 West Forrest Street	257 (a) East Camden Wyoming Avenue	140 South Governors Avenue
Date Site Reviewed / Visited ³	8/28/2013	8/28/2013	8/28/2013	8/28/2013	8/28/2013
Alternate Historical Listings	None	None	None	Possibly Johnson Dicks, Inc. - 1962	None
Current Site Use ⁴	Commercial-Laundry Services	Commercial-Other	Commercial-Laundry Services	Commercial-Other	Commercial-Vacant
Currently Providing Dry Cleaning Services?	Yes - off-site Dry Cleaning	No	Yes - off-site Dry Cleaning	No	No
Potential Receptors ⁵	Commercial Businesses	Commercial Businesses	Commercial Business & Residential Houses	Commercial Businesses	Commercial Businesses
Notes	Nothing located at 1064 Forrest Street. Actual site address could be 1064 Forrest Avenue, which is a Capitol Cleaners & Launderers Inc, drop off dry cleaner facility. Site status confirmed via site visit.	Since there is no exact address two potential businesses are located roughly at the two intersecting streets of the site address. A "Windham Travel & Cruise Center" and what appears to be a vacant storage facility. Looks as if something may have been demolished near storage facility in past.	Street name possibly misspelled. Should be "Forest". Site address appears to located at intersecting West Division Street and West Forest Street in proximity to residential houses. Address could possibly be "Capital Cleaners / Emerald City Wash World Laundromat" at site address. Site status confirmed via site visit.	Site address listed in Camden, DE, not Dover. Currently a residential house converted into a business. "MurrayPhillips criminal and DUI defense attorneys" at site address. Several other store front businesses in area.	No business is located at the site address. Businesses in proximity to site address include: "Knukel Service Co" (120 South Governors Avenue), "Harry & Louie Dry Cleaning & Laundry" (129 South Governors Avenue), and "Cabe Associates, Inc." (144 South Governors Avenue).

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 5
Historic City Directory Data
Dover, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Capital Laundromat	Clements Cleaners, Inc.	Dover Discount Dry Cleaners	Dover Laundry & Dry Cleaners	Edgehill Cleaners
Directory Year ²	1969	1936	1981	1974	1962
Site Address	805 1/2 Forest Street	26 Lockerman Street	210 South Governors Avenue	411 South Governors Avenue	900 East Division Street
Date Site Reviewed / Visited ³	8/28/2013	8/28/2013	8/28/2013	8/13/2013	8/28/2013
Alternate Historical Listings	None	None	None	Dover Laundry - 1936	None
Current Site Use ⁴	Commercial-Other	Commercial-Vacant	Commercial-Vacant	Commercial-Vacant	Commercial-Other
Currently Providing Dry Cleaning Services?	No	No	No	No	No
Potential Receptors ⁵	Commercial Business & Residential Houses	Commercial Businesses	Commercial Business & Residential Apartments	Commercial Businesses & Residential Houses	Commercial Business & Residential Houses
Notes	"Westside Car Wash" located at site address. Site in proximity to residential houses.	Address may have been misspelled. Could be 26 Loockerman Street. Address appears to be vacant along store front businesses.	Building at site address was identified as vacant. Residential apartments and "Delaware Tire Center Inc." in proximity to site.	Empty concreted lot / parking lot at location of where location is. There is a "Bike Werx" and residential housing in proximity to site location.	Currently "MomMom's Ice Cream Shop". Site is in proximity to a "Little Grocer" and residential housing.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - **Site Name** - business name as listed in the historic city directory.

2 - **Record Year(s)** - date of record(s) identified in the historic city directory.

3 - **Date site visited / reviewed** - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - **Current Site Use** - based on visual observations made during site visit /review.

5 - **Potential Receptors** - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 5
Historic City Directory Data
Dover, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	First State Laundromat	Hastings Laundrette	Highlander Self-Service Laundry	Hi-Way Cleaners	Jack's Dry Cleaning
Directory Year ²	1976	1974	1968	1975	1952
Site Address	1181 (b) North DuPont Highway	725 South Governors Avenue	6 North Railroad Avenue	1181 North DuPont Highway	3501 NR Silver Lake*
Date Site Reviewed / Visited ³	8/28/2013	8/13/2013	8/28/2013	8/28/2013	8/28/2013
Alternate Historical Listings	None	None	None	None	None
Current Site Use ⁴	Commercial-Other	Commercial-Other	Residential	Commercial-Other	NA
Currently Providing Dry Cleaning Services?	No	No	No	No	NA
Potential Receptors ⁵	Commercial Businesses - Located in shopping center	Commercial Businesses	Residential	Commercial Businesses - Located in shopping center	NA
Notes	Exact site address not found. Site appears to have been located in shopping center that currently has a "Best Buy", "Michaels", and an "Ashley Furniture".	Address appears to be located in "Bayhealth Kent General Hospital" out patient parking lot. "Benchmark Transmission" automotive shop across the street from site. Site is adjacent to "New Life Spinal Care Center".	Site address currently located in Wyoming, DE. A residential house is located at site address.	Exact site address not found. Site appears to have been located in shopping center that currently has a "Best Buy", "Michaels", and an "Ashley Furniture".	NA

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 5
Historic City Directory Data
Dover, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Johnson Dick Inc	Marstellers Coin Laundry	Master Dry Cleansing	Norge Laundry & Cleaning Village	Paul & Fran Enterprises
Directory Year ²	1962	1968	1969	1968	1979
Site Address	257 Camden Wyoming Avenue	1102 White Oak Road	211 Dover Avenue	1320 Bair Lane*	780 Walker Street
Date Site Reviewed / Visited ³	8/28/2013	10/22/2015	8/28/2013	8/28/2013	8/28/2013
Alternate Historical Listings	None	None	None	None	None
Current Site Use ⁴	Residential	Commercial-Other	Commercial-Other	NA	Commercial-Other
Currently Providing Dry Cleaning Services?	No	Unknown	No	NA	No
Potential Receptors ⁵	Residential Neighborhood	Commercial Business & Residential Houses	Commercial Businesses	NA	Commercial Businesses - Located in shopping center
Notes	Site address not found, refers to 257 Wyoming Avenue, Dover, DE. Site address identified in residential neighborhood.	Currently a "Stop & Shop Convenience Store". A store to the right has a sign that reads "Laundromat" and appears to be a coin operated laundry service. Site status was unable to be confirmed via phone interview.	Site address comes up as "211 Dover Street". No dry cleaner located at site address. "First National Bank of Wyoming" located in proximity to address. Confirmed on-site dry cleaner based on RCRA waste generator records for alternate site name "Master Dry Cleaners, Inc.".	NA	Currently a "Stop & Shop Convenience Store". A "Coin Laundry" is located on the left of the convenience store. Site in proximity to "E Y Coin Laundromat" site.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - **Site Name** - business name as listed in the historic city directory.

2 - **Record Year(s)** - date of record(s) identified in the historic city directory.

3 - **Date site visited / reviewed** - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - **Current Site Use** - based on visual observations made during site visit /review.

5 - **Potential Receptors** - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 5
Historic City Directory Data
Dover, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Professional Dry Cleaning and Alteration Shop	Round The Clock Laundry	Service Master of Delaware Inc	Welter's Dry Cleaning	Ye Olde Laundromat
Directory Year ²	1976	1974	1972	1942	1972
Site Address	327 Martin Street	1058 South DuPont Highway	1027 North State Street	221 South State Street	228 West Division Street
Date Site Reviewed / Visited ³	8/28/2013	8/13/2013	8/28/2013	8/28/2013	8/28/2013
Alternate Historical Listings	None	None	None	None	None
Current Site Use ⁴	Commercial-Other	Commercial-Vacant	Commercial-Other	Residential	Residential
Currently Providing Dry Cleaning Services?	No	No	No	No	No
Potential Receptors ⁵	Commercial Businesses	Commercial Businesses - Located in shopping center	Commercial Business & Residential Houses	Commercial Businesses	Residential
Notes	The site is currently listed as "Serenity Place", a drug and alcohol rehabilitation center.	Site address appears to most recently have been a seafood market, "Pittman's Seafood" and is currently closed. It is in proximity to several commercial businesses.	Currently "Once Again" business. Business appears to be similar to an antique shop. Site in proximity to residential houses.	An apparent vacant residential house was identified at the site address. A church is located to the left and several store front businesses are located in proximity.	Site address appears to be a vacant lot. In proximity to residential houses.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 5
Historic City Directory Data
Dover, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Capital Cleaners & Dyers	Dover Laundry & Dry Cleaners Inc.	Hastings Dry Cleaners	Betty Brite Cleaners & Shirt Laundry	Kent Cleaners & Laundry
Directory Year ²	1933	1962	1962	1966	1967
Site Address	New & Division *	Bay Road*	Lebannon Road*	South DuPont Highway & corner of Cowgill Street*	South DuPont Highway*
Date Site Reviewed / Visited ³	9/3/2013	9/3/2013	9/3/2013	9/3/2013	9/3/2013
Alternate Historical Listings	None	None	None	None	None
Current Site Use ⁴	NA	NA	NA	NA	NA
Currently Providing Dry Cleaning Services?	NA	NA	NA	NA	NA
Potential Receptors ⁵	NA	NA	NA	NA	NA
Notes	NA	NA	NA	NA	NA

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 5
Historic City Directory Data
Dover, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name¹	Hastings Laundry Center	High Ander Center Laundromat	Sparkle Coin Op Laundry	Parkway Enterprise
Directory Year²	1969	1972	1972	1975
Site Address	South Little Creek Road*	North Railroad Avenue*	Bay Road*	North Rail Road Avenue*
Date Site Reviewed / Visited³	9/3/2013	9/3/2013	9/3/2013	9/3/2013
Alternate Historical Listings	None	None	None	None
Current Site Use⁴	NA	NA	NA	NA
Currently Providing Dry Cleaning Services?	NA	NA	NA	NA
Potential Receptors⁵	NA	NA	NA	NA
Notes	NA	NA	NA	Na

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	333 South Governors Ave.	680 Forest Street	742 South Governors Avenue	779 North DuPont Highway	Archives Building
DNREC Program Identification Number (DE - #)	0359	1451	1202	1456	1133
Parcel # / Lat-Lon	ED-05-077.09-04-47.00.000, 39.155878, -75.525950	ED-05-076.12-02-39.00.000, 39.157556, -75.533443	ED-05-077.13-01-34.00.000, 39.149242, -75.525456	ED-05-068.05-01-10.00.000, 39.181220, - 75.528935	ED-05-077.09-05-13.00.000, 39.158333, -75.520552
Date Reviewed	5/31/2013	5/10/2013	6/4/2013	7/16/2013	6/5/2013
Soil Investigation	Yes	Yes	Yes	Yes	Yes
Groundwater Investigation	Yes	Yes	Yes	Yes	No
Sampled for:	S & GW: Full TAL/TCL	S & GW: Full TAL/TCL	S & GW: VOCs and SVOCs	S & GW: VOCs/SVOCs and Lead	S: Full TAL/TCL (Prelim sample only)
Media with PCE Detections	ND	GW	S	ND	ND
Max PCE Concentration	ND	3.6 µg/L	260 µg/kg	ND	ND
Media with TCE Detections	ND	ND	ND	ND	ND
Max TCE Concentration	ND	ND	ND	ND	ND
Media with DCE Detections	ND	ND	ND	ND	ND
Max DCE Concentration	ND	ND	ND	ND	ND
Media with Vinyl Chloride Detections	ND	ND	ND	ND	ND
Max Vinyl Chloride Concentration	ND	ND	ND	ND	ND
Notes	BrightFields conducted a Site Specific Assessment investigation in March, 2013.		7/24/00, Compliance Environmental sampled the soil and GW below the basement staining, also found that the site was a Former Dry Cleaner.	A Phase I was performed by Giles Engineering Associates, Inc. in 2008, M.I.G Environmental performed a subsurface investigation with no detections of target dry cleaning VOCs.	1998, Duffield collected test pit soil samples. PAH impacted soils were removed from site.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Atlantic Coast Environmental	Blue Hen Auto Body, Inc	Blue Hen Mall Drum Site	Braun Property	Capital Cleaners
DNREC Program Identification Number (DE - #)	1379	0243	1480	1487	1018
Parcel # / Lat-Lon	ED-05-067.00-02-55.00.000, 39.182341, -75.552435	5825 West Denneys Road, Dover, DE 19904, 39.202500, -75.559996	ED-05-077.00-01-01.00.000, 39.153329, -75.500265	ED-05-077.09-03-60.00.000, 39.154600, -75.525299	ED-05-077.09-03-37.00.000, 39.155278, -75.525829
Date Reviewed	7/23/2013	7/23/2013	7/24/2013	6/4/2013	6/3/2013
Soil Investigation	No	No	Yes	Yes	Yes
Groundwater Investigation	Yes	No	Yes	No	Yes
Sampled for:	GW: HSL VOCs by EPA Method 8240	No sampling indicated	S & GW: Full TAL/TCL	S: Full TAL/TCL SG: VOCs	S & GW: VOCs
Media with PCE Detections	GW	NA	ND	SG	S, GW
Max PCE Concentration	31 ppb	NA	ND	10.17 µg/m ³	S (640 µg/Kg), GW (42,000 µg/L)
Media with TCE Detections	GW	NA	ND	ND	S, GW
Max TCE Concentration	100 ppb	NA	ND	ND	S (3,100 µg/Kg), GW (630 µg/L)
Media with DCE Detections	GW	NA	ND	ND	S, GW
Max DCE Concentration	14 ppb	NA	ND	ND	S (69,000 µg/Kg), GW (2,800 µg/L)
Media with Vinyl Chloride Detections	ND	NA	ND	ND	GW
Max Vinyl Chloride Concentration	ND	NA	ND	ND	GW (60 µg/L)
Notes	Balsam Environmental Consultants, Inc. performed a Hydrogeological and Engineering Investigation on the site in 1988.	DNREC prepared a Preliminary Assessment for this site in 1990. During the investigation, no samples were collected.	Ten Bears performed a limited Environmental Investigation on the drum site in 2009. BrightFields, Inc. conducted a Supplemental Environmental Info and Response report.	Soil gas reported in ppb(v). Converted to µg/m ³ using Eurofins calculator (http://www.eurofinsus.com/environment-testing/laboratories/eurofins-air-toxics/resources/unit-conversion-calculator/) 1.5 ppb(v) of PCE is equal to 10.17 µg/m ³ . Brownfields Investigation Report 2010 and Limited Subsurface Exploration report, Ten Bears.	During the 1995 Remedial Investigation (RI) both laboratory and field chromatography analysis were used to analyze site soil samples. Maximum concentrations for laboratory data are listed above. EPA collected groundwater samples in their PCE spill report.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Capitol Scrap	Chemdecon Trailer	City of Dover - Public Works	Delaware Civic Center Property	Delaware State College Dump
DNREC Program Identification Number (DE - #)	1171	0254	0152	1438	0164
Parcel # / Lat-Lon	ED-05-076.08-06-02.00.000, 39.159009, -75.532398	39.194091, -75.547016	There is no Parcel ID, the site is located on water street without an exact address. Coordinates provided from DNREC NAV are 39.153333, -75.519441	ED-05-057.00-01-05.03.000 ED-05-057.00-01-08.02.000, 39.191784, -75.551419	The inactive Delaware State College Dump (landfill) is located west of Route 13 in Dover, Kent County, Delaware. The dump encompasses approximately one acre within the Delaware State College Agricultural and Ecological Research area. 39.184559, -75.548518
Date Reviewed	5/8/2013	7/23/2013	6/5/2013	7/23/2013	7/16/2013
Soil Investigation	Yes	No	Yes	Yes	Yes
Groundwater Investigation	Yes	No	Yes	Yes	Yes
Sampled for:	S & GW: Screening and some analytical Full TAL/TCL	Not Listed	S & GW: Full TAL/TCL	S & GW: SVOCs, Pest, PCBs and TAL metals and cyanide	S & GW: Full TAL/TCL (But not for all)
Media with PCE Detections	GW	NA	GW	NA	ND
Max PCE Concentration	1 µg/L	NA	5 µg/L	NA	ND
Media with TCE Detections	GW	NA	ND	NA	ND
Max TCE Concentration	2 µg/L	NA	ND	NA	ND
Media with DCE Detections	ND	NA	ND	NA	ND
Max DCE Concentration	ND	NA	ND	NA	ND
Media with Vinyl Chloride Detections	ND	NA	ND	NA	ND
Max Vinyl Chloride Concentration	ND	NA	ND	NA	ND
Notes	DNREC performed a BPAII investigation on site soil and groundwater.	Site suspected to have contained metallic sodium within an onsite trailer. DNREC sampled the suspected media and concluded metallic sodium was not present.	Cabe Associates performed a Facility Evaluation on the site in 2000 and collected surface water, sediment, groundwater, and soil samples.	Based on Conceptual Site Model (CSM) and Sampling Analysis Plan (SAP) by Duffield, no organics were proposed to be analyzed. No previous detections of chlorinated solvents noted in previous investigations.	EA Engineering, Science and Technology, Inc. prepared a Facility Evaluation (FE) Report for the site summarizing all prior reports and findings.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Donohos Paint	Dover Air Force Base	Dover Bulk Oil	Dover Gas and Light Co.	Dover Machine Works
DNREC Program Identification Number (DE - #)	1312	0031	1313	NAT-10374 (Superfund/ DE-0057	1314
Parcel # / Lat-Lon	ED-05-077.09-01-45.00.000 ED-05-077.09-01-46.00.000 ED-05-077.09-01-47.00.000 ED-05-077.09-01-53.00.000 ED-05-077.09-01-52.00.000 ED-05-077.09-01-48.00.000 ED-05-077.09-01-49.00.000, 39.157832, -75.528119	The Dover Air Force Base (DAFB) site is composed of 5 different areas of remediation: Area 5 in the West Management Unit, Area 6 in the West Management Unit, Sites SS08 and LF25 in the West Management Unit, the South Management Unit, and the East Management Unit. 39.126667, -75.466386	The Dover Historical Bulk Oil Storage Area (site) is comprised of nineteen (19) parcels bound by Mary Street to the north, North West Street to the east, Division Street to the south and Ridgley Street to the west. The central coordinates for the site are latitude 390 09' 42" by longitude 750 32' 5".	ED0507709030100 OR 2-05-07709-03-0100-00001, 39.155834, -75.527218	ED0507709017400, ED0507709018400 ED0507709016900, ED0507709018300 ED0507709017000, ED0507709018200 ED05077090ML01, 39.156824, -75.528208
Date Reviewed	5/31/2013	8/22/2013	5/8/2013	5/31/2013	5/31/2013
Soil Investigation	No	Yes	No	Yes	Yes
Groundwater Investigation	No	Yes	No	Yes	Yes
Sampled for:	None	S & GW: Over the course of all site investigations Full TAL/TCL analysis has been performed, although not for every investigation	No sampling indicated	S & GW: Full TAL/TCL SG: VOCs	S& GW: Full TAL/TCL
Media with PCE Detections	NA	S, GW	NA	S, GW, SG	GW
Max PCE Concentration	NA	S (100 ppb), GW (3,300 µg/L)	NA	S (4,200 µg/kg), GW (7,300 µg/L), SG (1,221 µg/m ³)	1 µg/L
Media with TCE Detections	NA	S, GW	NA	S, SG	ND
Max TCE Concentration	NA	S (66 ppb), GW (21,000 µg/L)	NA	S (160 µg/kg), SG (75.2 µg/m ³)	ND
Media with DCE Detections	NA	S, GW	NA	S	ND
Max DCE Concentration	NA	S (1.1 ppb), GW (7,300 µg/L)	NA	12,000 µg/kg	ND
Media with Vinyl Chloride Detections	NA	GW	NA	S	ND
Max Vinyl Chloride Concentration	NA	510 µg/L	NA	1,400 µg/kg	ND
Notes	A Preliminary Assessment Report was conducted by DNREC in 2004. Two tanks found on-site. No documentation of a removal was located.	Several reports have been conducted on this site over the past few decades. The most recent site summary reports (2013) adequately summarize all site findings.	Only files found included a DNREC preliminary site assessment and drum disposal summary.	Soil gas reported in ppb(v). Converted to µg/m ³ using Eurofins calculator (http://www.eurofins.com/environment-testing/laboratories/eurofins-air-toxics/resources/unit-conversion-calculator/) 180 ppb(v) of PCE is equal to 1,221 µg/m ³ . 14 ppb(v) of TCE is equal to 75.2 µg/m ³ . EPA as well as several other consultants have conducted multiple reports since the mid 1980's.	1996 Atlantic Hydrologic hand auger investigation, 2004 DNREC preliminary assessment, 2007 Ten Bears Phase I and Limited subsurface investigation.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Dover West Side Area A	Dover West Side Area B	Dover West Side Area B	Dover West Side Area C
DNREC Program Identification Number (DE - #)	1212	DWB/Coca Cola (1213)	1213	1214
Parcel # / Lat-Lon	ED-0507612024500, ED-0507612024400, ED-0507612024300, ED-0507608014500, ED-0507612044200, ED-0507612041300, ED-0507612041500, ED-0507612041200, ED-0507612040900, ED-050761204110, ED-0507612041000, ED-0507612042600, ED-0507612042601, ED-0507612042500, ED-0507612042400, ED-0507612041600, ED-0507612041700, ED-0507612041800, ED-0507612041900, ED-0507612042000, ED-0507612042100, ED-0507612042200	ED-0507612040600, ED-0507612040701, ED-0507612040700, ED-0507612040500, ED-0507612040400, ED-0507612040300, ED-0507612040800, ED-0507612040201, ED-0507612040200, ED-0507612044100, ED-050761202400, ED-0507612024200, ED-0507612024100, ED-0507612023800, ED-0507612023901, ED-0507612023900, ED-0507612012800	ED-0507612040600, ED-0507612040701, ED-0507612040700, ED-0507612040500, ED-0507612040400, ED-0507612040300, ED-0507612040800, ED-0507612040201, ED-0507612040200, ED-0507612044100, ED-050761202400, ED-0507612024200, ED-0507612024100, ED-0507612023800, ED-0507612023901, ED-0507612023900, ED-0507612012800	ED-0507608013700, ED-0507608013800, ED-0507608014000, ED-0507608013900, ED-0507608014001, ED-0507608014100, ED-0507608014102, ED0507608014200, ED-0507608014300, ED-0507608014500, ED-0507608014101
Date Reviewed	5/10/2013	5/8/2013	5/10/2013	5/8/2013
Soil Investigation	Yes	Yes	Yes	Yes
Groundwater Investigation	Yes	Yes	Yes	Yes
Sampled for:	S & GW: Full TAL/TCL	S & GW: Full TAL/TCL	S & GW: Full TAL/TCL	S & GW: Metals, VOCs and SVOCs
Media with PCE Detections	GW	GW	GW	ND
Max PCE Concentration	0.9 ppb	41 µg/L	47 ppb	ND
Media with TCE Detections	ND	GW	GW	GW
Max TCE Concentration	ND	52 µg/L	52 ppb	12 ppb
Media with DCE Detections	ND	ND	GW	ND
Max DCE Concentration	ND	ND	ND	ND
Media with Vinyl Chloride Detections	GW	ND	ND	ND
Max Vinyl Chloride Concentration	0.6 ppb	ND	ND	ND
Notes	A BPAII was performed to assess risk for the subject sites.	DNREC collected groundwater samples in 2001.	A BPA II was conducted characterizing risk for the area.	DNREC performed a Brownfield Preliminary Assessment (BPA) II for 11 parcels. A toxicological evaluation was also conducted for the whole area.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Eastern Disposal Rubble Pit	Former Chesapeake Supply Company	Former Dover Ice Plant	Former Playtex Property	Fraziers Pit
DNREC Program Identification Number (DE - #)	0066	1334	1110	1552	0154
Parcel # / Lat-Lon	ED-05-067.00-02-53.00.000 ED-05-067.00-02-54.00.000 ED-05-067.00-02-56.00.000, 39.182944, -75.550093	ED-05-76.12-04-41.00.000, 39.156669, -75.532861	ED-05-076.12-04-08.01.000, 39.155894, -75.532789	ED-05-077.06-01-02.00.000, 39.163996, -75.516928	ED-05-057.00-01-04.01.000, 39.190847, -75.553441
Date Reviewed	7/16/2013	5/10/2013	5/13/2013	8/22/2013	7/23/2013
Soil Investigation	Yes	No	Yes	No	Yes
Groundwater Investigation	Yes	Yes	Yes	No	Yes
Sampled for:	S & GW: Full TAL/TCL	GW: TCL VOCs, total and dissolved Chromium	S & GW: Full TAL/TCL	No sampling indicated	S & GW: SVOCs, Pest, PCBs and TAL metals and cyanide
Media with PCE Detections	ND	GW	ND	NA	NA
Max PCE Concentration	ND	120 µg/L	ND	NA	NA
Media with TCE Detections	ND	GW	GW	NA	NA
Max TCE Concentration	ND	7 µg/L	260 µg/L	NA	NA
Media with DCE Detections	ND	ND	ND	NA	NA
Max DCE Concentration	ND	ND	ND	NA	NA
Media with Vinyl Chloride Detections	ND	ND	ND	NA	NA
Max Vinyl Chloride Concentration	ND	ND	ND	NA	NA
Notes	BrightFields Inc. conducted BI for the site in 2006.	DNREC memorandum references PCE in Dover Area B sampling.	Remedial Investigation report (Tetra Tech) completed in November 2000.	Mirror Lake project by BrightFields Inc. Project has not started as of yet. At the time of file review no investigations were conducted.	JCA Associates, Inc. performed a Hydrogeologic Characterization in 1997 and a Groundwater Leachate sampling summary in 1998.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Hastings Dry Cleaners	Kent County Landfill; Dover	Lebanon Road Landfill	McClements Farm	McKee Run Generating Station - Dover Power Plant
DNREC Program Identification Number (DE - #)	1010	0010	0132	1029	0269
Parcel # / Lat-Lon	S Route 113 & Lebanon Road, Dover, DE 19901, 39.121417, -75.480558	ED-00-095.00-01-03.00.000, 39.099003, -75.456073	Site is located adjacent to Lebanon Road, in the tidal marsh of the St. Jones River in Dover, Kent County 39.113505, -75.491797	ED-05-066.00-01-07.00.000, 39.185070, -75.572068	The site address is 880 Buttner Place, Dover, / 39.174445, -75.544718
Date Reviewed	7/25/2013	8/7/2013	8/7/2013	7/23/2013	7/15/2013
Soil Investigation	Yes	Yes	Yes	Yes	Yes
Groundwater Investigation	Yes	Yes	Yes	Yes	Yes
Sampled for:	S & GW: TCL VOCs	S & GW: Full TAL/TCL	S & GW: Full TAL/TCL	S & GW: RCRA Characteristics, TCLP for VOCs, SVOCs, Pest, PCBs	S & GW: Full TAL/TCL
Media with PCE Detections	S, GW	ND	ND	ND	S
Max PCE Concentration	S (590 ppb), GW (2,000 ppb)	ND	ND	ND	180 µg/kg
Media with TCE Detections	GW	ND	ND	ND	ND
Max TCE Concentration	130 ppb	ND	ND	ND	ND
Media with DCE Detections	ND	ND	ND	ND	ND
Max DCE Concentration	ND	ND	ND	ND	ND
Media with Vinyl Chloride Detections	ND	ND	ND	ND	ND
Max Vinyl Chloride Concentration	ND	ND	ND	ND	ND
Notes	The 2003 EA Engineering, Science, and Technology, Inc's Remedy Evaluation Report summarizes on-site contamination and off-site attributing factors.	In 1991 DNREC conducted a Site Inspection and collected several types of varying media samples. All samples collected were non-detect for any dry cleaner associated VOCs.	In 2002, EA Engineering, Science, and Technology, Inc. collected two surface water samples. No solvents associated with dry cleaner activities were detected.	EA Engineering, Science and Technology conducted an Environmental Conditions Survey in 1989 for latex contamination.	The power plant is comprised of 3 individual substations. City of Dover performed a groundwater and soil investigation the substations in 1995. Frazier substation is located on the north side of Dover on a private road that intersects the southbound lane of DuPont Highway. The St. Jones substation is located adjacent to the intersection of Division Street and Kings Highway. College Road substation is located on the north side of Dover at the intersection of College Road and a train track operated by Conrail. PCE was detected at the St. Jones substation.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	Morris Work Release Center	New Street	P & F Motorcycles	Paradee Oil	Pugh Dump
DNREC Program Identification Number (DE - #)	1143	1107	1093	0231	0227
Parcel # / Lat-Lon	ED-05-077.13-01-10.00.000, 39.153056, -75.527496	ED-05-077.09-01-85.00.000, 39.156945, -75.527496	ED-00-086.00-01-38.00.000, 39.127132, -75.490645	2030 North DuPont Highway, Dover, DE 19901, 39.201667, -75.563329	39.129132, -75.509611
Date Reviewed	6/3/2013	5/31/2013	7/25/2013	7/23/2013	7/24/2013
Soil Investigation	Yes	Yes	Yes	Yes	No
Groundwater Investigation	Yes	Yes	Yes	Yes	No
Sampled for:	S & GW: Full TAL/TCL	S & GW: VOCs and Full TAL/TCL SG: VOCs	S & GW: VOCs	S & GW: BTEX & TPH	NA
Media with PCE Detections	ND	S, GW, SG	S, GW	NA	NA
Max PCE Concentration	ND	S (3,200 µg/kg), GW (143 µg/L), SG (6,394 µg/m ³)	S (2 µg/kg), GW (812 µg/L)	NA	NA
Media with TCE Detections	ND	GW, SG	S, GW	NA	NA
Max TCE Concentration	ND	GW (26 µg/L) SG (70 µg/m ³)	S (4 µg/kg), GW (8.3 µg/L)	NA	NA
Media with DCE Detections	ND	GW	ND	NA	NA
Max DCE Concentration	ND	750 µg/L	ND	NA	NA
Media with Vinyl Chloride Detections	ND	ND	ND	NA	NA
Max Vinyl Chloride Concentration	ND	ND	ND	NA	NA
Notes	Final Plan of Remedial Action by DNREC 1999. Duffield 2000 Remedial Investigation reported on soil excavation and sampling.	A Facility Evaluation Report was conducted by DNREC in 1998 and sampled GW, Soil and passive soil gas. Conversion factor used in report (1 ng/L = 1 µg/m ³).	A status update from DNREC (2012) summarizes past investigations and findings.	DNREC performed a Preliminary Assessment in 1989. Delmarva tank services performed a Hydrogeologic Investigation in 1991.	Preliminary Assessment Report described the subject site as an abandoned borrow pit that has become overgrown with trees. Some illegal dumping of broken concrete, wood, old appliances, a few tires, and two old cars has occurred in the past. DNREC conducted a Preliminary Assessment in 1989. No samples were collected on site.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCS** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Rodney Village Shopping Center	Scott Paper Company	Silver Lake Park	South State Street / HolyCross Church Landfill	Square Club Lodge Landfill
DNREC Program Identification Number (DE - #)	1288	0060	0085	0143	0145
Parcel # / Lat-Lon	ED-00-085.16-04-65.00.000, 39.128400, -75.532187	1340 West North Street, Dover, DE 19904 39.150000, -75.549996	ED-05-068.17-03-16.00.000, 39.168333, -75.523330	There is no parcel ID, the site is now abandoned. Coordinates provided from DNREC NAV are 39.151318, -75.518766	ED-05-067.18-01-11.00.000, 39.169086, -75.558352
Date Reviewed	7/24/2013	7/16/2013	7/15/2013	6/4/2013	7/16/2013
Soil Investigation	Yes	No	Yes	Yes	No
Groundwater Investigation	Yes	No	Yes	Surface Water	No
Sampled for:	S, GW, and SG: Sampled for VOCs	NA	S & GW: Full TAL/TCL	Surface Water: Metals	NA
Media with PCE Detections	S,GW, SG	NA	ND	NA	NA
Max PCE Concentration	S (150 µg/kg), GW(17 µg/L), SG (27,133 µg/m ³)	NA	ND	NA	NA
Media with TCE Detections	SG	NA	ND	NA	NA
Max TCE Concentration	SG (6,449 µg/m ³)	NA	ND	NA	NA
Media with DCE Detections	SG	NA	ND	NA	NA
Max DCE Concentration	SG (10,523 µg/m ³)	NA	ND	NA	NA
Media with Vinyl Chloride Detections	ND	NA	ND	NA	NA
Max Vinyl Chloride Concentration	ND	NA	ND	NA	NA
Notes	Soil gas reported in ppb(v). Converted to µg/m3 using Eurofins calculator (http://www.eurofinsus.com/environment-testing/laboratories/eurofins-air-toxics/resources/unit-conversion-calculator/) 4,000 ppb(v) of PCE is equal to 27,133 µg/m ³ . 14 ppb(v) of TCE is equal to 1,199 µg/m ³ . 2,654 ppb(v) of DCE is equal to 10,523 µg/m ³ . Environmental Alliance submitted a 2012 Annual report which summarizes all investigation results.	A Preliminary Assessment was performed in 1984 to determine if hazardous waste was being disposed of on property. The assessment concluded that nothing was found.	EPA conducted a site inspection in 1986 and collected GW and soil samples.	Only reference to an investigation is in 1988, by EPA. Not much info, Heavy Metals (Antimony) were detected.	A Preliminary Assessment was performed in 1986. It was determined that "fill dirt" brought to the site was not contaminated.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compounds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

