Quarterly Operation and Maintenance Report – 3Q2018

Stanton Cleaners

NYSDEC Site No: 130072

110 Cuttermill Road, Great Neck, New York

Work Assignment # D007625-06

February 3, 2020

Prepared for:

New York State Department of Environmental Conservation

625 Broadway

Albany, New York 12233

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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ACRONYMS AND ABBREVIATIONS

AS	Air Sparge
ASP	Analytical Services Protocol
bgs	below ground surface
CAP	Contractor's Application for Payment
cfm	cubic feet per minute
COC	contaminant of concern
DUSR	data usability summary report
DVS	Data Validation Services
ECL	Environmental Conservation Law
EFF	Effluent
GAC	Granular Activated Carbon
gpm	gallons per minute
GWE&T	Groundwater Extraction and Treatment
GWQS	Groundwater Quality Standard
HC	Hampton Clarke
HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C.
INF	influent
LIHA	Long Island Hebrew Academy
lbs	pounds
LEL	lower explosive limit
LGAC	liquid phase granular activated carbon
ND	non-detect
ng/L	nanograms per liter
NPL	National Priorities List
NYCRR	New York Codes of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operations and Maintenance
PCE	tetrachloroethene
PES	Preferred Environmental Services
PFC	perfluorinated compounds
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonic acid
PID	photo-ionization detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
RAO	Remedial Action Objective

ACRONYMS AND ABBREVIATIONS (CONT.)

ROD	Record of Decision
RSO	Remedial System Optimization
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objective
SPDES	State Pollutant Discharge Elimination System
SSDS	sub-slab depressurization system
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TA	Test America
TCL	Target Compound List
TICs	Tentatively Identified Compounds
UGA	Upper Glacial Aquifer
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WA	Work Assignment
WAGNN	Water Authority of Great Neck North

1.0 INTRODUCTION

As part of on-going remediation system operations and maintenance (O&M) and monitoring at the Stanton Cleaners groundwater contamination site located in Great Neck, New York (NYSDEC Site#130072), the New York State Department of Environmental Conservation (NYSDEC) has assigned site management tasks to Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) under Standby Engineering Contract D007625. The site is currently listed on the New York State Registry of Inactive Hazardous Waste Sites as a Class 4. This designation is for properly closed sites but requires continued management until remedial objectives are achieved. From 2001 to 2012, the United States Environmental Protection Agency (USEPA) oversaw the O&M and site management, with the NYSDEC resuming responsibility in 2012.

The on-going site management was assigned to HDR (D007625-06) in August 2012. This work assignment (WA) includes the following tasks:

- Task 1 – Project Scoping
- Task 2 – Site Management Plan
- Task 3 – O&M
- Task 4 – Monitoring and Reporting
- Task 5 – Periodic Review
- Task 6 – Remedial System Optimization (RSO)

This quarterly O&M Report (Task 4) summarizes the O&M and monitoring activities completed during the third quarter of 2018 (July through September 2018). This report provides a description of the work performed throughout the reporting period and includes all relevant data and performance monitoring documentation.

2.0 BACKGROUND

2.1 Site Location and Current Use

The site's physical address is 110 Cutter Mill Road in Great Neck, New York. The property is approximately ¼ acre in size and includes a vacant two-story building (formerly the Stanton Cleaners building), a one-story boiler/storage building, and the two-story groundwater extraction and treatment (GWE&T)/soil vapor extraction (SVE) system building. The site is bordered to the north and east by empty lots (former indoor tennis facility), to the south by a Sunoco gasoline fueling station and the Long Island Hebrew Academy (LIHA), and to the west by Cutter Mill Road. The surrounding area is largely urbanized and consists of various mixed uses with residential areas on side streets and commercial buildings along the main roadways. The entire area is serviced by public water and sewer with Water Authority of Great Neck North (WAGNN) as the primary water supplier. A United States Geological Survey (USGS) 7.5-minute map showing the site's location is provided on Figure 1.

As mentioned above, the Stanton Cleaners building is currently vacant. During a 2014 inspection, the NYSDEC verified that the facility terminated the use of a fourth generation tetrachloroethene (PCE) dry cleaning machine and surrendered their Air Facility Registration. In February 2017, the dry cleaning machinery was removed from the property and operations were moved to another location.

Three WAGNN public water supply wells are located approximately 1,000 feet west (downgradient) of the site. Two of these wells are approximately 145 feet deep and the third well is 434 feet deep. The two 145-foot deep wells, designated as PW-2A (N-12796) and PW-9 (N-4388), are screened within a deeper portion of the Upper Glacial Aquifer (UGA). The third 434-foot deep well, designated as PW-11, is within the Lloyd Aquifer and not believed to be impacted by the site. In October 2015, well PW-11 was taken out of service and replaced by well PW-11A in April 2017.

The WAGNN supply well treatment system is currently in operation and influent (INF) volatile organic compound (VOC) concentrations are treated to below federal and state drinking water standards. WAGNN analytical data provided to the NYSDEC indicates that PCE concentrations in raw water samples collected from PW-2A (down gradient of Stanton Cleaners site) periodically exceed its respective NYSDEC Groundwater Quality Standard (GWQS) of 5 micrograms per liter (µg/L).

2.1 Site Geology

Long Island's geology is composed of a sequence of unconsolidated glacial, lacustrine, deltaic, and marine deposits of clay, silt, and gravel that range in age from the Upper Cretaceous to Pleistocene epochs. These deposits overlay a Precambrian to Paleozoic crystalline bedrock. In Nassau County, where the site is located, the unconsolidated deposit thickness is approximately 500 feet.

Underlying the site, the UGA is subdivided into shallow, intermediate, and deep zones. For on-going site management, this naming convention is maintained such that all data collected is consistent with the *April*

2004 Final Hydrogeologic Investigation Report- Operable Unit 1 and *Final Capture Zone Analysis Report*. The shallow UGA consists of orange brown, poorly to well graded outwash sands and till of generally high permeability. The intermediate zone, at the water table's vicinity (depth between 50 to 60 feet below ground surface (bgs)), consists of a light grey to white fine grained micaceous silty sand and clay. The intermediate zone then transitions with depth into the North Shore confining unit, which separates the shallow-intermediate and deep zones. The confining unit consists of fine grained deposits and is described as light brown clay, light gray clayey silts, and silty clay. The finer grained materials are likely marine or post-glacial lake deposits which, in some areas of the site, overlie the deeper UGA. The deep UGA zone is generally a thin deposit of outwash sands and gravels that represent possible infilling of low lying areas during an interglacial stage.

Previous site investigations have shown that only the UGA has been impacted and groundwater PCE concentrations have declined significantly over time. The site groundwater levels are impacted by the pumping stress associated with the WAGNN pumping wells, with the most pronounced impacts in the UGA intermediate and deep zones.

2.2 Remedial History

Improper handling and disposal of spent dry cleaning solvents, including PCE, has resulted in hazardous substance releases at the site. As a result, PCE migrated from the underlying subsurface soils to surrounding indoor air and groundwater environments, producing significant threats to human health. Site remedial activities began in 1983 and are briefly summarized below.

- 1983 – Approximately 20 cubic yards of PCE-contaminated soil was removed from behind the Stanton Cleaners property
- 1986 – The NYSDEC funded construction of an air stripper treatment system for the WAGNN water supply wells.
- 1989 - A GWE&T system was installed by the potentially responsible party (PRP). The system performed poorly and was abandoned shortly thereafter.
- 1993 – The site was listed on the New York State Registry of Inactive Hazardous Waste Sites as a Class 2.
- 1998 – A new air stripper treatment system for the site-impacted WAGNN water supply wells was installed.
- 1998/1999 – USEPA assistance was requested; the site was proposed for addition to the National Priorities List (NPL); a Record of Decision (ROD) was finalized. The site was formally added to the NPL in May 1999.
- 2001 – The USEPA completed the installation of the dual GWE&T/SVE system on the property to address and contain the on-site contamination source. Additionally, the USEPA installed a sub-slab depressurization system (SSDS) on the LIHA.

- 2002 – Two 250-gallon PCE and one 500-gallon oil underground storage tanks (UST) were removed.
- 2008 – The USEPA conducted the first five-year site review. The review concluded that the remedy was in place and functioning as intended and did not identify significant issues requiring attention.
- 2011 – The site was reclassified from a Class 2 to a Class 4 Inactive Hazardous Waste site.
- 2012 – The USEPA completed the installation of a groundwater air sparge (AS) system and began operations in March. Additionally, the USEPA removed the LIHA SSDS prior to the NYSDEC assuming O&M in November.
- 2013 – The USEPA conducted the second five-year review in December.
- 2014 – Due to an air compressor oil leak, the AS system was shut down. The AS component of the groundwater system was removed from service such that the remaining remedial system consists of GWE&T and SVE. In February, snow and ice on the roof collapsed the gutter system, pulling the electrical service drop from the building. As a result, extensive downtime occurred due the electrical system damage and subsequent repairs.
- 2015 – In July, USEPA representatives met with NYSDEC representatives to review remedial action objective (RAO) progress and discuss site management program plans.
- 2016 – Significant downtime to the SVE system (approximately 10 months) occurred due to needed repairs for the blower. Repairs were delayed for administrative reasons during the Amendment 1 approval process.
- 2017 – The NYSDEC completed an RSO investigation from November 2016 through February 2017 to evaluate subsurface soil and the local EPA-EXT-02 aquifer. Additionally, the Stanton Cleaners building was vacated, with all associated equipment and operations removed from the site.

2.3 Site Cleanup Objectives

The site cleanup objective is, to the extent feasible, restore the impacted media to pre-disposal conditions. Closure criterion will be determined by the NYSDEC based on the future monitoring data. The Standards, Criteria, and Guidance (SCGs) currently used for the various sample media are summarized below.

- Soil – NYSDEC Environmental Conservation Law (*ECL*) *6 New York Code of Rules and Regulations (NYCRR) Part 375-6: Remedial Program Soil Cleanup Objectives (SCOs).*
- Groundwater - NYSDEC *Technical and Operational Guidance Series (TOGS) 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*.
- Soil Vapor - New York State Department of Health (NYSDOH) *Final Guidance for Evaluating Soil Vapor Intrusion (SVI) in the State of New York.*

3.0 OPERATIONS AND MAINTENANCE PROGRAM

The on-going O&M program at the Stanton Cleaners site includes the following:

- Monthly operational checks of the GWE&T and SVE systems;
- Monthly water level monitoring;
- Monthly influent (INF)/effluent (EFF) sampling of the GWE&T system;
- Quarterly INF/EFF sampling of the SVE system; Annual, or as needed, granular activated carbon (GAC) change outs on the GWE&T and SVE systems; and
- Annual State Pollutant Discharge Elimination System (SPDES) sampling of the GWE&T system EFF.

This report is a summary of all third quarter 2018 activities (July through September). Daily reports summarizing the activities completed for that day are in Appendix A.

3.1 Groundwater Extraction and Treatment System Operations and Maintenance

Currently EPA-EXT-02, located at the corner of Cutter Mill and Ascot Roads, is the only operational extraction well. Four additional extraction wells (EPA-EXT-01, EPA-EXT-03, EPA-EXT-04R, and ST-IW-01) are not operational and were formerly included in the groundwater monitoring well network. The locations of the five extractions wells are shown on Figure 2.

The GWE&T system was not operational through the third quarter of 2018; samples were not collected and sample collection data tables are not included in this quarterly report. Performance monitoring logs including the monthly O&M reports and Lookout® operational data is provided in Appendices B and C, respectively.

3.1.1 Groundwater Extraction and Treatment System Influent/Effluent Sampling

Sampling of the GWE&T system INF and EFF is performed monthly to monitor plant efficiency and determine whether liquid GAC (LGAC) breakthrough has occurred. Since the RW-2 motor was not working and the GWE&T system remained offline for the entire third quarter of 2018, monthly influent and effluent samples were not collected. A graph showing the GWE&T system influent PCE concentrations from 2003 through the third quarter of 2018 is provided on Figure 3.

3.1.2 Groundwater Extraction and Treatment System Annual SPDES Sampling

Sampling of the GWE&T system EFF is performed annually to verify that discharge parameters do not exceed the SPDES permit equivalency. During this quarter, a sample was not collected from the effluent port.

3.2 Soil Vapor Extraction System Operations and Maintenance

Air monitoring of the SVE system is performed on a monthly basis. In accordance with the *2012 O&M Manual*, monthly SVE system performance monitoring includes the collection of the following parameters: VOCs, carbon monoxide, oxygen, lower explosive limit (LEL), hydrogen sulfide, air velocity in cubic feet per minute (cfm), temperature, relative humidity, dew point, and vacuum pressure. Air monitoring is performed at the following locations:

- SVE wells: EPA-SVE-1 (shallow), EPA-SVE-1 (medium), EPA-SVE-2 (shallow), EPA-SVE-2 (medium), EPA-SVE-3A, EPA-SVE-3B, and SS-A
- SVE-Influent, SVE-1 Combined, SVE-2 Combined: Sampling ports on SVE influent lines, prior to blower and vapor phase carbon
- Post-Blower Pre-Carbon: Prior to vapor phase carbon treatment, post blower
- Post-VGAC – Post vapor phase treated effluent (quarterly as needed to evaluate carbon breakthrough)

As a result of the third quarter 2018 SVE system operations (July through September), approximately 42 lbs. of VOCs have been removed through the vapor phase. SVE mass removal rates are calculated utilizing total VOC measurements via a photo-ionization detector (PID). Since the start of operations in September 2003, the SVE system is estimated to have removed an approximately 2,109.8 lbs. of PCE. Graphs showing the cumulative PCE mass removed over the past year and since September 2003 can be found on Figures 4 and 5, respectively. Monthly performance monitoring logs including both the AS and SVE systems can be found in Appendices D and E, respectively.

Figure 5 uses the PID measurements obtained during monitoring to estimate the mass recovery of the SVE system over the life of the system. When applicable, measurement of the SVE influent from a more robust source, such as sample collection via summa canister and laboratory analysis is used instead of a PID measurement. Calculation assumes that PCE is the bulk of the VOC detected in PID readings attained at the site.

Quarterly, 1-liter SUMMA canister influent and effluent samples are collected. During this quarter, samples were not collected by Preferred Environmental Services from the influent and effluent ports.

4.0 MONITORING PROGRAM

The on-going Monitoring program at the Stanton Cleaners site includes the following:

- Quarterly O&M reports;
- Semi-annual groundwater sampling; and
- Semi-annual SVI sampling at the LIHA.

4.1 Plume Perimeter Monitoring

Groundwater level measurements are obtained from both onsite and offsite wells once a month in order to evaluate capture zones(s) around groundwater extraction well EPA-EXT-02. The monitoring well network and well monitoring schedule are provided as Figures 6 and 7, respectively.

Water level measurements were collected during the July through September 2018 monthly O&M visits at 17 of the 18 on and off-site monitoring wells. Well number EPA-MW-22 is under a clothing bin and is inaccessible. The location and number of monitoring wells was previously determined by the USEPA based on the 2014 *Final Capture Zone Analysis Report*. Potentiometric surface maps for the shallow, intermediate, and deep UGA, based on the September 2018 values, can be found on Figures 8, 9, and 10, respectively. Groundwater level measurements for this quarter are provided in Appendix F.

The groundwater flow directions in the shallow and deep UGA resemble those measured previously for the site. In each of the contour maps, groundwater generally appears to flow to the southwest. A downward component of flow is also apparent when comparing the shallow, intermediate, and deep groundwater contours. A noticeable depression in the shallow water table (Figure 8) is centered around extraction well, EPA-EXT-02. The intermediate and deep UGA flow directions are to the southwest (Figures 9 and 10). During the February 2017 RSO aquifer test, it was found that the entire site falls within the capture zones of the public water supply wells, which strongly influence flow.

4.2 Groundwater Sampling

Routine semi-annual groundwater samples were not collected during this quarter. The next routine semi-annual groundwater sampling event is scheduled during the fourth quarter of 2018.

4.3 Indoor Air Quality Sampling

Routine semi-annual indoor air quality samples were not collected from the LIHA building during this quarter. The next routine semi-annual indoor air quality sampling event is scheduled for the fourth quarter of 2018.

