Woman Owned Business

Aztech Environmental

TECHNOLOGIES

Periodic Review Report
for the
Baldwin Place Shopping Center
(now Somers Commons)

80 U.S. Route 6
Baldwin Place, Westchester County, New York

Covering the Time Period from
April 4, 2017 through April 4, 2018

NYSDEC Site No. 3-60-023

May 3, 2018

Prepared for:
NYSDEC – Central Office
625 Broadway
Albany, New York 12233-7020

REMEDIATION SOLUTIONS

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Engineering Controls – Standby Consultant/Contractor Certification Form

Site Details	Box 1	
Site No. 360023		
Site Name Baldwin Place Shopping Center (now Somers Commons)		
Site Address: 80 Route 6 Zip Code: 10505 City/Town: Baldwin Place County: Westchester Site Acreage: 28.0		
Reporting Period: April 04, 2017 to April 04, 2018		
	YES	**NO**
1. Is the information above correct? If NO, include handwritten above or on a separate sheet.	**X**	
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?		**X**
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		**X**
4. To your knowledge have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		**X**
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. To your knowledge is the site currently undergoing development?		**X**

	Box 2	
	YES	**NO**
6. Is the current site use consistent with the use(s) listed below? Restricted-Residential, Commercial, and Industrial	**X**	
7. Are all ICs/ECs in place and functioning as designed?	**X**	

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

_____
Signature of Standby Consultant/Contractor Date

Site No. 360023 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
4.20-1-11	U.B. Somers, Inc. c/o Urstadt Biddle Properties Inc., Greenwich, Ct.	Site Management Plan Monitoring Plan O & M Plan

A Long Term Monitoring and Operation and Maintenance Plan is in place.

4.20-1-11.6	U.B. Somers, Inc. c/o Urstadt Biddle Prop.	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O & M Plan IC/EC Plan

A deed restriction is in place for unit #6 that requires adherence to the Site Management Plan, including allowing access by the Department, and includes a prohibition for use of the property for residential purposes, use of groundwater without proper treatment and a provision to provide a periodic certification that states compliance with the institutional controls.

Description of Engineering Controls **Box 4**

Parcel	Engineering Control
4.20-1-11	Groundwater Treatment System

One groundwater pump and treat system (Plant 1) is currently in operation in the former source area to address residual contamination/shallow plume containment. Long term groundwater monitoring is required. Vapor monitoring is required in Unit 6 (Home Goods Store).

4.20-1-11.6	Groundwater Treatment System

Groundwater extraction system
Groundwater monitoring well system

Periodic Review Report (PRR) Certification Statements **Box 5**

2. I certify by checking "Yes" Below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and r by, the party making the certification, including data and material prepared by previous contra the certifying period, if any;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES	NO
X	

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

b) nothing has occurred that would impair the ability of such Control, to protect the public health and the environment;

c) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists;

YES	NO
X	

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor — Date

IC/EC CERTIFICATIONS

Box 6

Qualified Environmental Professional Signature

I certify that all information in Boxes 2 through 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Randolph H. Hoose at Aztech Technologies, Inc.
5 McCrea Hill Road
Ballston Spa, New York 12020

am certifying as a Qualified Environmental Professional.

Signature of Qualified Environmental Professional — 5-3-2018 Date

Enclosure 2
Institutional and Engineering Controls – Property Owner Survey

Site Details **Box 1**

Site No. 360023

Site Name Baldwin Place Shopping Center (now Somers Commons)

Site Address: 80 Route 6 Zip Code: 10505
City/Town: Baldwin Place
County: Westchester
Site Acreage: 28.0

Reporting Period: April 04, 2017 to April 04, 2018

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2, 3 or 4, include documentation with this form.		
5. Is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Restricted-Residential, Commercial, and Industrial	X	☐
7. Are all Institutional Controls (ICs) in place and functioning as designed?	X	☐

Signature of Property Owner — Date: 3/6/18

AVP - Environmental Manager

Property Owner Survey (continued)

SITE NO. 360023 — **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
4.20-1-11	UB SOMERS INC. (c/o Urstadt Biddle Properties, Inc.)	Site Management Plan Monitoring Plan O&M Plan

A Long Term Monitoring and Operation and Maintenance Plan is in place.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
4.20-1-11	Groundwater Treatment System

One groundwater pump and treat system (Plant 1)is currently in operation in the former source area to addre residual contamination/shallow plume containment. A monitoring well system is in place to perform long-term groundwater monitoring. Vapor monitoring is required in Unit 6 (Home Goods store).

Box 5

Periodic Review Report (PRR) Survey Statements

For each Institutional or Engineering control listed in Boxes 3 and/or 4, by checking "YES" below I believe all of the following statements to be true:

(a) the Institutional Control(s) and/or Engineering Control(s) employed at this site remain unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control; and

(d) if a Site Management Plan (SMP) exists, nothing has occurred that would constitute a violation or failure to comply with the SMP for this Control.

YES	NO
☒	☐

Signature of Property Owner — Date: 3/16/18

AVP - Environmental Manager

1.0 INTRODUCTION

This document is required as an element of the remedial program for the former Baldwin Place Mall, located at 80 U.S. Route 6 in the Town of Somers, Westchester County, New York (hereinafter referred to as the "Site"). The Site is managed under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). The Site, which is currently known as Somers Commons, is listed by the NYSDEC as a Class 4 Inactive Hazardous Waste Site (ID No. 3-60-023). Class 4 sites are sites that have been properly closed-out but require continued site management consisting of operation, maintenance and/or monitoring.

Several investigative and remedial activities have been conducted at the Site in accordance with the 1995 Record of Decision (ROD), which was executed on November 4, 1995. The Site currently operates a groundwater extraction and treatment (GWE&T) remedial system (Plant 1) that is located near the source area and, has operated for over 10 years. A second GWE&T remedial system (Plant 2) formerly operated at the site but, is no longer in service.

Plant 2 was the former water supply system for the mall. This water supply system was later extended to provide potable water to the Meadow Park Road residential area located southeast of the site. This area was disconnected from Plant 2 when the municipal water system became available in 2001. Plant 2 continued to operate as a groundwater extraction and treatment system after it was disconnected from the Meadow Park Road residential area. Plant 2 ceased operation in January, 2011 and has been recommended for decommissioning after a September, 2014 remedial system optimization (RSO) completed by MACTEC Engineering and Consulting, P.C. of Portland Maine (MACTEC).

The NYSDEC has established the periodic review process in order to determine if a site is being managed in accordance with the remedies established for that site in its governing documents. The governing document for completing this PRR is the January 27, 2016 Site Management Plan (SMP) prepared by MACTEC. All previous monitoring and reporting for the site was governed by the November, 1995 ROD and, the January, 2004 Plan for Routine Groundwater Monitoring for the Baldwin Place Mall (by Lawler, Matusky & Skelly Engineers, LLP). The November, 1995 ROD establishes the remedial goals for the site.

The periodic review report (PRR) seeks to evaluate site-specific inspection, monitoring, and other related data, that will help to assess whether the remedies (engineering and/or institutional controls) for the site are being implemented properly. In particular, the PRR seeks to evaluate pertinent site-related data and evaluate whether the remedies established for the site remain protective of human health and the environment.

Aztech was issued a callout in April, 2009 (callout no. 117995) in which NYSDEC requested that they operate and maintain the two (2) water treatment systems at the site (Plant 1 and Plant

2). This included regular influent and effluent sampling and, routine maintenance of the two (2) treatment plants. As previously indicated, the September, 2014 RSO by MACTEC recommended that Plant 2 be decommissioned. NYSDEC concurred with this recommendation. Plant 2 was not decommissioned during the time period covered by this PRR.

2.0 SITE BACKGROUND AND HISTORY

The Site is a 28 acre parcel (consisting of parcel Nos. 4.20-1-11.2 through 4.20-1-11.9) in a mixed residential/commercial area within the Town of Somers, Westchester County, New York (**Figure 1**). The Site was a mostly vacant shopping center until the early 2000's, when it was demolished to make way for the current shopping center (Somers Commons) located on the property. The property is bounded by U.S. Route 6 to the northwest, a bike path (a former railroad embankment) to the east and, an east-west trending section of Route 118 to the north.

The Site was used for agricultural purposes (as an orchard) prior to its development into the Baldwin Place Shopping Center in 1965. A dry cleaning business is known to have operated on the premises since 1967. This business came under scrutiny in 1979 as a result of a county-wide investigation, by the Westchester County Department of Health (WCDOH), of sites vulnerable to the dry cleaning solvent tetrachloroethene (PCE). During this investigation, WCDOH identified PCE in the water supply wells associated with the shopping center but, no evidence of disposal (or source) was found. Subsequent sampling by WCDOH in 1984 confirmed that PCE was present in the shopping center water supply at concentrations that were less than the 50 part per billion (ppb) guidance value for drinking water at that time. Big V Supermarkets acquired the shopping center in 1986.

Topographically, the Site is situated in a relatively high location with drainage toward the northwest and southeast. The eastern portion of the site drains to a south flowing stream that lies between the Site and the residential properties on Meadow Park Road. This is a tributary to the nearby Muscoot River. The western portion of the Site drains to a north-flowing stream that empties into two ponds northwest of the property and Lake Baldwin prior to its confluence with the Muscoot River. The Muscoot River flows south and empties into the Amawalk Reservoir, approximately 1.5 miles south of the Site.

2.1 Previous Investigations

During the county-wide investigations conducted by WCDOH in 1979 (and subsequent investigations conducted through 1989), the presence of PCE in groundwater was confirmed. The purpose of this sampling program initiated by WCDOH was to assess potential drinking water problems in areas where present and past dry cleaning establishments had been located. The program started by collection of numerous samples from private water supply wells throughout the county. The results of that effort identified impacts to the shopping center water supply. However, no evidence of disposal by the dry-cleaning establishment was found. Nevertheless, based on confirmation of historical groundwater quality data, NYSDEC concluded that the dry-cleaner was the most likely source of the impacts identified. As such, the Site was listed on the Registry of Inactive Hazardous Waste Sites in New York State as a Class 2 site with the groundwater impacts determined to be a significant threat to public health.

A groundwater investigation was conducted in May, 1989 and, a Water Supply and Treatment Alternatives Study was conducted later that year in October, 1989. A Remedial Investigation/Feasibility Study (RI/FS) was concluded in 1995 and led to issuance of a Record of Decision (ROD) for the Site. A site map depicting the Baldwin Place Shopping Center, prior to its raze and rebuild in the early 2000's, is presented as **Figure 2**.

2.1.1 Site Geology/Hydrogeology

The RI found that the Site and vicinity is underlain by glacial till, weathered bedrock, and bedrock. The till comprises the uppermost geologic and water bearing unit. The till is thin near the western/north-western site boundaries and thickens to the south-southeast. Below the glacial till is approximately 15 to 30 feet of weathered bedrock that grades from highly weathered to competent. The depth to competent bedrock ranges from 35 feet below grade (in the western part of the Site) to about 100 feet (in the east/southeastern part of the Site). The unweathered bedrock is characterized as biotite gneiss.

The weathered and unweathered bedrock is under "unconfined" conditions in the extreme western and northwestern portion of the Site. In this area, the overlying glacial till is thin and mostly unsaturated. The glacial till thickens and, becomes saturated throughout the main portion of the Site. The occurrence of shallow groundwater beneath the site generally ranges from 2.0 feet to 7.0 feet below grade. Regional groundwater flow in the off-site area to the northeast is generally in a southwesterly direction toward the Site. However, the historic presence of an apparent groundwater divide (trending in a south-southwesterly/north-northeasterly direction) beneath the southern portion of the Site diverts groundwater movement toward the south and southeast (in the area southeast of the divide) and, toward the northwest (in the area northwest of the divide). This divide historically persisted under pumping conditions relating to "Plant 2", the former water supply for the shopping center. Within the deeper bedrock zone, regional groundwater flow also indicates a groundwater divide under static conditions with flow components toward the southeast on the southeast side of the divide, and toward the west/northwest on the northwest side of the divide. Additionally, where saturated glacial till overlies weathered/unweathered bedrock, a downward vertical gradient is evident between these two units.

2.1.2 Source Area

The RI included a test boring program that was conducted within an alleyway area behind the dry cleaning establishment. The analytical results of the soil sampling associated with this effort identified a 15 foot by 15 foot area of elevated PCE concentration within the unsaturated zone above the water table (approximately 3.0 feet below grade at this location). The maximum depth of the PCE impacted soil extended to approximately 15 feet below grade. Groundwater sampling within this area identified PCE concentrations as high as 24,000 micrograms per liter (ug/l). As such, this area (shown on Figure 2) was determined to be the

source for the PCE concentrations identified in on-site and nearby off-site groundwater, and, within the water supply wells for the former shopping center.

2.1.3 Groundwater

The dry cleaning compound PCE and its related degradation by-products trichloroethene (TCE), and 1,2-dichloroethene (DCE) are the compounds of concern (COCs) associated with the site. Groundwater within the source area has historically contained PCE concentrations as high as 24,000 ug/l. The location of the source area in relation to the aforementioned groundwater divide has caused site related compounds to migrate toward the southeast and, to the west. Historic PCE concentrations identified in on-site groundwater outside of the source area have been detected as high as 910 ug/l and, TCE and DCE have been identified as high as 190 ug/l and 61 ug/l, respectively.

Toward the southeast, where a strong downward vertical component of groundwater flow is present, the lateral distribution of site related compounds is limited. This is because groundwater flow is preferentially in a downward direction, ultimately recharging the underlying weathered and unweathered bedrock. Movement of site–related compounds within the weathered and unweathered bedrock has migrated toward an off-site residential area to the southeast. This area, which is approximately 1,200 feet from the source area, is known as the Meadow Park Road Area.