**Table 6
DNREC-SIRS HSCA Sites in Study Area
Dover, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Teal Construction Co Landfill	Teiman Property	White Oak Salvage	Wildcat Landfill
DNREC Program Identification Number (DE - #)	0133	1550	0358	0011
Parcel # / Lat-Lon	ED-00-095.00-01-03.00.000, 39.113482, -75.489013	ED-00-085.20-01-09.00.000, 39.124300, -75.531128	LC-00-058.00-02-70.02.000 LC-00-058.00-02-70.03.000 LC-00-058.00-02-70.04.000, 39.184553, -75.492841	NM-00-086.00-01-37.00.000, 39.120834, -75.496663
Date Reviewed	8/7/2013	8/22/2013	7/23/2013	8/7/2013
Soil Investigation	Part of area sample event	No	No	Yes
Groundwater Investigation	Part of area sample event	No	No	Yes
Sampled for:	NA	No sampling indicated	No sampling indicated	S & GW: Full TAL/TCL
Media with PCE Detections	NA	NA	NA	ND
Max PCE Concentration	NA	NA	NA	ND
Media with TCE Detections	NA	NA	NA	ND
Max TCE Concentration	NA	NA	NA	ND
Media with DCE Detections	NA	NA	NA	ND
Max DCE Concentration	NA	NA	NA	ND
Media with Vinyl Chloride Detections	NA	NA	NA	ND
Max Vinyl Chloride Concentration	NA	NA	NA	ND
Notes	Besides a Preliminary Assessment and a field report, no other site specific documents are presented. No dry cleaner VOCs are listed as DNREC contaminants of concern.	No documents found other than a Brownfields Certification letter.	DNREC performed a Preliminary Assessment for the site in 2012. No sampling has been conducted on the property.	In 1986, DNREC conducted a Remedial Investigation Report. 2002 Operations and Maintenance well sampling showed no targeted contaminants of concern in GW. Navigator information indicates target dry cleaner VOCs were not site contaminants of concern.

Highlighted (Yellow) - Chlorinated solvents have been detected at the site. **VOCs** - Volatile Organic Compounds
S - Soil **SVOCs** - Semi-Volatile Organic Compunds
S* - Soil sampled using field chromatography **PCE** - Tetrachloroethylene or perchloroethylene
GW - Groundwater **TCE** - Trichloroethylene or trichloroethene
SG - Soil Gas **DCE** - 1,2-Dichloroethene or 1,2-dichloroethylene
NA - Not analyzed **TAL** - Target Analyte List
ND - Not detected **TCL** - Target Compound List
Chlorinated solvent detections and corresponding units are recored as found in text (1 ppb = 1 µg/L).

Table 7
EDR Proprietary Records
US Historical Cleaners
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Georgetown Square Laundry	Ottomat Laundromat Service General Corp	Thoro Kleen Dry Cleaning & Laundry
Record Year(s)²	2004 & 2007	2003, 2004, 2010	1999-2001, 2004, 2010
Site Address	432 East Market Street	111 North Race Street	11 North Railroad Avenue
Date Site Reviewed / Visited³	10/9/2013	10/22/2015	10/9/2013
Business Telephone Number	Unavailable	302-856-2966	302-856-2813
Business Still Operating at Location?	No	Yes	Unknown
Current Site Use⁴	Commercial-Other	Commercial-Laundry Services	Commercial-Vacant
Currently Providing Dry Cleaning Services?	No	No	Unknown
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	Yes - on-site Dry Cleaning
Potential Receptors⁵	Commercial Businesses & Residential Houses	Commercial Businesses	Commercial Businesses & Residential Houses
Notes	No dry cleaner located at site address. Financial services, "Simply Beautiful" salon, located in location shopping center with residential houses across the street.	"Service General Cleaners" located at 110 North Race Street. "Susan's Boutique" to left as well as several other surrounding businesses 111 North Race Street is an "Advanced Services" business selling airline tickets, PC repair, and internet services. Site status confirmed via phone interview with business employee.	Dry cleaner building located at site address but is closed. Businesses and residential housing in proximity to building. Site confirmed historic on-site dry cleaner via DNREC-AQMS FOIA documents.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

Table 8
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report

Site Name¹	1st State Chev Olds Body Shop	Delaware Department of Transportation Division of Highways	Farris, Rich Auto Body, Inc.
Site Address	Laurel Street & Railroad Avenue	Rd. 431 & Rt. 113	27 Bramhall Street
Date Site Reviewed / Visited²	10/9/2013	10/9/2013	10/9/2013
Business Contact Name	Richard Paugh	Charlie Plummer	Betty Farris
Business Telephone Number	302-856-7575	302-856-5209	302-856-4335
Current Owner	Bob Hansen & Lee Turek	State of Delaware - DEL DOT	Richard L. Farris, Jr.
Current Owner Telephone Number	302-856-7575	302-739-4328	NA
Current Owner/Operator Start Date	Not reported	Not reported	Not reported
Current Site Use³	Automotive	Other	Automotive
RCRA Waste Code(s)[*]	F003 and F005	D039	F003 and F005
Notes			

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039- PCE (tetrachlorethylene)

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 8
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report

Site Name¹	First State Motors, Inc.	Floyd A Megee Motor	Georgetown Cleaners
Site Address	300 South DuPont Highway	515 North Bedford Street	315 North Race Street
Date Site Reviewed / Visited²	10/9/2013	10/9/2013	10/9/2013
Business Contact Name	Terry Truitt	John Ferebee	Nandikkara V. Ramn
Business Telephone Number	302-856-2521	302-856-0064	302-323-4540
Current Owner	First State Motors, Inc.	Terry A. Megee	Norman W. Lyons
Current Owner Telephone Number	302-856-2521	302-856-2817	NA
Current Owner/Operator Start Date	Not reported	Not reported	Not reported
Current Site Use³	Automotive	Automotive	Dry Cleaner
RCRA Waste Code(s)[*]	F002	D039	F002
Notes			Confirmed onsite dry cleaner based on RCRA waste generator records.

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039- PCE (tetrachlorethylene)

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 8
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Georgetown Laundry & Dry Cleaning	Jeff Whites Auto, Inc.	Walmart Supercenter #2791
Site Address	7 Georgetown Plaza	514 West Market Street	4 College Park Lane
Date Site Reviewed / Visited²	10/9/2013	10/9/2013	10/9/2013
Business Contact Name	Abe Hanna	Jeff White	Justin Wilson
Business Telephone Number	302-856-4511	302-856-3333	479-204-3517
Current Owner	Richard Rymen Rte 113 Ltd Co	Jeffrey White	Wal-Mart Stores East, LP
Current Owner Telephone Number	302-856-4511	302-856-3333	Not reported
Current Owner/Operator Start Date	Not reported	Not reported	8/16/2000
Current Site Use³	Dry Cleaner	Automotive	Other
RCRA Waste Code(s)[*]	F002	F003 and F005	D039
Notes	Site confirmed current onsite dry cleaner via DNREC-AQMS registered dry cleaner list.		

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039- PCE (tetrachlorethylene)

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 9
Delaware Sanborn Map Sites - Identified Cleaning and Automotive Services
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report

Approximate Address	Sanborn Description	Industry Type	Map Year	Notes
12 West Market Street	Auto Sales and Service	Automotive Services	1959	
212 Albury Avenue	Auto Repair	Automotive Services	1959	
305 North Race Street	Cleaning	Laundry Services	1959	Site not currently operating as a laundry service business. Site identified in DNREC FOIA response as "Georgetown Cleaners".
519 North Bedford Street	Auto Repair	Automotive Services	1959	
413 North Bedford Street	Auto Sales and Service	Automotive Services	1959	
409 1/2 North Bedford Street	Auto Sales and Service	Automotive Services	1959	
133 East (West) Market Street	Auto Repair	Automotive Services	1959	
124 East (West) Market Street	Auto Sales and Service	Automotive Services	1959	
13 North Railroad Avenue	Cleaning	Laundry Services	1959	Site location on Sanborn® map added to site located at 11 North Railroad Avenue "Thoro-Kleen Dry Cleaning & Laundry". Alternate site address locted in EDR Proprietary Records (Table 7), and Historic City Directory data (Table 10) as "Thoro-Kleen Dry Cleaning & Laundry".

Highlighted (yellow) - indicates confirmed current and /or historic onsite dry cleaning services.

Highlighted (orange) - indicates potential historic onsite/current offsite dry cleaning services occurred at the site.

Table 10
Historic City Directory Data
Georgetown, Delaware
Delaware Dry Cleaner Initiative Project

Site Name ¹	Diamond State Laundry Co.	Georgetown Cleaners	Georgetown Cleaners
Directory Year ²	1936	1939	1940
Site Address	411 North Bedford Street	522 East Market Street	370 North Race Street
Date Site Reviewed / Visited ³	8/27/2013	8/27/2013	9/19/2013
Alternate Historical Listings	None	None	None
Current Site Use ⁴	Commercial-Vacant	Commercial-Other	Commercial-Vacant
Currently Providing Dry Cleaning Services?	No	No	No
Potential Receptors ⁵	Residential Houses	Residential Houses	Residential Houses
Notes	Building located at site address appears to be an abandoned / vacant residential house / business. The site is in proximity to residential houses.	A residential house and office building located at the rear of the property appear to be currently in use as a "State Farm Insurance" office / building at the site address. The site is surrounded by residential houses.	A vacant lot appears to be located at site address. Lot is located across from Georgetown Police Department and is in proximity to residential houses.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - **Site Name** - business name as listed in the historic city directory.

2 - **Record Year(s)** - date of record(s) identified in the historic city directory.

3 - **Date site visited / reviewed** - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - **Current Site Use** - based on visual observations made during site visit /review.

5 - **Potential Receptors** - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

Table 10
Historic City Directory Data
Georgetown, Delaware
Delaware Dry Cleaner Initiative Project

Site Name ¹	Thoro-Kleen Dry Cleaning Works	Sussex Cleaners & Dyers	Sussex Cleaners & Dyers	Sussex Cleaners & Dyers
Directory Year ²	1938 & 1955	1933	1936	1938
Site Address	11 North Railroad Avenue	N. Bedford*	Court*	E. Market*
Date Site Reviewed / Visited ³	9/19/2013	9/19/2013	9/19/2013	8/27/2013
Alternate Historical Listings	The Town Laundry - 1948	None	None	None
Current Site Use ⁴	Commercial-Vacant	NA	NA	NA
Currently Providing Dry Cleaning Services?	No	NA	NA	NA
Potential Receptors ⁵	Commercial Businesses & Residential Houses	NA	NA	NA
Notes	A vacant building with a sign reading "Thoro-Kleen Dry Cleaning & Laundry" is located at the site address. Site confirmed historic on-site dry cleaner via DNREC-SIRS DEN documents.	NA	NA	NA

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 11
DNREC-SIRS HSCA Sites in Study Area
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Atlantic Industrial Optics	BAST Parking Lot	Former Pep-Up Site	Georgetown Cleaners
DNREC Program Identification Number (DE - #)	0209	1490	1491	0113
Parcel # / Lat-Lon	116 New Street, 38.694413,-75.387714 tax parcel: 135-14.20-119.00	New Street, east intersection with N. Race Street, 38.694413,-75.387714 tax parcel: 135-14.20-121.00	310 North Race Street, 38.694223,-75.388796 Tax parcels: 135-14.20-108, 135-14.20-110, 135-14.20-111	305 N. Race Street, 38.693889,-75.389165
Date Reviewed	9/26/2013	9/26/2013	9/25/2013	9/17/2013
Soil Investigation	Yes	Yes	Yes	Yes
Groundwater Investigation	Yes	Yes	Yes	Yes
Sampled for:	S: Total petroleum hydrocarbons, BTEX, MTBE, naphthalene GW: BTEX, MTBE, naphthalene, TAL metals	S & GW: VOCs, SVOCs, PCBs, Pesticides S: TAL inorganics GW: Dissolved TAL inorganics TPH-DRO, TPH-GRO	S: organic/inorganic COCs; 20% screened soil samples for TAL/TCL GW: VOCs Select wells: full TAL/TCL	S & GW: Full TAL TCL / VOCs and TOC SG: VOCs
Media with PCE Detections	NA	ND	SG, GW	S, GW, SG
Max PCE Concentration	NA	ND	GW (341 µg/L) SG (estimated) (1.09 µg/m ³)	S (21,000 µg/kg), GW (680 µg/L), SG (14.24 µg/m ³)
Media with TCE Detections	NA	ND	GW	S, GW
Max TCE Concentration	NA	ND	65.4 µg/L	S (490 µg/kg), GW (130 µg/L)
Media with DCE Detections	NA	ND	ND	S, GW
Max DCE Concentration	NA	ND	ND	S (820 µg/kg), GW (690 µg/L)
Media with Vinyl Chloride Detections	NA	ND	ND	ND
Max Vinyl Chloride Concentration	NA	ND	ND	ND
Notes	Approximately 0.35 acres. Unoccupied property (2008). Historic uses: ice manufacturer, glass grinding/polishing, fitness center, storage for insulation contractor. Mixed use area.	Previously used as coal storage (1919-1939), vacant lot (2010).	Soil gas reported in ppb(v). Converted to µg/m ³ using Eurofins calculator (http://www.eurofinsus.com/environment-testing/laboratories/eurofins-air-toxics/resources/unit-conversion-calculator/) 0.16 ppb(v) of PCE is equal to 1.09 µg/m ³ . Approximately 1 acre, zoned for commercial. Used to contain gasoline, kerosene and heating oil in ASTs. 2010 investigation revealed petroleum contamination of subsurface soil. PCE detections attributed to Georgetown Cleaners site.	Soil gas reported in ppb(v). Converted to µg/m ³ using Eurofins calculator (http://www.eurofinsus.com/environment-testing/laboratories/eurofins-air-toxics/resources/unit-conversion-calculator/) 2.1 ppb(v) of PCE is equal to 14.24 µg/m ³ . 1995, DNREC conducted a FE. During this investigation the highest contamination levels were observed. Tetra Tech performed a RI in 1997. The report summarizes all site activities. Tetra Tech also conducted a soil vapor sampling event in 2005.