4.4 Water Authority of Great Neck North Public Supply Well Monitoring

On a periodic basis, WAGNN personnel collect raw and treated water samples from each of its public supply wells (PW-2A, PW-6, PW-9, and PW-11A) and submits for the analysis of various compounds, including site specific chlorinated VOCs. It should be noted that PW-11 was permanently removed from service on October 19, 2016 and abandoned in March 2017. A new location, PW-11A, was installed during that time and began operation in April 2017.

In the analytical data provided by WAGNN for this quarter, the highest PCE concentration in any pre-treatment sample occurred on September 5, 2018 in PW-2A at a concentration of 8.4 µg/L. All post-treatment samples were non-detect (ND) for PCE. A graph showing the contaminants of concern (COCs) concentrations in the WAGNN wells over time can be found on Figure 11.

5.0 MAINTENANCE ISSUES AND RECOMMENDED SOLUTIONS

Based on the site visits and data collected during this period, HDR has identified maintenance issues and the recommendations relative to those findings can be found below.

- Influent Piping for GWTS (steel piping and/or the plastic strainer housing) needs replacement (leaking portion). Might be able to use RW-1 or RW-3 strainer housing.
- GWTS Pump RW-2 is actually wired to the controller and contactor labeled "RW-3 Pump". This controller was tripped, and the wires leading to/from it were burnt out. When the contacts were pulled in, the controller was receiving insufficient load.
- RW-2 pump motor was removed and replaced on September 25, 2018, but was not operational after installation. The GWTS has been offline since June 2018. The Lookout data logs show minimal discharge flow rates (1 – 16 gpm) from Recovery Well 3.

Unless otherwise noted, HDR has requested approval to proceed with our recommendations as outlined above and future quarterly reports will document how the maintenance issues were addressed.

5.1 Downtime Summary

During this quarterly monitoring period, SVE system components were found to be operational. The GWTS remained offline during the third quarter of 2018, and the approximate downtime duration was 92 days.

6.0 FUTURE ACTIVITIES

Upcoming maintenance and monitoring activities at the site includes the following:

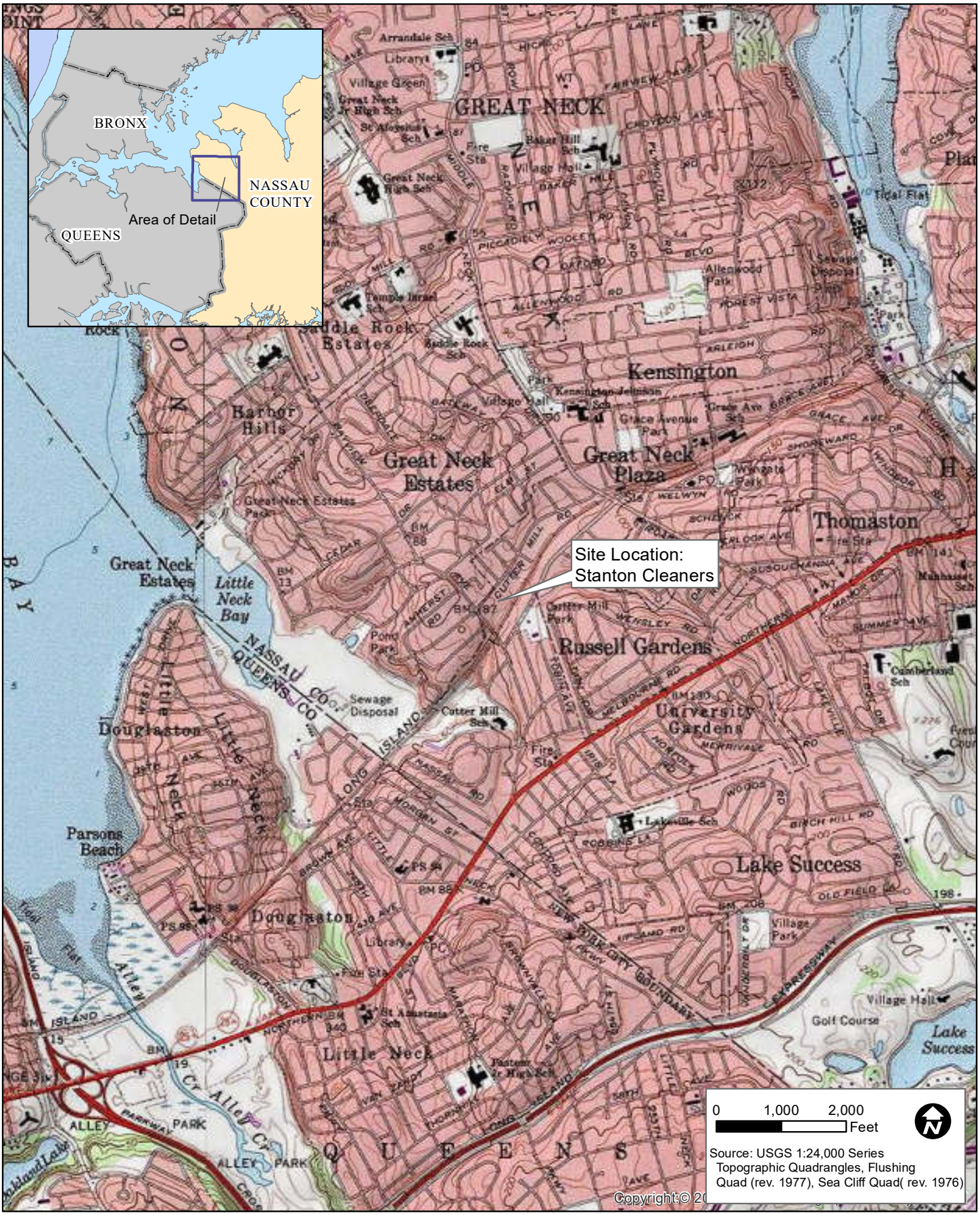
- Monthly routine monthly O&M activities will continue.
- Semi-annual groundwater sampling is scheduled to be completed during the fourth quarter of 2018.
- Semi-annual indoor air sampling is scheduled to be completed during the fourth quarter of 2018.

7.0 PROGRESS TOWARD CLEANUP OBJECTIVES

As a result of the GWE&T being offline and ongoing SVE system operations during the third quarter of 2018, a total of 37.3 lbs. of VOCs have been removed in the vapor phase. The total cost incurred in association with operation of these remedial system operations and subsequent site monitoring during this past quarter was $14,027.41 (see quarterly cost summary below). During this quarter, the cost of both liquid and vapor phase VOC removal was $376.07 per pound. Note that the cost per VOC pound removed is based on spending associated with WA D007625-06 Tasks 1 (Project Scoping), 2 (Site Management Plan), 3 (O&M), 4 (Monitoring and Reporting), and 5 (Periodic Review). Costs associated with Task 6 (RSO) are not included. Specific cost details can be found on HDR's Contractor's Application for Payments (CAPs) for this period.

Progress continues toward achieving the site cleanup objectives. An overall bulk reduction in the groundwater contaminant concentration has been achieved, but groundwater concentrations still exceed applicable goals. The SVE system continues to remove VOCs in the vapor phase, as determined by PID readings and flow measurements. Operation of the SVE system should continue until the cost per pound of VOC removed exceeds that which is determined efficient, or if asymptotic conditions have been reached.

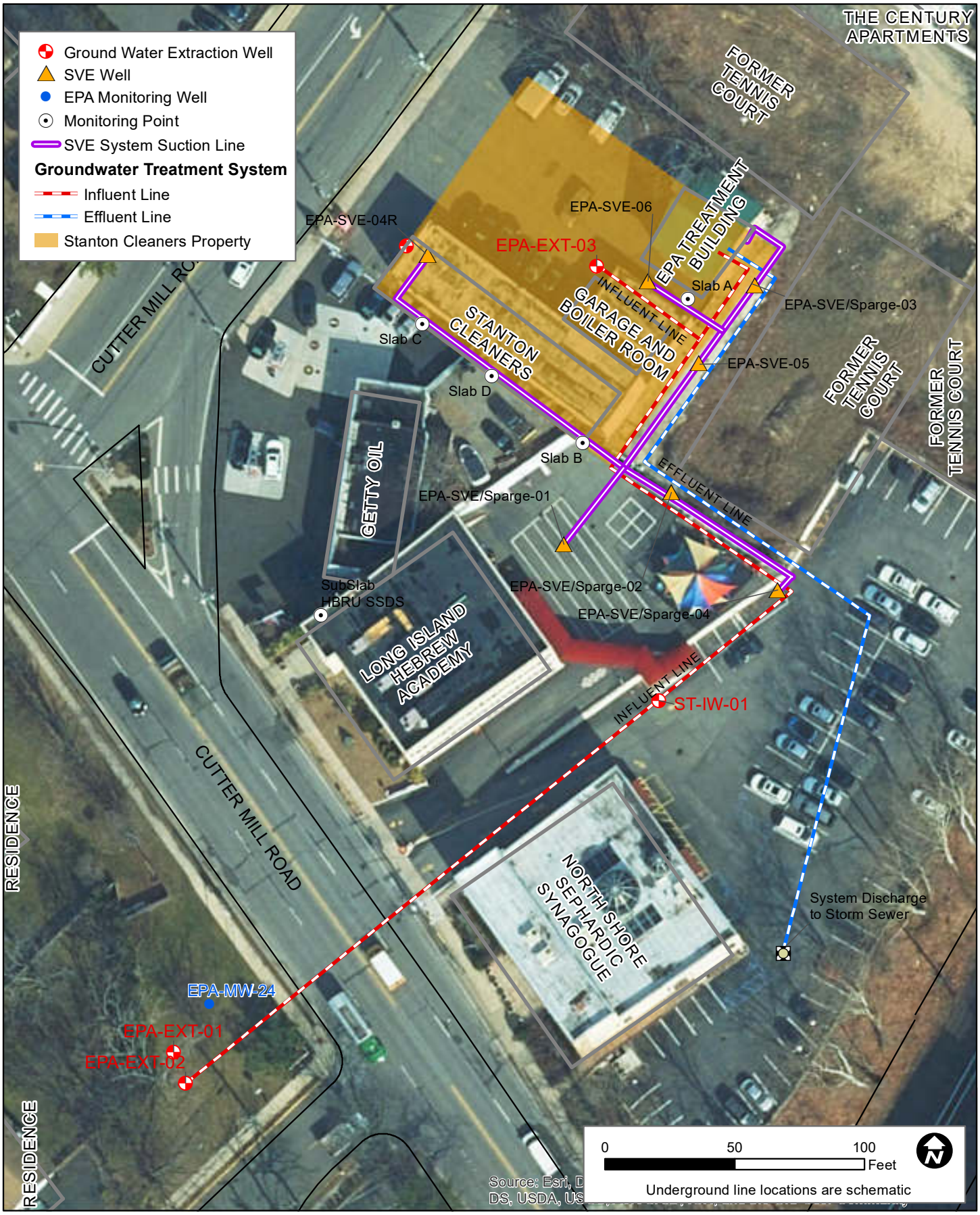
Quarterly Cost Summary							
PERIOD	COST ($)	Total VOCS Measured at SVE (lbs.)	Total VOCs Measured at GWE&TS (lbs.)	Quarterly Sum ($)		Total VOCs Removed (lbs.)	Cost per Pound
7/1/2018 - 9/29/2018	$ 14,027.41	37.3	0	$ 14,027.41		37.3	$ 376.07



Site Location
Stanton Cleaners
NYSDEC Site # 130072
Great Neck-North Hempstead, New York

Figure 1

September 29, 2018

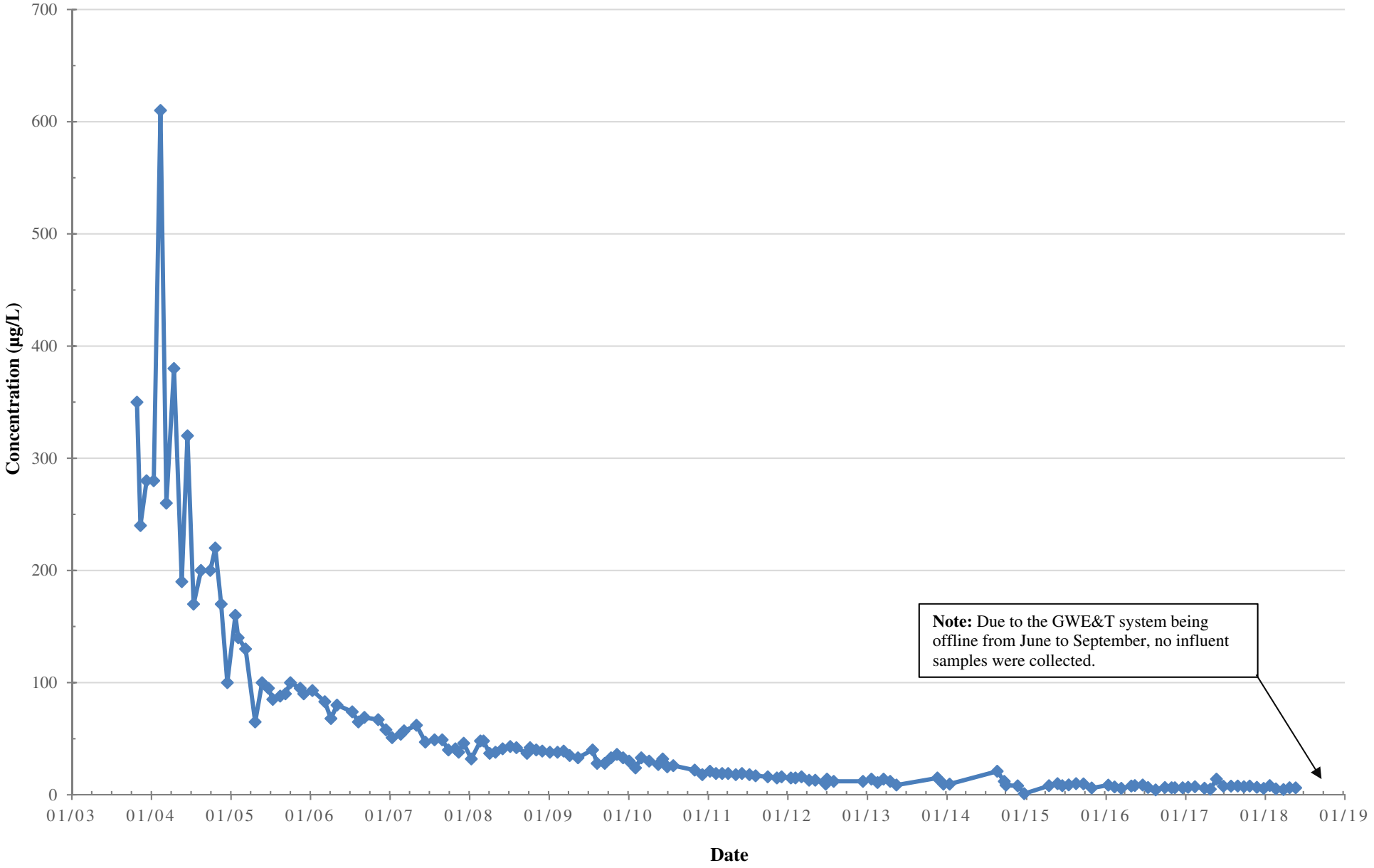


Site Layout
Stanton Cleaners
NYSDEC Site # 130072
Great Neck-North Hempstead, New York