Toward the west and northwest, the downward vertical gradient between the glacial till and weathered bedrock/unweathered bedrock is not as strong. As such, the weaker vertical gradient allows impacted groundwater to move farther laterally, while also moving deeper vertically into the weathered/unweathered bedrock. This area, which is also approximately 1,200 feet from the source area, is a mixed commercial and residential area known as the Route 6 Area.

2.1.3.1 Former Water Supply Wells – Meadow Park Road Area

The Meadow Park Road Area is located southeast of the Site and extends as far as the southernmost intersection between Meadow Park Road and Tomahawk Street (Route 118). Several former water supply wells in this area have had detections of site-related VOCs (PCE, TCE and/or DCE) in excess of NYSDEC standards/guidance values for class GA groundwater as defined by NYSDEC in their Technical and Operational Guidance Series Memorandum (TOGS 1.1.1) of June, 1998. Seven (7) of these residential water supplies (when they were active) were equipped with point of entry treatment (POET) systems. Residences in this area are now connected to the regional municipal water system.

2.1.3.2 Water Supply Wells – Route 6 Area

The Route 6 Area is located west and northwest of the Site and extends as far to the west as Mahopac Avenue. Several former commercial and residential water supply wells in this area

historically had detections of site-related VOCs (PCE, TCE and/or DCE), as well as MtBE (methyl tertiary butyl ether) from a nearby gasoline release, in excess of the standards/guidance values established by NYSDEC (TOGS 1.1.1). These commercial and residential water supplies were temporarily equipped with POET systems. The regional municipal water system now supplies these locations.

2.2 Record of Decision and Remedial Actions

Big V Supermarkets entered into an Order on Consent with NYSDEC in September, 1991 where they either installed new POET systems or, assumed maintenance and operation of existing POET systems for the water supplies of commercial and/or residential properties impacted with site-related VOCs. This was part of an Interim Remedial Measure undertaken prior to issuance of the November, 1995 Record of Decision (ROD).

2.2.1 Record of Decision

The Groundwater Investigation and Water Supply and Treatment Alternatives Studies conducted in 1989 and, the RI/FS concluded in 1994 led to issuance of the ROD in November, 1995. The goals of the ROD were to:

- Prevent exposure (via inhalation, ingestion, and dermal contact) to soils containing unacceptable levels of PCE and its breakdown products;
- Prevent continued degradation of groundwater quality through migration of PCE and its breakdown products from impacted soil to groundwater;
- Prevent exposure (via inhalation, ingestion, and dermal contact) to groundwater impacted with unacceptable concentrations of PCE and its breakdown products;
- Restore groundwater quality (impacted by PCE and its breakdown products) to acceptable concentrations within a reasonable time frame; and,
- Prevent migration and discharge of site-related VOCs in groundwater to adjacent surface water bodies.

Therefore, the following elements were included in the ROD in order to satisfy its goals:

- Source removal via excavation of source area soil;
- Supply potable water to 19 residences on Meadow Park Road. This was accomplished by developing a new water district that derived its water supply via the two (2) water supply wells associated with the former shopping center and treating that water via granular activated carbon (GAC) prior to distribution to the 19 residences. That water supply would later become known as “Plant 2”;
- Maintain POET systems along US Route 6. This would be accomplished by continuing maintenance and operation of individual POET systems installed on commercial and/or residential properties located along US Route 6. Use of these POET systems would continue until groundwater quality is restored to drinking water standards or, an alternate source of water supply became available. Additionally, any future wells along

Route 6 that became impacted by site-related VOCs in excess of drinking water standards would be equipped with a POET system;

- Connection to alternate water supply. Each of the residences and/or commercial establishments equipped with POET systems would be connected to the regional municipal system when it became available; and,
- Groundwater treatment in the source area. A groundwater pump and treat system (Plant-1) would be installed in proximity to the source area in order to capture vertical and horizontal flow from within and around the source area as well as to capture vertical leakage from the glacial till into the bedrock. Groundwater captured via this system would be treated via a separate treatment system and, be discharged to a nearby stream.

2.2.2 Remedial Actions

Big V Supermarkets assumed responsibility for implementing remedial actions required by the ROD until August 6, 2003, when liquidation of their assets under a bankruptcy proceeding terminated their funding of remedial efforts. NYSDEC has assumed direct responsibility for the continued implementation of the ROD since that time.

Source Removal

The source removal excavation was conducted in February 1997 and involved excavation of shallow soil from above the footers of the former building foundation and installation of sheet piling to form the walls of the remainder of the excavation. Altogether, approximately 135 cubic yards of source area soil (236 tons) was removed. This former source area is currently presented as a lawn area on the north side of the Home Goods store (Building #6) and is shown on the current site map for the Somers Commons shopping center (**Figure 3**).

Potable Water Supply - Meadow Park Road

The community water supply system for the Meadow Park Road residences was constructed in 1998 and started up during February 1999. This system delivered treated water obtained via the shopping center water supply to 17 of the 19 residences located on Meadow Park Road. These 17 residences in the Meadow Park Road Area were connected to the regional municipal water system when it became available in November, 2001. As such, the connection between the Site's former water supply and Meadow Park Road was terminated. The Sites former water supply wells continued operation as a groundwater pump and treat system (Plant 2) until 2011 when operation of Plant 2 was suspended. Plant 2 has been recommended for decommissioning in an RSO completed by MACTEC and has not operated during the time period covered by this PRR.

Maintain POET Systems along US Route 6 and Connection to Alternate Water Supply

POET systems at the residential and/or commercial properties on US Route 6 and Mahopac Avenue were maintained until they were connected to the municipal system.

2.3 Engineering/Institutional Controls

Institutional Controls (ICs) were established via a deed restriction in order to ensure continued operation of the Engineering Controls (ECs) associated with the site, to control use and development of the site and, to restrict the future use of groundwater. The ECs for the site historically have included operation and maintenance of POET systems on residential and commercial water supply wells and/or development of a new water district (using the supply wells for the shopping center) until the regional municipal system became available in the area. Currently, the ECs for the site include groundwater extraction and treatment via a GWE&T system (Plant 1), the network of groundwater monitoring wells and, soil vapor intrusion monitoring points.

2.3.1 Institutional Controls

Under the terms of the deed restriction, the property owner (or agents) is obligated to the following:

- The property owner will not allow construction, use, or occupancy of the Property that results in disturbance or excavation of the Property (resulting in unacceptable human exposure to impacted soils or threatening the integrity of the ECs) unless prior written approval by the NYSDEC is first obtained.
- The property owner will require that the potential for soil vapor intrusion be evaluated prior to construction of buildings within the area encompassed by the IC. The site owner will ensure that any adverse impacts identified via that evaluation will be monitored and/or mitigated.
- The property owner will not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of any ECs unless in each instance the owner first obtains a written waiver of such prohibition from the NYSDEC.
- The property owner will provide agents, employees or other representatives of NYSDEC, access to the site in order to verify compliance with the Deed Restriction and to perform operation, monitoring and maintenance of the ECs. NYSDEC will provide reasonable prior notice to the property owner.
- The property owner will prohibit the Property from ever being used for purposes other than those specified in the Deed Restriction without first obtaining a written waiver of such prohibition from the NYSDEC.
- The property owner will prohibit the use of the groundwater underlying the Property, without prior treatment to render it safe for human consumption (or industrial purposes), unless the user first obtains permission to do so from the NYSDEC.
- The property owner will provide a periodic certification (on request) to the NYSDEC that will verify that the ICs put in place are unchanged from the previous certification; that the owner has complied with the provisions of the Deed Restriction (including compliance with the SMP); that there has been no change in use of the property (unless the NYSDEC has been properly notified), and; that the ECs have not been impaired.

- The property owner will maintain the ICs required for continuing the remedy to be in full force and effect unless permission is first obtained from the NYSDEC to discontinue such ICs.

Under the terms of the deed restriction, the NYSDEC (or, its agent) is obligated to the following:

- All ECs must be operated and maintained as specified in the SMP;
- All ECs must be inspected at a frequency and in a manner specified in the SMP;
- Groundwater and other environmental or public health monitoring must be performed as specified in the SMP;
- Data and information collected under the authority of the SMP must be reported at a frequency (and in a manner) consistent with the SMP;
- Monitoring to evaluate the performance and effectiveness of the remedy must be performed as specified in the SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as specified in the SMP.

2.3.2 Engineering Controls

The ECs for the site include the GWE&T system (Plant 1), groundwater monitoring (via various monitoring wells, former off-site water supply wells and current water supply wells) and soil vapor intrusion (SVI) monitoring of Building 6 (the Home Goods store) associated with the Somers Commons shopping center.

2.3.2.1 Groundwater Extraction and Treatment (Plant 1)

Groundwater extraction and treatment at the site has historically been via two (2) separate remedial systems. Plant 1 is located in proximity to the former source area and its purpose is to capture groundwater that becomes impacted with site related compounds via residual source area soil. Plant 2 historically has treated impacted groundwater captured by the water supply wells for the former shopping center. However, Plant 2 was recommended for decommissioning in a recent RSO prepared by MACTEC. As such, Plant 2 has not been included in the January 2016 SMP for the site.

Plant 1 extracts groundwater via one (1) shallow well (RW-1S), which is completed within the shallow portion of the glacial till overburden, and one (1) deeper well (RW-2D) which is completed within the bedrock. The purpose of these pumping wells is to extract impacted groundwater before it can migrate off-site. These wells are completed at depths of 49-feet and 83-feet below grade, respectively.

Both of the 4.0-inch inside diameter (ID) wells are equipped with electric submersible pumps that convey groundwater from the subsurface to the Plant 1 treatment building. The design flow rate for the wells is approximately a ½ gallon per minute (gpm) from well RW-1S and 3.0

gpm from well RW-2D. Each well is equipped with a totalizing flow meter. Water conveyed to Plant 1 is sequentially filtered via 50 micron and 5 micron bag filters to remove particulate then passed through two (2) large fiberglass carbon adsorption units (connected in series) that each contain 700 pounds of granular activated carbon (GAC). After filtration, discharge is to an unnamed tributary on the east side of the Site that eventually discharges to the Muscoot River.

The March, 1998 Operation and Maintenance Manual for the Baldwin Place Mall Plant 1 Groundwater Pump & Treat System (prepared by Lawler, Matusky & Skelly Engineers, LLP) provides details regarding operation and maintenance procedures to be employed for this treatment facility.

2.3.2.2 Groundwater Monitoring

Various groundwater sources have historically been monitored under the 1995 ROD and January, 2004 Monitoring Plan prepared by Lawler, Matusky & Skelly Engineers, LLP of Pearl River, New York. Currently, the January 27, 2016 SMP prepared for NYSDEC by MACTEC is the governing document that directs all groundwater monitoring at the site. These include:

- On-site groundwater monitoring wells;
- Remedial pumping wells and;
- Meadow Park Road monitoring wells

On-Site Groundwater

The January, 2016 SMP for the site calls for sampling of 10 on-site monitoring wells (MW-4S, MW-4D, MW-5S, MW-7S, MW-7D, MW-8S, MW-9S, MW-9D, MW-12S and MW-101M) every five quarters (5/4 sampling). Wells MW-4S and MW-4D are located near the northern entrance of the shopping center north of Building 5. Wells MW-5S, MW-12S, and MW-101M are located in proximity to the former source area adjacent to the north side of Building 6, while wells MW-7S and MW-7D are located in the paved parking area west of Building 6. Well MW-8S is located near the northeast entrance of the shopping center. Wells MW-9S and MW-9D are located in the paved area adjacent to Building 2 on the west side of the shopping center.

Under this sampling schedule, purge water from wells MW-4S, MW-4D, MW-8S and MW-9D is to be directed to adjacent grassy areas whereas purge water from all of the other on-site wells is to be treated via Plant 1 prior to discharge. Groundwater samples are to be analyzed for the full list of VOCs via USEPA analytical method 8260.

Remedial Pumping Wells – Plant 1

The January, 2016 SMP calls for quarterly sampling of remedial wells RW-1S and RW-2D with analysis for the full list of VOCs via EPA analytical method 8260.

Meadow Park Road Monitoring Wells

The January, 2016 SMP specifies four (4) off-site monitoring wells located in the residential area

southeast of the Site on Meadow Park Road to be sampled on a 5/4 frequency. Analysis is for the full list of VOCs via EPA analytical method 8260.

Purge water associated with sampling at these locations is to be treated via Plant 1 prior to disposal in accordance with the SMP. These wells were originally used as water supplies for residences that have since been connected to the municipal water system. The wells range in depth from 190 feet below grade to 245 feet below grade and, are located at the following residences:

- #6 Meadow Park Road (Sorensen Residence);
- #12 Meadow Park Road (Mathews Residence);
- #13 Meadow Park Road (Pepi Residence), and;
- #21 Meadow Park Road (Hale Residence).

2.3.2.3 Soil Vapor Intrusion Monitoring

The January, 2016 SMP requires sampling of sub-slab vapor and indoor air associated with the Home Goods store (Building 6) once every three (3) years during the heating season. SVI samples are via two (2) sub-slab and two (2) indoor air sample locations and, also, include a concurrent outdoor ambient air sample. Analysis of these samples is for the full list of VOCs via method TO-15.

3.0 REMEDY COMPLIANCE, PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

The Site is located at 80 US Route 6 in the Town of Somers, Westchester County, New York. The site is currently known as the Somers Commons Shopping Plaza and consists of approximately 28 acres (Town of Somers Tax Parcel 4.20-1-11) in postal zone 10589. The property is owned by UB Somers, Inc. of Greenwich, Connecticut. A conversation with the Town of Somers Building Department on April 12, 2018 indicates that the only building permits issued for the site during the reporting period herein (April 4, 2017 through April 4, 2018) were for internal remodeling only; no earth-breaking construction activities have taken place on the site. Additionally, the property on which the site is situated was not sold, subdivided, merged nor did it undergo a tax map amendment. The site was not issued any federal, state, and/or other local permits.