Highlighted (Yellow) - Site has detections of chlorinated solvents.
DNREC - Delaware Department of Natural Resources and Environmental Control
S - Soil
GW - Groundwater
NA - Not analyzed / Not applicable
ND - Not detected

VOCs - Volatile Organic Compounds
SVOCs - Semi-Volatile Organic Compounds
PCE - Tetrachloroethylene or perchloroethylene
TCE - Trichloroethylene or trichloroethene
TAL - Target Analyte List
TCL - Target Compound List

**Table 11
DNREC-SIRS HSCA Sites in Study Area
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	Georgetown Coal Gas	Georgetown Groundwater OU	Georgetown Substation (Former)	J. G Townsend OU1
DNREC Program Identification Number (DE - #)	0188	1407	1286	1338
Parcel # / Lat-Lon	316 N. Race Street, 38.695368,-75.389013 Tax parcels: 1-35-14.20-117, 1-35-14.20-118	N Race Street 38.694223,-75.388796	200 Block of North Race Street, 38.693365,-75.387887 tax parcel: 135-14.20-127.00	Small Parcel OU1 38.696716,-75.389020 Tax parcel: 1-35-14.16-55,
Date Reviewed	9/26/2013	10/2/2013	10/1/2013	9/16/2013
Soil Investigation	Yes	No	Yes	Yes
Groundwater Investigation	Yes	Yes, references a compact disc	Yes	Yes
Sampled for:	S: BTEX, PAHs, priority pollutant metals, total cyanide, PCBs GW: BTEX, PAHs, PCE, TCE, DCE, vinyl chloride, dissolved and total pollutant metals, total and free cyanide	GW: TCL VOCs	S: Metals + Arsenic, VOCs, SVOC + PAHs, Pesticides, PCBs GW: total and dissolved TAL metals, VOCs, SVOCs, PCBs, Pesticides	S & GW: BTEX, Isopropylbenzene, Naphthalene, MTBE, EDC, EDB, Lead by method SW 846, Total metals, TCLP metals and RCRA characteristics
Media with PCE Detections	GW (offsite well)	GW	ND	NA
Max PCE Concentration	37 µg/L	480 µg/L	ND	NA
Media with TCE Detections	GW (offsite well)	GW	ND	NA
Max TCE Concentration	0.36 µg/L estimated	60 µg/L	ND	NA
Media with DCE Detections	GW (offsite well)	ND	ND	NA
Max DCE Concentration	0.61 µg/L estimated	ND	ND	NA
Media with Vinyl Chloride Detections	ND	ND	ND	NA
Max Vinyl Chloride Concentration	ND	ND	ND	NA
Notes	Approximately 0.5 acres. Former manufactured gas plant (1910-1930). Contamination of polynuclear aromatic hydrocarbons (PAHs). PCE and TCE from offsite source. Site was in acceptable condition Sept 29, 2009. Data from Remedial Investigation Report (1996).	Site created to address co-mingled chlorinated solvent and petroleum plume affecting JG Townsend well, PW-1. Ten tax parcels totaling 6 acres: JG Townsend Cannery (DE-0208), Georgetown Coal Gas (DE-0188), Atlantic Industrial Optics, Inc. (DE-0209), Former Pep-Up (DE-1491), and Georgetown Cleaners (DE-0113). Georgetown Groundwater OU divided into Former Pep-Up OU-2 and Georgetown Coal Gas OU-2. Used Data Report on PW-1 and Vicinity	Previously used as electrical substation. Vacant for several decades. Arsenic, PCB, and PAH contamination.	Ten Bears conducted a Supplemental Investigation Report (SIR) in 2007 on the smaller of the two parcels labeled the "Fuel Depot" OU1. The larger is labeled the "Frozen Foods" site OU2.

Highlighted (Yellow) - Site has detections of chlorinated solvents.

DNREC - Delaware Department of Natural Resources and Environmental Control

S - Soil

GW - Groundwater

NA - Not analyzed / Not applicable

ND - Not detected

VOCs - Volatile Organic Compounds

SVOCs - Semi-Volatile Organic Compounds

PCE - Tetrachloroethylene or perchloroethylene

TCE - Trichloroethylene or trichloroethene

TAL - Target Analyte List

TCL - Target Compound List

**Table 11
DNREC-SIRS HSCA Sites in Study Area
Georgetown, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name	JG Townsend Cannery	JG Townsend Frozen Foods	Route 113 Associates, LLC	Thoro-Kleen Dry Cleaning & Laundry	Wilson Baker Bulk Storage Plant (Former)
DNREC Program Identification Number (DE - #)	0208	1261	1414	0207	1417
Parcel # / Lat-Lon	38.694606,-75.389219 tax parcels: 1-35-14.20-112, 1-35-14.20-113, 1-35-14.20-116	Same as JG Townsend Cannery	22297 South Dupont Boulevard, 38.679178,-75.39193 tax parcel: 135-19.00-63.01	11 North Railroad Avenue, 38.692666,-75.384327	25056 Shortly Road, 38.632251,-75.387316 tax parcel: 1-35-14.20-122.0
Date Reviewed	9/17/2013	9/17/2013	9/26/2013	10/1/2013	9/26/2013
Soil Investigation	Yes	Same as JG Townsend Cannery	Yes	No	Yes
Groundwater Investigation	Yes	Same as JG Townsend Cannery	Yes	Yes (monitoring wells)	Yes
Sampled for:	S & GW: Full TAL/TCL	NA	S: VOCs, SVOCs, Pesticides/PCBS, Metals Some Soil: Full TAL/TCL GW: Full TAL/TCL (total and dissolved metals)	GW: Chloroform, Bromoform, Bromodichloromethane, Trihalomethanes, TCE, PCE, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver	S: TCL organics, TAL metals
Media with PCE Detections	GW	NA	ND	GW	ND
Max PCE Concentration	0.001 mg/L	NA	ND	8.4 µg/L	ND
Media with TCE Detections	ND	NA	ND	GW	ND
Max TCE Concentration	ND	NA	ND	1.3 µg/L	ND
Media with DCE Detections	ND	NA	ND	NA	ND
Max DCE Concentration	ND	NA	ND	NA	ND
Media with Vinyl Chloride Detections	ND	NA	ND	NA	ND
Max Vinyl Chloride Concentration	ND	NA	ND	NA	ND
Notes	Ten Bears performed a Remedial Investigation (RI) / Feasibility Study (FS) Report in 2003 on the "Frozen Food" site OU2. A RI report by TetraTech (1998) states that groundwater samples were collected from this property in 1985. PCE was detected in the groundwater. (0.001 mg/L = 1 µg/L)	This site is in the same location of JG Townsend Cannery. There are no documents associated with the site listed.	Approximately 13 acres. Former Pep-Up/Calhoun Property. Was once a gas station. Petroleum related contamination in subsurface soils discovered after tank removal. ASTs on site. Fertilizers once stored in some of the buildings. Currently vacant.	App. 1/4 acres. Active dry-cleaning establishment. PCE waste. Only 3 documents SIRB site: 2 letters (1989, 1994) and 1 preliminary assessment report (1989). No further action recommended because of owner's adherence to state and local disposal regulations of PCE (1989).	Approximately 0.33 acres. Previously used as storage for petroleum products (gasoline, kerosene, heating oil). Report states site location on Shortly Road but describes a location on New Street.

Highlighted (Yellow) - Site has detections of chlorinated solvents.
DNREC - Delaware Department of Natural Resources and Environmental Control
S - Soil
GW - Groundwater
NA - Not analyzed / Not applicable
ND - Not detected

VOCs - Volatile Organic Compounds
SVOCs - Semi-Volatile Organic Compounds
PCE - Tetrachloroethylene or perchloroethylene
TCE - Trichloroethylene or trichloroethene
TAL - Target Analyte List
TCL - Target Compound List

Table 12
EDR Proprietary Records
US Historical Cleaners
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	College Square Cleaners	Gary Gross Carpet Cleaners	Great American Cleaners	Heritage Cleaners	Italo's Tailor Shop & Cleaners
Record Year(s) ²	2003, 2004, 2006-2008, 2010-2012	2003, 2006-2009	2003 & 2010	2004, 2007, 2008, 2010-2012	2011 & 2012
Site Address	150 College Square	19 Shull Drive	624 Newark Shopping Center	409 New London Road	64 East Main Street
Date Site Reviewed / Visited ³	10/27/2015	4/25/2014	4/24/2014	10/27/2015	4/24/2014
Business Telephone Number	302-368-4555	None	302-737-7739	302-731-8431	302-562-7567
Business Still Operating at Location?	Yes	No	No	Yes	Yes
Current Site Use ⁴	Commercial-Laundry Services	Residential	Commercial-Vacant	Commercial-Laundry Services	Commercial-Laundry Services
Currently Providing Dry Cleaning Services?	Yes - on-site Dry Cleaning	No	No	Yes - on-site Dry Cleaning	Yes - off-site Dry Cleaning
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	Yes - Unknown if on-site/off-site	No Evidence	Yes - Unknown if on-site/off-site
Potential Receptors ⁵	Commercial Businesses	Residential Houses	Commercial Businesses & Residential Houses and Apartments - Located in shopping center.	Commercial Businesses and Residential Houses - Located in shopping center	Commercial Businesses
Notes	"College Square Cleaners" located at site address with "Nail Salon" on left and an abandoned building on the right. Historically known as "Crystal Cleaners Inc." Site confirmed current on-site dry cleaner via phone interview. Site currently using alternate solvent.	Site address located in residential neighborhood.	Cleaner facility at site address appears closed with "Zahara's International Food Market" to left, other businesses, and residential housing across the street. Site status confirmed via site visit.	"Heritage Cleaners" was identified in the "Fairfield Shopping Center" located at 409 New London Road. "GEM Studios" is located to the right of the site and "Beer-Wine Liquors" is located to the left. Site confirmed current on-site dry cleaner via phone interview and DNREC-AQMS registered dry cleaner list.	Site is located above "Brewed Awakenings" along Main Street. The "5&10 National" store is located to the right and the "Delaware Book Exchange" is located to the left of the site. Site confirmed current off-site dry cleaner via phone interview. Site listed in Dover Public Archives data set. Unable to determine if historic dry cleaning occurred.

Highlighted (yellow) - indicates confirmed current and /or historic on site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map™ internet search.

Contact Information - BrightFields personnel obtained site contact information by searching the internet using the site name and address provided from EDR's data.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 12
EDR Proprietary Records
US Historical Cleaners
Newark, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	K & L Cleaners	Main Street Cleaners	Newark Chinese Laundry and Dry Cleaners	Newark Cleaners	Newark Cleaners
Record Year(s) ²	2003, 2004, 2008, 2010-2012	1999-2008, 2010-2012	1999, 2000, 2003-2005	2010	2005
Site Address	231 College Square, Shopping Center	179 East Main Street	260 East Main Street	129 Beverly Road	129 Elkton Road
Date Site Reviewed / Visited ³	10/27/2015	10/26/2015	4/24/2014	4/25/2014	4/25/2014
Business Telephone Number	302-737-8737	302-738-4385	302-369-5397	302-368-1922	302-368-1922
Business Still Operating at Location?	Yes	Yes	No	No	No
Current Site Use ⁴	Commercial-Laundry Services	Commercial-Laundry Services	Commercial-Other	Commercial-Vacant	Commercial-Vacant
Currently Providing Dry Cleaning Services?	Yes - on-site Dry Cleaning	Yes - off-site Dry Cleaning	No	No	No
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	Yes - Unknown if on-site/off-site	No Evidence	No Evidence
Potential Receptors ⁵	Commercial Businesses	Commercial Businesses & Residential Apartments	Commercial Businesses & Residential Apartments	Commercial Businesses & Residential Apartments	Commercial Businesses & Residential Apartments
Notes	"K & L Cleaners" at site address with "Kmart" to left and "RadioShack" to the right. Listed as "K & L Cleaners & Shoe Repair" in SQG and FOIA data sets at the listed address. Site confirmed current on-site dry cleaner via phone interview.	"Main Street Cleaners" located at site address with "Papa John's Pizza" to left and "Sinclar's Café" to the right. Residential apartments in proximity to site address. Site confirmed current off site dry cleaner via phone interview.	"Century 21" Real Estate Office (Gold Key Realty) located at site address. "Super 8" motel located to the right of site and "Open Door, Inc." located to the left of site. Residential apartment complexes in proximity to site address. Possible EDR query error, 260 West Main Street site record year data was included for this site address. 260 West Main Street was found in a residential neighborhood. Unable to determine if historic dry cleaning occurred.	A vacant "Newark Cleaners" appears to be located at site address. A "Surf N Suds" cleaning business and residential houses and apartments are located in proximity to site address.	A vacant "Newark Cleaners" appears to be located at site address. A "Surf N Suds" cleaning business and residential houses and apartments are located in proximity to site address.

Highlighted (yellow) - indicates confirmed current and /or historic on site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map™ internet search.

Contact Information - BrightFields personnel obtained site contact information by searching the internet using the site name and address provided from EDR's data.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 12
EDR Proprietary Records
US Historical Cleaners
Newark, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	Parkway Cleaners	Parkway Cleaners	Pencader Plaza Dry Cleaners	Surf N Suds	Thompson Cleaners, Inc.	Thompson II Cleaners
Record Year(s) ²	2003 & 2004	2010	1999-2001, 2003, 2004, 2007, 2010-2012	2010-2012	2003 & 2004	2010 - 2012
Site Address	308 Elkton Road	308 Suburban Drive	160 Pencader Plaza	147 Elkton Road	718 Paper Mill Road	386 Possum Park Road
Date Site Reviewed / Visited ³	4/25/2014	10/26/2015	10/27/2015	10/26/2015	10/26/2015	10/26/2015
Business Telephone Number	None	302-292-1122	302-731-9200	302-368-7033	302-292-2818	302-292-2818
Business Still Operating at Location?	No	Unknown	Yes	Yes	Yes	Yes
Current Site Use ⁴	Residential	Commercial-Laundry Services	Commercial-Laundry Services	Commercial-Laundry Services	Commercial-Laundry Services	Commercial-Laundry Services
Currently Providing Dry Cleaning Services?	No	Yes - Unknown if on-site/off-site	Yes - on-site Dry Cleaning	No	Yes - on-site Dry Cleaning	Yes - on-site Dry Cleaning
Evidence of Historic Dry Cleaning Operations?	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence	No Evidence
Potential Receptors ⁵	Residential Houses	Commercial Businesses	Commercial Businesses	Commercial Businesses & Residential Houses	Commercial Businesses & Residential Houses	Commercial Businesses & Residential Houses
Notes	No indication of dry cleaning operations occurring at site address. Residential housing located in proximity to site address, 307 South Main Street / Elkton Road, Newark.	"Parkway Cleaners" at site address with "Concord Pet Food Supply" to left and "Suburban Tobacco" to the right. BrightFields contacted Site to confirm site status. Site contact number no longer in service.	"Pencader Plaza Dry Cleaners" at site address with "Nick & Joe's Pizza" to left and "Nail & Tans" Salon to right. Formerly "Ocean Cleaners". Site confirmed current on-site dry cleaner via phone interview and DNREC-AQMS registered dry cleaner list.	"Surf N Suds" located at site address with "BP Gas Station" to the right, vacant "Newark Cleaner's to left and several restaurants, shops, and residential housing in proximity to the site. Site confirmed as laundry service only site via phone interview.	"Thompson Cleaners" at site address with "Tony's Café" and liquor store to right. Site is also listed located at 386 Possum Park Road. Site confirmed current on-site dry cleaner via phone interview and DNREC-AQMS registered dry cleaner list.	"Thompson Cleaners" at site address with "Tony's Café" and "Liquor Store" to right. Site is also listed located at 718 Paper Mill Road. Site confirmed current on-site dry cleaner via phone interview and DNREC-AQMS registered dry cleaner list.

Highlighted (yellow) - indicates confirmed current and /or historic on site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site/current off site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Record Year(s) - date of record(s) identified in the EDR historical dry cleaner records.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map™ internet search.

Contact Information - BrightFields personnel obtained site contact information by searching the internet using the site name and address provided from EDR's data.

4 - Current Site Use - based on visual observations made during site visit / review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 13
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Newark, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	Aearo Technologies, LLC	Carmax #6001	Christina School District	Cramaro	FMC Corporation
Site Address	650 Dawson Drive	2070 Stafford Way	400 Wyoming Road	131 Sandy Drive	1301 Ogletown Road
Date Site Reviewed / Visited ²	4/25/2014	4/24/2014	4/25/2014	4/25/2014	4/24/2014
Business Contact Name	Joyce McGuire	Johanna Griscik	Donald Hartwig II	Bill Crocker	Richard Bouyea
Business Telephone Number	302-286-2452	804-747-0422	302-454-2281	302-292-2170	302-451-0178
Current Owner	Aearo Technologies, LLC	Carmax Auto Superstores, Inc.	Christina School District	Triple T	FMC Corporation
Current Owner Telephone number	302-286-2452	Not reported	302-545-2281	302-292-2170	Not reported
Current Owner/Operator Start Date	4/1/2008	10/1/2013	Not reported	Not reported	4/1/1962
Current Site Use ³	Other	Automotive	Other	Other	Other
RCRA Waste Code(s) [*]	F003	F003 and F005	D039	F003, F005, D039, and D040	F002, F003, and F005
Notes					

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

* - Waste Codes:

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 13
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Frontier Scientific Services, Inc.	GE Energy-Ceramic Composite Products, LLC	Hessey's Auto Center	JC Heritage Cleaners	K & L Cleaners & Shoe Repair
Site Address	601 Interchange Boulevard	400 Bellevue Road	235 East Delaware Avenue	409 New London Road	231 College Square Shopping Center
Date Site Reviewed / Visited ²	4/25/2014	4/25/2014	4/24/2014	10/26/2015	10/26/2015
Business Contact Name	Ronald Paloni, Jr.	Sean Burke	Bob Hessey	Sang Ju	Young Kim
Business Telephone Number	302-266-6891	302-631-1358	302-368-9950	302-731-8431	302-737-8737
Current Owner	Frontier Scientific Services, Inc.	General Electric Company	Robert Hessey	Sang Ju	Young Kim
Current Owner Telephone number	302-266-6891	Not reported	302-368-9950	302-731-8431	302-737-8737
Current Owner/Operator Start Date	9/1/2011	12/7/2001	Not reported	9/15/2001	Not reported
Current Site Use ³	Other	Other	Automotive	Dry Cleaner	Dry Cleaner
RCRA Waste Code(s) [*]	F001	F003 and F005	D039	F002 and D039	F002 and D039
Notes				Site also listed as "Heritage Cleaners". Site confirmed current on-site dry cleaner via phone interview and is currently listed as a registered dry cleaner through DNREC-AQMS.	Site confirmed current on-site dry cleaner via phone interview.

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - **Site Name** - business name as listed in the EDR historical dry cleaner records database.

2 - **Date site visited / reviewed** - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - **Current Site Use** - based on visual observations made during site visit / review.

* - **Waste Codes:**

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 13
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Laidlaw Transit, Inc	Maaco Painting & Bodyworks - Newark	Maintenance Services, Inc.	Martin Mazda	Newark Cleaners
Site Address	100 South Chapel, PO Box 7956	729 Dawson Drive	206 Hansen Court	298 East Cleveland Avenue	129 Elkton Road
Date Site Reviewed / Visited ²	4/24/2014	4/25/2014	4/25/2014	4/24/2014	4/25/2014
Business Contact Name	Robert Gibbons	R Jewell	William Garlic	Charles Otto	James H. Cox
Business Telephone Number	302-738-7560	302-737-8460	302-453-8300	302-738-5200	302-368-1922
Current Owner	Pete Stiltz	Jewell Enterprises	James Hammond	Martin Dealerships	James H. Cox
Current Owner Telephone number	302-738-7560	Not reported	302-453-8300	302-738-5200	Not reported
Current Owner/Operator Start Date	Not reported	Not reported	Not reported	Not reported	Not reported
Current Site Use ³	Other	Automotive	Automotive	Automotive	Dry Cleaner
RCRA Waste Code(s) [*]	F002 and F004	F003 and F005	D039	F002, F003, F005, D039, and D040	NA
Notes					Site listed as potential historic on-site dry cleaner. Site confirmed as a SQG but does not list waste codes. Site was unable to be confirmed via phone interview. Contact number no longer in service.

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - **Site Name** - business name as listed in the EDR historical dry cleaner records database.

2 - **Date site visited / reviewed** - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - **Current Site Use** - based on visual observations made during site visit / review.

* - **Waste Codes:**

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 13
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	Newark Jeep Eagle, Inc.	Newark Toyota	Rohm & Haas Electronic Materials Cmp.	Rohm & Haas Electronic Materials Cmp.	Rohm & Haas Electronic Materials Cmp.
Site Address	244 East Cleveland Avenue	1344 Marrows Road	983 South Chapel Street	525 Bellevue Road	50 Bellevue Road
Date Site Reviewed / Visited ²	4/24/2014	4/25/2014	4/25/2014	4/25/2014	4/25/2014
Business Contact Name	George Lemoine	Rich Ressler	Jeff Ferris	Jeff Ferris	Jeff Ferris
Business Telephone Number	302-731-0100	302-368-6262	302-399-0500	302-399-0500	302-399-0501
Current Owner	Gary P. Hendrixson	Warren Price	Rohm & Haas Electronic Materials Cmp.	Rohm & Haas Electronic Materials Cmp.	Rohm & Haas Electronic Materials Cmp.
Current Owner Telephone number	Not reported	Not reported	Not reported	Not reported	Not reported
Current Owner/Operator Start Date	Not reported	Not reported	2/7/2000	2/7/2000	2/7/2000
Current Site Use ³	Automotive	Automotive	Other	Other	Other
RCRA Waste Code(s) [*]	F002 and F003	F001	F003 and F005	F003 and F005	F003 and F005
Notes					

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - **Site Name** - business name as listed in the EDR historical dry cleaner records database.