Figure 2

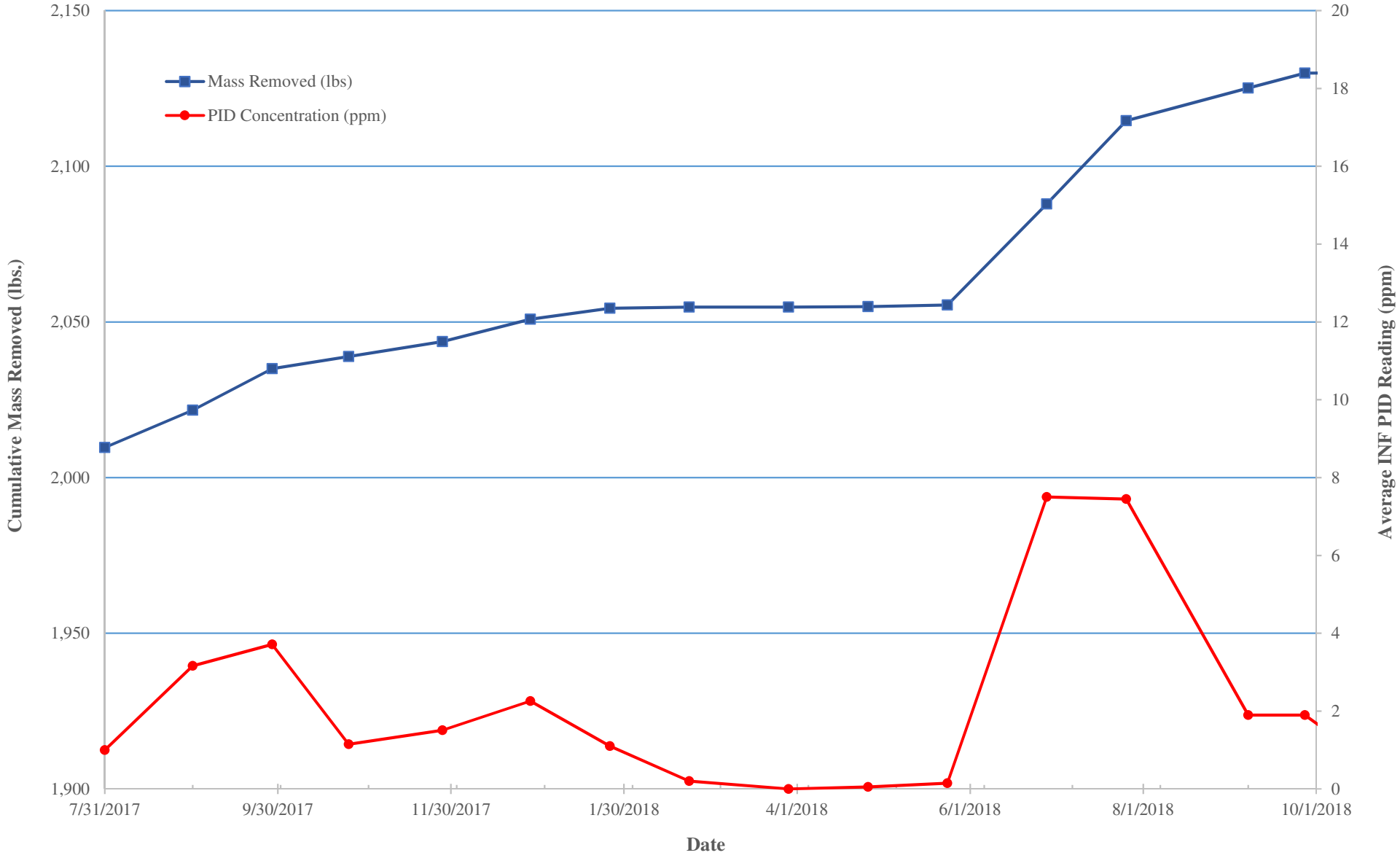
September 29, 2018

Figure 3
GWE&T System Influent PCE Concentrations - 2003-2018
Stanton Cleaners
110 Cuttermill Road, Great Neck, NY



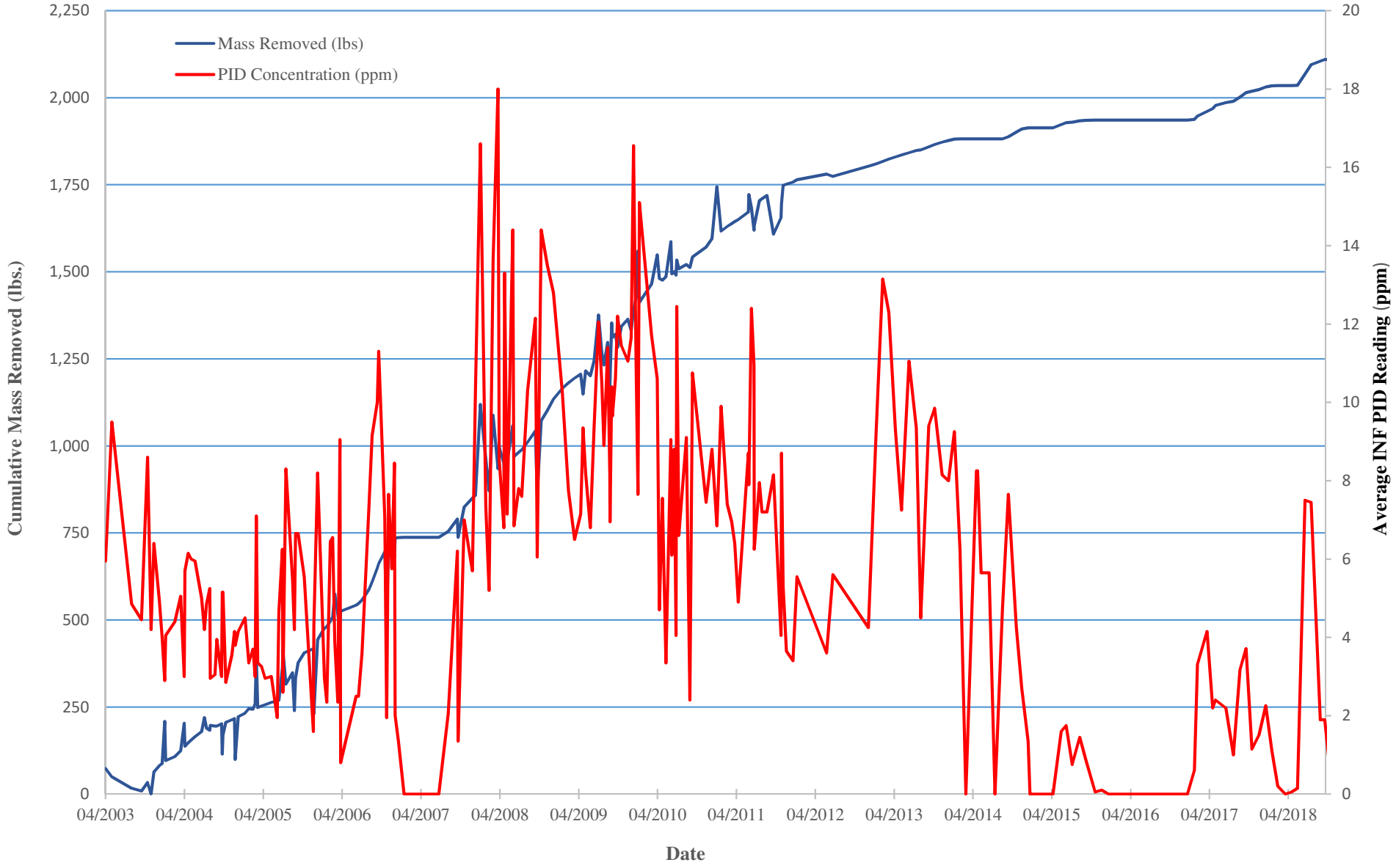
NYSDEC Site No: 130072
Standby Contract: D007625-06

Figure 4
SVE System Annual Cumulative PCE Mass Removal
Stanton Cleaners
110 Cuttermill Road, Great Neck, NY

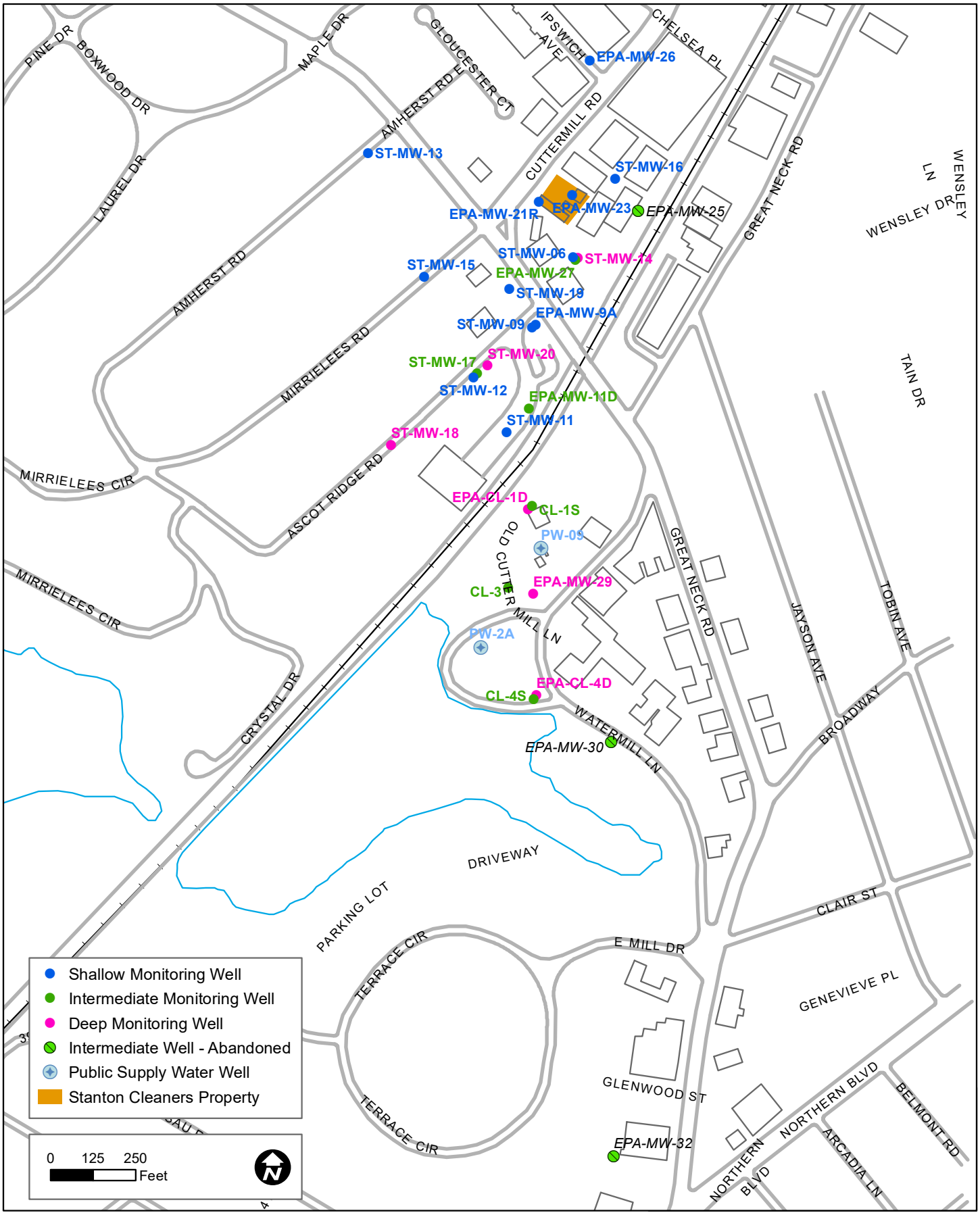


NYSDEC Site No: 130072
Standby Contract: D007625-06

Figure 5
SVE System Cumulative PCE Mass Removal
Stanton Cleaners
110 Cuttermill Road, Great Neck, NY



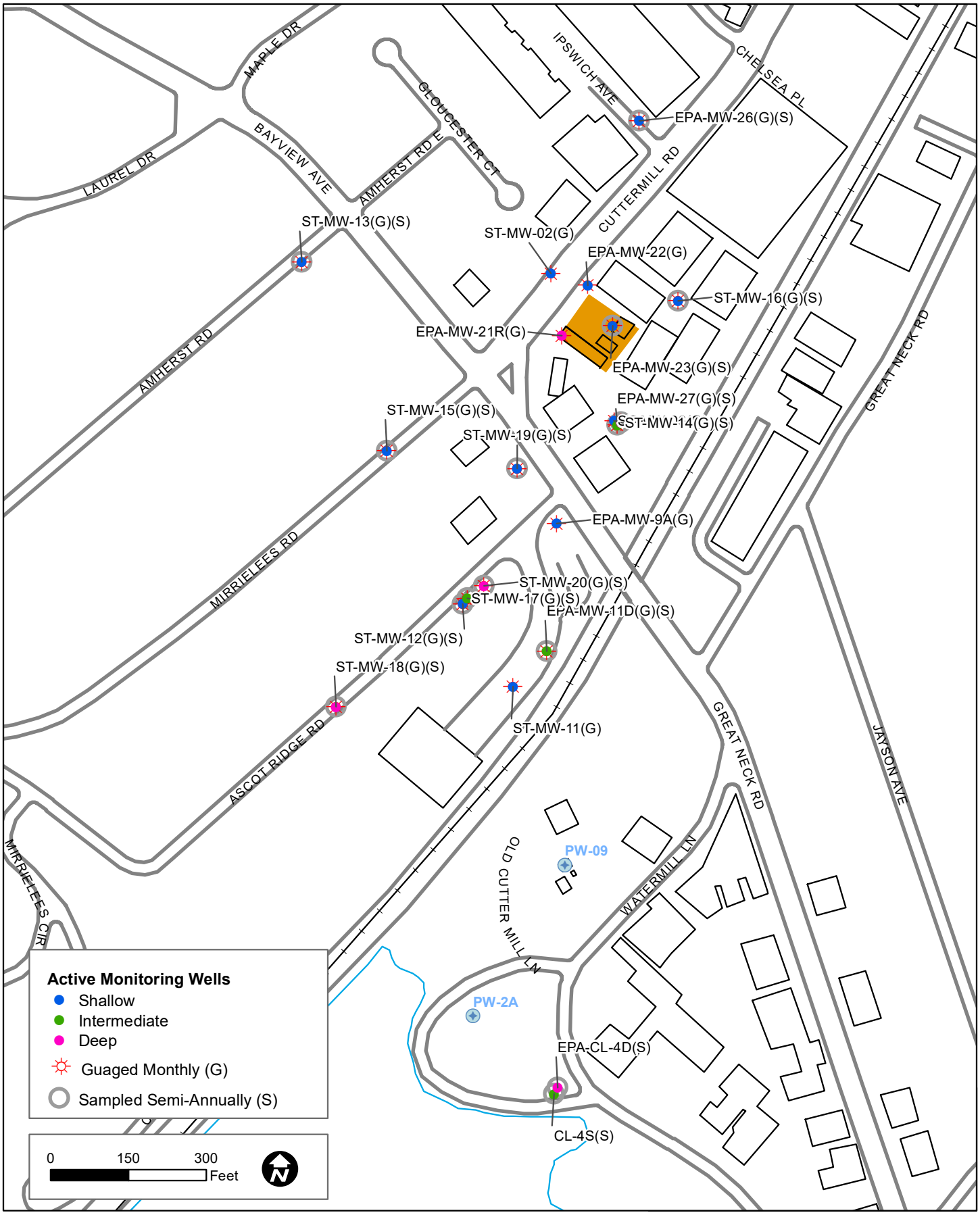
NYSDEC Site No: 130072
Standby Contract: D007625-06



Monitoring Well Network
Stanton Cleaners
NYSDEC Site # 130072
Great Neck-North Hempstead, New York