The monitoring program for the site during the time period reported herein is governed by the January, 2016 SMP. The sampling required by the monitoring program specified in that document is summarized in **Table 1** below. Additional GWE&T system monitoring required by the SMP that is not shown on Table 1 includes recording the flow rates and liquid levels from both extraction wells (RW-1S & RW-2D) and pressure differential across the bag filter unit and carbon vessels every two (2) weeks. Depth to water measurements are also required every five (5) quarters from selected monitoring wells that are not included in the groundwater monitoring for the site.

Table 1
January 2016 SMP Monitoring Program

	Frequency*	Matrix	Analysis
GWE&T – Plant 1	Quarterly	Groundwater (Mid-Carbon & Effluent)	VOCs (Full List) via 8260
Remedial Pumping Wells	Quarterly	Groundwater (RW-1S & RW-2D)	VOCs (Full List) via 8260
On-Site Groundwater	5/4	Groundwater (MW-4S, MW-4D, MW-5S, MW-7S, MW-7D, MW-8S, MW-9S, MW-9D, MW-12S and MW-101M	VOCs (Full List) via 8260
Meadow Park Road Monitoring Wells	5/4	Groundwater • #6 MPR (Sorensen); • #12 MPR (Matthews); • #13 MPR (Pepi); • #21 MPR (Hale)	VOCs (Full List) via 8260
Soil Vapor Intrusion	Every 3 Years	Soil Vapor/Air (Sub-Slab Vapor, Indoor Air, Outdoor Air – Home Goods @ Building #6)	VOCs (Full List) via TO-15

Notes:
* The frequency of events will be conducted as specified until otherwise approved by NYSDEC.
Depth to water measurements are also required every five (5) quarters via wells MW-2S, MW-2D, MW-3D, MW-3DD, MW-7MI, MW-7M2, MW-10D, MW-12SI, MW-12M & MW-101D).

This PRR will evaluate each component of the monitoring program as directed by the January 2016 SMP (outlined above in Table 1) in terms of its compliance, performance and, effectiveness and protectiveness with respect to the goals of the ROD. This is because that document now governs site management during the time period reported herein.

3.1 Groundwater Extraction and Treatment System – Plant 1

One of the goals of the ROD is to prevent continued degradation of groundwater quality through transfer of PCE and its breakdown products from impacted soil to groundwater. This was partially accomplished via a limited excavation of source area soil. Subsequent to completing the source area excavation, Plant 1 was installed in order to capture vertical and horizontal flow from within and around the source area as well as to capture vertical leakage from the glacial till before it enters the bedrock.

3.1.1 Compliance

The monitoring schedule for Plant 1 during the time period reported herein includes bi-weekly operation and maintenance (O&M) visits to check its operation and, to perform routine maintenance tasks (such as changing filters, making minor adjustments, etc.) as necessary. The SMP indicates that these site visits should occur every two (2) weeks at a minimum. Additionally, the SMP requires that samples of the "mid-carbon" and "effluent" from Plant-1 be collected on a quarterly basis in order to ensure that the treated groundwater discharged by the system meets the quality standards established for the site.

Sampling conducted throughout the monitoring period reported in this PRR, from April 4, 2017 to April 4, 2018 has consistently indicated that effluent from Plant 1 is below the laboratory reporting limit of 1.0 microgram per liter (ug/l). As such, the analytical results of the system effluent samples indicate that the discharge from Plant 1 is in compliance with the quality standards established for the site and, that the operation of Plant 1 is in compliance with the goals of the ROD.

3.1.2 Performance

Monthly (rather than bi-weekly) site visits have been conducted during the period between April 4, 2017 and April 4, 2018. These monthly site visits include monitoring of the flow rate and water levels in extraction wells RW-1S and RW-2D as well as pressure differential across the bag filter units and carbon vessels. Visual inspection of the remedial system shed & components, condition/cleanliness of the shed and surrounding area, routine maintenance and, sampling of the system are also conducted as-needed.

Operational data collected from the system (which is included in the attached summary table) indicates that the higher frequency of site visits recommended by the SMP are un-necessary. The operational data collected during the monthly site visits indicates that the GWE&T system has collectively removed and treated 66,353 gallons of impacted groundwater via wells RW-1S and RW-2D from the overburden and bedrock beneath the site during the time period reported herein.

3.1.3 Effectiveness and Protectiveness

An evaluation of the analytical results obtained via system effluent samples collected from Plant 1 during the period between April 4, 2017 and April 4, 2018 indicates that concentrations

of VOCs were below the analytical laboratory reporting limit (1.0 ug/l). As such, the laboratory analytical results indicate that the treatment and discharge of groundwater captured by Plant 1 is effective and protective of human health and the environment. This is because the GAC treatment is effectively removing site-related VOCs present in the groundwater extracted via wells RW-1S and RW-2D prior to its discharge into the unnamed stream adjacent to the eastern side of the Site.

3.2 On-Site Groundwater and Remedial Pumping Wells

The on-site groundwater monitoring program (as directed by the 2016 SMP) includes quarterly sampling from remedial pumping wells RW-1S and RW-2D. Monitoring wells MW-4S, MW-4D, MW-5S, MW-7S, MW-7D, MW-8S, MW-9S, MW-9D, MW-12S and MW-101M are sampled every five (5) quarters (5/4 sampling).

3.2.1 Compliance

During the time period reported herein, the routine 5/4 sampling of on-site monitoring wells was conducted on November 21, 2017. **Table 2** below summarizes the on-site groundwater sampling events conducted during the time period reported herein.

Table 2
Summary of Sampling Events: April 4, 2017 – April 4, 2018
On-Site Monitoring Wells

Sampling Frequency*	Well ID	Number of Sampling Events+	Sampling Dates
Quarterly	RW-1S	13	4-6; 5-4; 6-17; 7-5; 8-9; 9-5; 10-6; 11-16; 12-6; 1-8; 2-7; 3-1 & 4-4
	RW-2D	5	4-6; 8-9; 9-5; 10-6 & 11-16
Every 15 Months (5/4 Sampling)	MW-4S	1	11-21
	MW-4D	1	11-21
	MW-5S	1	11-21
	MW-7S	1	11-21
	MW-7D	1	11-21
	MW-8S	1	11-21
	MW-9S	1	11-21
	MW-9D	1	11-21
	MW-12S	1	11-21
	MW-101M	1	11-21

Note:
* Sampling frequency as directed by the January, 2016 SMP
+ Number of sampling events conducted between April, 2017 and April, 2018

3.2.2 Performance

During the November 21, 2017 groundwater sampling event, all 10 of the on-site monitoring wells that are specified in the 2016 SMP were sampled. Grab-samples of the groundwater extracted from wells RW-1S and RW-2D were collected during the November 16, 2017 monthly site visit.

During the sampling events, depth to water (DTW) measurements are required from each of the 10 wells designated for sampling in the 2016 SMP. DTW measurements from un-sampled on-site monitoring wells (MW-2S, MW-2D, MW-3D, MW-3DD, MW-7M1, MW-7M2, MW-10D, MW-12S1, MW-12M, & MW-101D) are also to be collected at that time. However, DTW measurements from the un-sampled on-site monitoring wells were not obtained during the November 21, 2017 sampling event.

The DTW measurements collected during the November 21, 2017 event were used in conjunction with top of well casing elevations in order to determine the groundwater elevation for each well. Based on their completion depth and specifications, groundwater elevations for wells completed in the shallow zone (MW-4S, MW-5S, MW-7S, MW-8S, MW-9S & MW-12S) and deep zone (MW-2D, MW-4D, MW-7D, MW-9D and MW-101M) were established and used to prepare the groundwater contour maps presented in **Figure 4A** and **Figure 4B** for the shallow and deep zones, respectively.

The groundwater elevations established for the November 21, 2017 sampling event represent static conditions. This is because the GWE&T system had become inoperative during the days preceding the sampling event. As shown on Figure 4A, the overall direction of groundwater flow within the shallow zone under static conditions is generally toward the southwest and west. Likewise, within the deep (i.e. bedrock) zone (Figure 4B), groundwater flow beneath most of the shopping center is generally toward the southwest and west under static conditions. The groundwater elevations associated with the November 21, 2017 sampling event are presented in **Table 3**.

Table 3
Groundwater Elevations – November 21, 2017

Well ID	Zone	TOC Elevation	DTW	GW Elevation
MW-4S	Shallow	611.64	7.35	604.29
MW-5S	Shallow	605.47	8.03	597.44
MW-7S	Shallow	602.23	12.05	590.18
MW-8S	Shallow	618.02	6.20	611.82
MW-9S	Shallow	595.99	8.86	587.13
MW-12S	Shallow	606.35	11.34	595.01
MW-101M	Shallow	603.43	9.71	593.72
MW-2D	Deep	603.41	13.84	589.57
MW-4D	Deep	611.84	11.12	600.72
MW-7D	Deep	602.31	9.90	592.41
MW-9D	Deep	595.68	8.72	586.96

Notes:
TOC elevations from January, 2016 SMP
NM = Not Measured

After completing the depth to water measurements, Aztech commenced with sampling by purging three (3) volumes of standing water from each well using dedicated, disposable bailers.

Each well was allowed to recover subsequent to purging. Groundwater samples were collected by transferring the groundwater from the dedicated bailers into appropriately preserved laboratory supplied containers and stored on ice. Samples were subsequently delivered to Adirondack Environmental Services, Inc., where they were analyzed for the full list of VOCs via EPA analytical method 601. Analytical method 601 was employed for the VOC analysis at the direction of NYSDEC in lieu of method 8260, which is the analytical method specified by the January 2016 SMP.

The analytical results indicate that detectable concentrations of site-related VOCs were identified in seven (7) of the twelve (12) wells sampled. This includes wells RW-1S and RW-2D (sampled during the system inspection on November 16, 2017) and wells MW-5S, MW-7S, MW-9S, MW-12S and MW-101M (sampled on November 21, 2017). PCE was the compound identified in the highest concentration (up to 3,200 ug/l). Lower concentrations of TCE (31 ug/l or less) were identified in four (4) wells and the isomers of DCE were also identified in five (5) wells at concentrations ranging between 2.1 ug/l (MW-9S) and 1,100 ug/l (RW-2D) when detected. PCE, TCE and/or DCE concentrations were in excess of the 5.0 ug/l standard for Class GA groundwater in seven (7) of the 12 wells sampled. This includes recovery wells RW-1S and RW-2D, and monitoring wells MW-5S, MW-7S, MW-9S, MW-12S, and MW-101M. A summary of the groundwater analytical results for the November 21, 2017 sampling event is presented below in **Table 4**.

Table 4
Summary of Groundwater Analytical Results
November 21, 2017

Well ID	Zone	PCE	TCE	DCE	Total VOCs
	GW Standard	5.0	5.0	5.0	
Wells included in January, 2016 SMP:					
RW-1S*	Shallow	**2,400**	**31**	**34**	2,491
MW-4S	Shallow	-	-	-	-
MW-5S	Shallow	**14**	1.9	4.5	20
MW-7S	Shallow	**9.6**	-	-	9.6
MW-8S	Shallow	-	-	-	-
MW-9S	Shallow	**18**	3.3	2.1	23
MW-12S	Shallow	**3,200**	**-**	**-**	3,200
MW-101M	Shallow	1.4	1.6	**15**	18
RW-2D*	Deep	**810**	**-**	**1,100**	1,974
MW-4D	Deep	-	-	-	-
MW-7D	Deep	-	**-**	-	-
MW-9D	Deep	-	-	-	-

NOTES:
Concentrations in micrograms per liter (ug/l)
Groundwater Standard from NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1
* Recovery well samples RW-1S & RW-2D collected November 16, 2017
\- Indicates that compound was not detected
Concentrations in **Bold** exceed Groundwater Standard (TOGS 1.1.1)

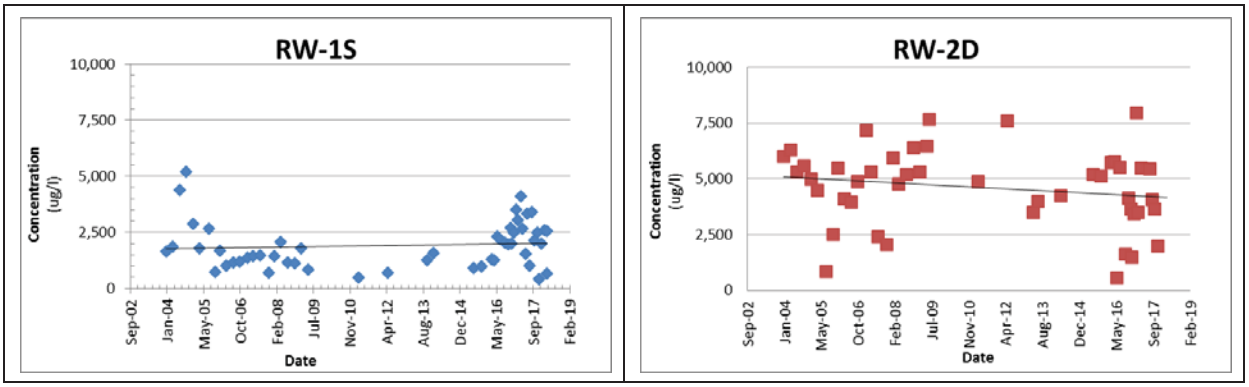
PCE =Tetrachloroethene
TCE = Trichloroethene
DCE = Dichloroethene

The distribution of PCE, TCE and isomers of DCE within both the shallow and deep zones during the November 21, 2017 sampling event is shown in **Figure 5A** and **Figure 5B**, respectively.