2 - **Date site visited / reviewed** - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - **Current Site Use** - based on visual observations made during site visit / review.

* - **Waste Codes:**

D039 - PCE (tetrachloroethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

**Table 13
RCRA Small Quantity Waste Generators of Chlorinated Solvents
Newark, Delaware
Delaware Dry Cleaner Initiative Report**

Site Name ¹	Sac Tire Center	W.L. Gore & Associates, Inc.	Wilmington Pharma Tech Co. LLC	Winner Ford	Winner Nissan
Site Address	900 Ogletown Road	555 Paper Mill Road	1 Innovation Way	300 East Cleveland Avenue	600 Ogletown Road
Date Site Reviewed / Visited ²	4/24/2014	4/24/2014	4/25/2014	4/24/2014	4/24/2014
Business Contact Name	Bob Swales	Joseph Davis	Harry Li Hui-Yin	Donald Hawk	Neil Berger
Business Telephone Number	302-652-4659	302-292-4232	302-737-9916	302-738-0800	302-368-6310
Current Owner	Southern State	W.L. Gore & Associates, Inc.	Innovation Way Suite 302	Winner Group	Winner Group
Current Owner Telephone number	302-652-4659	302-738-4880	303-737-9611	Not reported	Not reported
Current Owner/Operator Start Date	Not reported	8/18/2003	1/1/1992	Not reported	Not reported
Current Site Use ³	Automotive	Other	Other	Automotive	Automotive
RCRA Waste Code(s) [*]	D0039	F001 and F002	F001 and F002	F001 and F002	F002 and F004
Notes					

Highlighted (yellow) - indicates confirmed current and/or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

* - Waste Codes:

D039 - PCE (tetrachloroethylene)

D040 - TCE (trichloroethylene)

D043 - Vinyl Chloride

F001 - spent halogenated solvents: TCE, PCE

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE.

F004 - may contain a total of ten percent or more by volume of TCE or PCE.

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 14
RCRA Large Quantity Waste Generators of Chlorinated Solvents
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name ¹	DuPont Stine Haskell Research Facility	Rohm & Haas Electronic Materials Cmp.	Rohm & Haas Electronic Materials Cmp.	Rohm & Haas Electronic Materials Cmp.	University of Delaware
Site Address	1090 Elkton Road	351 Bellevue Road	385 Bellevue Road	451 Bellevue Road	122 Hullihen Hall
Date Site Reviewed / Visited ²	4/25/2014	4/25/2014	4/25/2014	4/25/2014	4/25/2014
Business Contact Name	John T. Edwards	Jeff Ferris	Jeff Ferris	Jeff Ferris	Michael Wayock
Business Telephone Number	302-366-5044	302-399-0500	302-399-0501	302-399-0502	302-831-8475
Current Owner	E. I. DuPont de Nemours, Inc.	Rohm & Hass Company	Rohm & Hass Company	Rohm & Hass Company	University of Delaware
Current Owner Telephone Number	302-774-1000	Not reported	Not reported	Not reported	Not reported
Current Owner/Operator Start Date	1/1/1954	2/7/2000	2/7/2000	2/7/2000	2/05/1833
Current Site Use ³	Other	Other	Other	Other	Other
RCRA Waste Code(s) [*]	F002, F003, and F005	F003 and F005	F003 and F005	F003 and F005	F002, F003, F005, D039, and D040
Notes					

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

NA - Not Available

RCRA - Resource Conservation and Recovery Act.

1 - Site Name - business name as listed in the EDR historical dry cleaner records database.

2 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps™ internet search.

3 - Current Site Use - based on visual observations made during site visit / review.

*** - Waste Codes:**

D039 - PCE (tetrachlorethylene)

D040 - TCE (trichloroethylene)

F002 - spent halogenated solvents: TCE, PCE

F003 - may contain a total of ten percent or more by volume of TCE or PCE

F005 - may contain a total of ten percent or more by volume of TCE or PCE.

Table 15
Delaware Sanborn Map Sites - Identified Cleaning and Automotive Services
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Approximate Address	Sanborn Description	Industry Type	Map Year(s)	Notes
42 West Main Street	Auto Sales and Service	Automotive Services	1949 & 1961	
171 East Main Street	Dry Cleaning	Laundry Services	1949	Site not currently operating as a laundy service business. Currently appears to be located within "Astra Plaza" along Main Street. Site not identified in any alternate data set.
14 West Cleveland Avenue	Machine Shop	Other	1949	
26 New London Road	Auto Repair	Automotive Services	1949 & 1961	
12 New London Road	Auto Repair	Automotive Services	1949 & 1961	
27 North Street	Laundry and Dry Cleaning	Laundry Services	1961	Site not currently operating as a laundy service business. Currently appears to identified as "Rex's Auto Body". Site has been identified in Historic City Directory data set (Table 16) as "Blue Hen Laundry & Cleaners".
82 East Cleveland Avenue	Machine Shop	Other	1961	
123 East Main Street	Machine Repair Shop	Other	1961	
164 East Main Street	Auto Sales and Service	Automotive Services	1961	
167 East Main Street	Auto Sales and Service	Automotive Services	1961	

Highlighted (orange) - indicates potential historic on-site/current off-site dry cleaning services occurred at the site.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Betty Brite Cleaners	Blue Hen Laundry & Cleaners	Brite Betty Cleaners	Brite Betty Cleaners
Directory Year ²	1973 - 1982	1959 - 1961	1967 - 1972	1972
Site Address	506 Christiana Road	27 North Street	4071 Christiana-Newark Road, Rt 3	4073 Christiana-Newark Road, Rt 3
Date Site Reviewed / Visited ³	12/18/2014	12/18/2014	12/18/2014	12/18/2014
Alternate Historical Listings	None	None	None	None
Current Site Use ⁴	Commercial-Other	Commercial-Automobile Services	Commercial-Other	Commercial-Other
Currently Providing Dry Cleaning Services?	No	No	No	No
Potential Receptors ⁵	Commercial Businesses & Residential Apartments	Commercial Business & Residential Houses	Commercial Businesses & Residential Apartments	Commercial Businesses & Residential Apartments
Notes	Exact site address not located, reviewed Christiana Road. Commercial businesses located on road include: "Advanced Plastic Surgery Center", "Neuroscience Surgery Institute", "Cedar Wood Apartments" and "Work Pro". Another site listed as "Beatty Brite" (possibly misspelled) was identified in FOIA data set as being located at 508 Christiana Road.	"Rex's Auto - Body and Paint" shop located at site address. Residential houses in proximity.	Exact site address not located, reviewed Christiana Road. Commercial businesses located on road include: "Advanced Plastic Surgery Center", "Neuroscience Surgery Institute", "Cedar Wood Apartments" and "Work Pro".	Exact site address not located, reviewed Christiana Road. Commercial businesses located on road include: "Advanced Plastic Surgery Center", "Neuroscience Surgery Institute", "Cedar Wood Apartments" and "Work Pro".

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map[®] internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Carroll's Laundry & Dry Cleaning	Chapel Street Cleaners	Clever Cleaners, Inc.	Coin Operated Laundry
Directory Year ²	1962	1977	1967	1961 & 1962
Site Address	39 East Main Street	70 Chapel Main Industrial Park Rm 6	10 Possum Park Mall / Liberty Plaza	Chestnut Hill Road near Salem Road, RD1*
Date Site Reviewed / Visited ³	12/18/2014	12/18/2014	12/18/2014	12/18/2014
Alternate Historical Listings	Blue Hen Laundry & Cleaners (1959 - 1961)	None	None	None
Current Site Use ⁴	Commercial-Other	Residential	Commercial-Other	NA
Currently Providing Dry Cleaning Services?	No	No	No	NA
Potential Receptors ⁵	Commercial Businesses & Residential Apartments	Commercial Businesses, Residential Houses & Apartments	Commercial Businesses - Located in shopping center	NA
Notes	Exact site address not located. "Grottos Pizza", which is a part of the "Main Street Galleria", was located at 33 East Main Street. "Newark Deli and Bagel" located at 36 East Main Street. University of Delaware buildings and housing are located after these businesses.	Exact site address not located, reviewed 70 South Chapel Street. Residential house located at site address. Commercial businesses and residential houses and apartments in proximity to address.	"A Dry Clean Express" located in shopping center at 27 Possum Park Mall. No businesses currently located at site address. "Perkins" restaurant located at 12 Liberty Plaza and "Peruchos" restaurant located at 8 Liberty Plaza.	NA

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Coin Operated Laundry	Coin Operated Laundry	Coin Operated Laundry	Custom Care Cleaners
Directory Year ²	1964 - 1972	1973	1974 - 1980	1980 - 1982
Site Address	807 Chestnut Hill Road	812 Chestnut Hill Road	756 Chestnut Hill Road	1015 South College Avenue
Date Site Reviewed / Visited ³	12/18/2014	12/18/2014	12/18/2014	12/18/2014
Alternate Historical Listings	None	None	None	None
Current Site Use ⁴	Commercial-Other	Commercial-Other	Commercial-Other	Commercial-Other
Currently Providing Dry Cleaning Services?	No	No	No	No
Potential Receptors ⁵	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center
Notes	Site address not able to be located. Site address not specified as East or West Chestnut Hill Road. 807 East Chestnut Hill Road appears to be located in a shopping center with a "D&H Jamaican Restaurant" and a "Discount Liquor" Store with several commercial businesses in proximity. 807 West Chestnut Hill Road does not exist. East Chestnut Hill Road address used in figure marked as an approximate location.	Site address not able to be located. Site address not specified as East or West Chestnut Hill Road. 812 East Chestnut Hill Road appears to be located in a shopping center with a "D&H Jamaican Restaurant" and a "Discount Liquor" Store with several commercial businesses in proximity. 812 West Chestnut Hill Road does not exist. East Chestnut Hill Road address used in figure marked as an approximate location.	Site address not specified as East or West Chestnut Hill Road. "Books & News Plus" is located at 756 East Chestnut Hill Road next to a "Mikes' Famous Streaks & Subs", "Hibachi", and a "Country Maid Deli" to the left. Residential houses located at 756 West Chestnut Hill Road. East Chestnut Hill Road address used in figure.	"China Garden" located at site address in "Shoppes at 896" shopping center. "Discount Liquors" to right of site address and "Mario's Pizza" and "Hair Academy" located to the left.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Dalco, Inc. Laundromat	Dove Cleaners	Gilbert's Dry Cleaning	Heritage Cleaners
Directory Year ²	1982	1979 - 1982	1962	1975 - 1982
Site Address	249 Park-N-Shop Shopping Center / Elkton Road	77 Brookside Shopping Center / Marrows Road	16 Academy Street	Fairfield Shopping Center / 409 New London Road
Date Site Reviewed / Visited ³	10/26/2015	10/26/2015	12/18/2014	10/26/2015
Alternate Historical Listings	Launderama (Toggart Enterprises) (1966-1971) Around the Clock Laundrerama (1972 - 1979)	Done Cleaners - 1978	None	None
Current Site Use ⁴	Commercial-Laundry Services	Commercial-Vacant	Commercial-Other	Commercial-Laundry Services
Currently Providing Dry Cleaning Services?	No	No	No	Yes - on-site Dry Cleaning
Potential Receptors ⁵	Commercial Business & Residential Houses	Commercial Businesses - Located in shopping center	Commercial Businesses & Residential Apartments	Commercial Businesses and Residential Houses - Located in shopping center
Notes	Site location identified within "Park & Shop" shopping center. Site appears to be new site location for "Surf N Suds", "Salvation Army " and "Anytime Fitness" to left of site and "Hallmark Store", "Yi Palace", and "Rite Aid" to right of site. Site status confirmed via phone interview.	Vacant "Cleaners" business located at approximate site address. "Cleaners" identified at end of strip mall in shopping center. "Barber Shop", "Laundromat", and "Nail Salon" to the right of "Cleaners" respectively. Historical site status confirmed via site review. Site status could not be confirmed via phone interview since contact number was no longer in service.	Exact site address not located. A "Barnes and Nobles" book store appears to be at approximate site address. Site address in proximity to residential apartment complexes.	"GEM Studios" is located to the right of the site and "Beer-Wine Liquors" is located to the left. Site listed as "JC Heritage Cleaners" in EDR SQG/LQG data set. Site confirmed current on-site dry cleaner via phone interview and DNREC-AQMS registered dry cleaner list.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Hollywood Cleaners	Italo Tailor & Cleaner	L & N Laundromat	Launder Center
Directory Year ²	1964	1971 - 1982	1982	1964 - 1982
Site Address	79 Brookside Shopping Center / Marrows Road	64 East Main Street	University Plaza Shopping Center	141 Elkton Road
Date Site Reviewed / Visited ³	12/18/2014	10/26/2015	10/26/2015	12/18/2014
Alternate Historical Listings	Half Hour Laundry (1961-1962) Hollywood Cleaners-1962	None	None	None
Current Site Use ⁴	Commercial-Vacant	Commercial-Laundry Services	Commercial-Laundry Services	Commercial-Vacant
Currently Providing Dry Cleaning Services?	No	Yes - off-site Dry Cleaning	Yes - off-site Dry Cleaning	No
Potential Receptors ⁵	Commercial Businesses - Located in shopping center	Commercial Businesses	Commercial Businesses - Located in shopping center	Commercial Businesses & Residential Apartments
Notes	Vacant "Cleaners" business located at approximate site address. "Cleaners" identified at end of strip mall in shopping center. "Barber Shop", "Laundromat", and "Nail Salon" to the right of "Cleaners" respectively. Historical site status confirmed via site review. Site status could not be confirmed via phone interview since contact number was no longer in service.	Site is located above "Brewed Awakenings" along Main Street. The "5&10 National" store is located to the right and the "Delaware Book Exchange" is located to the left of the site. Site confirmed current off-site dry cleaner via phone interview. Unable to determine if historic on-site dry cleaning occurred.	Alternate site name "University Cleaners" identified in "University Plaza Shopping Center". Site address is listed as both 240 & 270 University Drive in DNREC- SIRS FOIA data set. "Burlington Coat Factory", "Harbor Freight Tools", "Collectors Box", "C & C Country Maid Deli", and "Perfect Nails" are in proximity to site. Site confirmed current off-site dry cleaner via phone interview.	A vacant "Newark Cleaners" appears to be located at site address. A "Surf N Suds" cleaning business and residential houses and apartments are located in proximity to site address.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map[®] internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Lauderall Self Service Laundry	Lauderall Self Service Laundry	Lauderama	Laundromat
Directory Year ²	1959 - 1969	1966	1959 - 1964	1980 & 1982
Site Address	124 East Main Street	125 East Main Street	255 Elkton Road	87 Brookside Shopping Center / Marrow Road
Date Site Reviewed / Visited ³	12/18/2014	12/18/2014	10/26/2015	12/18/2014
Alternate Historical Listings	None	None	None	None
Current Site Use ⁴	Commercial-Other	Commercial-Other	Commercial-Laundry Services	Commercial-Vacant
Currently Providing Dry Cleaning Services?	No	No	No	No
Potential Receptors ⁵	Commercial Businesses & Residential Apartments	Commercial Businesses & Residential Apartments	Commercial Business & Residential Houses	Commercial Businesses - Located in shopping center
Notes	"Walgreens Pharmacy" located at site address. "Newark Post Office" to left of site and "Home Grown" restaurant to the right of the site. Residential apartments in proximity to site address.	"Department of Linguistics and Cognitive Science" located at site address. "D.P. Dough" restaurant located to left of site address and "Taverna" restaurant to the right of site address. Residential apartments in proximity to site address.	Site location identified within "Park & Shop" shopping center. Site appears to be new site location for "Surf N Suds". "Salvation Army" and "Anytime Fitness" to left of site and "Hallmark Store", "Yi Palace", and "Rite Aid" to right of site. Site status confirmed via phone interview.	Vacant "Cleaners" business located at approximate site address. "Cleaners" identified at end of strip mall in shopping center. "Barber Shop", "Laundromat", and "Nail Salon" to the right of "Cleaners" respectively. Historical site status confirmed via site review. Site status could not be confirmed via phone interview since contact number was no longer in service.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	M & M Cleaners	M & M Cleaners	M & M Drive In Cleaners	M & M Drive In Cleaners
Directory Year ²	1962	1964 - 1971	1962 - 1982	1962
Site Address	279 Elkton Road	109 Newark Shopping Center	11 North Chapel Street	Limestone Road and Kirkwood Highway
Date Site Reviewed / Visited ³	10/26/2015	12/18/2014	12/18/2014	10/26/2015
Alternate Historical Listings	None	None	None	None
Current Site Use ⁴	Commercial-Laundry Services	Commercial-Other	Commercial-Other	Commercial-Laundry Services
Currently Providing Dry Cleaning Services?	No	No	No	Yes - on-site Dry Cleaning
Potential Receptors ⁵	Commercial Business & Residential Houses	Commercial Business & Residential Houses	Commercial Business & Residential Houses	Commercial Businesses and Residential Houses - Located in shopping center
Notes	Site location identified within "Park & Shop" shopping center. Site appears to be new site location for "Surf N Suds". "Salvation Army" and "Anytime Fitness" to left of site and "Hallmark Store", "Yi Palace", and "Rite Aid" to right of site. Site status confirmed via phone interview.	Site approximate location identified. "Wang's Oriental Food Store" and "Merlin Instrument Company" located at approximate address.	Exact site address not located. "Mi Ranchito Mexican Food Market" located at site approximate address. The food market takes up two spots in strip mall but is listed only as 13 North Chapel Street. "Musik TV" is located to the left of the market at 9 North Chapel Street.	General location of site address appears to be at "Mill Creek Shopping Center or Parklynn Shopping Center". "Parklynn Quality Cleaners" was identified. This site is listed at 4526 Kirkwood Highway #A Wilmington, DE. Site is outside of study area. Site confirmed current on-site dry cleaner via phone interview.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Mc Spadden Cleaners	Newark Chinese Laundry	Newark Cleaners & Dyers, Inc.	Newark Cleaners & Dyers, Inc.
Directory Year ²	1980 - 1982	1962 - 1982	1961 - 1967	1970 - 1982
Site Address	748 Chestnut Hill Road	260 East Main Street	176 East Main Street	137 Elkton Road
Date Site Reviewed / Visited ³	12/18/2014	12/18/2014	12/18/2014	12/18/2014
Alternate Historical Listings	One Hour Martinizing (1972 - 1979)	None	Newark Chinese Laundry (1959 - 1966)	Launder Center (1961), Towne Cleaners, Inc. (1962), Towne Cleaners (1964 - 1969)
Current Site Use ⁴	Commercial-Other	Commercial-Other	Commercial-Other	Commercial-Vacant
Currently Providing Dry Cleaning Services?	No	No	No	No
Potential Receptors ⁵	Commercial Businesses - Located in shopping center / Residential Houses	Commercial Businesses & Residential Apartments	Commercial Businesses & Residential Apartments	Commercial Businesses & Residential Apartments
Notes	Site address not specified as East or West Chestnut Hill Road. "D&H Jamaican Restaurant" is located at 748 East Chestnut Hill Road next to a "Discount Liquor" Store with several commercial businesses in proximity. Residential houses located at 748 West Chestnut Hill Road. East Chestnut Hill Road address used in figure.	"Century 21" Real Estate Office (Gold Key Realty) located at site address. "Super 8" motel located to the right of site and "Open Door, Inc." located to the left of site. Residential apartment complexes in proximity to site address. Based on EDR proprietary and DNREC FOIA data sets, the site is also named "Newark Chinese Laundry and Dry Cleaners".	Site address is located with the "Astra Plaza". Astra Plaza's tenants include several restaurants ("Wings to Go", "Freddy's Wraps", "Santa Fe Mexican Grill") and a "Nail Stop" salon.	A vacant "Newark Cleaners" appears to be located at site address. A "Surf N Suds" cleaning business and residential houses and apartments are located in proximity to site address.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Map® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	One Hour Martinizing	Parkway Cleaners Laundry & Shoe Repair	Pastel Cleaners	Pastel Cleaners
Directory Year ²	1973 & 1974	1973 - 1982	1969	1970 - 1973
Site Address	2620 Capitol Trail / Kirkwood Highway	33 Chestnut Hill Plaza	1 Possum Park Mall / Liberty Plaza	1 1/2 Possum Park Mall / Liberty Plaza
Date Site Reviewed / Visited ³	12/18/2014	12/18/2014	12/18/2014	12/18/2014
Alternate Historical Listings	None	None	None	None
Current Site Use ⁴	Commercial-Other	Commercial-Other	Commercial-Other	Commercial-Other
Currently Providing Dry Cleaning Services?	No	No	No	No
Potential Receptors ⁵	Commercial Businesses and Residential Houses - Located in shopping center	Commercial Businesses and Residential Houses - Located in shopping center	Commercial Businesses - Located in shopping center	Commercial Businesses - Located in shopping center
Notes	"Elegant Nails" salon located at site address within "Meadowood Shopping Center". Site address listed as 2620 Kirkwood Highway, Newark, DE. "Kids Kuts" hair cuttery located to the left and "Troy Pizzeria" located to the right. Forest Oak Elementary School and residential houses located behind shopping center.	"New Care Spa" currently located at site address. Older images confirm "Parkway Dry Cleaners" at site address. Based on Parkway Cleaners website (www.parkwayde.com), the Chestnut Hill Plaza location has been closed. They currently operate out of Bear, DE. "Nails and Tanning" to right of site and "Do It Best Hardware" to the left of site.	"Liberty Yoga" located at site address. "Korean Barbecue & Sushi Bar" and "Peruchos" restaurants located in proximity to site address. Based on DNREC-SIRS FOIA data set, Mins / Love Cleaners was located at 2 Liberty Plaza.	"Liberty Yoga" located at site address. "Korean Barbecue & Sushi Bar" and "Peruchos" restaurants located in proximity to site address. Based on DNREC-SIRS FOIA data set, Mins / Love Cleaners was located at 2 Liberty Plaza.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

**Table 16
Historic City Directory Data
Newark, Delaware
Delaware Dry Cleaner Initiative Project**

Site Name ¹	Smith Tailor Shop	Star Brite Cleaners	Violet Ray Laundry	Webb's Cleaners
Directory Year ²	1962 - 1977	1972 - 1982	1962 - 1982	1979 - 1982
Site Address	65 East Main Street	21 Possum Park Mall / Liberty Plaza	181 East Main Street	26 Chapman Road /1450 Capitol Trail / Kirkwood Highway #104
Date Site Reviewed / Visited ³	12/18/2014	12/18/2014	12/18/2014	12/18/2014
Alternate Historical Listings	None	None	None	None
Current Site Use ⁴	Commercial-Other	Commercial-Other	Commercial-Laundry Services	Commercial-Laundry Services
Currently Providing Dry Cleaning Services?	No	No	No	No
Potential Receptors ⁵	Commercial Businesses & Residential Apartments	Commercial Businesses - Located in shopping center	Commercial Businesses & Residential Apartments	Commercial Businesses, Residential Houses & Apartments - Located in shopping center
Notes	"Scissor Palace" barber shop located at site address. "Newark Camera" located to the right of site and "Newark Methodist Church" located to the left of site.	"Newark Coins" located in shopping center at 23 Liberty Plaza. "Main Street Antiques" located at 23 Possum Park Mall. No businesses identified at exact site address.	"Papa John's Pizza" located at site address with "Main Street Cleaners" to the right. Residential apartments in proximity to site address.	Site address unable to be located. Site possibly located in "Salem Village Square" shopping center. "The Village Laundromat" is located in the shopping center as well as a "Dollar General" and "Modern Nails". Site listed online at 1450 Capitol Trail Ste. 104.