Figure 6

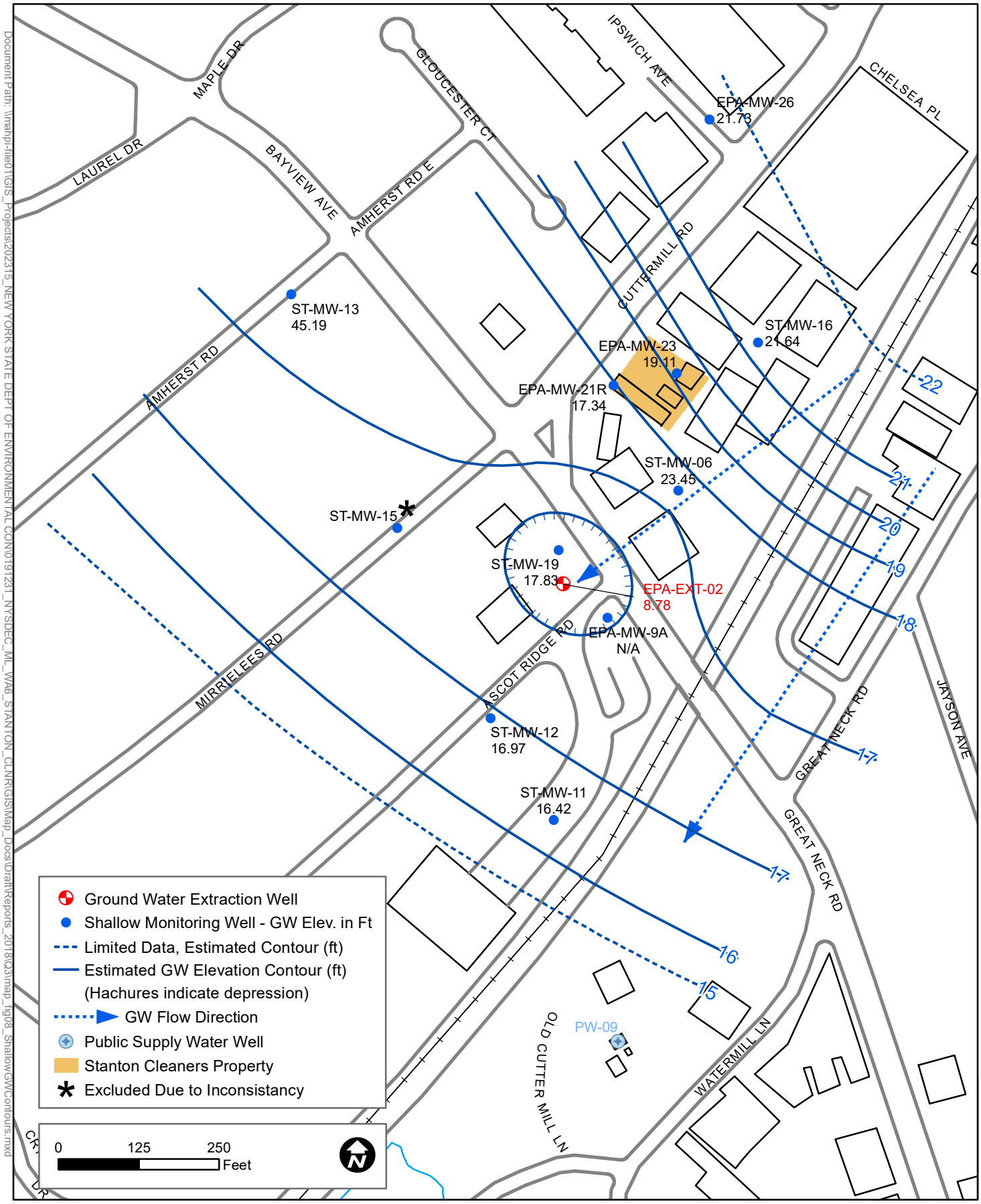
September 29, 2018



Well Monitoring Schedule
Stanton Cleaners
NYSDEC Site # 130072
Great Neck-North Hempstead, New York

Figure 7

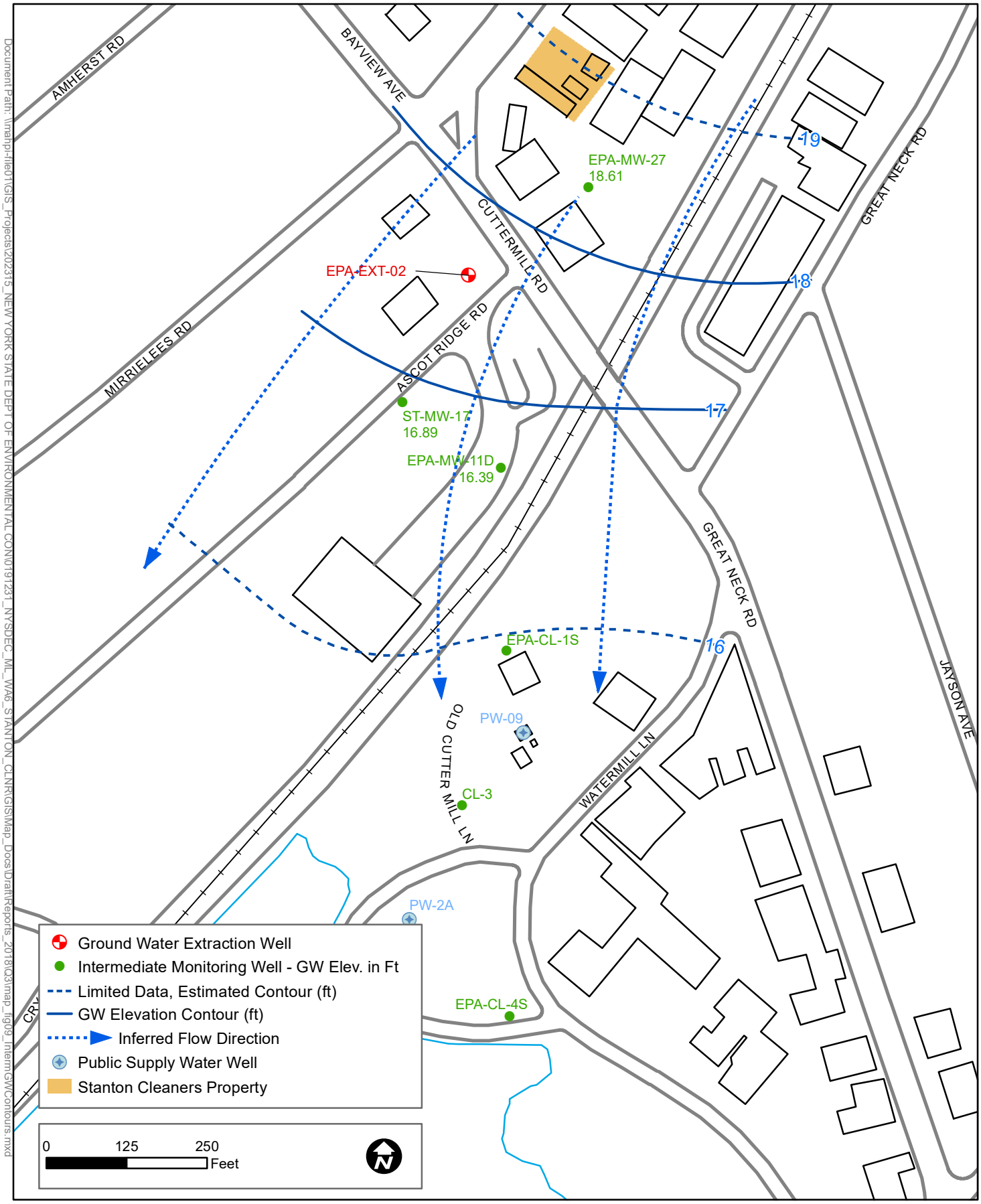
September 29, 2018



Shallow Ground Water Elevations (September 7, 2018)
Stanton Cleaners
NYSDEC Site # 130072
Great Neck-North Hempstead, New York

Figure 8

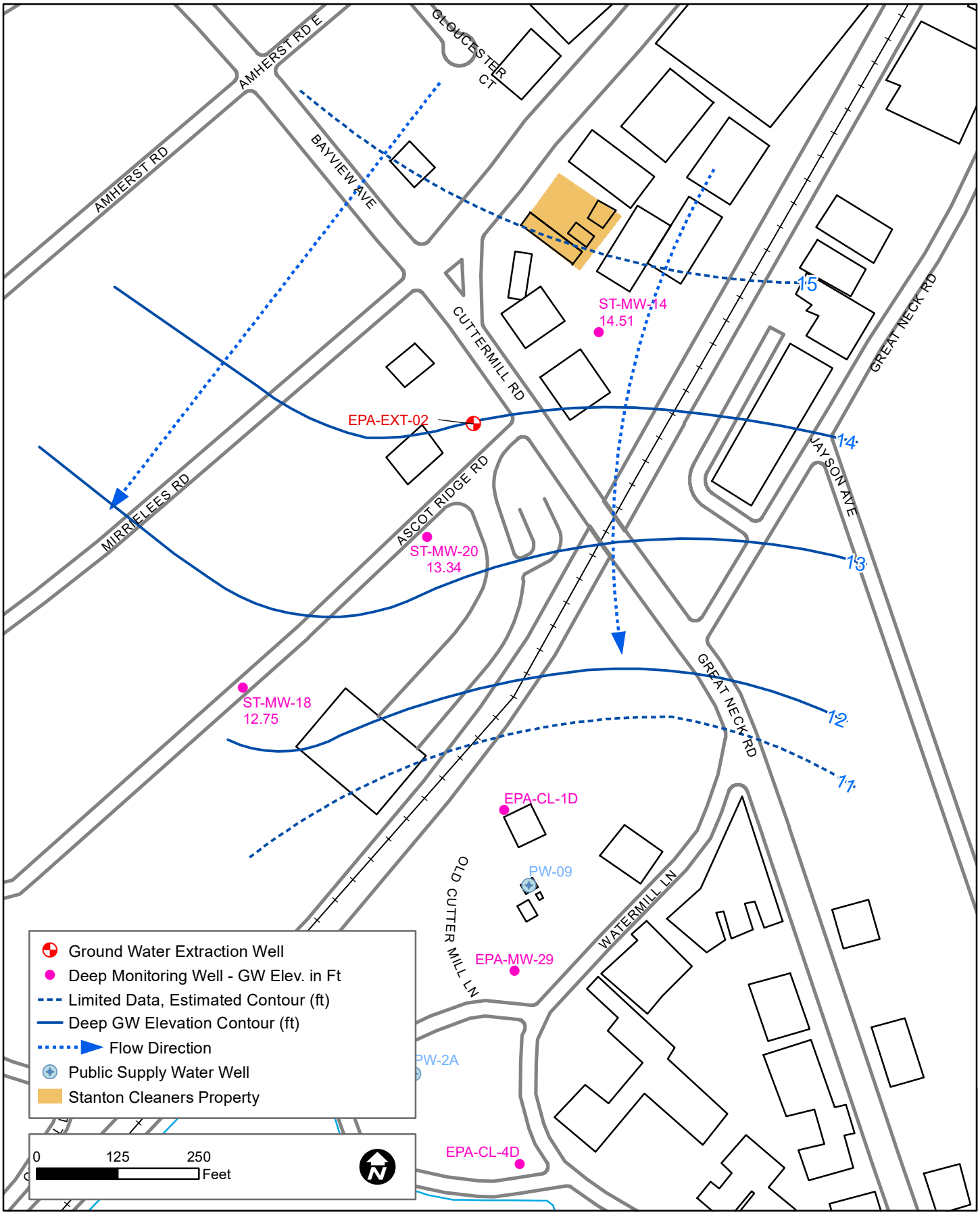
September 29, 2018



Intermediate Ground Water Elevations (September 7, 2018)
Stanton Cleaners
NYSDEC Site # 130072
Great Neck-North Hempstead, New York

Figure 9

September 29, 2018

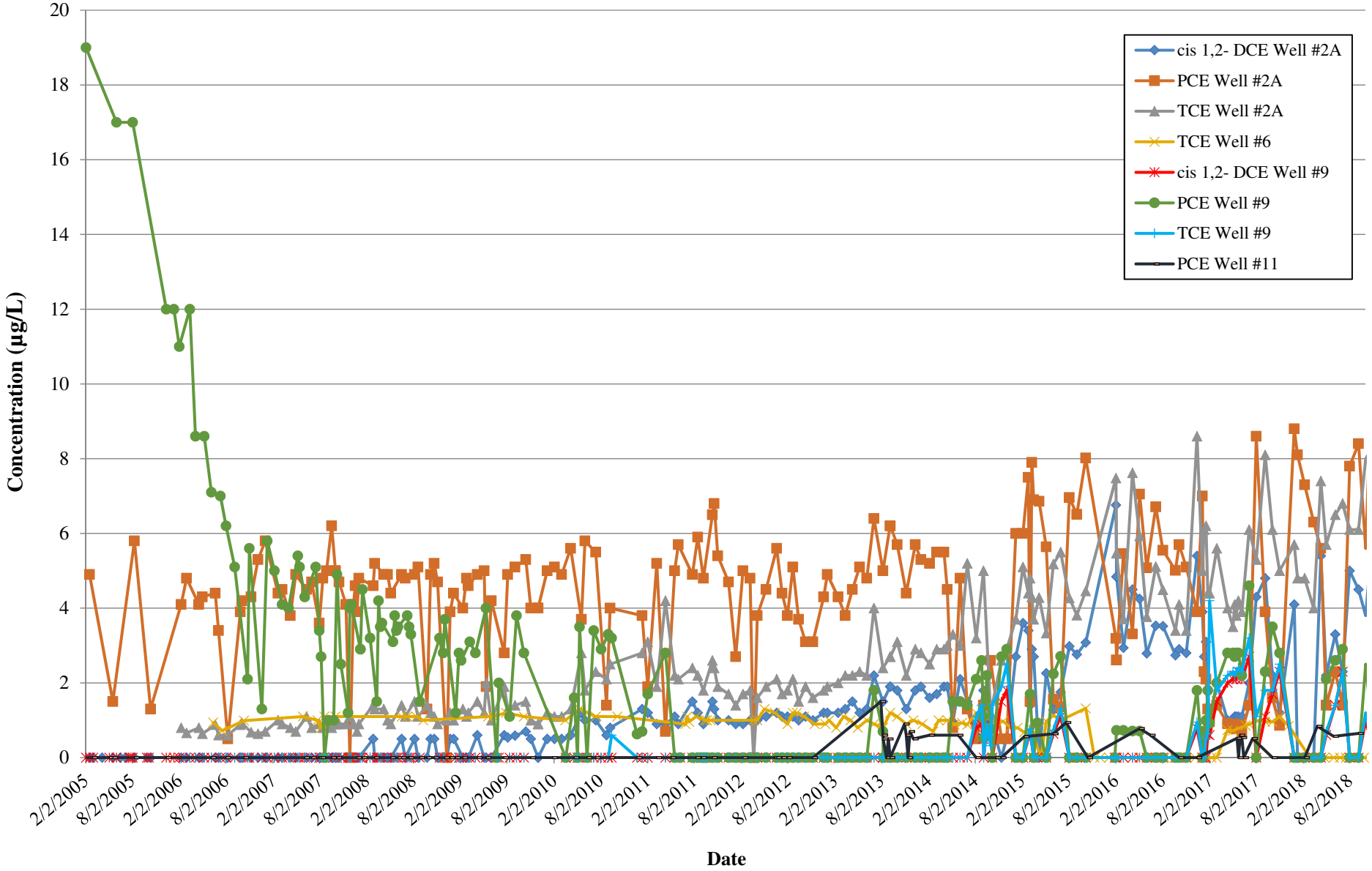


Deep Ground Water Elevations (September 7, 2018)
Stanton Cleaners
NYSDEC Site # 130072
Great Neck-North Hempstead, New York

Figure 10

September 29, 2018

Figure 11
Contaminants of Concern in WAGNN Wells
Stanton Cleaners
110 Cuttermill Road, Great Neck, NY



Appendix A

Daily O&M Reports

Project: Stanton Cleaners - Site Management
Contractors: HDR and Preferred Environmental Services

HDR Job No:
Site No:
HDR Project Manager: Michael Lehtinen

HDR
16 Corporate Woods Blvd
Albany, NY 12211
Telephone: 518.937.9500

DAILY REPORT

Day:	S	M	T	W	TH	F	S

Date: 2-Jul-18
REPORT No.
PAGE No. 1

PREPARED BY: Daniel Prisco-Buxbaum TITLE: Site Rep.

WEATHER	Bright Sun	Partly Cloudy	Overcast	Rain	Clear
TEMP	To 32	32-50	50-70	70-85	85 and up
WIND	Light	Moderate	High		
HUMIDITY	Dry	Moderate	Humid		
WIND DIR	NE	NW	SE	SW	
	N	S	E	W	

AVERAGE FIELD FORCE

Name of Contractor	Title	Hours Worked	Remarks
Daniel Prisco-Buxbaum	Technician	11:15 - 13:00	Preferred

VISITORS

Name	Time (From - To)	Representing	Remarks
Tom King	12:10 - 13:00	Delta Well and Pump	Troubleshooting GWTS Pump

EQUIPMENT AT THE SITE

I = Idle W = Working

1. Blowers - Working	3. Dell PC and Monitor- Working		
2. GWTS- Working			

OPERATION & MAINTENANCE ACTIVITIES

HDR/Preferred Site Representative: Daniel Prisco-Buxbaum - Preferred

11:15 - Preferred (DPB) arrived on site. SVE Blower online, GWTS remains offline. Scheduled to meet Tom King from Delta at 11:30.