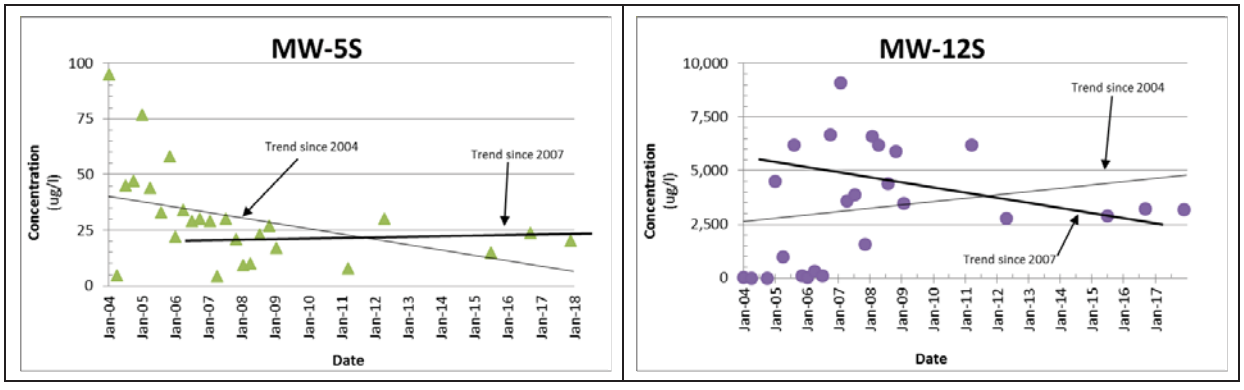
3.2.3 Effectiveness and Protectiveness

The goal of the November, 1995 ROD is to establish a remedial approach for the site that is protective of human health and the environment. Ultimately, the goal for the groundwater at the site would be for groundwater quality to satisfy the standards, criteria and guidance for Class GA groundwater as defined by NYSDEC (TOGS 1.1.1).

A review of the groundwater analytical results obtained from sampling events conducted since 2004 indicates that, in general, total VOC concentrations in well RW-1S have generally stabilized (or, are following a slightly increasing trend) whereas total VOC concentrations in well RW-2D are following an overall declining trend. These trends are shown in the charts below for the active groundwater extraction wells RW-1S and RW-2D. Both of these wells are located in proximity to the former source area.



It is also interesting to observe the total VOC trends noted in wells MW-5S and MW-12S (shown in the charts below). Total VOC trends in groundwater samples obtained from well MW-5S since 2004 are following a similar trend as that of well RW-2D. That is, total VOC concentrations are generally declining. However, evaluation of the groundwater analytical data collected over the past 10 years suggests a slightly increasing trend over that time period. Conversely, total VOC concentrations in groundwater samples collected since 2004 from well MW-12S are following a generally increasing trend. However, total VOC concentrations in well MW-12S over the past 10 years are following a distinctly declining trend.



Based on the declines noted in wells RW-1S, RW-2D and MW-5S since 2004 and, the trend noted in well MW-12S since 2007, it appears that the concentrations of the VOCs identified in groundwater are continuing to slowly trend toward the remedial goals for the site while fluctuating within the historic range for each monitoring well. However, the slightly increasing trend in well RW-1S (dating back to 2004) and MW-5S (since 2007) is notable. Additionally, the most recent groundwater analytical results indicate concentrations of PCE, TCE and/or DCE in groundwater samples from seven (7) on-site wells that are currently in excess of the standards, criteria and guidance for Class GA groundwater (TOGS 1.1.1).

3.3 Meadow Park Road Monitoring Wells

The Meadow Park Road (MPR) monitoring wells include four (4) former residential water supply wells that are no longer used for water supply purposes. This is because these residences have been connected into the municipal water system. The completion depths for these former water supply wells are summarized in **Table 5** below.

Table 5
Meadow Park Road Monitoring Well Specifications

Well ID	Total Depth
# 6 MPR (Sorensen)	190
# 12 MPR (Matthews)	205
# 13 (Pepi)	245
# 21 (Hale)	220

Notes:
Depths given in feet
Wells are 6.0" diameter former residential water supply wells. MPR = Meadow Park Road

3.3.1 Compliance

As indicated previously (Table 1), the MPR monitoring wells are scheduled for sampling on a 5/4 frequency in the January 2016 SMP. These wells were not sampled during the time period reported herein. As such, monitoring of the MPR monitoring wells is not in compliance with the monitoring schedule specified in the SMP.

3.3.2 Performance

The most recent groundwater monitoring event for the Meadow Park Road monitoring wells was conducted in July, 2008. A review of the analytical results for that sampling event indicates that concentrations of VOCs are not detected in three (3) of the four (4) locations sampled. At one location (# 13 Meadow Park Road), PCE was identified at a concentration of 6.1 ug/l. This concentration is in excess of the 5.0 ug/l standard for Class GA groundwater (TOGS 1.1.1). No sampling events involving the MPR monitoring wells were conducted during the time period covered by this PRR.

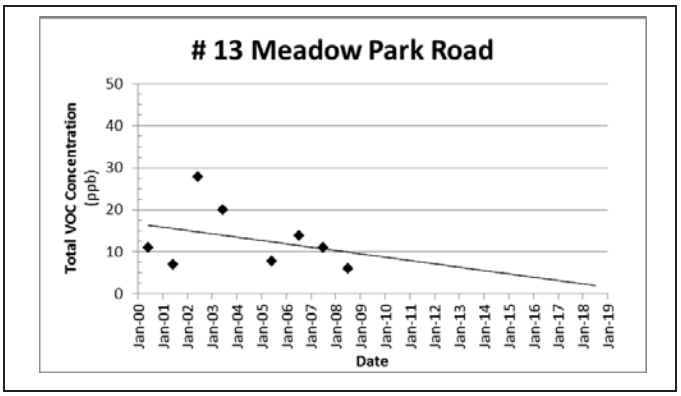
3.3.3 Effectiveness and Protectiveness

The goal of the November, 1995 ROD is to establish a remedial approach for the site that is protective of human health and the environment. Ultimately, the goal for the groundwater at

the site would be for groundwater quality to satisfy the standards, criteria and guidance for Class GA groundwater as defined by NYSDEC (TOGS 1.1.1).

A review of the groundwater analytical results obtained from the previous sampling events that have included the MPR monitoring wells since June, 2000 indicates that concentrations of site-related VOCs in three (3) of the four (4) MPR Monitoring wells have not exceeded their respective standards established by NYSDEC for Class GA groundwater (TOGS 1.1.1) since June, 2001. As such, it is unlikely that site related VOCs would have been identified at concentrations in excess of the groundwater standards if these wells had been sampled.

PCE concentrations in the former water supply well at 13 Meadow Park Road have typically been in excess of the NYSDEC standard (5.0 ug/l). The chart below demonstrates the declining trend in total VOC concentration at this location during the sampling events conducted between June, 2000 and July, 2008. Extension of this trend suggests that the concentration anticipated for a sample collected in November, 2017 would have been below the 5.0 ug/l standard.



Based on the fact that total VOC concentrations in three (3) of the four (4) MPR monitoring wells have been below NYSDEC standards for class GA groundwater since June, 2001 and, the noted declines in the former water supply well located at 13 Meadow Park Road, the concentrations of the VOCs identified in off-site groundwater are trending toward the remedial goals for the site.

3.4 Additional Sampling - Private Water Supply Well at 264 Mahopac Avenue

The 1995 ROD for the site established eventual connection of all residential and/or commercial users in proximity to the site on Mahopac Avenue, US Route 6, County Line Drive and Meadow Park Road to the municipal water supply once it became available in the area. One residence, located at 264 Mahopac Avenue, has elected to remain disconnected from the municipal system (which is now available to this location). The January 2016 SMP does not include this location in the monitoring plan for the site.

A review of the historic groundwater analytical results obtained from more than 50 sampling events (dating back to March, 2000) from this location indicate that PCE concentrations, when

detected, had ranged from a low concentration of 0.5 ug/l to a high concentration of 1.8 ug/l. Historically, PCE has been "not detected" in more than 45 of these previous sampling events. NYSDEC requested that a sample be collected from the water supply well at this location during the September 5, 2017 monthly site visit for Plant-1. The purpose of this sampling event was to evaluate the current groundwater quality in this well and compare the analytical results with the historic analytical results for this location. The results for the September 5, 2017 sample indicate that all compounds included in the analysis, which was via analytical method 524.2, were below the laboratory reporting limit of 0.5 ug/l. No further testing was conducted for the well at 264 Mahopac Avenue during the time period reported herein.

3.5 Soil Vapor Intrusion Monitoring

The January 2016 SMP for the site establishes a frequency of every three (3) years for conducting SVI monitoring. This includes sampling of sub-slab vapor, indoor air and outdoor air associated with the "Home Goods" store (Building 6) of Sommers Commons. This location is adjacent to (and south of) the former source area.

3.5.1 Compliance

The SVI monitoring program directs that the SVI sampling will be conducted during the heating season via two (2) sub-slab locations (SS-03 & SS-04), two (2) corresponding indoor air locations (IA-03 & IA-04) and, one (1) outdoor air location (OA-01). The SVI sampling locations for the sub-slab and indoor air samples are within Building 6 of the shopping center at the "Home Goods" store (see Figure 3); the outdoor air sample is collected from within the fenced compound associated with Plant 1.

SVI monitoring was conducted on February 7, 2018. As such, the site is in compliance with the SVI monitoring schedule for the time period reported herein.

3.5.2 Performance

The February 7, 2018 sub-slab samples were collected from two (2) previously installed sub-slab sampling points (SS-03 & SS-04). Sample SS-03 is located in the hallway leading to the rest rooms in the northeast corner of the Home Goods store. This location is due south of the former source area. Sample SS-04 is within the storage room of the Home Goods store at a location that is positioned approximately midway (and adjacent to) the eastern wall of Building 6. Corresponding indoor air samples (IA-03 and IA-04, respectively) were also collected at each location. An outdoor air sample (OA-1) was also collected from within the fenced area associated with Plant 1.

The samples were collected via 6.0-liter summa canisters over an approximate 7.0-hour duration and shipped to Test Americas' Knoxville, Tennessee laboratory where they were analyzed via analytical method TO-15 for the full list of VOCs. The analytical results of that sampling event are summarized and presented below in **Table 6**.

Table 6
Summary of Soil Vapor Intrusion Monitoring
February 7, 2018

Compound	Home Goods - Hallway		Home Goods – Storage Room		Outdoor Air	Matrix
	SS-03 (sub-slab)	IA-03 (Indoor Air)	SS-04 (sub-slab)	IA-04 (Indoor Air)	OA-1	
TCE	6.2	ND	1.5	ND	ND	Matrix A/NFA
cis-1,2 DCE	2.8	ND	ND	ND	ND	Matrix A/NFA
1,1-DCE	ND	ND	ND	ND	ND	Matrix A/NFA
Carbon Tet	ND	ND	ND	0.51	0.5	Matrix A/NFA
PCE	290	13	190	6.7	120	Matrix B/Mitigate
1,1,1-TCA	ND	ND	ND	ND	ND	Matrix B/NFA
Meth Cl	ND	3.2	ND	5.6	1.1	Matrix B/NFA
VC	ND	ND	ND	ND	ND	Matrix C/NFA

NOTES:
Concentrations in micrograms per cubic meter (ug/m^3)
TCE = Trichloroethene
DCE = Dichloroethene
Carbon Tet = Carbon Tetrachloride
NFA = No Further Acton
PCE = Tetrachloroethene
TCA = Trichloroethane
Meth Cl = Methylene Chloride
VC = Vinyl Chloride
ND = Not Detected
Matrix = Decision matrix per NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October, 2006) & amendments

The analytical results of the February 7, 2018 SVI sampling event were evaluated via the decision matrices provided in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October, 2006), and the associated 2013 and 2015 addendums. Decision Matrix B (formerly, Decision Matrix-2) suggests that "mitigation" is an appropriate response to the concentrations of PCE identified at SS-03/IA-03 and that monitoring is the recommended response for the concentrations of PCE identified at SS-04/IA-04. "No further action" (NFA) is the recommended response to the other compounds identified in the air samples and evaluated via the NYSDOH Decision Matrices.

3.5.3 Effectiveness and Protectiveness

The goal of the November, 1995 ROD is to establish a remedial approach for the site that is protective of human health and the environment. As part of that remedial approach, the goal for the SVI monitoring would be to meet the criteria established via the NYSDOH Decision Matrices (and their subsequent addenda), with respect to protection of indoor air quality.

A review of the most recent set of SVI monitoring data indicates that the results are consistent with the historic SVI sampling. However, based on updated NYSDOH guidance, via the 2013 and 2015 addendums, the Decision Matrices indicate the need to mitigate. As such, the current SVI monitoring program is not meeting the goals of the November, 1995 ROD.