Highlighted (yellow) - indicates confirmed current and / or historic on-site dry cleaning services.

Highlighted (orange) - indicates potential historic on-site / current off-site dry cleaning services occurred at the site.

No Highlight - indicates the site was considered neither a confirmed nor potential dry cleaner site.

* - Site address was unable to be identified.

** - Site address was found at approximate location and is out of study area.

NA - Not available.

1 - Site Name - business name as listed in the historic city directory.

2 - Record Year(s) - date of record(s) identified in the historic city directory.

3 - Date site visited / reviewed - date BrightFields personnel visited the site or reviewed area utilizing Google Maps® internet search.

4 - Current Site Use - based on visual observations made during site visit /review.

5 - Potential Receptors - immediate surrounding area where occupants are susceptible to effects of potential solvent contamination.

Table 17
DNREC-SIRS HSCA Sites in Study Area
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	Any Garment Dry Cleaners	Brookside Dump	Chrysler Assembly Plant "Science and Technology Campus"	Chrysler Assembly Plant "Science and Technology Campus"
DNREC Program Identification Number (DE - #)	DE-1629	DE-0184	OU-2 of DE-0105	OU-6 of DE-0105
Parcel # / Lat-Lon	39.693894 Lat, -75.718459 Lon	39.673611 Lat, -75.739161 Lon	18-036.00-002 39.664722 Lat, -75.756939 Lon;	18-039.00-002 39.664722 Lat, -75.756939 Lon;
Date Reviewed	10/23/2017	6/25/2014	3/26/2014	3/26/2014
Soil Investigation	Yes	No	Yes: Shallow & Subsurface	Yes: Shallow, Subsurface, Soil Gas
Groundwater Investigation	Yes	No	Yes	Yes
Sampled for:	S: Full TAL/TCL GW: PCBs and TCL VOCs SS: TO-15 IA: TO-15	No samples collected	Shallow S: SVOC benzo(a)pyrene and inorganics Subsurface S: SVOCs and inorganics GW: SVOCs, pesticides, and inorganics	Shallow & Subsurface S: TCL and TAL substances SG: organics GW: TCL and TAL substances
Media with PCE Detections	GW, SS, IA	NA	NA	SG
Max PCE Concentration	GW (11 µg/L), SS (2,400 µg/m ³), IA (7 µg/m ³)	NA	NA	0.10 µg
Media with TCE Detections	SS, IA	NA	NA	SG
Max TCE Concentration	SS (20 µg/m ³), IA (1 µg/m ³)	NA	NA	0.03 µg
Media with DCE Detections	ND	NA	NA	ND
Max DCE Concentration	ND	NA	NA	ND
Media with Vinyl Chloride Detections	ND	NA	NA	ND
Max Vinyl Chloride Concentration	ND	NA	NA	ND
Notes	Limited Phase II Site Investigation (2015) and Remedial Investigation Report (2016)	Preliminary Assessment provided no analytical data, request for investigation in 2002 but no findings located on DNREC-DEN. No further action recommended, little likelihood for drinking water contamination.	Brownfield Investigation Report (2010)	Brownfield Investigation Report (2012) SG samples collected using Gore Sorbers®.

Highlighted (Yellow) - Site has detections of chlorinated solvents.

S - Soil
 GW- Groundwater
 SG - Soil Gas
 SC - Soil Chromatography
 NA - Not analyzed / Not applicable
 ND - Not detected
 SS - Sub Slab

VOCs - Volatile Organic Compounds
 SVOCs - Semi-Volatile Organic Compounds
 PCE - Tetrachloroethylene or perchloroethylene
 TCE - Trichloroethylene or trichloroethene
 DCE - 1,2-Dichloroethene or 1,2-dichloroethylene
 TAL - Target Analyte List
 TCL - Target Compound List
 IA - Indoor Air

Table 17
DNREC-SIRS HSCA Sites in Study Area
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	City of Newark Bikeway	City of Newark Bikeway "Newark-Pomeroy Rail to Trail"	Cleveland Avenue Landfill	Cleveland Heights
DNREC Program Identification Number (DE - #)	DE-1194	DE-1194	DE-0052	DE-1367
Parcel # / Lat-Lon	B: 18-032.00-241 C: 18-027.00-006 39.674346 Lat, -75.741469 Lon	Del. Ave: 18-020.00-263 Chap. St: 18-033.00-082 39.674346 Lat, -75.741469 Lon	39.688006 Lat, -75.738778 Lon; 39°41'13"N Lat, 75°44'15" Lon	18-015.00-006 39.687985 Lat, -75.739396 Lon;
Date Reviewed	3/26/2014	3/26/2014	3/26/2014	3/26/2014
Soil Investigation	Yes	Yes	Yes	Yes
Groundwater Investigation	Yes	Yes	Yes	Yes
Sampled for:	S: PCBs, Priority Pollutant (PP) Metals, PP VOCs GW: TCL VO+10, TCL BN+10, PCBs, TAL Metals	S: PP Pesticides/PCBs, PP Metals, PP SVOCs TCL VOCs, TCL SVOCs, TCL pesticides/PCBs, TAL metals and cyanide GW: PP Pesticides/PCBs, PP Metals, PP SVOCs	S: SVOCs, Metals GW: SVOCs, VOCs, Metals	S: TAL Metals and cyanide, TCL SVOCs, TCL VOCs, TCL pesticides/PCBs GW: TAL Metals and cyanide, TCL SVOCs, TCL VOCs, TCL pesticides/PCBs
Media with PCE Detections	GW	ND	ND	ND
Max PCE Concentration	0.6 µg/L	ND	ND	ND
Media with TCE Detections	GW	ND	ND	ND
Max TCE Concentration	12 µg/L	ND	ND	ND
Media with DCE Detections	GW	ND	ND	ND
Max DCE Concentration	30 µg/L	ND	ND	ND
Media with Vinyl Chloride Detections	ND	ND	ND	ND
Max Vinyl Chloride Concentration	ND	ND	ND	ND
Notes	Remedial Investigation Report (groundwater) (2000) and Phase I and Limited Phase II Environmental Site Investigation (soil) (2000).	Remedial Investigation Report (2010)	Remedial Investigation Report (2009)	Brownfield Investigation Report (2008)

Highlighted (Yellow) - Site has detections of chlorinated solvents.

- S - Soil
- GW- Groundwater
- SG - Soil Gas
- SC - Soil Chromatography
- NA - Not analyzed / Not applicable
- ND - Not detected
- SS - Sub Slab

- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCE - Tetrachloroethylene or perchloroethylene
- TCE - Trichloroethylene or trichloroethene
- DCE - 1,2-Dichloroethene or 1,2-dichloroethylene
- TAL - Target Analyte List
- TCL - Target Compound List
- IA - Indoor Air

Table 17
DNREC-SIRS HSCA Sites in Study Area
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	Curtis Crown Paper Company (Former)	Curtis Paper Mill - Water Treatment Area	Del Chapel OU1	Del Chapel OU2
DNREC Program Identification Number (DE - #)	DE-1153	DE-0194	DE-1121	DE-1124 (was -0163)
Parcel # / Lat-Lon	39.690130 Lat, -75.750177 Lon; 39 41'28" Lat 75 45'10" Lon	39.690746 Lat, -75.751989 Lon	39.681225 Lat, -75.745582 Lon	08-021.00-031 39.680000 Lat, -75.742494 Lon;
Date Reviewed	4/2/2014	3/27/2014	6/25/2014	4/2/2014
Soil Investigation	Yes	Yes	Yes	Yes
Groundwater Investigation	Yes	Yes	No	Yes
Sampled for:	S: TCL base/neutral extractable organic compounds, TCL VOCs GW: TCL Vo+10, base/neutral and acid extractable organics, pesticides, TAL metals, total cyanides	S: Dioxin compounds and related furans GW: TAL and TCL compounds	S: Volatile-range petroleum hydrocarbons and extractable-range petroleum hydrocarbons	S: VOCs, SVOCs, TPH, metals GW: VOCs, metals, SVOCs, and TPH
Media with PCE Detections	ND	ND	NA	GW
Max PCE Concentration	ND	ND	NA	1.9 µg/L
Media with TCE Detections	ND	ND	NA	GW
Max TCE Concentration	ND	ND	NA	40.0 µg/L
Media with DCE Detections	ND	ND	NA	ND
Max DCE Concentration	ND	ND	NA	ND
Media with Vinyl Chloride Detections	ND	ND	NA	GW
Max Vinyl Chloride Concentration	ND	ND	NA	20.0 µg/L
Notes	Brownfield Investigation Report (2009)	Facility Evaluation (1996)	Subsurface Exploration Report (1999)	Facility Evaluation Report (1998)

Highlighted (Yellow) - Site has detections of chlorinated solvents.

S - Soil
 GW- Groundwater
 SG - Soil Gas
 SC - Soil Chromatography
 NA - Not analyzed / Not applicable
 ND - Not detected
 SS - Sub Slab

VOCs - Volatile Organic Compounds
 SVOCs - Semi-Volatile Organic Compounds
 PCE - Tetrachloroethylene or perchloroethylene
 TCE - Trichloroethylene or trichloroethene
 DCE - 1,2-Dichloroethene or 1,2-dichloroethylene
 TAL - Target Analyte List
 TCL - Target Compound List
 IA - Indoor Air

Table 17
DNREC-SIRS HSCA Sites in Study Area
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	Del Chapel OU3	Del Chapel OU4	Del Chapel Place	Former AstroPower Facility
DNREC Program Identification Number (DE - #)	DE-1125, DE-0163 (Western Parcel)	DE-1221	DE-0163	DE-1344
Parcel # / Lat-Lon	39.681111 Lat, -75.744439 Lon	18-021.00-031 39.681445 Lat, -75.743650 Lon;	39.681389 Lat, -75.744717 Lon	39.675869 Lat, -75.737216 Lon
Date Reviewed	4/2/2014	4/2/2014	4/10/2014	4/2/2014
Soil Investigation	Yes	No	Yes	Yes
Groundwater Investigation	Yes	Yes	Yes	Yes
Sampled for:	S: VOCs, SVOCs, Pesticides/PCBS, PAHs, metals GW: TAL Inorganics, TCL Organics	GW: magnesium, zinc, bacteria	S: VOCs, SVOCs, Pesticides/PCBs, and TAL Inorganics GW: metals, VOCs, and PAHs	S: VOCs, SVOCs GW: TCL Pesticides, Herbicides, PP Metals
Media with PCE Detections	ND	NA	S, GW	ND
Max PCE Concentration	ND	NA	S (310 µg/Kg) (8 µg/L) GW	ND
Media with TCE Detections	GW	NA	S	ND
Max TCE Concentration	5.5 µg/L	NA	310 µg/Kg	ND
Media with DCE Detections	GW	NA	S	ND
Max DCE Concentration	4.6 µg/L	NA	310 µg/Kg	ND
Media with Vinyl Chloride Detections	GW	NA	S	ND
Max Vinyl Chloride Concentration	7.5 µg/L	NA	310 µg/Kg	ND
Notes	Facility Evaluation Report (2000)	Not analyzed for chlorinated solvents.	Brownfield Preliminary Assessment II (1997) (soil) and Preliminary Feasibility Study (2003) (groundwater).	Groundwater Evaluation (2006) (groundwater) and Soil Investigation (2008) (soil).

Highlighted (Yellow) - Site has detections of chlorinated solvents.

S - Soil
 GW- Groundwater
 SG - Soil Gas
 SC - Soil Chromatography
 NA - Not analyzed / Not applicable
 ND - Not detected
 SS - Sub Slab

VOCs - Volatile Organic Compounds
 SVOCs - Semi-Volatile Organic Compounds
 PCE - Tetrachloroethylene or perchloroethylene
 TCE - Trichloroethylene or trichloroethene
 DCE - 1,2-Dichloroethene or 1,2-dichloroethylene
 TAL - Target Analyte List
 TCL - Target Compound List
 IA - Indoor Air

Table 17
DNREC-SIRS HSCA Sites in Study Area
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	Former Permaflex Rollers Site	Haines Street-University Commons	Lenape Ordnance Modification Center	McKees Park Landfill
DNREC Program Identification Number (DE - #)	DE-1512	DE-1019	DE-0303	DE-1366
Parcel # / Lat-Lon	18-047.00-006 39.649206 Lat, -75.738270 Lon;	39.681132 Lat, -75.746573 Lon	39.662503 Lat, -75.760367 Lon	39.688845 Lat, -75.738252 Lon
Date Reviewed	4/2/2014	4/3/2014	4/3/2014	4/3/2014
Soil Investigation	Yes	Yes	No	No
Groundwater Investigation	Yes	Yes	NA	NA
Sampled for:	S & GW: TCL VOCs+10, TCL SVOCs+20, TCL pesticides and PCBs, TAL inorganics	S: TPH, TCL VOCs, TCL SVOCs, TAL metals, pesticides/PCBs GW: TPH, TCL VOCs, TCL SVOCs, TAL metals, cyanides, pesticides/PCBs	NA	NA
Media with PCE Detections	GW	ND	NA	NA
Max PCE Concentration	179 µg/L	ND	NA	NA
Media with TCE Detections	GW	ND	NA	NA
Max TCE Concentration	39 µg/L	ND	NA	NA
Media with DCE Detections	GW	ND	NA	NA
Max DCE Concentration	550 µg/L	ND	NA	NA
Media with Vinyl Chloride Detections	NA	ND	NA	NA
Max Vinyl Chloride Concentration	NA	ND	NA	NA
Notes	Brownfield Investigation Report (2012)	Facility Evaluation Report (1994)	Site closed and archived. Refer to Chrysler Site (DE-0105) for contaminants of potential concern.	No documents listed for this site on DNREC Navigator.

Highlighted (Yellow) - Site has detections of chlorinated solvents.

- S - Soil
- GW- Groundwater
- SG - Soil Gas
- SC - Soil Chromatography
- NA - Not analyzed / Not applicable
- ND - Not detected
- SS - Sub Slab

- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCE - Tetrachloroethylene or perchloroethylene
- TCE - Trichloroethylene or trichloroethene
- DCE - 1,2-Dichloroethene or 1,2-dichloroethylene
- TAL - Target Analyte List
- TCL - Target Compound List
- IA - Indoor Air

Table 17
DNREC-SIRS HSCA Sites in Study Area
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	Mill Road Landfill	Newark Concrete Company	Newark Landfill	Newark Lumber
DNREC Program Identification Number (DE - #)	DE-0091	DE-0035	DE-0039	DE-1140
Parcel # / Lat-Lon	39.670833 Lat, -75.776384 Lon	1803300006 39.672778 Lat, -75.739439 Lon;	18-03.200-233 39.670430 Lat, -75.747007 Lon;	39.683268 Lat, -75.744553 Lon
Date Reviewed	4/3/2014	4/3/2014	4/3/2014	6/25/2014
Soil Investigation	Yes	Yes	Yes	Yes
Groundwater Investigation	Yes	Yes	Yes	Yes
Sampled for:	S: Priority Pollutants + 40 VOCs, acid extractable compounds, base neutral compounds, pesticides, PCBs	S & GW: TAL Inorganics, TCL Organics	S: Organics, Metals GW: SVOCs, VOCs	S: BTEX, TPH-DRO, herbicides, and pesticides (PII) and Full TCLP waste characterization /includes VOCs GW: BTEX and TPH-DRO
Media with PCE Detections	ND	ND	GW	NA/ND
Max PCE Concentration	ND	ND	<5 µg/L	NA/ND
Media with TCE Detections	ND	ND	GW	NA/ND
Max TCE Concentration	ND	ND	27 µg/L	NA/ND
Media with DCE Detections	ND	ND	GW	NA/ND
Max DCE Concentration	ND	ND	10 µg/L	NA/ND
Media with Vinyl Chloride Detections	ND	ND	GW	NA/ND
Max Vinyl Chloride Concentration	ND	ND	19 µg/L	NA/ND
Notes	Review and Reconciliation of Environmental Reports (1988) and Limited Phase II - Subsurface Investigation (2006)	Site Inspection Report (2003)	Environmental Data Summary Report (1998) and Final Plan of Remediation (2012)	Phase II Environmental Site Assessment (1998) (NA) / Interim Investigation Report (2000) (ND)

Highlighted (Yellow) - Site has detections of chlorinated solvents.

- S - Soil
- GW- Groundwater
- SG - Soil Gas
- SC - Soil Chromatography
- NA - Not analyzed / Not applicable
- ND - Not detected
- SS - Sub Slab

- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCE - Tetrachloroethylene or perchloroethylene
- TCE - Trichloroethylene or trichloroethene
- DCE - 1,2-Dichloroethene or 1,2-dichloroethylene
- TAL - Target Analyte List
- TCL - Target Compound List
- IA - Indoor Air

Table 17
DNREC-SIRS HSCA Sites in Study Area
Newark, Delaware
Delaware Dry Cleaner Initiative Report

Site Name	NVF Company Newark	NVF Newark Margaret Street	Pencader Plaza Dry Cleaners	Porter Chevrolet
DNREC Program Identification Number (DE - #)	DE-0199	DE-1086	DE-1551	DE-0120
Parcel # / Lat-Lon	39.689551 Lat, -75.743587 Lon	39.688333 Lat, -75.744717 Lon	39.659492 Lat, -75.737024 Lon	39.688246 Lat, -75.736935 Lon
Date Reviewed	4/9/2014	4/9/2014	10/20/2017	4/9/2014
Soil Investigation	Yes	No	Yes	No
Groundwater Investigation	Yes	No	Yes	No
Sampled for:	S: pesticides/PCBs, VOCs, TCL SVOCs, TAL metals GW: VOCs, filtered metals	NA	S: Full TAL/TCL GW: Full TAL/TCL SS: TO-15 IA: TO-15	ND
Media with PCE Detections	ND	NA	GW, SS, IA	ND
Max PCE Concentration	ND	NA	GW (5 J µg/L), SS (5,200 µg/m ³), IA (9.1 µg/m ³)	ND
Media with TCE Detections	ND	NA	SS	ND
Max TCE Concentration	ND	NA	720 µg/m ³	ND
Media with DCE Detections	ND	NA	SS	ND
Max DCE Concentration	ND	NA	3.3 J µg/m ³	ND
Media with Vinyl Chloride Detections	ND	NA	ND	ND
Max Vinyl Chloride Concentration	ND	NA	ND	ND
Notes	Facility Evaluation Report (1998)	Phase I Environmental Assessment Report (1996) - LUST site, "No further action required", no laboratory analysis appears to have occurred.	Remedial Investigation Report (2016)	Preliminary Assessment (1985) Drums and debris removed from site in 1979, no further action required. No laboratory analysis appears to have occurred. Soil characterization profile (2004) and soil analysis results (2012) shows non-detects.

Highlighted (Yellow) - Site has detections of chlorinated solvents.