12:10 - Tom King (Delta) on-site.

- Influent Piping for GWTS (steel piping and/or the plastic strainer housing) needs replacement (leaking portion). Might be able to use RW-1 or RW-3 strainer housing.

- GWTS Pump RW-2 is actually wired to the controller and contactor labeled "RW-3 Pump". This controller was tripped, and the wires leading to/from it were burnt out, requiring replacement. When the contacts were pulled in, the controller was receiving insufficient load.

- RW-2 pump motor also appears to be burnt out. Tom King suggested that power surges might have something to do with it, but was unable to offer a solution at this time. He indicated that he would reach out to M. Lehtinen regarding parts and cost for the repairs/replacement of the GWTS pump.

13:00 - Treatment building secured. All parties off-site.

☐ - Designates report is continued on additional pages

HDR/Preferred Site Representative: **Daniel Prisco-Buxbaum (Preferred)** Project Manager: **M. Lehtinen**

Project: Stanton Cleaners - Site Management
Contractors: HDR and Preferred Environmental Services

HDR Job No:
Site No:
HDR Project Manager: Michael Lehtinen

HDR
16 Corporate Woods Blvd
Albany, NY 12211
Telephone: 518.937.9500

DAILY REPORT

Day:	S	M	T	W	TH	F	S

Date: 7/26/2018
REPORT No.
PAGE No. 1

PREPARED BY: Daniel Prisco-Buxbaum TITLE: Site Rep.

WEATHER	Bright Sun	Partly Cloudy	Overcast	Rain	Clear
TEMP	To 32	32-50	50-70	70-85	85 and up
WIND	Light	Moderate	High		
HUMIDITY	Dry	Moderate	Humid		
WIND DIR	NE	NW	SE	SW	
	N	S	E	W	

AVERAGE FIELD FORCE

Name of Contractor	Title	Hours Worked	Remarks
Edward Combs	Technician	8:15 - 14:45	Preferred

VISITORS

Name	Time (From - To)	Representing	Remarks

EQUIPMENT AT THE SITE

I = Idle W = Working

1. Camera - W	3. Five Gas Meter - W	5. Diaphragm Sampling Pump - W	
2. VelociCalc - TSI 9565 - W	4. 300-ft Solinst - W	6. Tedlar Bag + Tubing - W	

OPERATION & MAINTENANCE ACTIVITIES

HDR/Preferred Site Representative: Edward Combs - Preferred

8:15 - Preferred (EC) on site. SVE blower online upon arrival. GWTS remains offline pending repair/replacement of the RW-2 pump.
8:30 - SVE blower offline for maitenance; changed 6 oz. of oil and greased blower bearings.
9:00 -SVE blower back online.
9:15 - Collected system readings around the treatment building.
9:30- Collected SVE port readings utilizing MultiRae 5-gas meter and Velocicalc.
10:45 - 12:00 - Performed routine monitoring well gauging under Task 4.
12:00- Performed weed removal and general housekeeping
14:30 - Inspected SVE piping "SVE-1 Shallow", "SVE-1 Medium" and "SVE-1 Combined" for cracks or penetrations and re-taped connections where applicable. No noticable increases in flow.
14:45 - Treatment building secured. Preferred (EC) off-site.

[x] - Designates report is continued on additional pages

HDR/Preferred Site Representative: **Daniel Prisco-Buxbaum (Preferred)** Project Manager: **M. Lehtinen**

Project: Stanton Cleaners - Site Management
Contractors: HDR and Preferred Environmental Services

HDR Job No:
Site No:
HDR Project Manager: Michael Lehtinen

HDR
16 Corporate Woods Blvd
Albany, NY 12211
Telephone: 518.937.9500

DAILY REPORT

Day:	S	M	T	W	TH	**F**	S

Date: 9/7/2018
REPORT No.
PAGE No. 1

PREPARED BY: Daniel Prisco-Buxbaum TITLE: Site Rep.

WEATHER	Bright Sun	Partly Cloudy	**Overcast**	Rain	Clear
TEMP	To 32	32-50	50-70	**70-85**	85 and up
WIND	**Light**	Moderate	High		
HUMIDITY	Dry	Moderate	**Humid**		
WIND DIR	NE	NW	SE	**SW**	
	N	S	E	W	

AVERAGE FIELD FORCE

Name of Contractor	Title	Hours Worked	Remarks
Daniel Prisco-Buxbaum	Technician	10:00 - 14:00	Preferred

VISITORS

Name	Time (From - To)	Representing	Remarks

EQUIPMENT AT THE SITE

I = Idle W = Working

1. Camera - W	3. Five Gas Meter - W	5. Diaphragm Sampling Pump - W	
2. VelociCalc - TSI 9565 - W	4. 300-ft Solinst - W	6. Tedlar Bag + Tubing - W	

OPERATION & MAINTENANCE ACTIVITIES

HDR/Preferred Site Representative: Daniel Prisco-Buxbaum - Preferred
10:00 - Preferred (DPB) on site. SVE blower online upon arrival. GWTS remains offline pending repair/replacement of the RW-2 pump.
10:15 - SVE blower offline for maitenance; changed 6 oz. of oil and greased blower bearings.
10:45 -SVE blower back online.
10:50 - Collected system readings around the treatment building.
11:00- Collected SVE port readings utilizing MultiRae 5-gas meter and Velocicalc.
12:00 - 13:00 - Performed routine monitoring well gauging under Task 4.
13:05 - 13:55 - Performed weed removal and general housekeeping
14:00 - Treatment building secured. Preferred (DPB) off-site.

[x] - Designates report is continued on additional pages

HDR/Preferred Site Representative: **Daniel Prisco-Buxbaum (Preferred)** Project Manager: **M. Lehtinen**

Project: Stanton Cleaners - Site Management
Contractors: HDR and Preferred Environmental Services

HDR Job No:
Site No:
HDR Project Manager: Michael Lehtinen

HDR
16 Corporate Woods Blvd
Albany, NY 12211
Telephone: 518.937.9500

DAILY REPORT

Day:	S	M	T	W	TH	F	S

Date: 9/27/2018
REPORT No.
PAGE No. 1

PREPARED BY: Edward Combs TITLE: Site Rep.

WEATHER	Bright Sun	Partly Cloudy	Overcast	Rain	Clear
TEMP	To 32	32-50	50-70	70-85	85 and up
WIND	Light	Moderate	High		
HUMIDITY	Dry	Moderate	Humid		
WIND DIR	NE	NW	SE	SW	
	N	S	E	W	

AVERAGE FIELD FORCE

Name of Contractor	Title	Hours Worked	Remarks
Edward Combs	Technician	9:00 - 15:00	Preferred

VISITORS

Name	Time (From - To)	Representing	Remarks

EQUIPMENT AT THE SITE

I = Idle W = Working

1. Camera - W	3. Five Gas Meter - W	5. Diaphragm Sampling Pump - W	
2. VelociCalc - TSI 9565 - W	4. 300-ft Solinst - W	6. Tedlar Bag + Tubing - W	

OPERATION & MAINTENANCE ACTIVITIES

HDR/Preferred Site Representative: Edward Combs - Preferred

9:00 - Preferred (EC) on site. SVE blower online upon arrival. GWTS remains offline pending repair/replacement of the RW-2 pump and troubleshooting of electrical panel and wiring.
9:15 - SVE blower offline for maitenance; changed 6 oz. of oil and greased blower bearings.
10:00 -SVE blower back online.
10:05 - Collected system readings around the treatment building.
10:25- Collected SVE port readings utilizing MultiRae 5-gas meter and Velocicalc.
12:15 - 14:00 - Performed routine monitoring well gauging under Task 4.
14:00 - **14:55** - Performed weed removal and general housekeeping
15:00 - Treatment building secured. Preferred (EC) off-site.

[x] - Designates report is continued on additional pages

HDR/Preferred Site Representative: **Daniel Prisco-Buxbaum (Preferred)** Project Manager: **M. Lehtinen**

Project: Stanton Cleaners - Site Management
Contractors: HDR and Preferred Environmental Services

HDR Job No:
Site No:
HDR Project Manager: Michael Lehtinen

HDR
16 Corporate Woods Blvd
Albany, NY 12211
Telephone: 518.937.9500

DAILY REPORT

Day:	S	M	**T**	W	TH	F	S

Date: 9/25/2018
REPORT No.
PAGE No. 1

PREPARED BY: Daniel Prisco-Buxbaum TITLE: Site Rep.

WEATHER	Bright Sun	Partly Cloudy	Overcast	**Rain**	Clear
TEMP	To 32	32-50	**50-70**	70-85	85 and up
WIND	Light	**Moderate**	High		
HUMIDITY	Dry	Moderate	**Humid**		
WIND DIR	NE	NW	SE	SW	
	N	S	**E**	W	

AVERAGE FIELD FORCE

Name of Contractor	Title	Hours Worked	Remarks
Edward Combs	Technician	7:00 - 10:15	Preferred
Edward Combs	Technician	12:00 - 14:00	Preferred

VISITORS

Name	Time (From - To)	Representing	Remarks
Ron	7:00 - 13:00	Delta Well & Pump	
Dan	7:00 - 13:00	Delta Well & Pump	

EQUIPMENT AT THE SITE

I = Idle W = Working

1. Camera - W			

OPERATION & MAINTENANCE ACTIVITIES

HDR/Preferred Site Representative: Edward Combs - Preferred

7:00 - Preferred (EC) on site with Delta Well & Pump for replacement of RW-2 pump motor. RW-2 offline on arrival.

7:30 - Started pulling up pump for RW-2.

8:45 - Old RW-2 pump motor removed and left onsite in the process room of the treatment building.

12:00 - New RW-2 pump motor installed and pump lowered back down well.

12:40 - Troubleshooting new RW-2 motor, still not functioning. Tom King (Delta) will need to return and troubleshoot the Master Control Panel and associated electrical wiring leading to RW-2.

13:00- Delta Well & Pump personnel off-site. EC remained on-site and took photographs of items requiring attention/maintenance in the near future (see attached photographs).

14:00- Treatment building secured. Preferred (EC) offsite.

[x] - Designates report is continued on additional pages

HDR/Preferred Site Representative: **Daniel Prisco-Buxbaum (Preferred)**

Project Manager: **M. Lehtinen**

Appendix B

GWE&T System O&M Reports

STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE
Soil-Vapor Extraction and Pump and Treat System
Monthly O&M Data Log

Date: 7/26/2018

Data from Computer Display Screen:

Pump	Flow	Valve open
RW-2	0** GPM	100%

Total Gallons Treated:	407,538,917	
Discharge Rate:	0 GPM*	
Discharge Conductivity:	0*	
Discharge pH:	5.6*	
SVE Air Flow Rate:	201 CFM	(190 CFM at meter)

Visual Digital Readouts from Catwalk:

Discharge pH:	4.07**
Discharge Temp:	31ºC**
Discharge Conductivity:	2.5**

Flow meter reading:

Flow Rate:	0 GPM**
Total gallons: 4,583,000 gallons	meter display in 100 of gallons

Effluent flow meter reading:

Flow Rate:	0 GPH**
Total gallons:	5,771,975.9

Weather:
83ºF, Partly Cloudy, Humid, Southwest wind

Notes:
* Meter Malfunctioning
** GWTS offline
GPM- Gallons Per Minute

STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE
Soil-Vapor Extraction and Pump and Treat System
Monthly O&M Data Log

Date: 9/7/2018

Data from Computer Display Screen:

Pump	Flow	Valve open
RW-2	0** GPM	100%

Total Gallons Treated:	407,716,989	
Discharge Rate:	7 GPM**	
Discharge Conductivity:	0.48*	
Discharge pH:	5.6*	
SVE Air Flow Rate:	207 CFM	(190 CFM at meter)

Visual Digital Readouts from Catwalk:

Discharge pH:	4.02**
Discharge Temp:	33ºC**
Discharge Conductivity:	3.9**

Flow meter reading:

Flow Rate:	0 GPM**
Total gallons: 4,583,000 gallons	meter display in 100 of gallons

Effluent flow meter reading:

Flow Rate:	0 GPH**
Total gallons:	5,771,975.9

Weather:
73ºF, Overcast, Humid, Southwest wind

Notes:
* Meter Malfunctioning
** GWTS offline
GPM- Gallons Per Minute

STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE
Soil-Vapor Extraction and Pump and Treat System
Monthly O&M Data Log

Date: 9/27/2018

Data from Computer Display Screen:

Pump	Flow	Valve open
RW-2	10** GPM	100%

Total Gallons Treated:	407,963,508	
Discharge Rate:	16 GPM**	
Discharge Conductivity:	0.38*	
Discharge pH:	5.6*	
SVE Air Flow Rate:	192 CFM	(190 CFM at meter)

Visual Digital Readouts from Catwalk:

Discharge pH:	4.39**
Discharge Temp:	27ºC**
Discharge Conductivity:	3.1**

Flow meter reading:

Flow Rate:	0 GPM**
Total gallons: 4,583,000 gallons	meter display in 100 of gallons

Effluent flow meter reading:

Flow Rate:	0 GPH**
Total gallons:	5,771,975.9

Weather:
70ºF, Partly Cloudy, Humid, North wind

Notes:
* Meter Malfunctioning
** GWTS offline
GPM- Gallons Per Minute

Appendix C

Lookout Operational Data Logs

Stanton Cleaners Groundwater Contamination Site - July 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
7/1/2018 0:00	0	410044841.4	208
7/1/2018 4:00	0	410044841.4	211
7/1/2018 8:00	0	410044841.4	212
7/1/2018 12:00	0	410044841.4	212
7/1/2018 16:00	0	410044841.4	210
7/1/2018 20:00	0	410044841.4	209
7/2/2018 0:00	0	410044841.4	210
7/2/2018 4:00	0	410044841.4	213
7/2/2018 8:00	0	410044841.4	212
7/2/2018 12:00	0	410044841.4	210
7/2/2018 16:00	0	410044841.4	205
7/2/2018 20:00	0	410044841.4	208
7/3/2018 0:00	0	410044841.4	209
7/3/2018 4:00	0	410044841.4	212
7/3/2018 8:00	0	410044841.4	212
7/3/2018 12:00	0	410044841.4	212
7/3/2018 16:00	0	410044841.4	209
7/3/2018 20:00	0	410044841.4	209
7/4/2018 0:00	0	410044841.4	206
7/4/2018 4:00	0	410044841.4	211
7/4/2018 8:00	0	410044841.4	209
7/4/2018 12:00	0	410044841.4	214
7/4/2018 16:00	0	410044841.4	207
7/4/2018 20:00	0	410044841.4	207
7/5/2018 0:00	0	410044841.4	209
7/5/2018 4:00	0	410044841.4	209
7/5/2018 8:00	0	410044841.4	207
7/5/2018 12:00	0	410044841.4	210
7/5/2018 16:00	0	410044841.4	207
7/5/2018 20:00	0	410044841.4	201
7/6/2018 0:00	1	410044882.8	200
7/6/2018 4:00	1	410045119.7	206
7/6/2018 8:00	0	410045277.3	207
7/6/2018 12:00	0	410045277.3	210
7/6/2018 16:00	0	410045277.3	205
7/6/2018 20:00	1	410045307.1	203
7/7/2018 0:00	1	410045544	203
7/7/2018 4:00	1	410045780.9	209
7/7/2018 8:00	0	410045899.3	209
7/7/2018 12:00	0	410045899.3	208
7/7/2018 16:00	0	410045899.3	206