4.0 EVALUATION OF COSTS

The cost evaluation included herein summarizes NYSDEC expenditures over the 12 month period beginning approximately April, 2017 and ending approximately March, 2018. The costs are broken down into four (4) categories. These include:

- GWE&T System – Plant 1: Routine operation and maintenance site visits. The January 27, 2016 SMP requires bi-weekly site visits to check flow rates and water levels in both extraction wells and pressure differential across the bag filters and GAC units. For the time period reported herein, site visits were conducted on a monthly (rather than bi-weekly) basis. Sampling of both extraction wells (RW-1S and RW-2D) and the mid-carbon and system effluent is required on a quarterly basis. However, NYSDEC requested that a more rigorous sampling frequency be implemented during the time period reported herein. Specifically, that the GWE&T system (via wells RW-1S and RW-2D (when both wells were operating), mid-carbon and system effluent) be sampled on a monthly basis (rather than quarterly).
- 5/4 Groundwater Monitoring: The January 27, 2016 SMP requires sampling of 10 on-site monitoring wells and four (4) off site monitoring wells every five (5) quarters. 5/4 sampling of the 10 on-site wells was conducted during November, 2017; 5/4 sampling of the off-site wells was not conducted.
- SVI Monitoring: The January 27, 2016 SMP requires sampling of sub-slab vapor and indoor air at two (2) locations within Building 6 (Home Goods store) of the Somers Commons shopping center and, outdoor air at one (1) location every three (3) years. The costs associated with that sampling event are included in Table 6 below. The next SVI monitoring event required by the SMP will be conducted in 2021.
- Reporting: This includes the additional costs to complete the compliance sampling reports and PRR required by the January 2016 SMP.

4.1 Approximate Costs: April, 2017 through March, 2018

The approximate costs associated with the time period between April, 2017 and March, 2018 are presented in **Table 7** below.

Table 7
Approximate Costs: April, 2017 through March, 2018

Task	Approximate Cost
Tasks Completed:	
GWE&T System O&M – Plant 1	$24,000.00
5/4 GW Monitoring	$2,500.00
SVI Monitoring	$2,500.00
Reporting	$10,500.00
Total:	$39,500.00

4.2 Anticipated Costs: O & M and Environmental Monitoring for Next Reporting Period

The estimated costs associated with continuing operation and maintenance of Plant 1 and, the environmental monitoring program for the next reporting period (April 5, 2018 through April 4, 2019) are summarized below in **Table 8**. For the purposes of estimating the anticipated costs associated with the 5/4 groundwater monitoring for the upcoming year, sampling of the 10 on-

site wells and four (4) off-site wells are estimated as two separate sampling events. The on-site wells are scheduled for sampling during the 1st quarter (January/February/March) of 2019; the off-site wells will be sampled as a separate event during the summer or fall quarters of 2018. Additionally, it should be noted that costs for conducting SVI monitoring have not been anticipated for the upcoming reporting period. This is because the next SVI sampling event is scheduled for January, 2021.

Table 8
Estimated Costs: Operation & Maintenance and Environmental Monitoring
April 5, 2018 through April 4, 2019

Task	Estimated Cost (per month/event)	Estimated Cost – Next Reporting Period
GWE&T System O&M – Plant 1		
Labor	$1,500.00	
Equipment/Materials	$500.00	$29,700.00
Utilities	$225.00	
Analytical	$250.00	
GWE&T System – Plant 1 Total:	$2,475.00 (per month)	(12 months)
5/4 GW Monitoring – On-Site + Off-Site (MPR) Wells		
Labor	$1,500.00	
Equipment/Materials	$750.00	$5,500.00
Analytical	$500.00	
5/4 GW Monitoring – On-Site + Off-Site Wells Total:	$2,750.00 (per event)	(2 events)
SVI Monitoring – Home Goods Store – Every 3 Years		
Labor	$785.00	
Equipment/Materials	$650.00	$0.00
Analytical+	$1,250.00	
SVI Monitoring – Home Goods Store :	$2,685.00 (per event)	(Next SVI Sampling event = 2021)
Reporting:		
Quarterly Report (4 reports)	$1,250.00 (per report)	$5,000.00
Periodic Review Report (Annual)	$5,500.00 (per report)	$5,500.00

Note:
+ Analytical costs are estimated – Actual costs are direct billed to NYSDEC via the analytical laboratory

Based on the costs and assumptions presented herein, the estimated cost for the upcoming reporting period (April 5, 2018 through April 4, 2019) is $45,700.00 (using the existing contract rates under contract no. C100601). This cost does not include previously proposed GWE&T system control upgrades; any currently unforeseen tasks associated with non-routine maintenance and/or repairs to GWE&T Plant 1, or; additional costs associated with installation of an SSD system at Building 6 (Home Goods Store) of Sommers Commons. Installation of an SSD system at this location will bring the site into compliance with the revised decision matrices set forth in the NYSDOH Guidance for Evaluating SVI Monitoring in the State of New York.

5.0 SUMMARY/CONCLUSIONS

The periodic review process is undertaken in order to determine if a site is being managed in accordance with the remedies established in its governing documents. In particular, the periodic review report seeks to evaluate pertinent site-specific inspection, monitoring, and other related data, that will help to assess whether the remedies (engineering and/or institutional controls) for a site are being implemented properly and, if those remedies remain protective of human health and the environment.

- The Site, which is currently known as Somers Commons, is listed by the NYSDEC as a Class 4 Inactive Hazardous Waste Site (ID No. 3-60-023). Class 4 sites are sites that have been properly closed-out but require continued site management consisting of operation, maintenance and/or monitoring.
- The November, 1995 ROD imposed Engineering Controls for the site that initially included operation and maintenance of POET systems on residential and commercial water supply wells and/or development of a new water district (using the supply wells for the shopping center) until the regional municipal system would be available in the area. These locations (except for the residence located at 264 Mahopac Avenue) are now connected to the municipal system.
- Engineering controls also included groundwater extraction and treatment via two (2) separate GWE&T remedial systems (Plant 1 and Plant 2). Plant 2 is no longer operating and has been recommended for decommissioning.
- Institutional controls imposed by the November, 1995 ROD included groundwater monitoring via various on-site monitoring wells and off-site water supply wells.
- Off-site water supply wells are no longer used for water supply purposes in the area and, as such, are no longer included in the monitoring program for the site.
- Annual SVI monitoring at a commercial establishment in proximity to the former source area (Home Goods store) was a requirement added to the monitoring program for the site in 2008. SVI monitoring at this location is now required every three (3) years.
- Historically, the ROD and monitoring program for the site did not place any restrictions on the use of the property. However, a deed restriction was placed on the property on June 15, 2016 that limits its development and sets certain procedures in place for the future use. This deed restriction was incorporated into the January 2016 SMP for the site.
- During the years since the effective date of the ROD, operation and maintenance of individual POET systems has ceased. This is because nearby residences and commercial establishments connected to the regional municipal system when it became available.
- The ROD identified PCE and its degradation by-products as the primary site-related compounds of concern.
- A source area excavation conducted at the site in February, 1997 included removal of approximately 135 cubic yards of source area soil from the area located behind (east) of the former dry cleaning operation. Altogether, 236 tons of impacted soil was removed.

The former source area is currently presented as a lawn area on the north side of the Home Goods store.

- The monitoring program for the site is governed by the January, 2016 Site Management Plan (prepared by MACTEC Engineering & Consulting, P.C. of Portland, Maine).
- This PRR compares the monitoring performed during the time period reported herein to the monitoring program outlined in the January, 2016 SMP in terms of its compliance, performance, effectiveness and protectiveness with respect to the goals of the ROD.
- Institutional Controls for the site were established via a June 15, 2016 deed restriction in order to ensure continued operation of the Engineering Controls associated with the site; to control use and development of the site, and; to restrict the future use of groundwater.
- Engineering Controls for the site include GWE&T via one (1) treatment facility (Plant 1). Plant 1 addresses impacted groundwater in proximity to the former source area.
- Groundwater samples (via the GWE&T system and on-site monitoring wells) are analyzed via method 601 for VOCs (in lieu of analytical method 8260 as specified by the SMP) at the direction of NYSDEC.
- An evaluation of the analytical results obtained via the system effluent samples indicates that the treated groundwater discharged from Plant 1 is currently in compliance with the quality standards established for the site. As such, operation of Plant 1 is protective of human health and the environment and, in compliance with the ROD.
- The monitoring program for the site during the time period reported herein included sampling of various media. This includes: quarterly sampling of two (2) active groundwater recovery wells (RW-1S and RW-2D); 5/4 sampling of ten (10) on-site monitoring wells (MW-4S, MW-4D, MW-5S, MW-7S, MW-7D, MW-8S, MW-9S, MW-9D, MW-12S & MW-101M) and four (4) off-site monitoring wells (former water supply wells) located in the Meadow Park Road residential area; and soil vapor intrusion monitoring in Building 6 (Home Goods store) of the current Somers Commons shopping center every three (3) years.
- Sampling of off-site groundwater in the Meadow Park Road area was not conducted during the time period reported herein. As such, monitoring of these off-site monitoring wells is not in compliance with the monitoring schedule specified in the SMP. However, it should be noted that the historic analytical results for these locations indicate that concentrations of the VOCs identified in off-site groundwater are trending toward the remedial goals for the site.
- Supplemental sampling of the private water supply well at 264 Mahopac Avenue was conducted on September 5, 2017. The analytical results of that sample were below the laboratory reporting limit of 0.5 ug/l for all compounds. Samples historically collected from this location have not exceeded the NYSDEC standards for class GA groundwater dating back to March, 2000. Groundwater from this location continues to meet the remedial goals established by the November, 1995 ROD.
- SVI monitoring was completed on January 18, 2017 at Building #6 (Home Goods Store)

of Sommers Commons. The revised NYSDOH soil vapor intrusion decision matrices applicable to this event have indicated “mitigate” as an appropriate course of action for the PCE concentrations identified and “no further action” for all other compounds associated with the site.

6.0 RECOMMENDATIONS

- GWE&T Plant 1 should continue to be operated for the purpose of capturing groundwater flowing through (and impacted by) residual source area soil before it can enter deeper into the glacial till and bedrock systems. Routine maintenance site visits should continue until operation of Plant 1 is no longer necessary.

- Plant 2 was recommended for decommissioning in a September, 2014 RSO completed by MACTEC. However, Plant 2 has not been decommissioned. Aztech recommends that NYSDEC encourage the property owner to decommission Plant 2 for safety reasons.

- The SMP requires quarterly monitoring of the GWE&T system influent via sampling of wells RW-1S and RW-2D, mid-carbon and system effluent. Aztech is recommending that monthly grab samples continue to be collected from RW-1S and RW-2D as well as from the mid-carbon and system effluent.

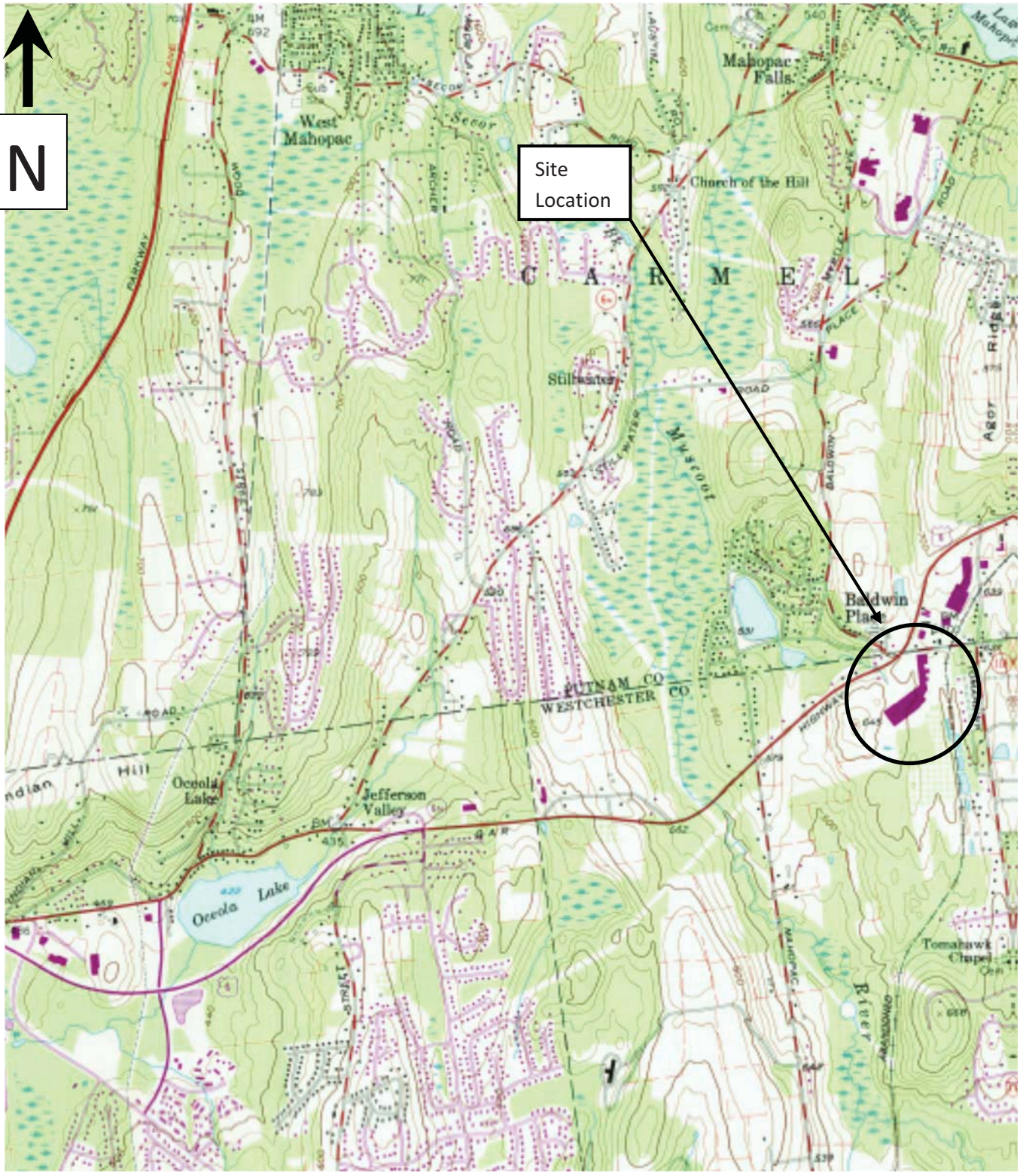
- The monitoring program for on-site and off-site groundwater, as outlined in the SMP, includes quarterly sampling of on-site remedial wells RW-1S and RW-2D and 5/4 sampling of on-site monitoring wells MW-4S, MW-4D, MW-5S, MW-7S, MW-7D, MW-8S, MW-9S, MW-9D, MW-12S & MW-101M. Sampling of off-site monitoring wells located within the Meadow Park Road residential area are also on a 5/4 schedule. Based on the 5/4 sampling schedule and the most recent groundwater sampling in November, 2017, the next round of groundwater sampling is scheduled for the 1st quarter (January/February/March), 2019.