S - Soil
 GW- Groundwater
 SG - Soil Gas
 SC - Soil Chromatography
 NA - Not analyzed / Not applicable
 ND - Not detected
 SS - Sub Slab

VOCs - Volatile Organic Compounds
 SVOCs - Semi-Volatile Organic Compounds
 PCE - Tetrachloroethylene or perchloroethylene
 TCE - Trichloroethylene or trichloroethene
 DCE - 1,2-Dichloroethene or 1,2-dichloroethylene
 TAL - Target Analyte List
 TCL - Target Compound List
 IA - Indoor Air

Table 18
Master List of Confirmed, Potential, and Non-Dry Cleaner Sites in Study Area
Dover, Delaware

Site Address	Site Name(s)	EDR Proprietary Record	RCRA SQG of Chlorinated Solvents ¹	RCRA LQG of Chlorinated Solvents ²	Sanborn Map Record ³	Historic City Directory ⁴	DNREC-SIRS HSCA Site with Chlorinated Solvent Detections ⁵	DNREC-SIRS FOIA	DNREC-DAQ FOIA	DNREC-SHWMS FOIA	DNREC-TMS FOIA	Permitted DNREC/DAQ Dry Cleaner Sites ⁶	Dry Cleaner Status
Ann Ave - 27	Reliable Dry Cleaning Pick up & Delivery	X											Non-Dry Cleaner Site
Caesar Rodney Avenue - 4	Harrington Auto Services		X										Non-Dry Cleaner Site
Camden Wyoming Avenue - 257	Johnson Dick Inc					X							Non-Dry Cleaner Site
Carvel Drive - 820	All Star Cleaning Service	X											Non-Dry Cleaner Site
College Park Drive - 1253	Doctors Pathology Services		X										Non-Dry Cleaner Site
D&S Lane - 300	Robm and Haas Electronic Materials CMP			X									Non-Dry Cleaner Site
Dover Airforce Base	Federal Express Corporation		X				X**						Non-Dry Cleaner Site
Dover Street - 211	Commerce Cleaners	X											Confirmed Current or Historic On-Site Dry Cleaner Site
	Master Dry Cleaners, Inc.		X*						X	X			
	Master Dry Cleansing					X							
East Camden Wyoming Avenue - 257 (a)	Camden Dry Cleaners					X							Potential Dry Cleaner Site
East Camden-Wyoming - 405	Dawson Bus Services		X										Non-Dry Cleaner Site
East Division Street - 900	Edgehill Cleaners					X							Potential Dry Cleaner Site
Forest Street - 700	Quality Auto Care		X				X**						Non-Dry Cleaner Site
Forest Street - 712	Sanborn				X		X**						Non-Dry Cleaner Site
Forest Street - 805 1/2	Capital Laundramat					X	X**						Potential Dry Cleaner Site
Forest Avenue - 1030	ACE Cleaners	X	X					X	X	X		X	Confirmed Current or Historic On-Site Dry Cleaner Site
Forest Avenue - 1064	Capitol Cleaners & Launderers, Inc.	X											Potential Dry Cleaner Site
	ABC Laundry					X							
Forest Avenue - 1324	Spent Queen Laundramat & Dry Cleaners	X											Potential Dry Cleaner Site
Gateway South Boulevard - 220	Capitol Cleaners & Launderers, Inc.	X											Potential Dry Cleaner Site
Greentree Drive - 59	Greentree Cleaners	X											Potential Dry Cleaner Site
Hadetville Road	Scott Paper Co - Dover Plant		X										Non-Dry Cleaner Site
Horseshoe Road - 1262	Thicon Delaware, Inc.		X										Non-Dry Cleaner Site
Independence Boulevard - 321	Towne & Country Cleaners	X											Potential Dry Cleaner Site
Jefferie Boulevard - 600	A-1 Cleaners	X											Potential Dry Cleaner Site
Lafferty Lane & Rt 113 North	Dover Auto Body, Inc.		X										Non-Dry Cleaner Site
Lockerman Street - 26	Clements Cleaners, Inc.					X							Potential Dry Cleaner Site
Manning Drive - 378	Vicks Commercial Cleaning	X											Non-Dry Cleaner Site
Martin Street - 327	Professional Dry Cleaning and Alteration Shop					X							Potential Dry Cleaner Site
Mary Street - 620	Sanborn				X								Non-Dry Cleaner Site
North Dover Highway - 428	A-1 Cleaners							X					Potential Dry Cleaner Site
	Patel & Sheth T/A Fashion Cleaners								X				
North DuPont Highway - 122	Dry Clean Central, Inc.	X											Potential Dry Cleaner Site
North DuPont Highway - 126	A-1 Cleaners							X	X				Potential Dry Cleaner Site
North DuPont Highway - 178	Capitol Cleaners & Launderers, Inc.	X											Potential Dry Cleaner Site
North DuPont Highway - 225	Nucar Mazda-Juara Dover		X										Non-Dry Cleaner Site
North DuPont Highway - 1181	Hl-Way Cleaners					X							Potential Dry Cleaner Site
	First State Laundramat												
North DuPont Highway - 1200	Delaware State College Dump		X										Non-Dry Cleaner Site
North DuPont Highway - 1572	Sam's Club #6330		X										Non-Dry Cleaner Site
North DuPont Highway DuPont Manor - 3140	McKinners Transmission		X										Non-Dry Cleaner Site
North Railroad Avenue - 6	Highlander Self-Service Laundry					X	X**						Non-Dry Cleaner Site
North State Street - 1027	Service Master of Delaware Inc					X							Non-Dry Cleaner Site
Olds Drive - 407	Abnormal Ties		X										Non-Dry Cleaner Site
Phoenix Drive - 465	Just You & Me Cleaning Corp	X											Non-Dry Cleaner Site
Ridgely Street, Ste. 14 - 631	Coastal Coating		X										Non-Dry Cleaner Site
Ross Street - 113	Dover Mart Laundromat RTS	X											Non-Dry Cleaner Site
Shot Gun Alley - 129	Sanborn				X								Non-Dry Cleaner Site
South DuPont Highway - 11	Brite Cleaners	X						X	X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
South DuPont Highway - 264	Emily Cleaners	X											Potential Dry Cleaner Site
South DuPont Highway - 270	Emily Cleaners							X	X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
South DuPont Highway - 272	Dover Mart Laundromat	X											Potential Dry Cleaner Site
South DuPont Highway - 591	Winmer Ford of Dover		X										Non-Dry Cleaner Site
South DuPont Highway - 1044	Campbell's Fashion Cleaners								X				Potential Dry Cleaner Site
South DuPont Highway - 1058	Round The Clock Laundry					X							Potential Dry Cleaner Site
South DuPont Highway - 2181	Kent County Motor Sales Co		X										Non-Dry Cleaner Site
South DuPont Highway / Corner of Cowgill Street	Betty Brite Cleaners & Shirt Laundry					X							Potential Dry Cleaner Site
South Governors Avenue - 4	Sanborn							X	X	X			Non-Dry Cleaner Site
South Governors Avenue - 129	Harry Louie Laundry & Dry Cleaning	X											Confirmed Current or Historic On-Site Dry Cleaner Site

Table 18
Master List of Confirmed, Potential, and Non-Dry Cleaner Sites in Study Area
Dover, Delaware

Site Address	Site Name(s)	EDR Proprietary Record	RCRA SQG of Chlorinated Solvents ¹	RCRA LOG of Chlorinated Solvents ²	Sunborn Map Record ³	Historic City Directory ⁴	DNREC-SIRS HSCA Site with Chlorinated Solvent Detections ⁵	DNREC-SIRS FOIA	DNREC-DAQ FOIA	DNREC-SHWMS FOIA	DNREC-TMS FOIA	Permitted DNREC-DAQ Dry Cleaner Sites ⁶	Dry Cleaner Status	
South Governors Avenue - 140	Capital Cleaners & Dyers				X	X							Potential Dry Cleaner Site	
South Governors Avenue - 210	Dover Discount Dry Cleaners					X							Potential Dry Cleaner Site	
South Governors Avenue - 309	Sunborn				X								Non-Dry Cleaner Site	
South Governors Avenue - 313	Ellis Auto Body Works, Inc.		X		X								Non-Dry Cleaner Site	
South Governors Avenue - 325	Sunborn				X								Non-Dry Cleaner Site	
South Governors Avenue - 411	Capital Cleaners & Laundry Dover Laundry & Dry Cleaners				X	X	X	X					Confirmed Current or Historic On-Site Dry Cleaner Site	
South Governors Avenue - 446	Sunborn				X								Non-Dry Cleaner Site	
South Governors Avenue - 584	Sunborn				X								Non-Dry Cleaner Site	
South Governors Avenue - 718	Amco Transmissions		X										Non-Dry Cleaner Site	
South Governors Avenue - 720	Sunborn				X								Non-Dry Cleaner Site	
South Governors Avenue - 725	Hastings Laundrette					X							Potential Dry Cleaner Site	
South Governors Avenue - 1221	Capital Cleaners & Launderers, Inc.	X											Potential Dry Cleaner Site	
South Governors Avenue - 1624	A-1 Cleaners	X											Potential Dry Cleaner Site	
South Governors Avenue - 1660	A-1 Cleaners	X									X		Confirmed Current or Historic On-Site Dry Cleaner Site	
South Little Creek Road - 1822	East Dover Laundromat	X											Potential Dry Cleaner Site	
South New Street - 217	Capital Cleaners & Launderers, Inc.	X	X*		X		X		X	X	X	X	Confirmed Current or Historic On-Site Dry Cleaner Site	
South New Street - 431	Coin Laundry	X											Potential Dry Cleaner Site	
South New Street - 812	Sunborn				X								Non-Dry Cleaner Site	
South State Street - 221	Welter's Dry Cleaning					X							Potential Dry Cleaner Site	
South State Street - 530	Sunborn				X								Non-Dry Cleaner Site	
South State Street - 1102	Capital Cleaners & Launderers, Inc.	X											Potential Dry Cleaner Site	
South State Street - 1255	Speed Queen Laundromat	X	X										Confirmed Current or Historic On-Site Dry Cleaner Site	
South West Street - 521	Sunborn				X		X**						Non-Dry Cleaner Site	
South West Street - 526	Sunborn				X		X**						Non-Dry Cleaner Site	
State College Road - 225	Atlantic Coast Environmental, Inc.			X									Non-Dry Cleaner Site	
US 13 & River Road	Delaware DOT Central District		X										Non-Dry Cleaner Site	
US Route 113 & Lebanon Road	Hastings Dry Cleaner						X	X					Confirmed Current or Historic On-Site Dry Cleaner Site	
US Rt 13 & 113 - 226	Sunborn				X								Non-Dry Cleaner Site	
Vepeo Boulevard - 124	Handytube Corporation			X									Non-Dry Cleaner Site	
Walker Road - 772	E.V. Coin Laundromat	X											Potential Dry Cleaner Site	
Walker Road - 884	Phytex Manufacturing, Inc.			X									Non-Dry Cleaner Site	
Walker Road - 1011	Capital Cleaners & Launderers, Inc.	X											Potential Dry Cleaner Site	
Walker Street - 780	Paul & Fran Enterprises					X							Potential Dry Cleaner Site	
Water Street - 422	George & Lauth, Inc.		X										Non-Dry Cleaner Site	
West Demays Road - 2277	Superior Carpet Cleaning & Janitorial	X											Non-Dry Cleaner Site	
West Demays Road - 5825	Blue Hen Auto Body, Inc.		X										Non-Dry Cleaner Site	
West Division Street - 228	Ye Olds Laundromat					X							Non-Dry Cleaner Site	
West Division Street - 630	M & S Cleaning Services LLC	X					X**						Potential Dry Cleaner Site	
West Division Street - 730	Emerald City Wash World	X					X**						Potential Dry Cleaner Site	
West Forrest Street - 841	Bone's Dry Cleaning & Pressing					X	X**						Potential Dry Cleaner Site	
West Lockerman Avenue - 28 1/2	Sunborn				X								Potential Dry Cleaner Site	
West Lockerman Avenue - 300	Sunborn				X		X**						Non-Dry Cleaner Site	
West Lockerman Avenue - 328	Sunborn				X		X**						Non-Dry Cleaner Site	
West North Street - 129	Sunborn				X								Non-Dry Cleaner Site	
West North Street - 1250	Kraft Foods North America		X										Non-Dry Cleaner Site	
White Oak Road - 1102	Marstellers Coin Laundry					X							Potential Dry Cleaner Site	
Number of Records Related to Confirmed Current or Historic On-site Dry Cleaners		7	4	0	2	2	3	3	6	6	3	5		
Number of Records Related to Potential Historic On-site / Current Off-site Dry Cleaners		19	0	0	2	16	4	0	2	3	0	0		
Number Records Related to Non-Dry Cleaner Sites		6	22	4	18	4	8	0	0	0	0	0		
Total Number of Records:		32	26	4	22	22	15	3	8	9	3	5		
								10 Confirmed Dry-Cleaner Sites	38 Potential Dry-Cleaner Sites			53 Non-Dry Cleaner Sites		
Total Number of Newark Sites Evaluated: 101 (with individual addresses)														

*₁ Site identified as an RCRA-SQG but does not list any waste codes associated chlorinated solvents.
**₂ Site located within the boundaries of an identified DNREC-SIRS HSCA Site.
Highlighted (yellow) - indicates confirmed current or historic onsite dry cleaning services.
Highlighted (orange) - indicates:
1. Chlorinated Solvents are defined as tetrachloroethylene (PCE), trichloroethylene (TCE), 1,2-Dichloroethane or 1,2-dichloroethane (DCE), and Vinyl Chloride
2. Sites identified on Sunborn Maps as cleaning or automotive services.
3. Sites identified as providing cleaning services.
4. Investigation report identifies the site as providing/having provided drycleaning operations.

Table 19
Master List of Confirmed, Potential, and Non-Dry Cleaner Sites in Study Area
Georgetown, Delaware

Site Address	Site Name(s)	EDR Proprietary Record	RCRA SQG of Chlorinated Solvents ¹	RCRA LQG of Chlorinated Solvents ¹	Sanborn Map Record ²	Historic City Directory ³	DNREC-SIRS HSCA Site with Chlorinated Solvent Detections ¹	DNREC-SIRS FOIA	DNREC-DAQ FOIA	DNREC-SHWMS FOIA	DNREC-TMS FOIA	Permitted DNREC-DAQ Dry Cleaner Sites ⁴	Dry Cleaner Status
Albury Avenue - 212	Sanborn				X								Non-Dry Cleaner Site
Bramhall Street - 27	Farris, Rich Auto Body, Inc.		X										Non-Dry Cleaner Site
College Park Lane - 4	Walmart Supercenter #2791		X										Non-Dry Cleaner Site
East (W) Market Street - 124	Sanborn				X								Non-Dry Cleaner Site
East (W) Market Street - 133	Sanborn				X								Non-Dry Cleaner Site
East Laurel Street & Railroad Avenue	1st State Chev Olds Body Shop		X										Non-Dry Cleaner Site
East Market Street - 432	Georgetown Square Laundry	X											Potential Dry Cleaner Site
East Market Street - 522	Georgetown Cleaners					X							Potential Dry Cleaner Site
North Bedford Street - 409 1/2	Sanborn				X								Non-Dry Cleaner Site
North Bedford Street - 411	Diamond State Laundry Co.					X							Non-Dry Cleaner Site
North Bedford Street - 413	Sanborn				X								Non-Dry Cleaner Site
North Bedford Street - 515	Floyd A Megee Motor		X										Non-Dry Cleaner Site
North Bedford Street - 519	Sanborn				X								Non-Dry Cleaner Site
North Race Street - 111	Ottomat Laundromat Service General Corp	X											Potential Dry Cleaner Site
North Race Street - 305	Georgetown Cleaners				X		X	X		X	X		Potential Dry Cleaner Site
North Race Street - 315	Georgetown Cleaners		X										Confirmed Current or Historic On-Site Dry Cleaner Site
North Race Street - 370	Georgetown Cleaners					X							Potential Dry Cleaner Site
North Railroad Avenue - 11	Thoro Kleen Dry Cleaning & Laundry	X					X						Confirmed Current or Historic On-Site Dry Cleaner Site
	Thoro-Kleen Dry Cleaning Works				X	X							
Rd. 431 & Rt. 113	DEL DOT Div of Hwys		X										Non-Dry Cleaner Site
South DuPont Highway - 300	First State Motors, Inc.		X										Non-Dry Cleaner Site
US Route 113 & Route 9 - (7 Georgetown Plaza)	Georgetown Plaza Cleaners									X			Confirmed Current or Historic On-Site Dry Cleaner Site
	Georgetown Laundry & Dry Cleaning		X								X		
West Market Street - 12	Sanborn				X								Non-Dry Cleaner Site
West Market Street - 514	Jeff Whites Auto, Inc.		X										Non-Dry Cleaner Site
Number of Records Related to Confirmed Current or Historic On-site Dry Cleaners		1	2	0	1	1	1	0	0	1	0	1	
Number of Records Related to Potential Historic On-site / Current Off-site Dry Cleaners		2	0	0	1	2	1	1	0	1	1	0	
Number Records Related to Non-Dry Cleaner Sites		0	7	0	7	1	0	0	0	0	0	0	
Total Number of Records:		3	9	0	9	4	2	1	0	2	1	1	
								3 Confirmed Dry-Cleaner Sites		5 Potential Dry-Cleaner Sites		15 Non-Dry Cleaner Sites	
Total Number of Newark Sites Evaluated: 23 (with individual addresses)													

¹- Site identified as an RCRA-SQG but does not list any waste codes associated chlorinated solvents.
Highlighted (yellow) - indicates confirmed current or historic onsite dry cleaning service
Highlighted (orange) - indicates potential historic onsite/current offsite dry cleaning services.
¹ - Chlorinated Solvents are defined as (tetrachlorethylene (PCE), trichloroethylene (TCE), 1,2-Dichloroethene or 1,2-dichloroethylene (DCE), and Vinyl Chloride)
² - Sites identified on Sanborn Maps as cleaning or automotive services.
³ - Sites identified as providing cleaning services.
⁴ - Investigation Report identifies the site as providing/has provided drycleaning operations.

Table 20
Master List of Confirmed, Potential, and Non-Dry Cleaner Sites in Study Area
Newark, Delaware

Site Address	Site Name(s)	EDR Proprietary Record	RCRA SQG of Chlorinated Solvents ¹	RCRA LQG of Chlorinated Solvents ¹	Sanborn Map Record ²	Historic City Directory ³	DNREC-SIRS HSCA Site with Chlorinated Solvent Detections ¹	DNREC-SIRS FOIA	DNREC-DAQ FOIA	DNREC-SHWMS FOIA	DNREC-TMS FOIA	Permitted DNREC-DAQ Dry Cleaner Sites ⁴	Dry Cleaner Status
						X							Potential Dry Cleaner Site
Academy Street - 16	Gilbert's Dry Cleaning												Potential Dry Cleaner Site
Bellevue Road - 50	Rohm & Haas Electronic Materials Corp.		X										Non-Dry Cleaner Site
Bellevue Road - 351	Rohm & Haas Electronic Materials Corp.			X									Non-Dry Cleaner Site
Bellevue Road - 385	Rohm & Haas Electronic Materials Corp.			X									Non-Dry Cleaner Site
Bellevue Road - 400	GE Energy-Ceramic Composite Products, LLC		X										Non-Dry Cleaner Site
Bellevue Road - 451	Rohm & Haas Electronic Materials Corp.			X									Non-Dry Cleaner Site
Bellevue Road - 525	Rohm & Haas Electronic Materials Corp.		X										Non-Dry Cleaner Site
Beverly Road - 129	Newark Cleaners	X											Potential Dry Cleaner Site
Brookside Shopping Center/Marrows Road - 77	Brookside Cleaners								X	X			Potential Dry Cleaner Site
	Dove Cleaners					X							Potential Dry Cleaner Site
Brookside Shopping Center - 79	Hollywood Cleaners					X							Potential Dry Cleaner Site
Brookside Shopping Center / Marrow Road - 87	Laundromat					X							Potential Dry Cleaner Site
Capitol Trail / Kirkwood Highway - 2620	One Hour Martinizing					X							Potential Dry Cleaner Site
Chapel Main Industrial Park Rm. 6 - 70	Chapel Street Cleaners					X							Non-Dry Cleaner Site
Chapman Road / 1450 Capitol Trail / Kirkwood Highway # 104 - 26	Webb's Cleaners					X							Potential Dry Cleaner Site
Chestnut Hill Plaza - 33	Parkway Cleaners Laundry & Shoe Repair					X			X	X			Potential Dry Cleaner Site
Chestnut Hill Road - 748	Mc Spalden Cleaners					X							Potential Dry Cleaner Site
Chestnut Hill Road - 756	Coin Operated Laundry					X							Non-Dry Cleaner Site
Chestnut Hill Road - 807	Coin Operated Laundry					X							Non-Dry Cleaner Site
Chestnut Hill Road - 812	Coin Operated Laundry					X							Non-Dry Cleaner Site
Christiana Road - 506	Betty Britz Cleaners					X							Potential Dry Cleaner Site
Christiana Road - 508	Beatty Britz Cleaners								X				Potential Dry Cleaner Site
Christiana-Newark Road, Rt 3 #071	Brite Betty Cleaners					X							Non-Dry Cleaner Site
Christiana-Newark Road, Rt 3 #073	Brite Betty Cleaners					X							Non-Dry Cleaner Site
Churchmans Plaza - 1109	New York Cleaners								X	X		X	Confirmed Current or Historic On-Site Dry Cleaner Site
College Square - 150	College Square Cleaners	X								X			Confirmed Current or Historic On-Site Dry Cleaner Site
College Square Shopping Center - 231	K & L Cleaners	X	X						X	X			Confirmed Current or Historic On-Site Dry Cleaner Site
Dawson Drive - 650	Aeero Technologies, LLC		X										Non-Dry Cleaner Site
Dawson Drive - 729	Maaco Painting & Bodyworks		X										Non-Dry Cleaner Site
East Chestnut Hill Road - 603	Augusta Cleaners								X				Potential Dry Cleaner Site
East Cleveland Avenue - 82	Sanborn				X								Non-Dry Cleaner Site
East Cleveland Avenue - 244	Newark Jeep Eagle, Inc.		X										Non-Dry Cleaner Site
East Cleveland Avenue - 298	Martin Mazda		X										Non-Dry Cleaner Site
East Cleveland Avenue - 300	Winner Ford		X										Non-Dry Cleaner Site
East Delaware Avenue - 235	Hessey's Auto Center		X										Non-Dry Cleaner Site
East Main Street - 39	Carroll's Laundry & Dry Cleaning					X							Potential Dry Cleaner Site
East Main Street - 64	Habo's Tailor Shop & Cleaners	X				X							Potential Dry Cleaner Site
East Main Street - 65	Smith Tailor Shop					X							Non-Dry Cleaner Site
East Main Street - 123	Sanborn				X								Non-Dry Cleaner Site
East Main Street - 124	Laundrall Self Service Laundry					X							Potential Dry Cleaner Site
East Main Street - 125	Laundrall Self Service Laundry					X							Potential Dry Cleaner Site
East Main Street - 164	Sanborn				X								Non-Dry Cleaner Site
East Main Street - 167	Sanborn				X								Non-Dry Cleaner Site
East Main Street - 171	Sanborn				X								Potential Dry Cleaner Site
East Main Street - 176	Newark Cleaners & Dyers, Inc					X							Potential Dry Cleaner Site
East Main Street - 179	Main Street Cleaners	X									X		Potential Dry Cleaner Site
East Main Street - 181	Violet Ray Laundry					X							Potential Dry Cleaner Site
East Main Street - 260	Newark Cleaners Laundry and Dry Cleaners	X				X		X	X	X			Potential Dry Cleaner Site
Elkton Road - 129	Newark Cleaners	X	X*						X	X	X		Potential Dry Cleaner Site
Elkton Road - 137	Newark Cleaners & Dyers, Inc					X							Potential Dry Cleaner Site

Table 20
Master List of Confirmed, Potential, and Non-Dry Cleaner Sites in Study Area
Newark, Delaware