Stanton Cleaners Groundwater Contamination Site - July 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
7/7/2018 20:00	0	410045899.3	205
7/8/2018 0:00	1	410046039.1	204
7/8/2018 4:00	0	410046246.3	208
7/8/2018 8:00	0	410046246.3	208
7/8/2018 12:00	0	410046246.3	210
7/8/2018 16:00	0	410046246.3	208
7/8/2018 20:00	0	410046246.3	206
7/9/2018 0:00	0	410046246.3	207
7/9/2018 4:00	0	410046246.3	209
7/9/2018 8:00	0	410046246.3	213
7/9/2018 12:00	0	410046246.3	209
7/9/2018 16:00	0	410046246.3	205
7/9/2018 20:00	0	410046246.3	209
7/10/2018 0:00	0	410046246.3	205
7/10/2018 4:00	0	410046246.3	211
7/10/2018 8:00	0	410046246.3	212
7/10/2018 12:00	0	410046246.3	208
7/10/2018 16:00	0	410046246.3	207
7/10/2018 20:00	0	410046246.3	208
7/11/2018 0:00	0	410046246.3	209
7/11/2018 4:00	0	410046246.3	206
7/11/2018 8:00	0	410046246.3	208
7/11/2018 12:00	0	410046246.3	210
7/11/2018 16:00	0	410046246.3	208
7/11/2018 20:00	0	410046246.3	204
7/12/2018 0:00	1	410046451	209
7/12/2018 4:00	0	410046550.3	210
7/12/2018 8:00	0	410046550.3	211
7/12/2018 12:00	0	410046550.3	208
7/12/2018 16:00	0	410046550.3	208
7/12/2018 20:00	1	410046575.5	203
7/13/2018 0:00	1	410046812.6	209
7/13/2018 4:00	0	410046884.4	209
7/13/2018 8:00	0	410046884.4	212
7/13/2018 12:00	0	410046884.4	211
7/13/2018 16:00	0	410046884.4	207
7/13/2018 20:00	0	410046884.4	208
7/14/2018 0:00	0	410046884.4	204
7/14/2018 4:00	0	410046884.4	207
7/14/2018 8:00	0	410046884.4	207
7/14/2018 12:00	0	410046884.4	207

Stanton Cleaners Groundwater Contamination Site - July 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
7/14/2018 16:00	0	410046884.4	206
7/14/2018 20:00	0	410046884.4	205
7/15/2018 0:00	0	410046884.4	212
7/15/2018 4:00	0	410046884.4	209
7/15/2018 8:00	0	410046884.4	210
7/15/2018 12:00	0	410046884.4	208
7/15/2018 16:00	0	410046884.4	206
7/15/2018 20:00	0	410046884.4	203
7/16/2018 0:00	0	410046884.4	208
7/16/2018 4:00	0	410046884.4	212
7/16/2018 8:00	0	410046884.4	208
7/16/2018 12:00	0	410046884.4	204
7/16/2018 16:00	1	410047038.6	205
7/16/2018 20:00	1	410047275.8	206
7/17/2018 0:00	1	410047512.9	207
7/17/2018 4:00	1	410047750.1	209
7/17/2018 8:00	0	410047774.1	207
7/17/2018 12:00	0	410047774.1	205
7/17/2018 16:00	1	410047935.2	203
7/17/2018 20:00	1	410048172.4	204
7/18/2018 0:00	1	410048409.6	209
7/18/2018 4:00	1	410048646.8	210
7/18/2018 8:00	0	410048717.8	208
7/18/2018 12:00	1	410048735.5	205
7/18/2018 16:00	1	410048972.7	205
7/18/2018 20:00	1	410049210	207
7/19/2018 0:00	1	410049447.2	208
7/19/2018 4:00	1	410049684.4	208
7/19/2018 8:00	0	410049716.4	209
7/19/2018 12:00	1	410049797.7	200
7/19/2018 16:00	1	410050034.9	204
7/19/2018 20:00	1	410050280	207
7/20/2018 0:00	1	410050521.3	208
7/20/2018 4:00	1	410050758.6	209
7/20/2018 8:00	1	410050995.8	207
7/20/2018 12:00	1	410051233	206
7/20/2018 16:00	1	410051470.3	207
7/20/2018 20:00	1	410051707.6	204
7/21/2018 0:00	1	410051944.8	207
7/21/2018 4:00	1	410052182.1	206
7/21/2018 8:00	1	410052419.3	206

Stanton Cleaners Groundwater Contamination Site - July 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
7/21/2018 12:00	1	410052656.6	207
7/21/2018 16:00	1	410052893.8	207
7/21/2018 20:00	1	410053131.1	205
7/22/2018 0:00	1	410053368.4	206
7/22/2018 4:00	1	410053605.6	205
7/22/2018 8:00	1	410053842.9	204
7/22/2018 12:00	1	410054080.2	207
7/22/2018 16:00	1	410054317.5	206
7/22/2018 20:00	1	410054554.8	205
7/23/2018 0:00	1	410054792.1	211
7/23/2018 4:00	1	410055029.4	203
7/23/2018 8:00	1	410055266.7	208
7/23/2018 12:00	1	410055504	208
7/23/2018 16:00	1	410055741.3	208
7/23/2018 20:00	1	410055978.6	207
7/24/2018 0:00	1	410056215.9	206
7/24/2018 4:00	1	410056453.3	207
7/24/2018 8:00	1	410056690.6	207
7/24/2018 12:00	1	410056927.9	203
7/24/2018 16:00	2	410057359.1	207
7/24/2018 20:00	2	410057833.9	208
7/25/2018 0:00	1	410058169.4	212
7/25/2018 4:00	1	410058406.8	212
7/25/2018 8:00	1	410058644.2	206
7/25/2018 12:00	1	410058881.5	207
7/25/2018 16:00	2	410059135.7	207
7/25/2018 20:00	1	410059500.5	208
7/26/2018 0:00	1	410059737.8	207
7/26/2018 4:00	1	410059975.2	209
7/26/2018 8:00	1	410060212.6	204
7/26/2018 12:00	1	410060450	205
7/26/2018 16:00	2	410060903.3	204
7/26/2018 20:00	2	410061378.1	206
7/27/2018 0:00	1	410061627.8	207
7/27/2018 4:00	1	410061865.2	212
7/27/2018 8:00	1	410062102.7	206
7/27/2018 12:00	1	410062340.1	208
7/27/2018 16:00	2	410062704.7	206
7/27/2018 20:00	2	410063179.6	210
7/28/2018 0:00	1	410063457.3	212
7/28/2018 4:00	1	410063694.8	207

Stanton Cleaners Groundwater Contamination Site - July 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
7/28/2018 8:00	1	410063932.2	204
7/28/2018 12:00	2	410064262.3	209
7/28/2018 16:00	2	410064737.2	210
7/28/2018 20:00	2	410065212.2	207
7/29/2018 0:00	2	410065687.1	205
7/29/2018 4:00	2	410066162.1	206
7/29/2018 8:00	2	410066637.1	202
7/29/2018 12:00	2	410067112.1	203
7/29/2018 16:00	2	410067587.2	210
7/29/2018 20:00	2	410068062.2	210
7/30/2018 0:00	1	410068470.4	211
7/30/2018 4:00	1	410068707.9	209
7/30/2018 8:00	2	410069108.2	206
7/30/2018 12:00	2	410069583.3	207
7/30/2018 16:00	2	410070058.3	209
7/30/2018 20:00	2	410070533.4	212
7/31/2018 0:00	1	410070816.8	213
7/31/2018 4:00	1	410071054.3	212
7/31/2018 8:00	1	410071291.9	210
7/31/2018 12:00	2	410071583.7	207
7/31/2018 16:00	2	410072058.9	212
7/31/2018 20:00	1	410072362.9	212

Stanton Cleaners Groundwater Contamination Site - August 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
8/1/2018 0:00	1	410072600.5	214
8/1/2018 4:00	1	410072838.1	208
8/1/2018 8:00	1	410073075.7	210
8/1/2018 12:00	2	410073386.4	211
8/1/2018 16:00	2	410073843.8	213
8/1/2018 20:00	1	410074182.4	212
8/2/2018 0:00	1	410074420	211
8/2/2018 4:00	1	410074654.8	210
8/2/2018 8:00	2	410075014.7	212
8/2/2018 12:00	2	410075489.9	210
8/2/2018 16:00	2	410075965.2	207
8/2/2018 20:00	2	410076440.4	205
8/3/2018 0:00	1	410076792.8	206
8/3/2018 4:00	1	410077030.4	208
8/3/2018 8:00	2	410077335	206
8/3/2018 12:00	2	410077810.3	203
8/3/2018 16:00	2	410078285.6	208
8/3/2018 20:00	1	410078672.5	208
8/4/2018 0:00	1	410078910.2	211
8/4/2018 4:00	1	410079147.8	206
8/4/2018 8:00	1	410079385.5	207
8/4/2018 12:00	2	410079808.9	203
8/4/2018 16:00	1	410080284	211
8/4/2018 20:00	1	410080524	213
8/5/2018 0:00	1	410080761.6	212
8/5/2018 4:00	1	410080999.3	206
8/5/2018 8:00	1	410081237	210
8/5/2018 12:00	2	410081601.6	211
8/5/2018 16:00	1	410082024.2	211
8/5/2018 20:00	1	410082261.9	213
8/6/2018 0:00	1	410082499.6	208
8/6/2018 4:00	2	410082750.4	206
8/6/2018 8:00	2	410083225.8	207
8/6/2018 12:00	2	410083701.2	206
8/6/2018 16:00	2	410084176.7	207
8/6/2018 20:00	1	410084497.3	211
8/7/2018 0:00	1	410084735.1	209
8/7/2018 4:00	1	410084972.8	206
8/7/2018 8:00	2	410085328.5	206
8/7/2018 12:00	2	410085804	203
8/7/2018 16:00	2	410086279.5	207

Stanton Cleaners Groundwater Contamination Site - August 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
8/7/2018 20:00	1	410086606.9	204
8/8/2018 0:00	1	410086844.6	206
8/8/2018 4:00	2	410087150	207
8/8/2018 8:00	2	410087625.6	206
8/8/2018 12:00	2	410088125.8	210
8/8/2018 16:00	2	410088601.3	208
8/8/2018 20:00	2	410089076.9	206
8/9/2018 0:00	2	410089552.5	209
8/9/2018 4:00	2	410090028	207
8/9/2018 8:00	2	410090503.6	206
8/9/2018 12:00	2	410090979.2	206
8/9/2018 16:00	2	410091463.8	208
8/9/2018 20:00	2	410091939.4	207
8/10/2018 0:00	3	410092518.9	208
8/10/2018 4:00	3	410093232.3	203
8/10/2018 8:00	3	410093945.8	207
8/10/2018 12:00	3	410094659.2	208
8/10/2018 16:00	3	410095372.7	208
8/10/2018 20:00	2	410095860.9	210
8/11/2018 0:00	2	410096336.5	203
8/11/2018 4:00	2	410096812.1	208
8/11/2018 8:00	3	410097494.2	207
8/11/2018 12:00	3	410098207.7	206
8/11/2018 16:00	3	410098921.2	206
8/11/2018 20:00	3	410099634.7	202
8/12/2018 0:00	3	410100348.2	205
8/12/2018 4:00	3	410101061.7	205
8/12/2018 8:00	4	410101919.6	203
8/12/2018 12:00	3	410102792.1	208
8/12/2018 16:00	3	410103505.6	209
8/12/2018 20:00	3	410104140.9	205
8/13/2018 0:00	3	410104854.5	205
8/13/2018 4:00	4	410105600	201
8/13/2018 8:00	4	410106551.4	202
8/13/2018 12:00	3	410107480.1	209
8/13/2018 16:00	3	410108193.7	211
8/13/2018 20:00	2	410108676.2	209
8/14/2018 0:00	2	410109152	209
8/14/2018 4:00	3	410109791.4	207
8/14/2018 8:00	3	410110505.1	206
8/14/2018 12:00	3	410111218.8	212

Stanton Cleaners Groundwater Contamination Site - August 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
8/14/2018 16:00	2	410111772.6	213
8/14/2018 20:00	2	410112248.4	209
8/15/2018 0:00	2	410112724.3	209
8/15/2018 4:00	3	410113224.9	210
8/15/2018 8:00	3	410113938.6	211
8/15/2018 12:00	2	410114600	213
8/15/2018 16:00	2	410115075.9	210
8/15/2018 20:00	2	410115551.7	207
8/16/2018 0:00	2	410116027.6	209
8/16/2018 4:00	3	410116722.3	205
8/16/2018 8:00	3	410117436.2	210
8/16/2018 12:00	3	410118150	209
8/16/2018 16:00	2	410118772.9	212
8/16/2018 20:00	3	410119295.7	209
8/17/2018 0:00	3	410120009.6	204
8/17/2018 4:00	4	410120781.3	206
8/17/2018 8:00	4	410121733.1	207
8/17/2018 12:00	4	410122685	207
8/17/2018 16:00	4	410123636.8	208
8/17/2018 20:00	4	410124588.7	202
8/18/2018 0:00	5	410125560	206
8/18/2018 4:00	5	410126749.7	206
8/18/2018 8:00	5	410127939.6	207
8/18/2018 12:00	5	410129128.9	207
8/18/2018 16:00	4	410130087.6	208
8/18/2018 20:00	4	410131039.6	207
8/19/2018 0:00	5	410132141.3	204
8/19/2018 4:00	5	410133331.3	204
8/19/2018 8:00	5	410134521.3	209
8/19/2018 12:00	4	410135607.6	206
8/19/2018 16:00	4	410136559.6	207
8/19/2018 20:00	4	410137511.7	207
8/20/2018 0:00	4	410138463.7	207
8/20/2018 4:00	4	410139415.8	207
8/20/2018 8:00	4	410140367.9	206
8/20/2018 12:00	4	410141320	210
8/20/2018 16:00	3	410142087.4	210
8/20/2018 20:00	4	410142866.4	209
8/21/2018 0:00	4	410143818.6	206
8/21/2018 4:00	5	410144882.9	206
8/21/2018 8:00	5	410146073.1	205

Stanton Cleaners Groundwater Contamination Site - August 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
8/21/2018 12:00	4	410147140.5	210
8/21/2018 16:00	4	410148092.7	208
8/21/2018 20:00	4	410149045	203
8/22/2018 0:00	5	410150200.1	204
8/22/2018 4:00	6	410151519.1	207
8/22/2018 8:00	5	410152826.4	205
8/22/2018 12:00	4	410153880.7	208
8/22/2018 16:00	4	410154830.1	207
8/22/2018 20:00	4	410155782.4	207
8/23/2018 0:00	5	410156887	205
8/23/2018 4:00	5	410158077.5	207
8/23/2018 8:00	5	410159268	210
8/23/2018 12:00	4	410160265	207
8/23/2018 16:00	4	410161217.5	208
8/23/2018 20:00	5	410162208	205
8/24/2018 0:00	5	410163398.6	204
8/24/2018 4:00	6	410164784.3	209
8/24/2018 8:00	5	410166003	206
8/24/2018 12:00	4	410166984	206
8/24/2018 16:00	4	410167936.5	211
8/24/2018 20:00	4	410168889.1	208
8/25/2018 0:00	5	410169868.4	209
8/25/2018 4:00	5	410171059.1	210
8/25/2018 8:00	4	410172054.9	214
8/25/2018 12:00	3	410172875.1	206
8/25/2018 16:00	3	410173589.6	205
8/25/2018 20:00	4	410174475.2	210
8/26/2018 0:00	4	410175427.9	209
8/26/2018 4:00	4	410176380.5	213
8/26/2018 8:00	3	410177254.2	215
8/26/2018 12:00	3	410177968.7	211
8/26/2018 16:00	3	410178683.1	212
8/26/2018 20:00	3	410179397.6	210
8/27/2018 0:00	4	410180203.6	209
8/27/2018 4:00	4	410181156.2	216
8/27/2018 8:00	3	410181885.2	212
8/27/2018 12:00	2	410182469.2	215
8/27/2018 16:00	3	410183043.6	213
8/27/2018 20:00	3	410183757.8	210
8/28/2018 0:00	4	410184534.8	209
8/28/2018 4:00	4	410185486.7	215