- Aztech is recommending that the off-site monitoring wells located in the Meadow Park Road residential area be sampled independently of the on-site monitoring wells. This will help to avoid some of the winter logistical issues that could be encountered during the 1st quarter (Jan/Feb/Mar) 2019 when the on-site monitoring wells are scheduled for sampling.

- SVI sampling conducted in January 2018 yielded analytical results that are consistent with historic SVI sampling events. However, the revised decision matrices set forth in the NYSDOH Guidance for Evaluating SVI Monitoring in the State of New York direct that mitigation is now the appropriate course of action in response to the concentrations of PCE identified during that sampling event. As such, Aztech is recommending that NYSDEC consider design and installation of an SSD system for Building 6 (Home Goods Store) of the Sommers Commons shopping center. Installation of an SSD system at this location will bring the site into compliance with the revised decision matrices set forth in the NYSDOH Guidance for Evaluating SVI Monitoring in the State of New York.

- The SVI monitoring program for the site, as outlined in the January, 2016 SMP, includes sub-slab and indoor air samples collected at two locations within Building 6 (Home Goods store) of the Somers Commons shopping center and, one outdoor air location every three (3) years. Based on that schedule, the next SVI sampling event is scheduled for January, 2021. However, with the results of the recent SVI sampling (January, 2018), and the recommendation in this PRR for installation of an SSD system at that location, the SVI monitoring program as defined in the current SMP for the site may need to be adjusted in the future.

FIGURES



USGS Topographic Quadrangle Map – Mohegan Lake

Approximate Scale 1:31,000

Remediation • Environmental • Drilling

Woman Owned Business

Aztech Environmental TECHNOLOGIES

SITE: NYSDEC – Site # 3-60-023
Baldwin Place Shopping Center
(now Somers Commons)
Somers, New York

FIGURE 1

Site Location Map

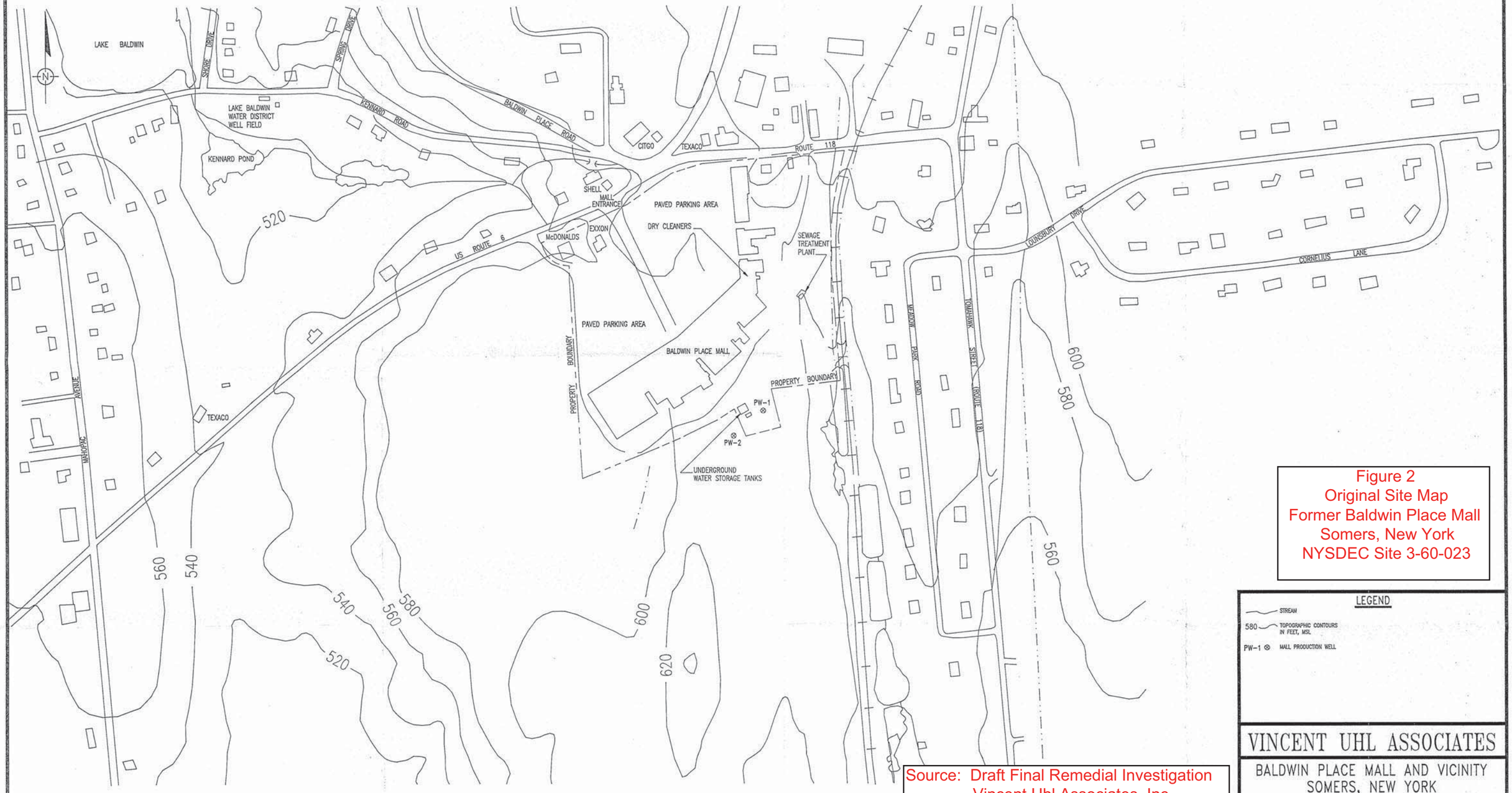


Figure 2
Original Site Map
Former Baldwin Place Mall
Somers, New York
NYSDEC Site 3-60-023

LEGEND

STREAM

580 TOPOGRAPHIC CONTOURS IN FEET, MSL

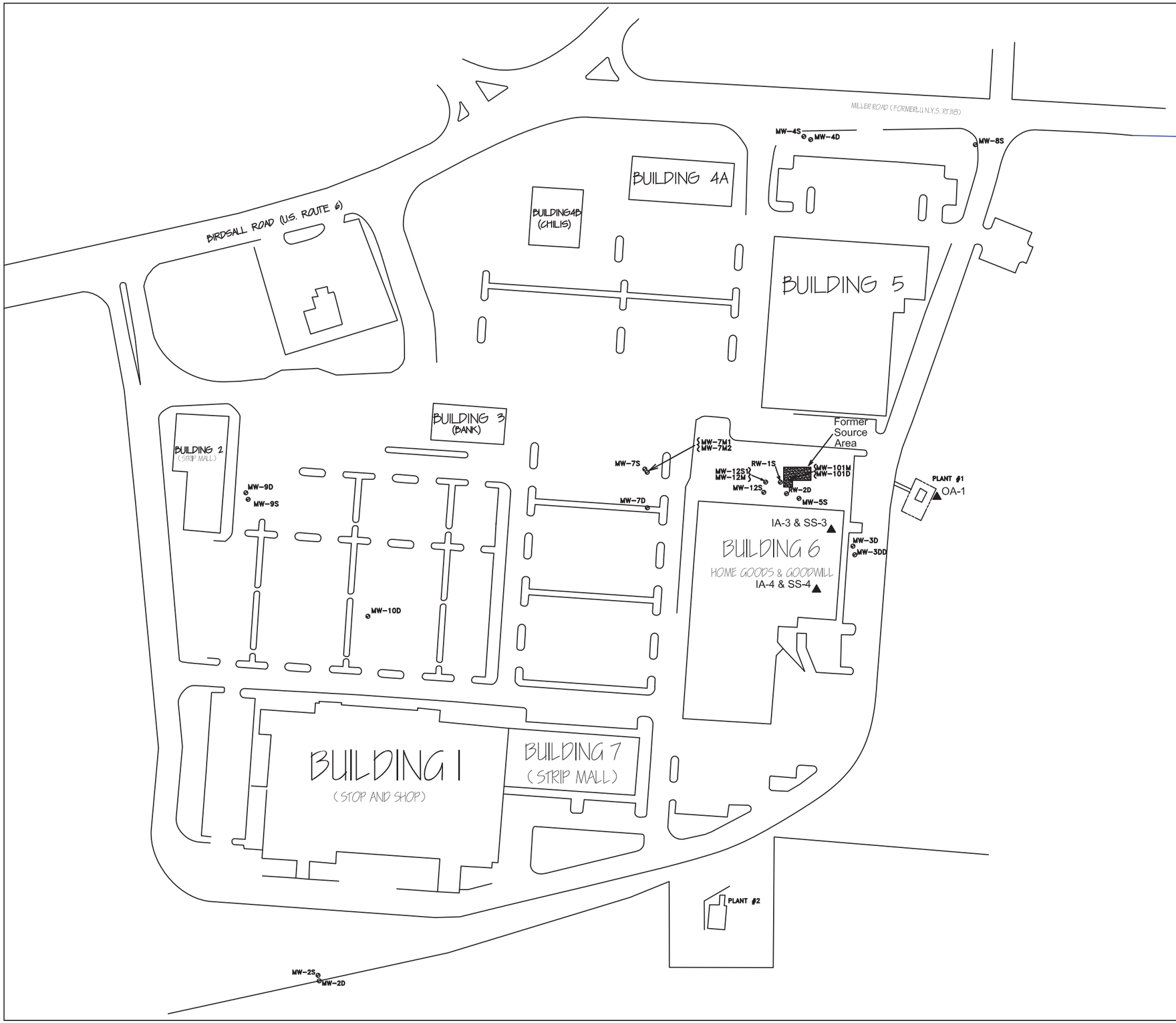
PW-1 ⊗ MALL PRODUCTION WELL

Source: Draft Final Remedial Investigation
Vincent Uhl Associates, Inc.
Washington Crossing, Pa
August, 1994

VINCENT UHL ASSOCIATES

BALDWIN PLACE MALL AND VICINITY
SOMERS, NEW YORK

PREPARED BY: JAB	JOB No.:	FIGURE 2-1
DATE: 2-9-94	SCALE: 1" = 200'	



AREA MAP

LEGEND:

- Groundwater Monitoring Well
- SVI Sample Location

BALDWIN PLACE SHOPPING CENTER
(now SOMERS COMMONS)
80 ROUTE 6 BALDWIN PLACE
WESTCHESTER COUNTY, NEW YORK
NYSDEC SPILL NO. 360023

SITE MAP

N
W
E
S

FIGURE 3

NOT TO SCALE

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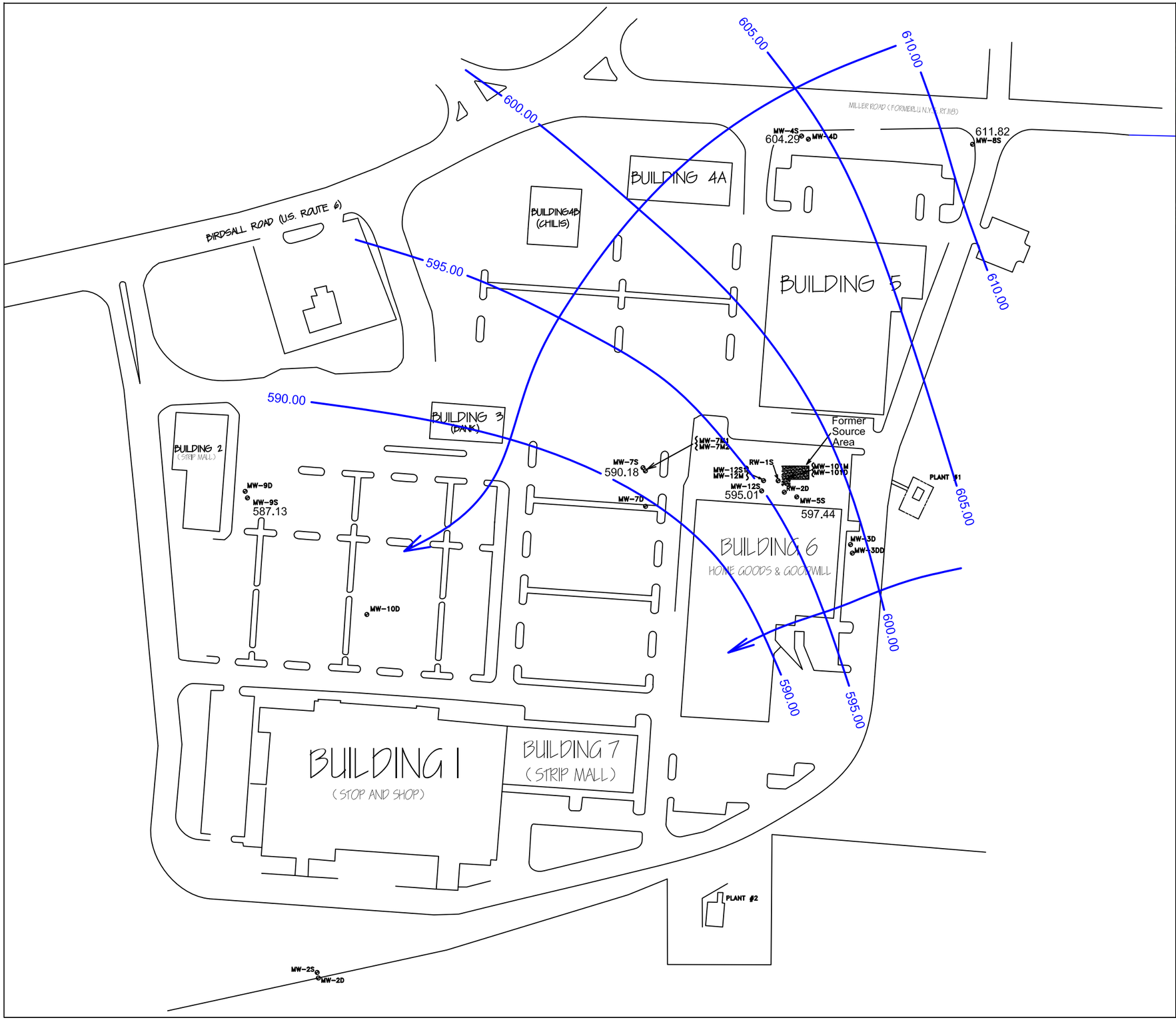

AREA MAP

LEGEND:

Groundwater Monitoring Well

Groundwater Elevation Contours Dashed Where Inferred

BALDWIN PLACE SHOPPING CENTER
(now SOMERS COMMONS)
80 ROUTE 6 BALDWIN PLACE
WESTCHESTER COUNTY, NEW YORK
NYSDEC SPILL NO. 360023

Groundwater Contour Map
Shallow Zone
----- Static Conditions -----

N
W E
S

Figure 4A

November 21, 2017

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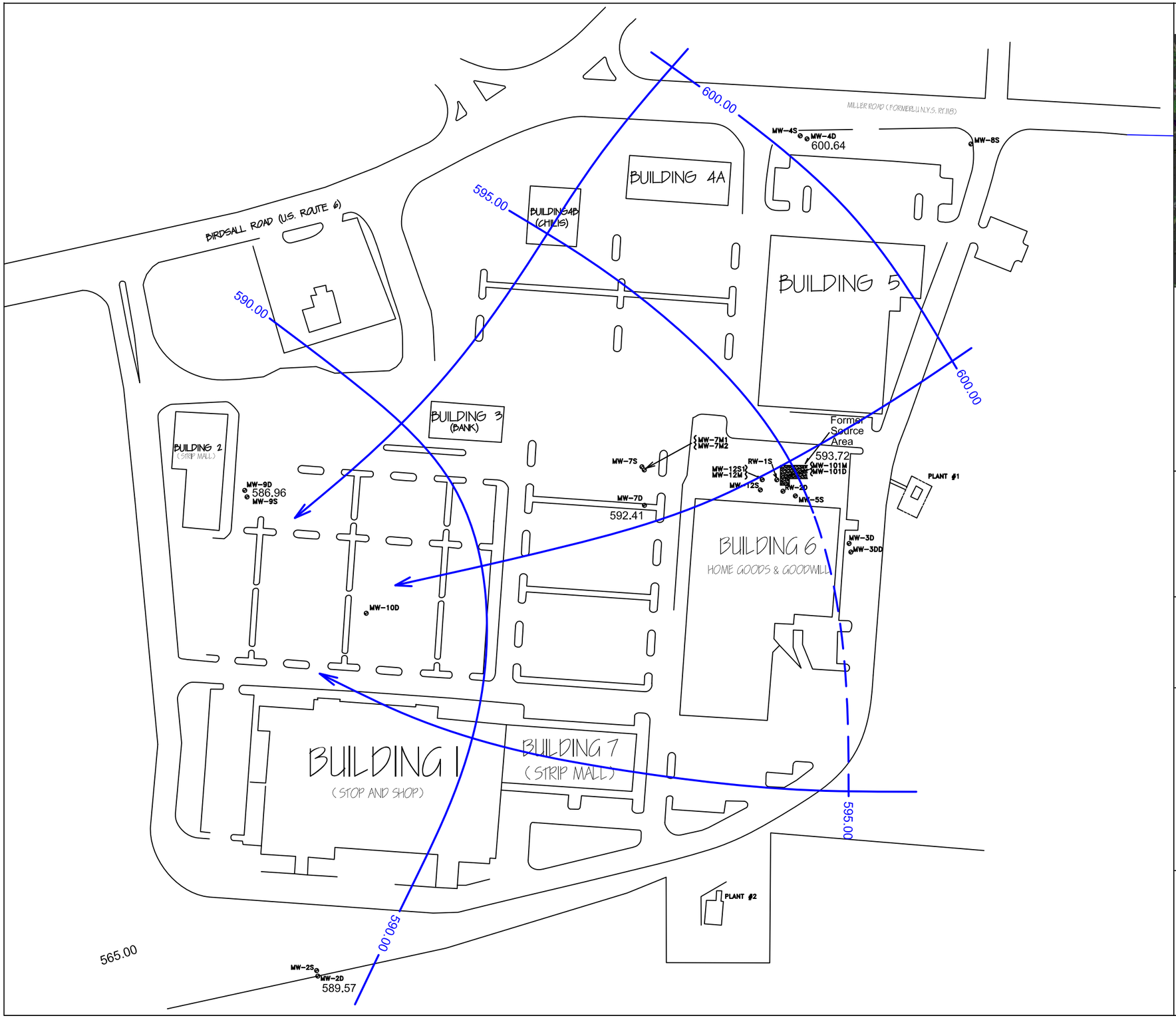

AREA MAP

LEGEND:

Groundwater Monitoring Well

Groundwater Elevation Contours Dashed Where Inferred

BALDWIN PLACE SHOPPING CENTER
(now SOMERS COMMONS)
80 ROUTE 6 BALDWIN PLACE
WESTCHESTER COUNTY, NEW YORK
NYSDEC SPILL NO. 360023

Groundwater Contour Map
Deep Zone
----- Static Conditions -----

N
W E
S

Figure 4B

November 21, 2017

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MW-4S

PCE	TCE	DCE	Total
<1.0	<1.0	<1.0	<1.0

MW-8S

PCE	TCE	DCE	Total
<1.0	<1.0	<1.0	<1.0

RW-1S (11-16-2017)

PCE	TCE	DCE	Total
2,400	31	34	2,491

MW-7S

PCE	TCE	DCE	Total
9.6	<1.0	<1.0	9.6

MW-101M

PCE	TCE	DCE	Total
1.4	1.6	15	18

MW-5S

PCE	TCE	DCE	Total
14	1.9	4.5	20

MW-9S

PCE	TCE	DCE	Total
18	3.3	2.1	23

MW-12S

PCE	TCE	DCE	Total
3,200	<25	<25	3,200

BIRDSALL ROAD (U.S. ROUTE 6)

MILLER ROAD (FORMERLY N.Y.S. RT.118)

BUILDING 4A

BUILDING 4B (CHILIS)

BUILDING 5

BUILDING 3 (BANK)

BUILDING 2 (STRIP MALL)

BUILDING 6 HOME GOODS & GOODWILL

BUILDING 1 (STOP AND SHOP)

BUILDING 7 (STRIP MALL)

PLANT #1

PLANT #2

Former Source Area

MW-4S MW-4D MW-8S MW-7S MW-7M1 MW-7M2 RW-1S MW-101M MW-101D MW-12M MW-12S RW-2D MW-5S MW-3D MW-3DD MW-9D MW-9S MW-10D MW-2S MW-2D

10 10 10 10 1,000 100

AREA MAP

LEGEND:

Groundwater Monitoring Well

Concentrations in micrograms per liter (ug/l)

BALDWIN PLACE SHOPPING CENTER
(now SOMERS COMMONS)
80 ROUTE 6 BALDWIN PLACE
WESTCHESTER COUNTY, NEW YORK
NYSDEC SPILL NO. 360023

Total VOC Distribution Shallow Zone

N W E S

Figure 5A

November 21, 2017

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MW-4D

PCE	TCE	DCE	Total
<1.0	<1.0	<1.0	<1.0

MW-7D

PCE	TCE	DCE	Total
<1.0	<1.0	<1.0	<1.0

MW-9D

PCE	TCE	DCE	Total
<1.0	<1.0	<1.0	<1.0

MW-10D (9-26-2016)

PCE	TCE	DCE	Total
<1.0	<1.0	<1.0	<1.0

RW-2D (11-16-2017)

PCE	TCE	DCE	Total
810	<50	1,100	1,974

BIRDSALL ROAD (U.S. ROUTE 6)

MILLER ROAD (FORMERLY N.Y.S. RT.118)

BUILDING 1 (STOP AND SHOP)

BUILDING 2 (STRIP MALL)

BUILDING 3 (BANK)

BUILDING 4A

BUILDING 4B (CHILIS)

BUILDING 5

BUILDING 6 HOME GOODS & GOODWILL

BUILDING 7 (STRIP MALL)

PLANT #1

PLANT #2

Former Source Area

MW-1S, MW-2D, MW-2S, MW-3D, MW-3DD, MW-4S, MW-4D, MW-5S, MW-7S, MW-7M1, MW-7M2, MW-7D, MW-8S, MW-9D, MW-9S, MW-10D, MW-12S1, MW-12M, MW-12S2, MW-101M, MW-101D

10, 100, 1,000

AREA MAP

LEGEND:

Groundwater Monitoring Well

Concentrations in micrograms per liter (ug/l)

BALDWIN PLACE SHOPPING CENTER
(now SOMERS COMMONS)
80 ROUTE 6 BALDWIN PLACE
WESTCHESTER COUNTY, NEW YORK
NYSDEC SPILL NO. 360023

Total VOC Distribution Deep Zone

N

W E

S

Figure 5B

November 21, 2017

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SUMMARY TABLES

Plant-1 Operational Data
April, 2017 - April, 2018
Baldwin Place Shopping Center (now Somers Commons)
Somers, New York
NYSDEC Site No. 3-60-023

WELL RW-1S

Date	Days Elapsed	Water Meter	Total Gallons Treated	Run Time		Gallons/ Minute	Influent VOC/MtBE Concentration	VOCs/MtBE Recovered	
				Total Hours	Hours This Time period		(ug/l)	(g)	(lbs)
4/6/17	0	1,539,518	0	26,500.00	0.00	0.00	4,100	0.0	0.000
5/4/17	28	1,544,744	5,226	27,172.70	672.70	0.13	2,668	52.8	0.116
6/17/17	44	1,556,970	12,226	27,253.10	80.40	2.53	1,557	72.1	0.159
7/5/17	18	1,567,066	10,096	27,313.10	60.00	2.80	3,344	127.8	0.282
8/9/17	35	1,567,123	57	27,313.40	0.30	3.17	1,025	0.2	0.000
9/5/17	27	1,574,000	6,877	27,353.50	40.10	2.86	3,397	0.0	0.000
10/6/17	31	1,574,010	10	27,353.10	-0.40	0.00	2,149	0.0	0.000
11/16/17	41	1,574,161	151	27,354.00	0.90	2.80	2,491	1.4	0.003
12/6/17	20	1,574,200	39	27,354.30	0.30	2.17	430	0.1	0.000
1/8/18	33	1,581,860	7,660	27,402.70	48.40	2.64	2,000	58.0	0.128
2/7/18	30	1,591,350	9,490	27,461.40	58.70	2.69	2,586	92.9	0.205
3/1/18	22	1,592,853	1,503	27,471.00	9.60	2.61	659	3.7	0.008
4/4/18	34	1,604,090	11,237	27,544.40	73.40	2.55	2,558	108.8	0.240

Total Days Elapsed:	**363**	**days**
Total Treated:	**64,572**	**gallons**
Total Hours Operational:	**1,044.40**	**hours**
Average Flow Rate When Operating:	**1.03**	**gpm**
Total Mass Removed:	**1.14**	**pounds**

WELL RW-2D

Date	Days Elapsed	Water Meter	Total Gallons Treated	Run Time		Gallons/ Minute	Influent VOC/MtBE Concentration	VOCs/MtBE Recovered	
				Total Hours	Hours This Time period		(ppb)	(g)	(lbs)
4/6/17	0	5,373,849	0	20,816.80	0.00	0.00	5,500	0.0	0.000
5/4/17	28	5,373,849	0	20,816.80	0.00	0.00	2,668	0.0	0.000
6/17/17	44	5,373,849	0	20,816.80	0.00	0.00	1,557	0.0	0.000
7/5/17	18	5,373,849	0	20,816.80	0.00	0.00	3,344	0.0	0.000
8/9/17	35	5,373,849	0	20,816.80	0.00	0.00	5,463	0.0	0.000
9/5/17	27	5,373,985	136	20,820.10	3.30	0.69	4,073	0.0	0.000
10/6/17	31	5,374,010	25	20,820.30	0.20	2.08	3,642	0.0	0.000
11/16/17	41	5,375,270	1,260	20,847.50	27.20	0.77	1,974	9.4	0.021
12/6/17	20	5,375,270	0	20,847.50	0.00	0.00	430	0.0	0.000
1/8/18	33	5,375,536	266	20,851.20	3.70	1.20	2,000	2.0	0.004
2/7/18	30	5,375,600	64	20,852.10	0.90	1.19	2,586	0.6	0.001
3/1/18	22	5,375,600	0	20,852.10	0.00	0.00	659	0.0	0.000
4/4/18	34	5,375,630	30	20,852.30	0.20	2.52	2,558	0.3	0.001

Total Days Elapsed:	**363**	**days**
Total Treated:	**1,781**	**gallons**
Total Hours Operational:	**35.50**	**hours**
Average Flow Rate When Operating:	**0.84**	**gpm**
Total Mass Removed:	**0.03**	**pounds**

Combined - Plant 1:

Total Days Elapsed:	**363**	**days**
Total Treated:	**66,353**	**gallons**
Total Hours Operational:	**1,079.90**	**hours**
Average Flow Rate When Operating:	**1.02**	**gpm**
Total Mass Removed:	**1.17**	**pounds**

Summary of Groundwater Analytical Results
Recovery Wells RW-1S and RW-2D
Baldwin Place Shopping Center (now Somers Commons)
Somers, New York
NYSDEC Site No. 3-60-023

Date	Compound				Total VOC
	DCE	TCE	PCE	Other	
GW Stnd*	**5.0**	**5.0**	**5.0**		
RW-1S					
Apr-17	< 50	< 50	4,100	< 50	4,100
May-17	68	< 50	2,600	< 50	2,668
Jun-17	< 25	< 25	1,500	57	1,557
Jul-17	< 25	48	3,200	96	3,344
Aug-17	< 50	< 50	960	65	1,025
Sep-17	< 25	< 25	3,300	97	3,397
Oct-17	< 25	< 25	2,100	49	2,149
Nov-17	34	31	2,400	26	2,491
Dec-17	< 50	< 50	430	< 50	430
Jan-18	< 50	< 50	2,000	< 50	2,000
Feb-18	< 25	< 25	2,500	86	2,586
Mar-18	< 25	< 25	620	39	659
Apr-17	23	24	2,500	11	2,558
RW-2D					
Apr-17	< 50	< 50	5,500	< 50	5,500
May-17	---------- Not Sampled ----------				
Jun-17	---------- Not Sampled ----------				
Jul-17	---------- Not Sampled ----------				
Aug-17	< 50	< 50	5,400	63	5,463
Sep-17	< 50	< 50	4,000	73	4,073
Oct-17	63	< 50	3,500	79	3,642
Nov-17	1,100	< 50	810	64	1,974
Dec-17	---------- Not Sampled ----------				
Jan-18	---------- Not Sampled ----------				
Feb-18	---------- Not Sampled ----------				
Mar-18	---------- Not Sampled ----------				
Apr-17	---------- Not Sampled ----------				

Notes:

Concentrations in micrograms per liter (ug/l)

GW Standard = TOGS 1.1.1

DCE = Diclhoroethene - Total of individual isomers

Summary of Groundwater Analytical Results

On-Site Wells

Baldwin Place Shopping Center (now Somers Commons)

Somers, New York

NYSDEC Site No. 3-60-023

Date	Compound				Total VOC
	DCE	TCE	PCE	Other	
GW Stnd*	**5.0**	**5.0**	**5.0**		
MW-4S (5/4 Sampling)					
Apr-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Apr-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	---------- Not Sampled - April, 2005 through April 2012 ----------				
Apr-12	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	---------- Not Sampled - April, 2012 through September 2016 ----------				
Sep-16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nov-17	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-4D (5/4 Sampling)					
Apr-04	< 1.0	< 1.0	< 1.0	4.5	4.5
Apr-05	< 1.0	< 1.0	< 1.0	2.4	2.4
	---------- Not Sampled - April, 2005 through April 2012 ----------				
Apr-12	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	---------- Not Sampled - April, 2012 through September 2016 ----------				
Sep-16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nov-17	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-5S (5/4 Sampling)					
Jan-04	4.1	6.6	82	2.5	95
Apr-04	< 1.0	< 1.0	4.6	< 1.0	4.6
Jul-04	< 10	5.4	40	< 10	45
Oct-04	5.7	6.3	35	< 100	47
Jan-05	7.1	< 10	70	< 10	77
Apr-05	0.9	3.2	40	< 1.0	44
Aug-05	5.7	4.5	23	< 1.0	33
Nov-05	7.6	7.3	42	1.1	58
Jan-06	< 1.0	1.5	20	< 1.0	22
Apr-06	1.7	4.1	28	< 1.0	34
Jul-06	4.6	7.4	17	< 1.0	29
Oct-06	< 1.0	6.8	22	0.75	30
Jan-07	1.6	4.4	23	< 2.0	29
Apr-07	< 1.0	< 1.0	4.3	< 2.0	4.3
Jul-07	15	5.0	10	< 2.0	30
Oct-07	3.2	5.0	13	< 2.0	21
Jan-08	< 1.0	< 1.0	9.3	< 2.0	9.3
Apr-08	< 1.0	< 1.0	10	< 2.0	10
Jul-08	8.6	4.5	10	< 2.0	23
Oct-08	5.9	5.3	16	< 1.0	27
Jan-09	< 1.0	1.1	16	< 1.0	17
Apr-09	< 1.0	3.5	7.7	< 1.0	11
	---------- Not Sampled - April, 2009 through March, 2011 ----------				
Mar-11	< 1.0	< 1.0	7.9	< 1.0	7.9
	---------- Not Sampled - March, 2011 through April, 2012 ----------				
Apr-12	1.8	3.2	25	< 1.0	30
	---------- Not Sampled - April, 2012 through June 28, 2015 ----------				
Jun-15	< 1.0	2.0	13	< 5.0	15
Sep-16	16	6.1	1.7	< 1.0	24
Nov-17	4.5	1.9	14	< 1.0	20

Summary of Groundwater Analytical Results
On-Site Wells
Baldwin Place Shopping Center (now Somers Commons)
Somers, New York
NYSDEC Site No. 3-60-023

Date	Compound				Total VOC
	DCE	TCE	PCE	Other	
GW Stnd*	**5.0**	**5.0**	**5.0**		
MW-7S (5/4 Sampling)					
	---------- Analytical Data not available prior to June, 2015 ----------				
Jun-15	6.0	< 1.0	< 1.0	< 5.0	6.0
Sep-16	< 1.0	< 1.0	7.3	< 1.0	7.3
Nov-17	< 1.0	< 1.0	9.6	< 1.0	9.6
MW-7M1					
	---------- Well Installed June, 2015 ----------				
Jun-15	6.0	< 1.0	< 1.0	< 5.0	6.0
Sep-16	---------- Not Sampled ----------				
Nov-17	---------- Not Sampled ----------				
MW-7M2					
Jun-15	---------- Well Installed June, 2015 ----------				
Jun-15	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0
Sep-16	---------- Not Sampled ----------				
Nov-17	---------- Not Sampled ----------				
MW-7D (5/4 Sampling)					
Jan-04	< 1.0	0.6	5.6	< 1.0	6.2
Apr-04	< 1.0	< 1.0	5.1	< 1.0	5.1
Jul-04	< 1.0	< 1.0	3.4	< 1.0	3.4
Oct-04	< 1.0	0.51	4.9	< 10	5.4
Jan-05	< 1.0	0.66	7.0	< 1.0	7.7
Apr-05	< 1.0	0.56	5.4	< 1.0	6.0
Aug-05	< 1.0	0.58	5.7	< 1.0	6.3
Nov-05	< 1.0	< 1.0	3.2	< 1.0	3.2
Jan-06	< 1.0	< 1.0	4.3	< 1.0	4.3
Apr-06	< 1.0	< 1.0	4.3	< 1.0	4.3
Jul-06	< 1.0	< 1.0	2.6	< 1.0	2.6
Oct-06	< 1.0	0.7	3.1	0.71	4.5
Jan-07	< 1.0	< 1.0	2.7	< 2.0	2.7
Apr-07	< 1.0	< 1.0	2.6	< 2.0	2.6
Jul-07	< 1.0	< 1.0	3.7	< 2.0	3.7
Oct-07	< 1.0	< 1.0	1.7	< 2.0	1.7
Apr-08	< 1.0	< 1.0	1.7	5.2	6.9
Apr-09	< 1.0	< 1.0	3.0	< 1.0	3.0
	---------- Not Sampled - April, 2009 through April, 2012 ----------				
Apr-12	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	---------- Not Sampled - April, 2012 through June 2015 ----------				
Jun-15	3.0	8.0	3.0	< 1.0	14
Sep-16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nov-17	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-8S (5/4 Sampling)					
Apr-04	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Apr-05	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	---------- Not Sampled - April, 2005 through April, 2012 ----------				
Apr-12	1.4	< 1.0	< 1.0	< 1.0	1.4
	---------- Not Sampled - April, 2012 through September, 2016----------				
Sep-16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nov-17	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Groundwater Analytical Results
On-Site Wells
Baldwin Place Shopping Center (now Somers Commons)
Somers, New York
NYSDEC Site No. 3-60-023

Date	Compound				Total VOC
	DCE	TCE	PCE	Other	
GW Stnd*	**5.0**	**5.0**	**5.0**		
MW-9S (5/4 Sampling)					
Apr-04	< 1.0	< 1.0	2.1	< 1.0	2.1
Apr-05	< 1.0	< 1.0	1.5	< 1.0	1.5
Apr-06	< 1.0	< 1.0	1.5	< 1.0	1.5
Apr-07	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Apr-08	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Apr-09	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
	---------- Not Sampled - April, 2009 through April, 2012----------				
Apr-12	1.4	< 1.0	3.8	< 1.0	5.2
	---------- Not Sampled - April, 2012 through June, 2015 ----------				
Jun-15	2.0	2.0	5.0	< 5.0	9.0
Sep-16	3.1	3.4	18	< 1.0	25
Nov-17	2.1	3.3	18	< 1.0	23
MW-9D (5/4 Sampling)					
Apr-04	< 1.0	< 1.0	1.2	< 1.0	1.2
Apr-05	< 1.0	< 1.0	1.7	< 1.0	1.7
Apr-06	< 1.0	< 1.0	0.7	< 1.0	0.7
Apr-07	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Apr-08	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Apr-09	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
	---------- Not Sampled - April, 2009 through April, 2012 ----------				
Apr-12	1.4	< 1.0	< 1.0	< 1.0	1.4
	---------- Not Sampled - April, 2012 through June, 2015 ----------				
Jun-15	< 1.0	< 1.0	< 1.0	2.0	2.0
Sep-16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nov-17	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-10D					
	---------- Analytical Data not available prior to June, 2015 ----------				
Jun-15	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0
Sep-16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Nov-17	---------- Not Sampled ----------				
MW-12S (5/4 Sampling)					
Jan-04	< 1.0	< 1.0	34	< 1.0	34
Apr-04	< 1.0	< 1.0	13	< 1.0	13
Jul-04	---------- Not Sampled ----------				
Oct-04	< 5.0	< 5.0	7.0	< 10	7.0
Jan-05	2.4	8.4	4,500	< 1.0	4,511
Apr-05	< 20	< 20	980	< 20	980
Aug-05	1.5	5.0	6,200	< 1.0	6,207
Nov-05	< 1.0	< 1.0	120	< 1.0	120
Jan-06	< 1.0	< 1.0	45	< 1.0	45
Apr-06	< 100	< 100	330	< 100	330
Jul-06	< 1.0	< 1.0	100	< 1.0	100
Oct-06	< 500	< 500	6,700	< 500	6,700
Jan-07	< 100	< 100	9,100	< 200	9,100
Apr-07	< 200	< 200	3,600	< 400	3,600
Jul-07	< 200	< 200	3,900	< 400	3,900

Summary of Groundwater Analytical Results
On-Site Wells
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NYSDEC Site No. 3-60-023

Date	Compound				Total VOC
	DCE	TCE	PCE	Other	
GW Stnd*	**5.0**	**5.0**	**5.0**		
MW-12S - Continued (5/4 Sampling)					
Oct-07	< 50	< 50	1,600	< 100	1,600
Jan-08	< 50	< 50	6,600	< 100	6,600
Apr-08	< 200	< 200	6,200	< 400	6,200
Jul-08	< 50	< 50	4,400	NA	4,400
Oct-08	< 100	< 100	5,900	< 100	5,900
Jan-09	< 100	< 100	3,500	< 100	3,500
Apr-09	< 100	< 100	5,800	< 100	5,800
	---------- Not Sampled -April, 2009 through March, 2011 ----------				
Mar-11	< 100	< 100	6,200	< 100	6,200
	---------- Not Sampled - March, 2011 through April, 2012 ----------				
Apr-12	< 100	< 100	2,800	< 100	2,800
	---------- Not Sampled - April, 2012 through June 28, 2015 ----------				
Jun-15	6.0	13	2,900	< 5.0	2,919
Sep-16	< 25	< 25	3,100	130	3,230
Nov-17	< 25	< 25	3,200	< 25	3,200
MW-12S1					
	---------- Well Installed June, 2015 ----------				
Jun-15	4.0	4.0	99	< 5.0	107
Sep-16	---------- Not Sampled ----------				
Nov-17	---------- Not Sampled ----------				
MW-12M					
	---------- Well Installed June, 2015 ----------				
Jun-15	< 1.0	< 1.0	< 1.0	24	24
Sep-16	---------- Not Sampled ----------				
Nov-17	---------- Not Sampled ----------				
MW-101M					
	---------- Well Installed June, 2015 ----------				
Jun-15	6.0	1.0	24	< 5.0	31
Sep-16	---------- Not Sampled ----------				
Nov-17	15	1.6	1.4	< 1.0	18
MW-101D					
	---------- Well Installed June, 2015 ----------				
Jun-15	8.0	< 1.0	6.0	2.0	16
Sep-16	3.2	< 1.0	< 1.0	< 1.0	3.2
Nov-17	---------- Not Sampled ----------				
MW-101DD					
	---------- Well Installed June, 2015 ----------				
Jun-15	9.0	< 1.0	6.0	2.0	17
Sep-16	---------- Not Sampled ----------				
Nov-17	---------- Not Sampled ----------				

Notes:
Concentrations in micrograms per liter (ug.l)
GW Standard = TOGS 1.1.1
DCE = Diclhoroethene - Total of individual isomers