Site Address	Site Name(s)	EDR Proprietary Record	RCRA SQG of Chlorinated Solvents ¹	RCRA LQG of Chlorinated Solvents ¹	Sanborn Map Record ²	Historic City Directory ³	DNREC-SIRS HSCA Site with Chlorinated Solvent Detections ¹	DNREC-SIRS FOIA	DNREC-DAQ FOIA	DNREC-SHWMS FOIA	DNREC-TMS FOIA	Permitted DNREC-DAQ Dry Cleaner Sites ⁴	Dry Cleaner Status
Elkton Road - 141	Laundry Center					X							Potential Dry Cleaner Site
Elkton Road - 147	Surf 'N Suds	X											Potential Dry Cleaner Site
Elkton Road - 255	Laundorama					X							Potential Dry Cleaner Site
Elkton Road - 279	M & M Cleaners					X							Potential Dry Cleaner Site
Elkton Road - 308	Parkway Cleaners	X											Non-Dry Cleaner Site
Elkton Road - 1090	DuPont Site Haskell Research Facility			X									Non-Dry Cleaner Site
Elkton Road/Park-N-Shop Shopping Center - 249	Daleo, Inc. Laundromat					X							Potential Dry Cleaner Site
Hansen Court - 206	Maintenance Services, Inc.		X										Non-Dry Cleaner Site
Hullihen Hall - 122	University of Delaware			X									Non-Dry Cleaner Site
Innovation Way - 1	Wilmington Pharma Tech Co. LLC		X										Non-Dry Cleaner Site
Interchange Boulevard - 601	Frontier Scientific Services, Inc.		X										Non-Dry Cleaner Site
Kirkwood Highway - 2616	Meadowood II Dry Cleaners							X	X				Potential Dry Cleaner Site
Limestone Road and Kirkwood Highway	M & M Drive In Cleaners					X							Confirmed Current or Historic On-Site Dry Cleaner Site
Marrows Road - 1344	Newark Toyota		X										Non-Dry Cleaner Site
New London Road - 12	Sanborn				X								Non-Dry Cleaner Site
New London Road - 26	Sanborn				X								Non-Dry Cleaner Site
New London Road - 409	Heritage Cleaners	X	X			X		X	X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
Newark Shopping Center - 109	M & M Cleaners					X							Potential Dry Cleaner Site
Newark Shopping Center - 624	Great American Cleaners	X						X	X				Potential Dry Cleaner Site
North Chapel Street - 11	M & M Drive In Cleaners					X							Potential Dry Cleaner Site
North Street - 27	Blue Hen Laundry & Cleaners				X	X							Potential Dry Cleaner Site
Ogletown Road - 600	Wimmer Niscon		X										Non-Dry Cleaner Site
Ogletown Road - 900	Sac Tire Center		X										Non-Dry Cleaner Site
Ogletown Road - 1301	FMC Corporation		X										Non-Dry Cleaner Site
Paper Mill Road - 555	W.L. Gore & Associates, Inc.		X										Non-Dry Cleaner Site
Paper Mill Road - 718	Thompson Cleaners, Inc.	X											Confirmed Current or Historic On-Site Dry Cleaner Site
Pencader Plaza - 160	Pencader Plaza Dry Cleaners	X					X	X	X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
Polly Drummond Shopping Center - 11	Polly Drummond Dry Cleaners								X	X		X	Confirmed Current or Historic On-Site Dry Cleaner Site
Possum Park Mall / Liberty Plaza - 1	Pastel Cleaners					X							Potential Dry Cleaner Site
	Pastel Cleaners												Potential Dry Cleaner Site
	Miss Cleaners							X	X				Potential Dry Cleaner Site
Possum Park Mall / Liberty Plaza - 10	Clever Cleaners, Inc.				X							Potential Dry Cleaner Site	
Possum Park Mall / Liberty Plaza - 21	Star Britz Cleaners				X							Potential Dry Cleaner Site	
Possum Park Mall / Liberty Plaza - 27 C	Any Garment Dry Cleaners						X		X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
Possum Park Road - 386	Thompson II Cleaners	X							X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
Pulaski Highway - 2430	VIP Cleaners								X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
Route 896 & Four Seasons Highway	Nice Cleaners								X		X		Confirmed Current or Historic On-Site Dry Cleaner Site
Salem Village Square - 16	Salem Dry Cleaners								X	X		X	Confirmed Current or Historic On-Site Dry Cleaner Site
Sandy Drive - 131	Cramaro		X										Non-Dry Cleaner Site
Shull Drive - 19	Gary Gross Carpet Cleaners	X											Non-Dry Cleaner Site
South Chapel Street - 100	Laidlaw Transit, Inc		X										Non-Dry Cleaner Site
South Chapel Street - 983	Rohm & Haas Electronic Materials Corp.		X										Non-Dry Cleaner Site
South College Avenue - 1015	Custom Care Cleaners					X							Potential Dry Cleaner Site
Stafford Way - 2070	Curmax #6001		X										Non-Dry Cleaner Site
Stanton Ogletown Road - 4134	Harmony Plaza Dry Cleaners								X	X			Potential Dry Cleaner Site
Stanton-Ogletown Road - 4625	Omega Cleaners, Inc.								X	X		X	Confirmed Current or Historic On-Site Dry Cleaner Site
Suburban Drive - 308	Parkway Cleaners	X											Potential Dry Cleaner Site
University Plaza - 240	University Cleaners								X				Potential Dry Cleaner Site
University Shopping Center - 270	University Cleaners									X			Potential Dry Cleaner Site
University Plaza Shopping Center	L & N Laundromat					X							Potential Dry Cleaner Site

**Table 20
Master List of Confirmed, Potential, and Non-Dry Cleaner Sites in Study Area
Newark, Delaware**

Site Address	Site Name(s)	EDR Proprietary Record	RCRA SQG of Chlorinated Solvents ¹	RCRA LQG of Chlorinated Solvents ¹	Sanborn Map Record ²	Historic City Directory ³	DNREC-SIRS HSCA Site with Chlorinated Solvent Detections ¹	DNREC-SIRS FOIA	DNREC-DAQ FOIA	DNREC-SHWMS FOIA	DNREC-TMS FOIA	Permitted DNREC-DAQ Dry Cleaner Sites ⁴	Dry Cleaner Status	
West Cleveland Avenue - 14	Sanborn				X								Non-Dry Cleaner Site	
West Main Street - 42	Sanborn				X								Non-Dry Cleaner Site	
Wyoming Road - 400	Christina School District		X										Non-Dry Cleaner Site	
Number of Records Related to Confirmed Current or Historic On-site Dry Cleaners		6	2	0	0	2	2	1	11	8	0	10		
Number of Records Related to Potential Historic On-site / Current Off-site Dry Cleaners		8	1	0	2	30	0	0	11	9	3	0		
Number Records Related to Non-Dry Cleaner Sites		2	22	5	8	7	0	0	0	0	0	0		
Total Number of Records		16	25	5	10	39	2	1	22	17	3	10		
									14 Confirmed Dry-Cleaner Sites		41 Potential Dry-Cleaner Sites		44 Non-Dry Cleaner Sites	
Total Number of Newark Sites Evaluated: 99 (with individual addresses)														

¹ Site identified as an RCRA SQG but does not list any waste codes associated chlorinated solvents.

Highlighted (yellow) - indicates potential historic onsite/current offsite dry cleaning services.

¹ Chlorinated Solvents are defined as tetrachloroethylene (PCE), trichloroethylene (TCE), 1,2-Dichloroethane or 1,2-dichloroethylene (DCE), and Vinyl Chloride)

² Sites identified on Sanborn Maps as cleaning or automotive services.

³ Sites identified as providing cleaning services.

⁴ Investigation Report identifies the site as providing/has provided drycleaning operations.

APPENDICES

APPENDIX A

History of the Drycleaning Industry

A Chronology of Historical Developments in Drycleaning

State Coalition for Remediation of Drycleaners

November 2007

1690 – First reference for the use of an organic solvent (spirits of turpentine) to spot clean fat and oil stains on clothing (Sigworth, 1981).

1821 - Perchloroethylene (PCE) synthesized by Michael Faraday (Partington, 1964)

1840s – The firm of Jolly-Belin opens a commercial drycleaning operation in Paris using spirits of turpentine as a drycleaning solvent (IFI).

1869 – Pullars of Perth Scotland introduces the first power machinery for drycleaning (Johnson, 1971).

1879 – At least one drycleaning plant was operating in the U.S. (Sigworth, 1981).

Late 19th Century – Turpentine spirits, camphor oil, benzene, naphtha, kerosene and white gasoline used as drycleaning solvents. Clothing was washed and rinsed in tubs of solvent and then hung in a warm room to dry.

1898 – Carbon tetrachloride imported from Germany by Ernest C. Klipstein. Carbon tetrachloride was sold as a drycleaning and spot-removing agent under the trade name of Carbona (Doherty, 2000).

Early 1900s

- Raw white gasoline is the primary drycleaning solvent used in the United States.
- Due to fire and explosion hazards associated with gasoline, drycleaning plants are considered such a poor risk that most insurance companies would not issue a policy for a drycleaning facility (Michelsen, 1957).
- First use of distillation to purify spent solvent (Lohman, 2002).

1903 - Steam presses introduced to drycleaning operations (Martin, 1958).

1905 - Clarifying systems (settling tanks) used to purify dirty solvent (Lohman, 2002).

1915 – The average U.S. drycleaning operation uses 12,000 gallons of gasoline a year (Michelsen, 1957).

1920s

- Bag filters first utilized to purify spent solvent, replacing clarifiers (Lohman, 2002).

- First use of powder filtration systems (Lohman, 2002).
- First dryers (tumblers) utilized in drycleaning plants. They replace drying cabinets or steam cabinets (Lohman, 2002).

1924 – Lloyd E. Jackson of the Mellon Institute of Industrial Research, working with W.J. Stoddard, an Atlanta drycleaner and president of the National Institute of Drycleaning, develops specifications for a higher flash point petroleum drycleaning solvent which became known as Stoddard solvent (Martin, 1958).

March 1, 1928 – U.S. Department of Commerce requires a minimum flash point of 100° F for petroleum drycleaning solvents. Drycleaners begin using Stoddard solvent (Martin, 1958).

1930 – Trichloroethylene (TCE) is introduced as a drycleaning solvent in U.S. Problems with dye bleeding and equipment corrosion limit the use of TCE (Martin, 1958).

1934 – Perchloroethylene is introduced as a drycleaning solvent in U.S. (Martin, 1958).

1940 – Chlorinated solvent use by the U.S. drycleaning industry was estimated to be 45 million pounds of carbon tetrachloride, 12 million pounds of perchloroethylene and 5 million pounds of trichloroethylene (Michelsen, 1957).

1940s

- Combination washer/extractor drycleaning machines marketed (Lohman, 2002).
- Perc reclaimers (solvent recovery tumblers or dryers) introduced (Lohman, 2002).
- Flat screen filters introduced (Lohman, 2002).

World War II – Shortages of chlorinated solvents result in most drycleaning being conducted with petroleum drycleaning solvents in the U.S. (Michelsen, 1957).

1948 – Perchloroethylene replaces carbon tetrachloride as the leading chlorinated solvent used in drycleaning (Chemical Week, 1957).

1950

- The National Institute of Cleaning and Dyeing worked with the U.S. Bureau of Standards to develop standards for a higher flash point petroleum drycleaning solvent known as 140-F solvent (Michelsen, 1957).
- A study by the National Institute of Cleaning and Dyeing determines that chlorinated solvent use by the U.S. drycleaning industry was 67,500,000 pounds of PCE and 15,000,000 pounds of carbon tetrachloride (Michelsen, 1957).

1950s – The use of carbon tetrachloride as a drycleaning solvent is discontinued due to toxicity and corrosion problems with equipment. (Kirk-Othmer, 1965).

1955 – The U.S. drycleaning industry used an estimated 145,000,000 gallons of Stoddard solvent, 4,000,000 gallons of 140-F solvent and 8,500,000 gallons of PCE (Michelsen, 1957).

Late 1950s

- Petroleum solvents still the predominant solvents used in drycleaning in the U.S.
- Rigid and flexible tube (tubular) screen filters introduced (Lohman, 2002).

1959 – It is estimated that the average neighborhood PCE drycleaning operation uses 50 to 100 gallons of PCE per month and that a one 55-gallon drum of PCE cleans about 500 pounds of clothing (Doherty, 2000).

1960 – Whirlpool Corporation introduces the first coin-operated drycleaning machine (Kirk-Othmer, 1965).

Early 1960s - Cartridge filters are introduced (Caplan, 2003).

1962 – PCE becomes the drycleaning solvent of choice in the U.S., and the drycleaning industry accounts for approximately 90% of PCE consumption (Chemical Engineering News, 1963).

1964 - E.I. du Pont de Nemours & Co. introduces a fluorinated-chlorinated hydrocarbon drycleaning solvent (1,1,2-trichloro-1,2,2-trifluoroethane, or Freon 113) under the trade name Valclene[®] (Johnson, 1971).

1966 – Drycleaning machines for fluorocarbon solvents developed by Böhler & Weber in Germany (Böwe, 2002).

1968 – Böhler & Weber develops first dry-to-dry machines in Germany (Böwe, 2002).

1970s

- Petroleum reclaimers (recovery tumblers) are developed (Lohman, 2002).
- Third generation drycleaning machines (closed loop dry-to-dry machines) are developed (Miller, 1998).

December 16, 1974 – The Safe Drinking Water Act signed into law. The act requires the states to regulate all direct injections of wastes to the subsurface (Pankow & Cherry, 1996).

1975 - The average PCE drycleaning machine can clean approximately 8,000 pounds of clothing with one 55-gallon drum of PCE (Kirschner, 1994).

1980s

- Spin disc filters are introduced (Caplan, 2003).
- 1,1,1-Trichloroethane (methyl chloroform or TCA) marketed as a drycleaning solvent (Dowclene LS[®]). There was limited use of this solvent in drycleaning because of corrosion problems.

1980 – PCE use peaks in the U.S. (Dougherty, 2000).

November 1980 – Resource Conservation Recovery Act (RCRA) promulgated. This legislation regulates the generation, transportation, treatment and disposal of hazardous wastes in the U.S.

December 26, 1985 – E.P.A. published a Notice of Intent to list PCE as a potentially toxic air pollutant to be regulated under Section 112 of the Clean Air Act (Office of Air Quality, 1991).

1986 – According to the U.S. Department of Commerce, there are approximately 21,787 drycleaning plants in the United States. Of these there are 4,300 coin-operated drycleaning facilities (19.7%), 1,182 are industrial laundry and drycleaning facilities (5.4%) and 16,305 are commercial drycleaning facilities (74.8%). Of these facilities, 18,899 (86.7%) use PCE, 489 facilities (2.2% use Valclene), 50 (0.2%) use TCA and 2,349 (10.8%) use petroleum solvent (U.S.D.C., 1986).

September 1986 – Notification deadline for small quantity generators of hazardous waste under the Hazardous and Solid Waste Amendments (HSWA) to RCRA. Most PCE drycleaners in U.S. began shipping wastes offsite as hazardous wastes.

September 1987 – Twenty-seven countries sign the Montreal Protocol on Substances that Deplete the Ozone Layer, committing every signatory state to reduce its use of chlorinated fluorocarbons by 50% of their level of use in 1986 by 1999. The drycleaning solvents that would be affected are 1,1,2 trichloro-1,2,2-trifluoroethane (Valclene) and 1,1,1-trichloroethane (Rowland, 1993).

1988 – A survey of drycleaning equipment and plant operations in the U.S. conducted by the International Fabricare Institute finds that approximately 70.7% of the 909 respondents discharged separator water to either the sanitary sewer or to a septic system (IFI, 1989).

April 1989 – The City of Lodi, California detects PCE in groundwater samples collected from two of its Municipal wells at concentrations exceeding the California Maximum Contaminant Level for drinking water. This discovery lead to extensive investigations that identified over 50 potential contaminant sources, including a number of dry cleaning facilities (Groundwater Resources Association, 2004).

June 1989 - Amendments to the Clean Water Act identify 83 compounds found in drinking water which may have an adverse effect on people's health. PCE and its degradation products are among these compounds. Drinking water Maximum Contaminant Levels are set for these compounds (Arbuckle, 1991).

1990 – Drycleaning/textile processing account for approximately 50% of PCE use in the U.S. (HSIA, 1998).

December 9, 1990 – Clean Air Act Amendments: EPA proposes national emission standards to limit PCE emissions from drycleaning plants (EPA, 2006).

March 1992 – A study by the Central Valley Region, California Regional Water Quality Control Board, identifies sanitary sewer lines as “the main discharge point for dry cleaners” of wastewater containing “dissolved PCE ... pure cleaning solvent and solids containing PCE” (Izzo, 1992).

1993

- First commercial use of a closed-loop/direct-couple solvent delivery system (Dawson, 2007).
- It is estimated that a typical PCE drycleaning machine can clean 16,000 pounds of clothing using one 55-gallon drum of PCE (Kirshner, 1994).

September 22, 1993 – EPA promulgated technology-based emission standards to control emissions of PCE from drycleaning facilities. No PCE transfer machines can be installed after this date (EPA, 2006).

1994

- Exxon Chemical begins marketing DF-2000™ a high flashpoint synthetic paraffin (petroleum) drycleaning solvent (Dawson, 2007).
- Connecticut and Florida create the first drycleaning solvent cleanup programs in the United States.

December 1994 – Dade County, Florida files a law suit against defendants and owners and operators of several dry cleaning facilities in the Suniland area. Drycleaning solvent contaminants were detected in groundwater samples collected from 556 private water wells located hydraulically downgradient of drycleaning facilities in 4 shopping centers. The Dade County Water and Sewer Authority installed public water mains in the area at a cost of over \$5 million (Service, 1994).

1995 – Kansas, Minnesota, Oregon, South Carolina, create drycleaning solvent cleanup programs.

1996

- Drycleaning is still the highest volume use of PCE in U.S. (Leder, 1999).

- First home drycleaning kits marketed.

January 1, 1996 – Beginning of phase out of the production of 1,1,1-trichloroethane (methyl chloroform) and 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113) in the U.S. (ICF, 2004)

September 21, 1996 - National Emission Standard Hazardous Air Pollutants (NESHAP) Requirements issued. Requirements include drycleaning machinery maintenance, record keeping and monitoring.

1997

- Illinois, North Carolina, Tennessee and Wisconsin create drycleaning solvent cleanup programs.
- The primary use of PCE in the U.S. is no longer as drycleaning solvent but as a chemical intermediary (HSIA, 1998).
- Pilgrim Enterprises sues drycleaning equipment manufacturers and suppliers for \$12 million for cleanup costs associated with 17 contaminated drycleaning sites in Houston and San Antonio (National Clothesline, 2003).

1998 – Drycleaning/textile processing accounts for 36% of PCE usage in the U.S. (HSIA, 1999).

1999

- Rynex[™] (dipropylene glycol tertiary-butyl ether) first marketed as a drycleaning solvent (Hayday, 2007).
- GreenEarth[®] (Decamethylcyclopentasiloxane) a silicon-based solvent is first marketed as a drycleaning solvent (Maxwell, 2007).

February 5, 1999 – The first commercial liquid carbon dioxide (CO₂) drycleaning plant opens in Wilmington, North Carolina (Wentz, 2001).

April 13, 1999 - The State Coalition for Remediation of Drycleaners is formed in Washington D.C. This organization is composed of representatives from the states with drycleaning solvent cleanup programs and is sponsored by the U.S. E.P.A.'s Technology Innovation Office.

2000

- Alabama and Missouri create drycleaning solvent cleanup programs.
- PureDry[™], a mixture of isoparaffinic hydrocarbons, hydrofluoroethers and perfluoroisobutylethers was first marketed as a drycleaning solvent (Eastern Research, 2005).

- The City of Lodi, California filed a suit in Federal Court against 15 Lodi businesses, including a number of drycleaning businesses, for PCE contamination of some of its water supply wells (Groundwater Resources, 2004).

December 6, 2002: The South Coast Air Quality Management District's governing board voted unanimously to require the region's estimated 2,200 dry cleaners to switch from PCE to a non-toxic alternative. The proposed phase-out of PCE would begin on January 1, 2003 and end with total phase-out of PCE by 2020. This is the nation's first proposed ban on PCE (Wides, 2002).

2003 – Texas creates a drycleaning solvent cleanup program.

April 2004 – Impress™ (propylene glycol-ether based drycleaning solvent) first marketed (Liotta, 2007).

January 25, 2006 – California Air Resources Board votes to phase out PCE drycleaning by 2023 (California EPA, 2007).

June 2006 – A San Francisco Superior Court jury awards the City of Modesto, California over \$178 million dollars in compensatory and punitive damages for PCE contamination of its water wells and other city properties. The defendants were drycleaning chemical manufacturers and drycleaning companies (National Clothesline, 2006).

July 27, 2006 – Effective date for final rule for National Perchloroethylene Air Emissions Standards for Dry Cleaning Facilities (40 CFR Part 63). This is a revision of standards promulgated on September 22, 1993. New drycleaning machines installed in residential buildings are not allowed to use PCE (EPA 2006).

October 2006: DrySolv™ (n-propyl bromide) first marketed as a drycleaning solvent (Roccon, 2007).

July 27, 2008 – Deadline for phase-out of PCE transfer machines (EPA, 2006).

December 21, 2020 – All existing PCE drycleaning machines in co-residential facilities are prohibited in the U.S. (EPA, 2006).

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APPENDIX B

DNREC FOIA Responses and Associated Documents

Nick Piane

From: donna.donovan@state.de.us
Sent: Thursday, November 20, 2014 11:12 AM
To: Nick Piane
Subject: FOIA Request Info

Follow Up Flag: Follow up
Flag Status: Completed

DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
INTERNET ADDRESS: www.awm.delaware.gov

FREEDOM OF INFORMATION ACT RESPONSE FORM

Date: From:
Emergency Prevention and Response
89 Kings Highway
Dover, DE 19901
302-739-9404
donna.donovan@state.de.us

To:
Nicholas Piane
Brightfields Inc.
801 Industrial Street
Wilmington, DE 19801

Facility/Site(s): State Wide Dry Cleaning Sites

Request Disposition:
No records have been found in this branch pursuant to the above referenced request.

Comments:

Should you have any questions, please do not hesitate to call the contact person for the branch.

PLEASE NOTE THE FOLLOWING:

Your request may have been distributed to other Branches applicable. Those Branches will respond individually to your request.

The Division of Air & Waste Management (DAWM) files records according to site/facility/ owner name, whichever may be applicable. The DAWM can not search files based upon tax parcel number or street address.

Nick Piane

From: Vanessa.Hamm@state.de.us
Sent: Wednesday, November 19, 2014 2:48 PM
To: Nick Piane
Subject: FOIA Request Response
Attachments: Dry Cleaners in DEN 10_5_14.xlsx; FOIA Database (Instructions).doc

Follow Up Flag: Follow up
Flag Status: Flagged

DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
INTERNET ADDRESS: www.awm.delaware.gov

FREEDOM OF INFORMATION ACT RESPONSE FORM

Date: From:
Site Investigation and Restoration Branch
391 Lukens Drive
New Castle , DE 19720
302-395-2600
Vanessa.Hamm@state.de.us

To:
Nicholas Piane
Brightfields Inc.
801 Industrial Street
Wilmington, DE 19801

Facility/Site(s): State Wide Dry Cleaning Sites

Request Disposition:
Attached is the information you have requested.

Comments:

Should you have any questions, please do not hesitate to call the contact person for the branch.

PLEASE NOTE THE FOLLOWING:

Your request may have been distributed to other Branches applicable. Those Branches will respond individually to your request.

The Division of Air & Waste Management (DAWM) files records according to site/facility/ owner name, whichever may be applicable. The DAWM can not search files based upon tax parcel number or street address.

Nick Piane

From: kathy.corazza@state.de.us
Sent: Thursday, December 04, 2014 3:59 PM
To: Nick Piane
Subject: FOIA Request Info

DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
INTERNET ADDRESS: www.awm.delaware.gov

FREEDOM OF INFORMATION ACT RESPONSE FORM

Date: From:
Solid & Hazardous Waste Management Branch
89 Kings Highway
Dover, DE 19901
302-739-9403
kathy.corazza@state.de.us

To:
Nicholas Piane
Brightfields Inc.
801 Industrial Street
Wilmington, DE 19801

Facility/Site(s): State Wide Dry Cleaning Sites

Request Disposition:
Please call within 30 days to discuss setting up an appointment to review the records found pursuant to the above referenced request. If you do not respond within 30 days from the date of this letter, your request will be CLOSED.

Comments:

Should you have any questions, please do not hesitate to call the contact person for the branch.

PLEASE NOTE THE FOLLOWING:

Your request may have been distributed to other Branches applicable. Those Branches will respond individually to your request.

The Division of Air & Waste Management (DAWM) files records according to site/facility/ owner name, whichever may be applicable. The DAWM can not search files based upon tax parcel number or street address.

Nick Piane

From: luella.allen@state.de.us
Sent: Thursday, November 20, 2014 11:36 AM
To: Nick Piane
Subject: FOIA Request Info

Follow Up Flag: Flag for follow up
Flag Status: Flagged

DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
INTERNET ADDRESS: www.awm.delaware.gov

FREEDOM OF INFORMATION ACT RESPONSE FORM

Date: From:
Tank Management Branch
391 Lukens Drive
New Castle, DE 19720
302-395-2500
luella.allen@state.de.us

To:
Nicholas Piane
Brightfields Inc.
801 Industrial Street
Wilmington, DE 19801

Facility/Site(s): State Wide Dry Cleaning Sites

Request Disposition:
Please call within 30 days to discuss setting up an appointment to review the records found pursuant to the above referenced request. If you do not respond within 30 days from the date of this letter, your request will be CLOSED.

Comments:

Should you have any questions, please do not hesitate to call the contact person for the branch.

PLEASE NOTE THE FOLLOWING:

Your request may have been distributed to other Branches applicable. Those Branches will respond individually to your request.

The Division of Air & Waste Management (DAWM) files records according to site/facility/ owner name, whichever may be applicable. The DAWM can not search files based upon tax parcel number or street address.

Nick Piane

From: Tonya.Neal@state.de.us
Sent: Wednesday, February 11, 2015 1:23 PM
To: Nick Piane
Subject: FOIA Request Response
Attachments: FOIA Request for BrightFields.docx

Follow Up Flag: Follow up
Flag Status: Flagged

DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
INTERNET ADDRESS: www.awm.delaware.gov

FREEDOM OF INFORMATION ACT RESPONSE FORM

Date: From:
Air Quality Management
Blue Hen Corporate Center 655 S. Bay Road, Suite 5 N
Dover, DE 19901
302-739-9402
Tonya.Neal@state.de.us

To:
Nicholas Piane
Brightfields Inc.
801 Industrial Street
Wilmington, DE 19801

Facility/Site(s): State Wide Dry Cleaning Sites

Request Disposition:
Attached is the information you have requested.

Comments:

Should you have any questions, please do not hesitate to call the contact person for the branch.

PLEASE NOTE THE FOLLOWING:

Your request may have been distributed to other Branches applicable. Those Branches will respond individually to your request.

The Division of Air & Waste Management (DAWM) files records according to site/facility/ owner name, whichever may be applicable. The DAWM can not search files based upon tax parcel number or street address.

Nick Piane

From: donna.alderucci@state.de.us
Sent: Wednesday, November 19, 2014 3:39 PM
To: Nick Piane
Subject: FOIA Request Info

Follow Up Flag: Follow up
Flag Status: Completed

DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
INTERNET ADDRESS: www.awm.delaware.gov

FREEDOM OF INFORMATION ACT RESPONSE FORM

Date: From:
Environmental Crimes Unit
89 Kings Highway
Dover, DE 19901
302-739-9401
donna.alderucci@state.de.us

To:
Nicholas Piane
Brightfields Inc.
801 Industrial Street
Wilmington, DE 19801

Facility/Site(s): State Wide Dry Cleaning Sites

Request Disposition:
No records have been found in this branch pursuant to the above referenced request.

Comments:

Should you have any questions, please do not hesitate to call the contact person for the branch.

PLEASE NOTE THE FOLLOWING:

Your request may have been distributed to other Branches applicable. Those Branches will respond individually to your request.

The Division of Air & Waste Management (DAWM) files records according to site/facility/ owner name, whichever may be applicable. The DAWM can not search files based upon tax parcel number or street address.

Facility	Programs:	Address	City	County
Bear <i>Cleaners</i>	Air Program, Hazardous Waste	1719 Pulaski Highway, US Route 40 , White Clay Shop Center, Bear, DE 19701 US	Bear	New Castle
Elim <i>Cleaners</i>	Air Program	1657 Pulaski Highway, Salem Shopping Center, Bear, DE 19701 US	Bear	New Castle
Fox Run Dry <i>Cleaners</i>	Air Program, Hazardous Waste	120 Fox Hunt Drive, Bear, DE 19701 US	Bear	New Castle
Governor Square <i>Cleaners</i>	Air Program, Hazardous Waste	1011 Governors Place, Governors Square Shopping Center, Bear, DE 19701 US	Bear	New Castle
Super Dry <i>Cleaners</i>	Air Program	1945 Pulaski Highway, Bear, DE 19701 US	Bear	New Castle
Nanticoke <i>Cleaners</i>	Air Program, Hazardous Waste, Underground Tank	35 North Market Street, Blades, DE 19973 US	Blades	Sussex
Betty Brite <i>Cleaners</i>	Air Program, Hazardous Waste	2709 Philadelphia Pike, Claymont, DE 19703 US	Claymont	New Castle
Claymont <i>Cleaners</i>	Air Program	3203 Philadelphia Pike, Claymont, DE 19703 US	Claymont	New Castle
A-1 <i>Cleaners</i>	Air Program, Hazardous Waste	136 North DuPont Highway, Dover, DE 19901 US	Dover	Kent
A-1 <i>Cleaners</i>	Air Program	428 North Dover Highway, Dover, DE 19901 US	Dover	Kent
Ace <i>Cleaners</i>	Air Program, Hazardous Waste, Site Inv & Rem site	1030 Forest Avenue, Suite 101, Gateway West Shopping Center, Dover, DE 19904	Dover	Kent
Brite <i>Cleaners</i>	Air Program, Hazardous Waste	11 South DuPont Highway, Dover, DE 19901 US	Dover	Kent
Campbells Fashion <i>Cleaners</i>	Hazardous Waste	1044 South DuPont Highway, Dover, DE 19901 US	Dover	Kent
Capitol <i>Cleaners</i>	Air Program, Site Inv & Rem site	411 Governors Avenue, 217 New Street, Dover, DE 19903 US	Dover	Kent
Capitol <i>Cleaners</i> & Laundry	Air Program, Hazardous Waste, Underground Tank	217 South New Street, Dover, DE 19901 US	Dover	Kent
Emily <i>Cleaners</i>	Air Program, Hazardous Waste	270 South DuPont Highway, Dover, DE 19901 US	Dover	Kent
Harry Louie Laundry & Dry <i>Cleaners</i>	Aboveground Tank, Air Program, Hazardous Waste	129 South Governors Avenue, Dover, DE 19904 US	Dover	Kent
Hastings Dry <i>Cleaners</i>	Site Inv & Rem site	US Route 113 & Lebanon Road, Dover, DE 19901 US	Dover	Kent

Master Dry Cleansing - Dover	Hazardous Waste, Underground Tank	211 Dover Street, Dover, DE 19901 US	Dover	Kent
Patel & Sheth T/A Fashion Cleaners -	Hazardous Waste	428 North DuPont Highway, Dover, DE 19901 US	Dover	Kent
Toni Dry Cleaners	Air Program, Hazardous Waste, Non-Septic Inj Wells, Site Inv & Rem site	1606 Kirkwood Highway, Elsmere, DE 19805-4918 US	Elsmere	New Castle
Georgetown Cleaners	Hazardous Waste, Non-Septic Inj Wells, Site Inv & Rem site, Underground Tank	305 North Race Street, Georgetown, DE 19947-1165 US	Georgetown	Sussex
Georgetown Plaza Cleaners	Hazardous Waste	US Route 113 & Route 9, Georgetown, DE 19947 US	Georgetown	Sussex
Hockessin Cleaners	Air Program, Hazardous Waste	7313 Lancaster Pike, Hockessin, DE 19707 US	Hockessin	New Castle
Sunrise Cleaners	Air Program, Hazardous Waste, Site Inv & Rem site	7288 Lancaster Pike, Hockessin, DE 19707 US	Hockessin	New Castle
Thompson Cleaners, Inc. IV	Air Program	7465 Lancaster Pike, Hockessin, DE 19707 US	Hockessin	New Castle
Master Dry Cleaners	Air Program	412 Savannah (e) Road, Lewes, DE 19958 US	Lewes	Sussex
Middletown Cleaners CLODES	Air Program, Hazardous Waste	739 North Broad Street, Middletown, DE 19709 US	Middletown	New Castle
Moon Cleaners	Air Program, Floor Drains&Brine Wells	232 Dove Run Center Drive, Middletown, DE 19709 US	Middletown	New Castle
New Castle I Cleaners	Air Program, Hazardous Waste	2386 North DuPont Highway, Rte 13, Middletown, DE 19709 US	Middletown	New Castle
Bennetts Custom Dry Cleaners	Air Program, Hazardous Waste	114 Park Avenue, Milford, DE 19963 US	Milford	Kent
Best Cleaners	Air Program, Hazardous Waste	664a Milford Plaza Shopping Center, Milford, DE 19963 US	Milford	Kent
Snow White Laundry (aka Snow White Laundry & Dry Cleaners Millsboro)	Wastewater	--	Millsboro	Sussex
Airport Cleaners	Air Program, Hazardous Waste	144 Sunset Boulevard, New Castle, DE 19720	New Castle	New Castle
Airport Cleaners (aka Airport II Cleaners)	Aboveground Tank, Air Program, Hazardous Waste, Land Development	550 South DuPont Parkway, New Castle, DE 19720 US	New Castle	New Castle
Handcraft Dry Cleaners	Hazardous Waste	Penn Mart Shopping Center, New Castle, DE 19720 US	New Castle	New Castle
Manor Cleaners	Air Program, Floor Drains&Brine Wells, Hazardous Waste	1415 DuPont Highway, New Castle, DE 19720 US	New Castle	New Castle
Martines Cleaners, Inc.	Air Program, Hazardous Waste	295 Christiana Road, New Castle, DE 19720 US	New Castle	New Castle
Penn Mart Dry Cleaners	Air Program	13 Penn Mart Shopping Center, New Castle, DE 19720 US	New Castle	New Castle

Whites Cleaners	Air Program, Underground Tank	213 North DuPont Parkway, New Castle, DE 19720	New Castle	New Castle
Whites Cleaners	Hazardous Waste, Site Inv & Rem site	203 DuPont Highway, New Castle, DE 19720 US	New Castle	New Castle
Any Garment Dry Cleaners	Air Program, Hazardous Waste	27 C Possum Park Mall, Newark, DE 19711 US	Newark	New Castle
Augusta Cleaners	Air Program	693 East Chestnut Hill Road, Newark, DE 19713 US	Newark	New Castle
Beatty Brite Cleaners	Air Program	508 Christiana Road, Newark, DE 19713 US	Newark	New Castle
Brookside Cleaners (aka All Brite Cleaners on Brookside Shopping Center, Newark)	Air Program, Hazardous Waste	77 Marrows Road, Newark, DE 19713 US	Newark	New Castle
College Square Cleaners	Hazardous Waste	150 College Square, Newark, DE 19711 US	Newark	New Castle
Crystal Cleaners (aka College Square Cleaners)	Air Program	150 College Square Shopping Center, Newark, DE 19711 US	Newark	New Castle
Emily Corporation T/A Thompson Cleaners -	Air Program	368 Possum Park Road, Newark, DE 19711 US	Newark	New Castle
Great American Cleaners (aka Great American Cleaners Of Newark, Inc)	Air Program, Hazardous Waste	624 Newark Shopping Center, Newark, DE 19711 US	Newark	New Castle
Harmony Plaza Dry Cleaners	Air Program, Hazardous Waste	4134 Stanton Ogletown Road, Newark, DE 19713 US	Newark	New Castle
Heritage Cleaners	Air Program, Hazardous Waste	409 New London Road, Newark, DE 19711 US	Newark	New Castle
K & L Cleaners & Shoe Repair	Air Program, Hazardous Waste	231 College Square Shopping Center, Newark, DE 19711 US	Newark	New Castle
Main Street Cleaners	Underground Tank	177 East Main Street, Newark, DE 19711 US	Newark	New Castle
Meadowood II Dry Cleaners	Air Program, Hazardous Waste	2616 Kirkwood Highway, Newark, DE 19711 US	Newark	New Castle
Mins Cleaners (aka Love Cleaners)	Air Program, Hazardous Waste	2 Liberty Plaza, Newark, DE 19711 US	Newark	New Castle
New York Cleaners	Air Program, Hazardous Waste	1109 Churchmans Plaza, Newark, DE 19713 US	Newark	New Castle
Newark Chinese Laundry & Dry Cleaners	Air Program, Hazardous Waste, Underground Tank	260 East Main Street, Newark, DE 19711 US	Newark	New Castle
Newark Cleaners & Dryers, Inc.	Air Program, Hazardous Waste, Underground Tank	129 Elkton Road, Newark, DE 19711 US	Newark	New Castle
Nice Cleaners	Air Program	Route 896 & Four Seasons Highway, Newark, DE 19702 US	Newark	New Castle
Omega Cleaners, Inc.	Air Program, Hazardous Waste	4625 Stanton-Ogletown Road, Newark, DE 19713 US	Newark	New Castle

Parkway Cleaners	Air Program, Hazardous Waste	13 Chestnut Hill Plaza, Newark, DE 19713 US	Newark	New Castle
Pencader Plaza Cleaners (aka Ocean Cleaners)	Air Program, Site Inv & Rem site	160 Pencader Plaza, Newark, DE 19713 US	Newark	New Castle
Polly Drummond Dry Cleaners	Air Program, Hazardous Waste	11 Polly Drummond Shopping Center, Newark, DE 19711 US	Newark	New Castle
Salem Dry Cleaners (aka Salem French Dry Cleaners)	Air Program, Hazardous Waste	16 Salem Village Square, Newark, DE 19713 US	Newark	New Castle
University Cleaners	Air Program	240 University Plaza, Newark, DE 19702 US	Newark	New Castle
University Cleaners	Hazardous Waste	270 University Shopping Center, Store 7, Newark, DE 19711 US	Newark	New Castle
VIP Cleaners	Air Program	2430 Pulaski Highway, Newark, DE 19702 US	Newark	New Castle
Newport Cleaners	Hazardous Waste	110 West Market Street, Newport, DE 19804 US	Newport	New Castle
Capitol Cleaners & Launderers	Air Program	9 Market Place Shopping Center, Rehoboth Beach, DE 19971 US	Rehobeth	Sussex
Foxs Cleaners	Hazardous Waste	1015 Norman Eskridge Highway, Seaford, DE 19973 US	Seaford	Sussex
Nanticoke Cleaners	Air Program	211 West Stein Highway, Seaford, DE 19973 US	Seaford	Sussex
Peninsula Dry Cleaners	Hazardous Waste	US Route 13 Seaford Marketplace, Seaford, DE 19973 US	Seaford	Sussex
Peninsula Dry Cleaners, Inc.	Aboveground Tank, Air Program, Hazardous Waste	815 Norman Eskridge Highway, Seaford, DE 19973 US	Seaford	Sussex
Selbyville Cleaners, Inc.	Aboveground Tank, Air Program, Underground Tank	65 Hoosier Street, Selbyville, DE 19975 US	Selbyville	Sussex
Wilgus J Cleaners (aka Wilgus Cleaners, Inc)	Air Program, Hazardous Waste	65 Hoosier Street, Selbyville, DE 19975 US	Selbyville	Sussex
Best Cleaners	Air Program	104 East Glenwood Avenue, Smyrna, DE 19977 US	Smyrna	New Castle
Best Cleaners	Hazardous Waste	80 East Glenwood Avenue, Smyrna, DE 19977 US	Smyrna	New Castle
Campbells Fashion Cleaners	Air Program, Hazardous Waste	456 C2 West Glenwood Avenue, Smyrna, DE 19977 US	Smyrna	New Castle
Commerce Cleaners	Hazardous Waste	62 West Commerce Street, Smyrna, DE 19977 US	Smyrna	New Castle
Alpine Cleaners	Air Program, Hazardous Waste	4311 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Any Garment Cleaners #106	Hazardous Waste	3624 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Augusta Cleaners	Air Program	3624 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Best Dry Cleaner, Inc.	Air Program	729 Philadelphia Pike, Wilmington, DE 19809 US	Wilmington	New Castle
Best Value Cleaners	Air Program, Hazardous Waste	3615 Silverside Road, Wilmington, DE 19810 US	Wilmington	New Castle

Blue Swan (aka Vogue Cleaner (Blue Swan, Inc))	Air Program, Hazardous Waste	1710 West 4th Street, Wilmington, DE 19805 US	Wilmington	New Castle
Boxwood Cleaners	Air Program, Hazardous Waste	626 South Maryland Avenue, Wilmington, DE 19804 US	Wilmington	New Castle
Bran Mar Cleaners	Hazardous Waste	Branmar Plaza, Marsh & Silverside Road, Wilmington, DE 19810 US	Wilmington	New Castle
City One Hour Cleaners	Air Program, Hazardous Waste	615 King Street, Wilmington, DE 19801 US	Wilmington	New Castle
Colton Cleaners	Air Program, Hazardous Waste	1321 McKennans Church Road, Wilmington, DE 19808 US	Wilmington	New Castle
Colton Cleaners	Air Program, Hazardous Waste	115 West 9th Street, Wilmington, DE 19810 US	Wilmington	New Castle
Concord Mall Cleaners	Air Program, Hazardous Waste	Concord Mall Shopping Center, Wilmington, DE 19810 US	Wilmington	New Castle
Dunrite Custom Cleaners	Air Program, Hazardous Waste	132 Concord Avenue, Wilmington, DE 19802 US	Wilmington	New Castle
Fairfax Valet Cleaners	Air Program, Hazardous Waste	3 Fairfax Boulevard, Wilmington, DE 19803 US	Wilmington	New Castle
Fairfax Valet Cleaners	Site Inv & Rem site	2213 Concord Pike, Wilmington, DE 19803 US	Wilmington	New Castle
Graylyn Cleaners	Air Program	1712 Marsh Road, Wilmington, DE 19810 US	Wilmington	New Castle
Highams Cleaners	Air Program, Hazardous Waste	111 Greenbank Road, Wilmington, DE 19808 US	Wilmington	New Castle
Hollywood Cleaners	Air Program	617 Shipley Street, Wilmington, DE 19801 US	Wilmington	New Castle
Hyye (Branmar Cleaners) (aka Classic Cleaners)	Air Program, Underground Tank	1812 Marsh Road, Unit 11, Wilmington, DE 19803 US	Wilmington	New Castle
JB Dry Cleaners	Site Inv & Rem site	1909 Centerville Road, Wilmington, DE 19808 US	Wilmington	New Castle
Joy Cleaners	Air Program, Hazardous Waste	301 Greenhill Road, Wilmington, DE 19804 US	Wilmington	New Castle
Kathy Savage Swan Cleaners	Underground Tank	1710 4th Street, Wilmington, DE 19805 US	Wilmington	New Castle
Kays Dry Cleaners	Air Program, Hazardous Waste	339 Robinson Lane, Wilmington, DE 19805 US	Wilmington	New Castle
Kays Dry Cleaners	Hazardous Waste	3100 Naamans Road, Wilmington, DE 19810 US	Wilmington	New Castle
Kellers Dry Cleaners	Air Program, Hazardous Waste, Underground Tank	1607 Pennsylvania Avenue, Wilmington, DE 19806 US	Wilmington	New Castle
Kirkwood Cleaners - 4373 Kirkwood Highway, Wilmington	Air Program, Hazardous Waste	4373 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Lancaster Cleaners	Air Program, Hazardous Waste	3800 Lancaster Pike, Wilmington, DE 19805 US	Wilmington	New Castle
Lewis Cleaners	Air Program, Hazardous Waste	2914 North Market Street, Wilmington, DE 19802 US	Wilmington	New Castle
Liberty Cleaners	Hazardous Waste	800 West 4th Street, Wilmington, DE 19801 US	Wilmington	New Castle

Limestone Cleaners CLOSED	Air Program, Hazardous Waste	5347A Limestone Road, Wilmington, DE 19808 US	Wilmington	New Castle
Marvi Cleaners		309 Philadelphia Pike, Wilmington, DE 19809 US	Wilmington	New Castle
McKelvey-Hires Dry Cleaning (aka Superior Cleaners of Wilmington)	Air Program, Hazardous Waste	808 First State Boulevard, Wilmington, DE 19804 US	Wilmington	New Castle
Millcreek Dry Cleaners	Air Program, Hazardous Waste	4557 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Mount Pleasant Cleaners	Air Program	Marsh Road & Silverside Road, Wilmington, DE 19810 US	Wilmington	New Castle
Mount Pleasant Cleaners Talleyville	Air Program	US Route 202 & Silverside Road, Wilmington, DE 19810 US	Wilmington	New Castle
New Lindenhill Cleaner	Air Program, Hazardous Waste	4561 New Linden Hill Road, Wilmington, DE 19707 US	Wilmington	New Castle
New York Dry Cleaners	Air Program, Hazardous Waste	307 West 7th Street, Wilmington, DE 19801 US	Wilmington	New Castle
Norgetown Cleaners & Laundromat	Air Program, Hazardous Waste	729a Philadelphia Pike, Wilmington, DE 19809 US	Wilmington	New Castle
North Hills Cleaners, Inc.	Air Program, Hazardous Waste	211 Philadelphia Pike, Wilmington, DE 19809 US	Wilmington	New Castle
Orchid Cleaners	Air Program, Hazardous Waste	1806 Marsh Road, Wilmington, DE 19810 US	Wilmington	New Castle
Parklynn Cleaners	Air Program, Hazardous Waste	4526 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Parklynn Dry Cleaner	Site Inv & Rem site	4526 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Rainbow Cleaners	Air Program, Hazardous Waste	2720 Washington Street, Wilmington, DE 19802 US	Wilmington	New Castle
Royal Dry Cleaners	Air Program, Hazardous Waste, Site Inv & Rem site, Underground Tank	3914 Concord Pike, Wilmington, DE 19810 US	Wilmington	New Castle
Seymours Cleaners -	Air Program, Hazardous Waste	900 North Union Street, Wilmington, DE 19805 US	Wilmington	New Castle
Superior Cleaners (aka Superior Cleaner Of Wilmington, Inc)	Air Program, Hazardous Waste	3616 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
The Dry Cleaner	Hazardous Waste	3421 Kirkwood Highway, Wilmington, DE 19808 US	Wilmington	New Castle
Thompson Cleaners	Air Program, Hazardous Waste, Underground Tank	4746 Limestone Road, Wilmington, DE 19808 US	Wilmington	New Castle
Towne & Country Cleaners	Air Program, Hazardous Waste	3301 Concord Pike, Wilmington, DE 19803 US	Wilmington	New Castle
Valley View Cleaners	Air Program	2506 Foulk Road, Wilmington, DE 19801 US	Wilmington	New Castle
Wamplers Cleaners	Air Program, Hazardous Waste	2082 Limestone Road, Wilmington, DE 19808 US	Wilmington	New Castle
Webbs Cleaners	Air Program, Hazardous Waste	1403 Philadelphia Pike, Wilmington, DE 19809 US	Wilmington	New Castle