Stanton Cleaners Groundwater Contamination Site - August 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
8/28/2018 8:00	3	410186246.7	212
8/28/2018 12:00	3	410186961	212
8/28/2018 16:00	3	410187674.8	209
8/28/2018 20:00	4	410188542.3	211
8/29/2018 0:00	4	410189493.2	209
8/29/2018 4:00	5	410190635.6	209
8/29/2018 8:00	5	410191823.3	209
8/29/2018 12:00	5	410193011.7	208
8/29/2018 16:00	5	410194199.6	207
8/29/2018 20:00	6	410195529.6	208
8/30/2018 0:00	6	410196954.5	208
8/30/2018 4:00	6	410198380.1	206
8/30/2018 8:00	5	410199608.6	210
8/30/2018 12:00	5	410200628.1	208
8/30/2018 16:00	5	410201811.9	207
8/30/2018 20:00	6	410203151.9	205
8/31/2018 0:00	6	410204568.8	208
8/31/2018 4:00	5	410205941.5	207
8/31/2018 8:00	4	410207084	212
8/31/2018 12:00	4	410208032.3	207
8/31/2018 16:00	5	410209187.7	205
8/31/2018 20:00	5	410210375	209

Stanton Cleaners Groundwater Contamination Site - September 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
9/1/2018 0:00	5	410211562.7	209
9/1/2018 4:00	4	410212714.4	213
9/1/2018 8:00	3	410213638.9	214
9/1/2018 12:00	4	410214452.7	212
9/1/2018 16:00	4	410215404.5	211
9/1/2018 20:00	5	410216440.3	210
9/2/2018 0:00	5	410217631.2	212
9/2/2018 4:00	4	410218702.9	214
9/2/2018 8:00	3	410219537.6	215
9/2/2018 12:00	4	410220259.8	209
9/2/2018 16:00	4	410221208.5	210
9/2/2018 20:00	5	410222231.1	210
9/3/2018 0:00	5	410223415.7	208
9/3/2018 4:00	4	410224433.4	215
9/3/2018 8:00	3	410225283.7	214
9/3/2018 12:00	4	410226182.3	208
9/3/2018 16:00	5	410227167.7	212
9/3/2018 20:00	5	410228350.6	210
9/4/2018 0:00	5	410229532.6	215
9/4/2018 4:00	4	410230574.8	214
9/4/2018 8:00	4	410231519.9	211
9/4/2018 12:00	4	410232465.5	206
9/4/2018 16:00	5	410233645.1	207
9/4/2018 20:00	6	410234873.8	210
9/5/2018 0:00	6	410236292.7	208
9/5/2018 4:00	6	410237711.8	206
9/5/2018 8:00	6	410239130.7	208
9/5/2018 12:00	6	410240549.5	205
9/5/2018 16:00	7	410242080.8	207
9/5/2018 20:00	7	410243736.1	204
9/6/2018 0:00	7	410245392.2	208
9/6/2018 4:00	7	410247047.5	207
9/6/2018 8:00	8	410248779.3	206
9/6/2018 12:00	8	410250673.1	201
9/6/2018 16:00	9	410252688.4	201
9/6/2018 20:00	9	410254818.1	202
9/7/2018 0:00	9	410256950.3	204
9/7/2018 4:00	9	410259079.8	203
9/7/2018 8:00	10	410261254.9	202
9/7/2018 12:00	10	410263617.4	202
9/7/2018 16:00	11	410265996.9	196

Stanton Cleaners Groundwater Contamination Site - September 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
9/7/2018 20:00	11	410268594.7	202
9/8/2018 0:00	10	410271101.9	203
9/8/2018 4:00	10	410273463.4	202
9/8/2018 8:00	10	410275825.2	201
9/8/2018 12:00	10	410278186.9	198
9/8/2018 16:00	10	410280548.7	202
9/8/2018 20:00	10	410282910.6	200
9/9/2018 0:00	9	410285082.1	202
9/9/2018 4:00	8	410287103.1	199
9/9/2018 8:00	8	410288992.5	204
9/9/2018 12:00	8	410290882	204
9/9/2018 16:00	8	410292771.5	203
9/9/2018 20:00	8	410294661.1	205
9/10/2018 0:00	8	410296550.7	203
9/10/2018 4:00	7	410298247.4	205
9/10/2018 8:00	8	410300033.9	205
9/10/2018 12:00	8	410301923.5	205
9/10/2018 16:00	8	410303813.2	204
9/10/2018 20:00	8	410305703	204
9/11/2018 0:00	8	410307592.7	201
9/11/2018 4:00	8	410309481.8	206
9/11/2018 8:00	8	410311371.7	204
9/11/2018 12:00	8	410313261.5	203
9/11/2018 16:00	9	410315329.9	200
9/11/2018 20:00	9	410317456	206
9/12/2018 0:00	8	410319369.8	206
9/12/2018 4:00	8	410321259.6	206
9/12/2018 8:00	8	410323149.5	203
9/12/2018 12:00	9	410325130.6	204
9/12/2018 16:00	9	410327256.9	204
9/12/2018 20:00	8	410329346.6	204
9/13/2018 0:00	7	410331146.9	205
9/13/2018 4:00	7	410332800.7	206
9/13/2018 8:00	8	410334547.1	203
9/13/2018 12:00	9	410336488.9	202
9/13/2018 16:00	9	410338615.1	202
9/13/2018 20:00	8	410340656.8	210
9/14/2018 0:00	6	410342362.5	202
9/14/2018 4:00	7	410343796.2	206
9/14/2018 8:00	7	410345450.1	203
9/14/2018 12:00	8	410347327.3	204

Stanton Cleaners Groundwater Contamination Site - September 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
9/14/2018 16:00	9	410349399	202
9/14/2018 20:00	8	410351372.9	208
9/15/2018 0:00	7	410353145.9	206
9/15/2018 4:00	8	410354882.6	207
9/15/2018 8:00	8	410356773	201
9/15/2018 12:00	8	410358663.6	208
9/15/2018 16:00	8	410360554	206
9/15/2018 20:00	8	410362444.6	203
9/16/2018 0:00	8	410364335.2	206
9/16/2018 4:00	8	410366225.7	203
9/16/2018 8:00	9	410368235.3	203
9/16/2018 12:00	9	410370362.3	202
9/16/2018 16:00	9	410372489.5	205
9/16/2018 20:00	8	410374481.4	206
9/17/2018 0:00	7	410376153.9	205
9/17/2018 4:00	7	410377808.3	205
9/17/2018 8:00	8	410379640.2	203
9/17/2018 12:00	9	410381693.2	203
9/17/2018 16:00	9	410383820.4	205
9/17/2018 20:00	9	410385947.4	206
9/18/2018 0:00	8	410387844.5	205
9/18/2018 4:00	9	410389923.8	200
9/18/2018 8:00	10	410392058.9	204
9/18/2018 12:00	10	410394421.8	204
9/18/2018 16:00	10	410396785.7	204
9/18/2018 20:00	9	410399093.1	203
9/19/2018 0:00	9	410401220.7	204
9/19/2018 4:00	9	410403349.5	204
9/19/2018 8:00	9	410405509.3	205
9/19/2018 12:00	9	410407637.8	203
9/19/2018 16:00	9	410409765.5	206
9/19/2018 20:00	9	410411893.1	204
9/20/2018 0:00	9	410414020.8	202
9/20/2018 4:00	10	410416297.4	201
9/20/2018 8:00	11	410418680	203
9/20/2018 12:00	11	410421280.5	201
9/20/2018 16:00	11	410423881.1	203
9/20/2018 20:00	10	410426471.4	202
9/21/2018 0:00	11	410428994.9	204
9/21/2018 4:00	11	410431595.7	204
9/21/2018 8:00	12	410434269.8	201

Stanton Cleaners Groundwater Contamination Site - September 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
9/21/2018 12:00	12	410437107.2	203
9/21/2018 16:00	12	410439944.6	203
9/21/2018 20:00	10	410442547.6	199
9/22/2018 0:00	11	410445098	198
9/22/2018 4:00	12	410447929.5	199
9/22/2018 8:00	13	410450972.2	195
9/22/2018 12:00	13	410454049.4	201
9/22/2018 16:00	12	410457114.4	203
9/22/2018 20:00	11	410459948.5	204
9/23/2018 0:00	11	410462549.9	204
9/23/2018 4:00	11	410465151.4	204
9/23/2018 8:00	10	410467567.9	205
9/23/2018 12:00	10	410469932.9	204
9/23/2018 16:00	9	410472196	206
9/23/2018 20:00	8	410474143.3	203
9/24/2018 0:00	9	410476044.5	202
9/24/2018 4:00	9	410478172.9	203
9/24/2018 8:00	10	410480470.1	200
9/24/2018 12:00	11	410483064.8	204
9/24/2018 16:00	10	410485553.7	206
9/24/2018 20:00	9	410487699.7	204
9/25/2018 0:00	10	410489912.1	204
9/25/2018 4:00	10	410492277.3	202
9/25/2018 8:00	11	410494817.4	202
9/25/2018 12:00	12	410497551.8	200
9/25/2018 16:00	12	410500390	200
9/25/2018 20:00	12	410503228.2	200
9/26/2018 0:00	14	410506218.8	200
9/26/2018 4:00	15	410509619.7	199
9/26/2018 8:00	16	410513350.9	200
9/26/2018 12:00	13	410516942.3	203
9/26/2018 16:00	10	410519671.5	204
9/26/2018 20:00	10	410522036.9	197
9/27/2018 0:00	12	410524559	196
9/27/2018 4:00	13	410527490.8	199
9/27/2018 8:00	15	410530879.5	200
9/3/2018 8:00	3	410225283.7	214
9/3/2018 12:00	4	410226182.3	208
9/3/2018 16:00	5	410227167.7	212
9/3/2018 20:00	5	410228350.6	210
9/4/2018 0:00	5	410229532.6	215

Stanton Cleaners Groundwater Contamination Site - September 2018 - Operational Data			
Time	Recovery Well 3 Flow (GPM)	Total Gallons Discharged	SVE Air Flow
9/28/2018 8:00	12	410547748.1	202
9/28/2018 12:00	11	410550544.6	205
9/28/2018 16:00	10	410553083.3	201
9/28/2018 20:00	10	410555449.5	205
9/29/2018 0:00	11	410557940.4	203
9/29/2018 4:00	11	410560543	203
9/29/2018 8:00	12	410563364.9	202
9/29/2018 12:00	10	410565888.5	205
9/29/2018 16:00	9	410568121.3	205
9/29/2018 20:00	10	410570426	203
9/30/2018 0:00	10	410572792.3	203
9/30/2018 4:00	11	410575339.8	198
9/30/2018 8:00	11	410578139.2	204
9/30/2018 12:00	10	410580643.6	205
9/30/2018 16:00	9	410582813.2	205
9/30/2018 20:00	10	410585071.2	202

Appendix D

AS System O&M Reports

STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE
Air Sparge System
O&M Data Log

Date: 7/26/2018

Readings at Well	
Near Well Head Bladder	N/A*

Treatment Room Readings	
SCFM	N/A* PSI
psi-1	N/A* PSI
psi-2	N/A* PSI
psi-3	N/A* PSI
P_1	N/A* PSI
P_2	N/A* PSI
P_3	N/A* PSI

System Readings	
Temp.	N/A* ºF
EN-37-1	N/A* bar
K/O Tank	N/A* PSI

Notes:
***Air readings could not be collected due to the Air Sparge System being offline.**

*Air Sparge System offline
SCFM- Standard Cubic Feet per Minute
psi- pounds per square inch

Locations:
Near Well Head- psi gauge at corner of New Stanton Cleaners Building
Bladder- psi gauge at well head
SCFM- gauge in treatment room (first gauge when looking at wall from left to right)
psi-1 - 2nd gauge attached to line on wall when looking left to right
psi-2 - 3rd gauge
psi-3- 4th gauge
P_1- influent relief valve
P_2- adjacent to catwalk
P_3- on top of carbon tank
Temp.- from compressor screen display
EN-37-1- gauge on compressor
K/O Tank- gauge on knockout tank

STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE
Air Sparge System
O&M Data Log

Date: 9/7/2018

Readings at Well	
Near Well Head Bladder	N/A*

Treatment Room Readings	
SCFM	N/A* PSI
psi-1	N/A* PSI
psi-2	N/A* PSI
psi-3	N/A* PSI
P_1	N/A* PSI
P_2	N/A* PSI
P_3	N/A* PSI

System Readings	
Temp.	N/A* ºF
EN-37-1	N/A* bar
K/O Tank	N/A* PSI

Notes:
***Air readings could not be collected due to the Air Sparge System being offline.**

*Air Sparge System offline
SCFM- Standard Cubic Feet per Minute
psi- pounds per square inch

Locations:
Near Well Head- psi gauge at corner of New Stanton Cleaners Building
Bladder- psi gauge at well head
SCFM- gauge in treatment room (first gauge when looking at wall from left to right)
psi-1 - 2nd gauge attached to line on wall when looking left to right
psi-2 - 3rd gauge
psi-3- 4th gauge
P_1- influent relief valve
P_2- adjacent to catwalk
P_3- on top of carbon tank
Temp.- from compressor screen display
EN-37-1- gauge on compressor
K/O Tank- gauge on knockout tank

STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE
Air Sparge System
O&M Data Log

Date: 9/27/2018

Readings at Well	
Near Well Head Bladder	N/A*

Treatment Room Readings	
SCFM	N/A* PSI
psi-1	N/A* PSI
psi-2	N/A* PSI
psi-3	N/A* PSI
P_1	N/A* PSI
P_2	N/A* PSI
P_3	N/A* PSI

System Readings	
Temp.	N/A* ºF
EN-37-1	N/A* bar
K/O Tank	N/A* PSI

Notes:
***Air readings could not be collected due to the Air Sparge System being offline.**

*Air Sparge System offline
SCFM- Standard Cubic Feet per Minute
psi- pounds per square inch

Locations:
Near Well Head- psi gauge at corner of New Stanton Cleaners Building
Bladder- psi gauge at well head
SCFM- gauge in treatment room (first gauge when looking at wall from left to right)
psi-1 - 2nd gauge attached to line on wall when looking left to right
psi-2 - 3rd gauge
psi-3- 4th gauge
P_1- influent relief valve
P_2- adjacent to catwalk
P_3- on top of carbon tank
Temp.- from compressor screen display
EN-37-1- gauge on compressor
K/O Tank- gauge on knockout tank

Appendix E

SVE System O&M Reports

STANTON CLEANERS AREA GROUNDWATEF
CONTAMINATION SITE
Soil-Vapor Extraction and Pump and Treat System
Monthly Air Monitoring Log

Date: 7/26/2018
Project #

		FID	MultiRAE Plus PGM-50					VelociCalc Plus				
	Pipe ID	VOC	VOC	CO	Oxygen	LEL	H2S	Temp.	Vac. Pre.	%RH	Dew pt.	Flow
SVE-Influent	5.709	N/A	0.1	0.0	20.3	0.0	0.0	89.7	***	54.6	71.2	***
Post- Blower Pre-Carbon***	5.706	N/A	2.0	0.0	19.3	0.0	0.0	118.3	1.199	20.8	67.7	177.69
EPA-SVE-1 (shallow)	1.913	N/A	2.2	0.0	20.2	0.0	0.0	77.4	***	80.9	71.1	30.44
EPA-SVE-1 (medium)	1.913	N/A	2.1	0.0	20.2	0.0	0.0	77.5	***	83.3	71.8	11.73
EPA-SVE-2 (shallow)	1.913	N/A	2.2	0.0	20.3	0.0	0.0	78.5	-0.607	77.7	71.0	1.58
EPA-SVE-2 (medium)	1.913	N/A	2.5	0.0	20.2	0.0	0.0	75.9	-1.979	89.3	73.0	21.58
SS-A	1.913	N/A	0.0	0.0	20.3	0.0	0.0	80.4	-12.011	77.4	71.6	128.73
SVE-3A	1.913	N/A	4.0	0.0	20.1	0.0	0.0	79.2	***	73.1	69.8	171.02
SVE-3B	1.913	N/A	3.6	0.0	19.8	0.0	0.0	79.0	***	74.3	69.0	84.20
SVE-1 Combined	1.913	N/A	0.2	0.0	20.3	0.0	0.0	82.3	***	78.2	70.2	55.80
SVE-2 Combined	1.913	N/A	3.0	0.0	19.8	0.0	0.0	79.2	***	78.2	72.2	91.77
Background		N/A	0.6	0.0	20.4	0.0	0.0	86.7	N/A	55.4	67.8	N/A

Notes:

Equipment calibrated by: **Edward Combs**
Air readings collected by: **Edward Combs**

Notes:
****SVE-Effluent relabeled as "Post-Blower Pre-Carbon" Sampling Location**
*****Maxed out reading on meter**
FID: Flame Ionization Detector
VOC: Volatile Organic Compounds (in parts per million)
CO: Carbon Monoxide
LEL: Lower Explosive Limit
H2S: Hydrogen Sulfide
Temperature: Measured in Degrees Fahrenheit
Vacuum Pressure: measured in inches of water (in/H2O)
%RH: relative humidity
Dew Pt.: dew point in degrees Fahrenheit
Flow: measured in cubic feet per minute (CFM)

AS: Air Stripper
SVE: Soil Vapor Extraction System

	Prior to 10/3/05	After 10/3/05
SVE 1	shallow on	shallow and medium on
SVE 2	shallow on	shallow on
SVE 3	shallow on	shallow on
SVE 4	off	off
EPA-SVE-04R/SSB(A)	on	on
SS-A	on	on
SS-B(B)	on	off
SS-B(C)	on	on
L1	on	off
L2	on	off

Comments:
New SVE well EPA-EXT-04 online since 11/4/04
LIHA sub-slab system was removed by the EPA from service in the Fall of 2012.
N/A- Not Available

STANTON CLEANERS AREA GROUNDWATEF
CONTAMINATION SITE
Soil-Vapor Extraction and Pump and Treat System
Monthly Air Monitoring Log

Date: 9/7/2018
Project #

		FID	MultiRAE Plus PGM-50					VelociCalc Plus				
	Pipe ID	VOC	VOC	CO	Oxygen	LEL	H2S	Temp.	Vac. Pre.	%RH	Dew pt.	Flow
SVE-Influent	**5.709**	N/A	**3.7**	**0.0**	**20.9**	**0.0**	**0.0**	**79.9**	***	**78.2**	**68.7**	***
Post- Blower Pre-Carbon* **	**5.706**	N/A	**3.8**	**0.0**	**20.9**	**0.0**	**0.0**	**116.9**	**1.152**	**20.7**	**66.8**	**206.93**
EPA-SVE-1 (shallow)	**1.913**	N/A	**2.2**	**0.0**	**20.9**	**0.0**	**0.0**	**74.6**	***	**77.6**	**67.2**	**41.02**
EPA-SVE-1 (medium)	**1.913**	N/A	**2.4**	**0.0**	**20.9**	**0.0**	**0.0**	**77.7**	***	**71.9**	**68.0**	**53.21**
EPA-SVE-2 (shallow)	**1.913**	N/A	**2.6**	**0.0**	**20.9**	**0.0**	**0.0**	**77.1**	**-0.520**	**72.8**	**67.5**	**1.24**
EPA-SVE-2 (medium)	**1.913**	N/A	**2.4**	**0.0**	**20.9**	**0.0**	**0.0**	**75.9**	**-2.254**	**77.8**	**68.4**	**33.91**
SS-A	**1.913**	N/A	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**77.5**	**-14.240**	**71.7**	**67.5**	**91.60**
SVE-3A	**1.913**	N/A	**5.7**	**0.0**	**20.9**	**0.0**	**0.0**	**76.7**	***	**71.9**	**66.6**	***
SVE-3B	**1.913**	N/A	**4.1**	**0.0**	**20.9**	**0.0**	**0.0**	**75.7**	***	**75.3**	**67.1**	**124.37**
SVE-1 Combined	**1.913**	N/A	**2.0**	**0.0**	**20.9**	**0.0**	**0.0**	**78.2**	***	**75.8**	**68.3**	**61.32**
SVE-2 Combined	**1.913**	N/A	**3.3**	**0.0**	**20.9**	**0.0**	**0.0**	**77.5**	**-11.908**	**75.8**	**69.2**	**98.58**
Background		N/A	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**74.3**	**N/A**	**74.22**	**70.6**	**N/A**

Notes:

Equipment calibrated by: **Daniel Prisco-Buxbaum**
Air readings collected by: **Daniel Prisco-Buxbaum**

Notes:
****SVE-Effluent relabeled as "Post-Blower Pre-Carbon" Sampling Location**
*****Maxed out reading on meter**
FID: Flame Ionization Detector
VOC: Volatile Organic Compounds (in parts per million)
CO: Carbon Monoxide
LEL: Lower Explosive Limit
H2S: Hydrogen Sulfide
Temperature: Measured in Degrees Fahrenheit
Vacuum Pressure: measured in inches of water (in/H2O)
%RH: relative humidity
Dew Pt.: dew point in degrees Fahrenheit
Flow: measured in cubic feet per minute (CFM)

AS: Air Stripper
SVE: Soil Vapor Extraction System

	Prior to 10/3/05	**After 10/3/05**
SVE 1	shallow on	shallow and medium on
SVE 2	shallow on	shallow on
SVE 3	shallow on	shallow on
SVE 4	off	off
EPA-SVE-04R/SSB(A)	on	on
SS-A	on	on
SS-B(B)	on	off
SS-B(C)	on	on
L1	on	off
L2	on	off

Comments:
New SVE well EPA-EXT-04 online since 11/4/04
LIHA sub-slab system was removed by the EPA from service in the Fall of 2012.
N/A- Not Available

STANTON CLEANERS AREA GROUNDWATEF
CONTAMINATION SITE
Soil-Vapor Extraction and Pump and Treat System
Monthly Air Monitoring Log

Date: 9/27/2018
Project #

		FID	MultiRAE Plus PGM-50					VelociCalc Plus				
	Pipe ID	VOC	VOC	CO	Oxygen	LEL	H2S	Temp.	Vac. Pre.	%RH	Dew pt.	Flow
SVE-Influent	**5.709**	N/A	**0.1**	**0.0**	**20.9**	**0.0**	**0.0**	**77.5**	***	**48.2**	**57.1**	***
Post- Blower Pre-Carbon**	**5.706**	N/A	**2.1**	**0.0**	**19.9**	**0.0**	**0.0**	**112.8**	**1.121**	**21.2**	**64.6**	**61.90**
EPA-SVE-1 (shallow)	**1.913**	N/A	**0.1**	**0.0**	**20.9**	**0.0**	**0.0**	**70.6**	***	**56.5**	**53.7**	**10.25**
EPA-SVE-1 (medium)	**1.913**	N/A	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**67.2**	***	**58.3**	**52.1**	**6.89**
EPA-SVE-2 (shallow)	**1.913**	N/A	**0.1**	**0.0**	**20.9**	**0.0**	**0.0**	**72.2**	**-0.691**	**50.1**	**53.7**	**1.24**
EPA-SVE-2 (medium)	**1.913**	N/A	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**72.5**	**-1.996**	**61.3**	**58.1**	**5.44**
SS-A	**1.913**	N/A	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**69.7**	**-14.028**	**49.2**	**49.8**	**92.71**
SVE-3A	**1.913**	N/A	**0.7**	**0.0**	**20.9**	**0.0**	**0.0**	**70.9**	***	**55.3**	**52.8**	***
SVE-3B	**1.913**	N/A	**0.5**	**0.0**	**20.9**	**0.0**	**0.0**	**72.9**	***	**48.6**	**51.8**	**60.70**
SVE-1 Combined	**1.913**	N/A	**0.1**	**0.0**	**20.9**	**0.0**	**0.0**	**71.2**	***	**58.3**	**50.2**	**63.20**
SVE-2 Combined	**1.913**	N/A	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**71.4**	**-11.888**	**49.3**	**52.5**	**109.12**
Background		N/A	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**74.1**	**N/A**	**45.9**	**51.5**	**N/A**

Notes:

Equipment calibrated by: **Edward Combs**
Air readings collected by: **Edward Combs**

Notes:
****SVE-Effluent relabeled as "Post-Blower Pre-Carbon" Sampling Location**
*****Maxed out reading on meter**
FID: Flame Ionization Detector
VOC: Volatile Organic Compounds (in parts per million)
CO: Carbon Monoxide
LEL: Lower Explosive Limit
H2S: Hydrogen Sulfide
Temperature: Measured in Degrees Fahrenheit
Vacuum Pressure: measured in inches of water (in/H2O)
%RH: relative humidity
Dew Pt.: dew point in degrees Fahrenheit
Flow: measured in cubic feet per minute (CFM)

AS: Air Stripper
SVE: Soil Vapor Extraction System

	Prior to 10/3/05	**After 10/3/05**
SVE 1	shallow on	shallow and medium on
SVE 2	shallow on	shallow on
SVE 3	shallow on	shallow on
SVE 4	off	off
EPA-SVE-04R/SSB(A)	on	on
SS-A	on	on
SS-B(B)	on	off
SS-B(C)	on	on
L1	on	off
L2	on	off

Comments:
New SVE well EPA-EXT-04 online since 11/4/04
LIHA sub-slab system was removed by the EPA from service in the Fall of 2012.
N/A- Not Available

Appendix F

Monthly Groundwater Level Measurements

WATER LEVEL DATA SUMMARY

PROJECT: Stanton Cleaners
LOCATION: Great Neck, NY
CLIENT: HDR
SURVEY DATUM: ft msl
MEASURING DEVICE: Solinst Water Level Indicator

JOB NUMBER:
DATE: 7/26/2018
MEASURED BY: EC

WELL NUMBER	MEASURING POINT		Time	DEPTH TO WATER (FT)	ELEVATION OF WATER (FT)	COMMENTS
	Description	Elevation (FT)				
EPA-MW-11D	ft BTOC	74.63	11:37	57.58	17.05	4" well in p-lot by med sports bldg.
EPA-MW-21-R	ft BTOC	84.13	11:54	65.33	18.80	Getty Gas Station well
EPA-MW-22	ft BTOC	82.20	____	____	N/A	Under clothing bin- SC p-lot
EPA-MW-23	ft BTOC	82.83	10:50	63.41	19.42	In front of treatment bldg.
EPA-MW-27	ft BTOC	69.32	11:50	50.36	18.96	LIHA PL
ST-MW-06	ft BTOC	69.83	11:43	45.42	24.41	LIHA PL 4"
ST-MW-09A	ft BTOC	78.13	11:32	62.13	16.00	P-lot across from triangle park
ST-MW-11	ft BTOC	75.25	11:40	58.36	16.89	p-lot by entrance to med sports bldg.
ST-MW-12	ft BTOC	87.20	11:25	69.88	17.32	In front of apartment bldg.
ST-MW-14	ft BTOC	69.73	11:47	53.86	15.87	LIHA PL
ST-MW-16	ft BTOC	75.78	10:55	54.40	21.38	Other side treatment bldg. near fence
ST-MW-17	ft BTOC	86.53	11:23	69.24	17.29	In front of apartment bldg.
ST-MW-19	ft BTOC	82.50	11:17	64.31	18.19	Triangle park well
ST-MW-20	ft BTOC	84.53	11:21	69.71	14.82	Near apartment bldg.
EPA-MW-26	ft BTOC	78.37	10:59	58.61	N/A	Ipswich Ave.
ST-MW-15	ft BTOC	90.13	11:09	72.31	N/A	Mirreless Rd
ST-MW-13	ft BTOC	130.95	11:04	85.53	45.42	Amherst Rd
ST-MW-18	ft BTOC	84.40	11:28	71.74	12.66	Ascot Ridge (past apt bldg)

Notes:
ST-MW-09A PVC cap which was stuck on well was freed, enabling Preferred to collect measurements as normal.

WATER LEVEL DATA SUMMARY

PROJECT: Stanton Cleaners
LOCATION: Great Neck, NY
CLIENT: HDR
SURVEY DATUM: ft msl
MEASURING DEVICE: Solinst Water Level Indicator

JOB NUMBER:
DATE: 9/7/2018
MEASURED BY: DPB

WELL NUMBER	MEASURING POINT		Time	DEPTH TO WATER (FT)	ELEVATION OF WATER (FT)	COMMENTS
	Description	Elevation (FT)				
EPA-MW-11D	ft BTOC	74.63	12:36	58.24	16.39	4" well in p-lot by med sports bldg.
EPA-MW-21-R	ft BTOC	84.13	12:57	66.79	17.34	Getty Gas Station well
EPA-MW-22	ft BTOC	82.20	_____	____	N/A	Under clothing bin- SC p-lot
EPA-MW-23	ft BTOC	82.83	12:00	63.72	19.11	In front of treatment bldg.
EPA-MW-27	ft BTOC	69.32	12:47	50.71	18.61	LIHA PL
ST-MW-06	ft BTOC	69.83	12:49	46.38	23.45	LIHA PL 4"
ST-MW-09A	ft BTOC	78.13	12:41	62.56	15.57	P-lot across from triangle park
ST-MW-11	ft BTOC	75.25	12:38	58.83	16.42	p-lot by entrance to med sports bldg.
ST-MW-12	ft BTOC	87.20	12:28	70.23	16.97	In front of apartment bldg.
ST-MW-14	ft BTOC	69.73	12:45	55.22	14.51	LIHA PL
ST-MW-16	ft BTOC	75.78	12:04	54.14	21.64	Other side treatment bldg. near fence
ST-MW-17	ft BTOC	86.53	12:30	69.64	16.89	In front of apartment bldg.
ST-MW-19	ft BTOC	82.50	12:18	64.67	17.83	Triangle park well
ST-MW-20	ft BTOC	84.53	12:32	71.19	13.34	Near apartment bldg.
EPA-MW-26	ft BTOC	78.37	12:07	58.81	N/A	Ipswich Ave.
ST-MW-15	ft BTOC	90.13	12:15	72.45	N/A	Mirreless Rd
ST-MW-13	ft BTOC	130.95	12:11	85.76	45.19	Amherst Rd
ST-MW-18	ft BTOC	84.40	12:23	71.65	12.75	Ascot Ridge (past apt bldg)

Notes:
ST-MW-09A PVC cap which was stuck on well was freed, enabling Preferred to collect measurements as normal.

WATER LEVEL DATA SUMMARY

PROJECT: Stanton Cleaners
LOCATION: Great Neck, NY
CLIENT: HDR
SURVEY DATUM: ft msl
MEASURING DEVICE: Solinst Water Level Indicator

JOB NUMBER:
DATE: 9/27/2018
MEASURED BY: EC

WELL NUMBER	MEASURING POINT		Time	DEPTH TO WATER (FT)	ELEVATION OF WATER (FT)	COMMENTS
	Description	Elevation (FT)				
EPA-MW-11D	ft BTOC	74.63	13:26	58.27	16.36	4" well in p-lot by med sports bldg.
EPA-MW-21-R	ft BTOC	84.13	13:46	79.82	4.31	Getty Gas Station well
EPA-MW-22	ft BTOC	82.20	_____	____	N/A	Under clothing bin- SC p-lot
EPA-MW-23	ft BTOC	82.83	12:30	63.73	19.10	In front of treatment bldg.
EPA-MW-27	ft BTOC	69.32	13:43	50.68	18.64	LIHA PL
ST-MW-06	ft BTOC	69.83	13:36	45.43	24.40	LIHA PL 4"
ST-MW-09A	ft BTOC	78.13	13:21	62.55	15.58	P-lot across from triangle park
ST-MW-11	ft BTOC	75.25	13:30	58.83	16.42	p-lot by entrance to med sports bldg.
ST-MW-12	ft BTOC	87.20	13:10	70.12	17.08	In front of apartment bldg.
ST-MW-14	ft BTOC	69.73	13:40	55.77	13.96	LIHA PL
ST-MW-16	ft BTOC	75.78	12:35	54.13	21.65	Other side treatment bldg. near fence
ST-MW-17	ft BTOC	86.53	13:13	69.64	16.89	In front of apartment bldg.
ST-MW-19	ft BTOC	82.50	13:03	64.60	17.90	Triangle park well
ST-MW-20	ft BTOC	84.53	13:17	71.83	12.70	Near apartment bldg.
EPA-MW-26	ft BTOC	78.37	12:42	58.72	N/A	Ipswich Ave.
ST-MW-15	ft BTOC	90.13	12:58	72.51	N/A	Mirreless Rd
ST-MW-13	ft BTOC	130.95	12:49	85.52	45.43	Amherst Rd
ST-MW-18	ft BTOC	84.40	13:07	72.31	12.09	Ascot Ridge (past apt bldg)

Notes: