388 Bridge Street
Brooklyn, New York

NYSDEC BCP Site No. C224134

2017 ANNUAL PERIODIC REVIEW REPORT AND ENGINEERING CERTIFICATION

ARNOLD F. FLEMING P.E.

&

Fleming Lee Shue

Environmental Management & Consulting

158 West 29th Street, 9th Floor
New York, NY 10001
(212) 675-3225

FLS Project Number: 10149-001

JANUARY 2018

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

This Periodic Review Report (PRR) documents the activities subject to the Site Management Plan (SMP) for 388 Bridge Street (Site) for calendar year 2017. The Site is comprised of Brownfield Cleanup Program (BCP) Site C224134 and administered by the New York State Department of Environmental Conservation (NYSDEC). The engineering and institutional controls (EC/IC) were implemented and were maintained in accordance with the NYSDEC-approved SMP.

The purpose of this PRR and Annual Certification is to document on-going Site management activities associated with the permanent ECs and ICs in place at the Site, and to certify that these controls are being maintained in accordance with the Brownfield Cleanup Agreement (BCA).

The Site management activities conducted in 2017 include the following:

- Routine system inspections of the on-Site SVE system;
- Routine system check of the sub-slab depressurization system (SSDS), a component of the vapor mitigation system implemented at the Site;
- Routine system check of the off-Site ECs including the SSDS and basement pressurization system (BPS), components of the vapor mitigation systems implemented at Saint Joseph's High School (SJHS);
- Visual inspection of the basement floor and perimeter for signs of vapor intrusion;
- Visual inspection of the concrete slab to determine the absence of cracks and fissures.

The implementation of remedial action, Site management activities, and continuous media monitoring were performed by FLS under direct supervision of Arnold F. Fleming P.E. It was determined that ECs and ICs remain effective and continued to be protective of public health and environment. The SVE data collected during monitoring demonstrated that the concentration of tetrachloroethylene (PCE) in the soil vapor has reduced significantly since system start-up in 2013. Groundwater samples have been collected on a semi-annual basis, starting in March 2016.

Compliance with the EC/IC Plan is further discussed in Section 3. Compliance with the media monitoring plan is discussed in Section 4 and compliance with the Operation and Maintenance of the ECs is discussed in Section 5. Conclusions with recommendations are provided in Section 6.

1.0 SITE OVERVIEW

1.1 Site Description

The Site is located in the Brooklyn, Kings County, New York and is identified as Block 152 and Lots 1001-1006 (formerly Lots 37 and 118) on the current New York City Tax Map. The Site is an approximately 0.46-acre area bounded by SJHS and a portion of a 5-story commercial building (Lots 33 and 31, respectively) to the north, a fabric discount store (Lot 6) and ASA Institute of Business (Lot 18) to the south, Bridge Street to the east, and Lawrence Street to the west. The Site Location and Layout are included as Figures 1 and 2, respectively. The boundaries of the Site are more fully described in Appendix A - Metes and Bounds.

1.2 Site Development Status

The development on the BCP Site C224134 includes the 53-story residential building with retail spaces on the ground floors and parking from the sub cellar to the 3rd floor of the building. Overall building construction on the Site is complete with some interior retail spaces still under construction. The development footprint is a lot line-to-lot line building as shown in Figure 2.

1.3 Nature and Extent of Contamination

Remedial investigations completed at the Site between May 2008 and July 2008 found several underground storage tanks (UST). NYSDEC spill number #0801499 was opened and then subsequently closed on August 18, 2009 after removal of these USTs. Additional remedial investigations on the Site detected soils indicative of urban fill with elevated levels of semi-volatile organic compounds and metals. Also, elevated levels of chlorinated volatile organic compounds (VOC) were detected in groundwater and soil vapor samples. Off-Site remedial investigations were completed to determine potential off-Site impacts from the historic dry cleaning tenant which operated on the Site until 1982. The offsite investigations found elevated levels of chlorinated VOCs from the Site at SJHS only.

Of note, a diagnostic testing conducted by FLS in 2015 confirmed that the remaining PCE contamination in soil vapor beneath the building was primarily present in the area of SVE well 2.

A new downsized SVE system was installed in 2016 to more effectively target the area where soil vapor contamination remains.

1.4 Site Remediation

The Site was remediated in accordance with the BCA Index# A2-0623-07-09 for BCP Site C224134 which was executed on August 10, 2009. The BCA was amended on July 13, 2010, to correct the Site size, add a survey map, and add R, K & G Associates, LLC as a Remedial Party.

The Site was remediated in accordance with the NYSDEC-approved Remedial Action Work Plan dated April 2012, which enumerated the following remedial activities:

1. Excavation of soil/fill for development purposes. The soil was screened for indications of contamination (by visual means, odor, and monitoring with a photoionization detector) of all excavated soil during intrusive Site work. All remaining soil met Track 2 RUSCOs;
2. Off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
3. Collection and analysis of end-point samples to evaluate attainment of Track 2 RUSCOs;
4. Installation of a SVE system to remove soil vapor above New York State Department of Health (NYSDOH) air guideline values (AGV), as listed in the NYSDOH *Final Guidance for Evaluating Vapor Intrusion in the State of New York, October 2006*;
5. Installation of an active SSDS as a preventative measure from residual contamination at the Site;
6. Construction and maintenance of an engineered composite cover consisting of a vapor barrier and a concrete pressure slab to prevent human exposure to residual contaminated soil/fill remaining under the Site;
7. Monitoring natural attenuation of groundwater;
8. Installation of an active SSDS, BPS, and sealing of the elevator pit at SJHS, which borders the Site to the north, to address off-Site soil vapor contamination;
9. And development of an SMP for long term management of residual contamination as required by the Environmental Easement, including plans for: (1) ECs /ICs, (2) monitoring, (3) operation and maintenance and (4) reporting.

2.0 REMEDY EVALUATION

In 2016, after monitoring of PCE concentrations and prior approval of NYSDEC, the 2013 SVE system that included six soil vapor extraction wells was downsized to limit extraction where the bulk of the PCE mass remains (SVE-2). Each of the vapor extraction points, except for one location (SVE-2), were converted into groundwater monitoring wells (SVE-MW-1, SVE-MW-3, SVE-MW 4, SVE-MW-5 and SVE-MW-6) to track monitored attenuations in those areas. Of note, SVE-MW-3 and SVE-MW-6 were abandoned with the prior approval of NYSDEC (dated July 29, 2016) as they were not suitable as groundwater monitoring wells as they did not extend into the groundwater table. Off-Site monitoring wells, MW-3 and MW-7, have been destroyed. Once remediation is completed, extraction well SVE -2 will be converted to a monitoring well and serve as the downgradient well.

The annual inspection of the on-Site ECs, which include the SSDS, composite cover system, and SVE system, demonstrated that the ECs continue to perform as designed and continue to be protective of human health and the environment.

The SVE monitoring results are included in Table 2 and demonstrate a large reduction in the concentrations of chlorinated VOCs in soil vapor since system start-up. The groundwater sampling results are included in Table 3 show that natural attenuation of the contaminants is occurring in the subsurface. These data are discussed further in Section 4.

The annual inspection of the off-Site ECs, which include the SSDS, BPS, and composite cover system, demonstrated that the off-site ECs also continue to perform as designed and continue to be protective of human health and the environment. The EC details and inspection results are discussed in Section 5.

3.0 INSTITUTIONAL AND ENGINEERING CONTROLS COMPLIANCE

3.1 Institutional Controls

The ICs are non-physical controls, such as Site use restrictions, implemented in order to protect human health and the environment. The SMP requires annual certification of the ICs for the Site to ensure that they continue to be implemented in order to prevent exposure to residual contamination. The ICs for the Site include the SMP, Soils/Materials Management Plan, groundwater use, farming, and gardening restrictions, provisions for deed restrictions and environmental easements, EC/IC plans, and the Operation, Maintenance and Monitoring plan.

3.2 Engineering Controls

The ECs are physical controls employed to contain, stabilize, and monitor residual contamination. Since residual contaminated soil, groundwater, and soil vapor exists beneath the Site, the ECs will continue to remain protecting human health and the environment. The on-Site ECs required by the SMP consist of a SSDS, a SVE system, and a composite cover system. The SSDS will not be operational until the SVE system is fully decommissioned. Of note, the SVE system installed in 2013 was replaced by a new and downsized system in 2016. The currently active SVE system extracts soil vapors from a limited area where the bulk of the PCE mass remains. Groundwater is monitored at the other areas where soil vapor extractions ceased. Off-Site ECs required by the SMP and implemented at SJHS consist of an active SSDS, BPS, and a composite cover system.

The SMP requires an annual inspection and certification of the ECs to ensure that they continue to perform as designed and continue to be protective of human health and the environment.

3.3 Certification of Engineering and Institutional Controls

The owner and the developer parties are responsible for overseeing, documenting, and certifying that the work at the Site was performed by or on behalf of each and done in accordance with the applicable SMP. The annual certifications were performed by Arnold F. Fleming on behalf of 384 Bridge Street, LLC. The completed EC/IC Certification Form is provided as Appendix B.

4.0 MONITORING PLAN COMPLIANCE

4.1 Groundwater Monitoring

The majority of the existing groundwater monitoring wells were demolished during building construction. As outlined in the SMP, semi-annual groundwater monitoring will be conducted to confirm natural attenuation of chlorinated VOCs in groundwater. Following the installation of the downsized SVE system in January 2016, five of the six SVE wells were converted to groundwater monitoring wells. Of these five, two wells (SVE-MW-3 and SVE-MW-6) were abandoned as they did not extend into the groundwater table. The SVE and groundwater monitoring well locations are shown on Figure 3.

In 2017, the semi-annual groundwater monitoring events were completed on March 17, 2017 and September 26, 2017. Reports summarizing groundwater monitoring events were prepared y FLS and submitted to NYSDEC.

4.2 Groundwater Monitoring Results

Since March 2016, groundwater samples have been collected on a semi-annual basis and are analyzed for VOCs and geochemical parameters including nitrate, nitrite, sulfate, ferrous iron, total organic carbon, and dissolved organic carbon.

As discussed in the Groundwater Monitoring Reports, PCE and TCE were the only contaminants of concern detected at concentrations above the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 Ambient Water Quality Standards and Guidance Values (TOGS) in the first semi-annual groundwater event conducted in March (1H2017). PCE was the only contaminants of concern detected at concentrations above the TOGS in the second semi-annual groundwater event conducted in September (2H2017).

In the most recent event (2H2017), PCE was present in concentrations that exceed the TOGS of 5 µg/L in two of the monitoring wells sampled: SVE-MW-4 (34.6 µg/L), and SVE-MW-5 (32 µg/L). Trichloroethylene (TCE) was detected at a concentration below the TOGS in all three monitoring wells. There were no other exceedances of the Site's contaminants of concern (PCE and its breakdown products: TCE and cis-1,2-dichloroethene). In addition, the 2H2017 analytical results

indicate chloroform concentration above the TOGS in one of the monitoring wells (SVE-MW-5) and nitrogen, nitrate + nitrite concentrations above the TOGS in SVE-MW-1.

During last monitoring event, 2H2017, PCE concentrations in SVE-MW-4 and SVE-MW-5 were higher than in previous sampling events. However, PCE concentrations continue to decline overall. Table 2 shows the results of the groundwater sample analyses compared to the Standards.

4.3 Soil Vapor Monitoring

The soil vapor monitoring was completed in accordance with the SMP. The objectives of the soil vapor monitoring in conjunction with the SVE system on the Site are to (1) track system performance and (2) monitor for carbon breakthrough. Quarterly sampling of soil vapor was conducted at the system prior to the carbon treatment (influent), after the first carbon treatment unit (midstream), and after the second carbon treatment unit (outlet). Samples were collected with 1-liter summa canisters provided by SGS Accutest Laboratories using 2-hour flow regulators and were analyzed for VOCs by EPA Method TO-15.

4.4 Soil Vapor Monitoring Results

The quarterly soil vapor monitoring analytical results shown in Table 3 were reviewed, and compared to the NYSDOH AGVs for PCE and TCE. The analytical results show that concentrations of PCE and TCE above the AGVs remain in the soil vapor beneath the building.

The results and findings of the soil vapor sampling of the SVE system, are summarized below:

- The highest historical concentrations of PCE (39,700 µg/m^3) and TCE (120 µg/m^3) detected at the 2013 SVE system inlet were recorded on July 3, 2013, one week after the system was turned on.
- In overall, the system installed in 2013 effectively removed 87.88 kilograms (kg) of PCE and 0.30 kg of TCE from June 2013 through October 2016. Graphs showing the accumulative mass removal for PCE and TCE are presented in Figure 4 and 5, respectively.
- Eight (8) quarterly events have been completed since the installation of the 2016 SVE system.
- New carbon was installed in the lead and lag carbon vessels in December prior to the collection of the December 21, 2017 SVE samples. Spent carbon will be disposed to an approved facility under EPA ID No. NYD981079932.

- To date, a total of sixty three (63) soil vapor sampling (monthly/quarterly) events have been completed. In the most recent sampling event, the SVE inlet readings of PCE and TCE were 4.7 and 6.4 $\mu g/m^3$, respectively. When comparing to the highest concentrations detected (sample collected July 3, 2013), there is a reduction in concentrations of PCE and TCE of 99.9% and 94.7%, respectively.
- As of the date of the last SVE sampling event, December 21, 2017, 2016 SVE system has removed a total of 16.86 kg of PCE and 0.13 kg of TCE.
- As of the date of the last SVE sampling event, December 21, 2017, 104.73 Kg of PCE and 0.37 Kg of TCE have been removed and treated from the Site.

5.0 OPERATION AND MAINTENANCE PLAN COMPLIANCE

5.1 Site Inspections

The inspections of the ECs were conducted by FLS on a quarterly basis. FLS inspected the on-Site SVE system, the on-Site and off-Site SSDSs, the on-Site and off-Site composite covers, and the off-Site BPS system. The quarterly inspection reports, which tabulate both SVE system readings and on and off-Site vacuum readings are included as Appendix C. Site and SVE system photographs are included in Appendix D.

The inspections consisted of the following elements:

- Inspection of the on-Site SVE system, including temperature and pressure readings at the system's components;
- Pressure readings were collected at the SVE extraction wells using digital manometer;
- Inspections of the on-Site and off-Site SSDSs including differential pressure readings using digital manometer at each of the monitoring points;
- Inspection of the BPS at the off-Site property (SJHS);
- Inspections of the composite cover systems, including the conditions of the on-Site and off-Site buildings' foundation slab and sidewalls; and
- Inspections of the basement floor and perimeter for signs of moisture intrusion.

5.2 Inspection Results

The ECs for the Site were inspected and continue to perform as designed, protecting human health and the environment. There are no areas where the composite cover systems appeared impaired, compromised or otherwise damaged.

During the winter of 2016-2017, FLS observed that the on-Site SVE system did not shut after a high moisture separator alarm was triggered, upon further inspection FLS noted that water in the moisture separator was frozen. This was remedied by updating the system's control panel and installing heat trace and insulation on the inlet pipe and moisture separator.

During the summer of 2017, FLS discovered that the system was overheating. This was remedied by decreasing the blower speed by adjusting the variable frequency drive. Aside from these minor

adjustments to the system, explained in the Corrective Measure Report (CMR), the on-Site SVE system functioned properly in 2017. The CMR is provided in Appendix E.

Also, the off-Site SSDS and BPS are functioning normally and no breakdowns or repairs were recorded in 2017. There were no modifications made to the HVAC system at either the on-Site development building or the off-Site SJHS that would have impacted the SSDSs (or the BPS).

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Compliance with the SMP

Based on the evaluation of the inspections and monitoring data, FLS concludes the following:

- The ECs and ICs were in place and remained effective at the Site in 2017.
- The ECs and ICs were in place and remained effective at SJHS off-Site in 2017.
- The operation and maintenance activities were conducted properly.
- The soil vapor sampling of the SVE system was properly implemented. There has been a significant reduction in concentrations of PCE and TCE since SVE system start-up in 2013.
- The groundwater sampling was properly implemented and the PCE concentrations are marginally above the Standard of 5 µg/L.

Based on the evaluation of the inspections and monitoring data, FLS recommends the following:

- All ECs and ICs both at the Site and off-Site will continue in operation and monitoring in 2017.
- The soil vapor sampling of the SVE system will continue to monitor system performance, breakthrough of carbon, and potential for conversion to SSDS operation only.
- Groundwater monitoring will continue to be conducted on a semi-annual basis. These results will evaluate the natural attenuation occurring in the subsurface.

6.2 Future PRR Submittals

In accordance with the approved SMP, PRRs will be submitted on an annual basis. The next PRR will be due in February 2019.

TABLES

Table 1
388 Bridge Street
Responsible Parties

NYSDEC Site #	Development Work	Responsible Party
BCP Site C224134		
	On-Site Building (New Development Building)	384 Bridge Street, LLC
	Off-Site Buiding (Saint Joseph's High School)	384 Bridge Street, LLC

Table 2 - Groundwater Sampling Results
BCP No. C224134
388 Bridge Street, Brooklyn, New York

Client Sample ID:	Units	NY TOGS Class GA GW Standards	SVE-MW-1				SVE-MW-4				SVE-MW-5			
Date Sampled:			3/31/2016	9/20/2016	3/17/2017	9/26/2017	3/31/2016	9/20/2016	3/17/2017	9/26/2017	3/31/2016	9/20/2016	3/17/2017	9/26/2017
Matrix:			Groundwater				Groundwater				Groundwater			
GC/MS Volatiles (SW846 8260C)														
Acetone	ug/l	-	ND (3.3)	ND (5.0)	ND (5.0)	ND (5.0)	ND (3.3)	ND (5.0)	ND (5.0)	ND (5.0)	ND (3.3)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	ug/l	1	ND (0.24)	ND (0.14)	ND (0.14)	ND (0.17)	ND (0.24)	ND (0.14)	ND (0.14)	ND (0.17)	ND (0.24)	ND (0.14)	ND (0.14)	ND (0.17)
Bromochloromethane	ug/l	5	ND (0.37)	ND (0.46)	ND (0.46)	ND (0.38)	ND (0.37)	ND (0.46)	ND (0.46)	ND (0.38)	ND (0.37)	ND (0.46)	ND (0.46)	ND (0.38)
Bromodichloromethane	ug/l	-	ND (0.23)	ND (0.55)	ND (0.55)	ND (0.22)	ND (0.23)	ND (0.55)	ND (0.55)	ND (0.22)	ND (0.23)	ND (0.55)	ND (0.55)	ND (0.22)
Bromoform	ug/l	-	ND (0.23)	ND (0.34)	ND (0.34)	ND (0.42)	ND (0.23)	ND (0.34)	ND (0.34)	ND (0.42)	ND (0.23)	ND (0.34)	ND (0.34)	ND (0.42)
Bromomethane	ug/l	5	ND (0.42)	ND (0.46)	ND (0.46)	ND (1.4)	ND (0.42)	ND (0.46)	ND (0.46)	ND (1.4)	ND (0.42)	ND (0.46)	ND (0.46)	ND (1.4)
2-Butanone (MEK)	ug/l	-	ND (5.6)	ND (1.9)	ND (1.9)	ND (4.8)	ND (5.6)	ND (1.9)	ND (1.9)	ND (4.8)	ND (5.6)	ND (1.9)	ND (1.9)	ND (4.8)
Carbon disulfide	ug/l	60	ND (0.25)	ND (0.33)	ND (0.33)	ND (0.23)	ND (0.25)	ND (0.33)	ND (0.33)	ND (0.23)	ND (0.25)	ND (0.33)	ND (0.33)	ND (0.23)
Carbon tetrachloride	ug/l	5	ND (0.22)	ND (0.54)	ND (0.54)	ND (0.34)	ND (0.22)	ND (0.54)	ND (0.54)	ND (0.34)	ND (0.22)	ND (0.54)	ND (0.54)	ND (0.34)
Chlorobenzene	ug/l	5	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.24)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.24)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.24)
Chloroethane	ug/l	5	ND (0.34)	ND (0.44)	ND (0.44)	ND (0.59) [a]	ND (0.34)	ND (0.44)	ND (0.44)	ND (0.59) [a]	ND (0.34)	ND (0.44)	ND (0.44)	ND (0.59) [a]
Chloroform	ug/l	7	1.7	1	1.3	ND (0.29)	0.89 J	1.3	0.93 J	3.6	0.79 J	0.85 J	0.71 J	**9.9**
Chloromethane	ug/l	5	ND (0.41)	ND (0.96)	ND (0.96)	ND (0.53) [a]	ND (0.41)	ND (0.96)	ND (0.96)	ND (0.53) [a]	ND (0.41)	ND (0.96)	ND (0.96)	ND (0.53) [a]
Cyclohexane	ug/l	-	ND (0.28)	ND (0.73)	ND (0.73)	ND (0.63)	ND (0.28)	ND (0.73)	ND (0.73)	ND (0.63)	ND (0.28)	ND (0.73)	ND (0.73)	ND (0.63)
1,2-Dibromo-3-chloropropane	ug/l	0.04	ND (0.99)	ND (0.69)	ND (0.69)	ND (0.69)	ND (0.99)	ND (0.69)	ND (0.69)	ND (0.69)	ND (0.99)	ND (0.69)	ND (0.69)	ND (0.69)
Dibromochloromethane	ug/l	-	ND (0.15)	ND (0.23)	ND (0.23)	ND (0.16)	ND (0.15)	ND (0.23)	ND (0.23)	ND (0.16)	ND (0.15)	ND (0.23)	ND (0.23)	ND (0.16)
1,2-Dibromoethane	ug/l	0.0006	ND (0.23)	ND (0.22)	ND (0.22)	ND (0.21)	ND (0.23)	ND (0.22)	ND (0.22)	ND (0.21)	ND (0.23)	ND (0.22)	ND (0.22)	ND (0.21)
1,2-Dichlorobenzene	ug/l	3	ND (0.19)	ND (0.23)	ND (0.23)	ND (0.50)	ND (0.19)	ND (0.23)	ND (0.23)	ND (0.50)	ND (0.19)	ND (0.23)	ND (0.23)	ND (0.50)
1,3-Dichlorobenzene	ug/l	3	ND (0.23)	ND (0.19)	ND (0.19)	ND (0.50)	ND (0.23)	ND (0.19)	ND (0.19)	ND (0.50)	ND (0.23)	ND (0.19)	ND (0.19)	ND (0.50)
1,4-Dichlorobenzene	ug/l	3	ND (0.27)	ND (0.21)	ND (0.21)	ND (0.50)	ND (0.27)	ND (0.21)	ND (0.21)	ND (0.50)	ND (0.27)	ND (0.21)	ND (0.21)	ND (0.50)
Dichlorodifluoromethane	ug/l	5	ND (0.90)	ND (0.70)	ND (0.70)	ND (1.9) [a]	ND (0.90)	ND (0.70)	ND (0.70)	ND (1.9) [a]	ND (0.90)	ND (0.70)	ND (0.70)	ND (1.9) [a]
1,1-Dichloroethane	ug/l	5	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.21)	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.21)	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.21)
1,2-Dichloroethane	ug/l	0.6	ND (0.18)	ND (0.39)	ND (0.39)	ND (0.20)	ND (0.18)	ND (0.39)	ND (0.39)	ND (0.20)	ND (0.18)	ND (0.39)	ND (0.39)	ND (0.20)
1,1-Dichloroethene	ug/l	5	ND (0.51)	ND (0.20)	ND (0.20)	ND (0.47)	ND (0.51)	ND (0.20)	ND (0.20)	ND (0.47)	ND (0.51)	ND (0.20)	ND (0.20)	ND (0.47)
cis-1,2-Dichloroethene	ug/l	5	ND (0.27)	ND (0.31)	ND (0.31)	ND (0.50)	0.85 J	1.6	0.79 J	1.3	0.34 J	ND (0.31)	ND (0.31)	1.4
trans-1,2-Dichloroethene	ug/l	5	ND (0.65)	ND (0.36)	ND (0.36)	ND (0.40)	ND (0.65)	ND (0.36)	ND (0.36)	ND (0.40)	ND (0.65)	ND (0.36)	ND (0.36)	ND (0.40)
1,2-Dichloropropane	ug/l	1	ND (0.39)	ND (0.33)	ND (0.33)	ND (0.24)	ND (0.39)	ND (0.33)	ND (0.33)	ND (0.24)	ND (0.39)	ND (0.33)	ND (0.33)	ND (0.24)
cis-1,3-Dichloropropene	ug/l	-	ND (0.21)	ND (0.19)	ND (0.19)	ND (0.25)	ND (0.21)	ND (0.19)	ND (0.19)	ND (0.25)	ND (0.21)	ND (0.19)	ND (0.19)	ND (0.25)
trans-1,3-Dichloropropene	ug/l	-	ND (0.19)	ND (0.26)	ND (0.26)	ND (0.22)	ND (0.19)	ND (0.26)	ND (0.26)	ND (0.22)	ND (0.19)	ND (0.26)	ND (0.26)	ND (0.22)
1,4-Dioxane	ug/l	-	ND (41)	ND (32)	ND (32)	ND (52)	ND (41)	ND (32)	ND (32)	ND (52)	ND (41)	ND (32)	ND (32)	ND (52)
Ethylbenzene	ug/l	5	ND (0.27)	ND (0.20)	ND (0.20)	ND (0.22)	ND (0.27)	ND (0.20)	ND (0.20)	ND (0.22)	ND (0.27)	ND (0.20)	ND (0.20)	ND (0.22)
Freon 113	ug/l	5	ND (0.52)	ND (1.2)	ND (1.2)	ND (1.2)	ND (0.52)	ND (1.2)	ND (1.2)	ND (1.2)	ND (0.52)	ND (1.2)	ND (1.2)	ND (1.2)
2-Hexanone	ug/l	-	ND (1.7)	ND (1.5)	ND (1.5)	ND (3.3)	ND (1.7)	ND (1.5)	ND (1.5)	ND (3.3)	ND (1.7)	ND (1.5)	ND (1.5)	ND (3.3)
Isopropylbenzene	ug/l	5	ND (0.23)	ND (0.16)	ND (0.16)	ND (0.25)	ND (0.23)	ND (0.16)	ND (0.16)	ND (0.25)	ND (0.23)	ND (0.16)	ND (0.16)	ND (0.25)
Methyl Acetate	ug/l	-	ND (1.9)	ND (1.5)	ND (1.5)	ND (3.1)	ND (1.9)	ND (1.5)	ND (1.5)	ND (3.1)	ND (1.9)	ND (1.5)	ND (1.5)	ND (3.1)
Methylcyclohexane	ug/l	-	ND (0.22)	ND (0.78)	ND (0.78)	ND (1.8)	0.31 J	ND (0.78)	ND (0.78)	ND (1.8)	ND (0.22)	ND (0.78)	ND (0.78)	ND (1.8)
Methyl Tert Butyl Ether	ug/l	10	ND (0.24)	ND (0.34)	ND (0.34)	ND (0.25)	0.24 J	ND (0.34)	ND (0.34)	ND (0.25)	ND (0.24)	ND (0.34)	ND (0.34)	ND (0.25)
4-Methyl-2-pentanone(MIBK)	ug/l	-	ND (1.0)	ND (1.2)	ND (1.2)	ND (3.0)	ND (1.0)	ND (1.2)	ND (1.2)	ND (3.0)	ND (1.0)	ND (1.2)	ND (1.2)	ND (3.0)
Methylene chloride	ug/l	5	ND (0.73)	ND (1.0)	ND (1.0)	ND (1.0)	ND (0.73)	ND (1.0)	ND (1.0)	ND (1.0)	ND (0.73)	ND (1.0)	ND (1.0)	ND (1.0)
Styrene	ug/l	5	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.24)	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.24)	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.24)
1,1,2,2-Tetrachloroethane	ug/l	5	ND (0.21)	ND (0.39)	ND (0.39)	ND (0.17)	ND (0.21)	ND (0.39)	ND (0.39)	ND (0.17)	ND (0.21)	ND (0.39)	ND (0.39)	ND (0.17)
Tetrachloroethene	ug/l	5	**11.9**	**11.8**	**9.7**	2.4	**12.5**	**11.9**	**11.6**	**34.6**	**12.1**	**11.3**	**6.6**	**32**
Toluene	ug/l	5	ND (0.16)	ND (0.23)	ND (0.23)	ND (0.25)	ND (0.16)	ND (0.23)	ND (0.23)	ND (0.25)	ND (0.16)	ND (0.23)	ND (0.23)	ND (0.25)
1,2,3-Trichlorobenzene	ug/l	5	ND (0.23)	ND (0.20)	ND (0.50)	ND (0.50)	ND (0.23)	ND (0.20)	ND (0.50)	ND (0.50)	ND (0.23)	ND (0.20)	ND (0.50)	ND (0.50)
1,2,4-Trichlorobenzene	ug/l	5	ND (0.21)	ND (0.25)	ND (0.50)	ND (0.50)	ND (0.21)	ND (0.25)	ND (0.50)	ND (0.50)	ND (0.21)	ND (0.25)	ND (0.50)	ND (0.50)
1,1,1-Trichloroethane	ug/l	5	ND (0.25)	ND (0.22)	ND (0.22)	ND (0.25)	ND (0.25)	ND (0.22)	ND (0.22)	ND (0.25)	ND (0.25)	ND (0.22)	ND (0.22)	ND (0.25)
1,1,2-Trichloroethane	ug/l	1	ND (0.21)	ND (0.28)	ND (0.28)	ND (0.24)	ND (0.21)	ND (0.28)	ND (0.28)	ND (0.24)	ND (0.21)	ND (0.28)	ND (0.28)	ND (0.24)
Trichloroethene	ug/l	5	0.49 J	0.40 J	0.46 J	ND (0.27)	**7.8**	**8.8**	**7.2**	2	3.3	2.6	1.4	2.9
Trichlorofluoromethane	ug/l	5	ND (0.43)	ND (0.58)	ND (0.58)	ND (0.60)	ND (0.43)	ND (0.58)	ND (0.58)	ND (0.60)	ND (0.43)	ND (0.58)	ND (0.58)	ND (0.60)
Vinyl chloride	ug/l	2	ND (0.15)	ND (0.33)	ND (0.33)	ND (0.62) [a]	ND (0.15)	ND (0.33)	ND (0.33)	ND (0.62) [a]	ND (0.15)	ND (0.33)	ND (0.33)	ND (0.62) [a]
m,p-Xylene	ug/l	-	ND (0.38)	ND (0.42)	ND (0.42)	ND (0.43)	ND (0.38)	ND (0.42)	ND (0.42)	ND (0.43)	ND (0.38)	ND (0.42)	ND (0.42)	ND (0.43)
o-Xylene	ug/l	5	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.22)	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.22)	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.22)
Xylene (total)	ug/l	5	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.22)	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.22)	ND (0.17)	ND (0.21)	ND (0.21)	ND (0.22)
General Chemistry														
Dissolved Organic Carbon	mg/l	-	-	<1.0	-	1.5	-	<1.0	-	1.4	-	<1.0	-	1.4
Iron, Ferrous	mg/l	-	-	<0.20	<0.20 [a]		-	<0.20	<0.20 [a]		-	<0.20	<0.20 [a]	
Nitrogen, Nitrate	mg/l	10	-	**12.2**	**10.3** [b]	**15.8** [b]	-	6.7	8.1 [b]	10 [b]	-	9.4	**23.2** [b]	6.3 [b]
Nitrogen, Nitrate + Nitrite	mg/l	10	-	**12.2**	**10.3**	**15.8**	-	6.7	8.1	10	-	9.4	**23.2**	6.3
Nitrogen, Nitrite	mg/l	1	-	<0.010	<0.010	ND (0.010)	-	<0.010	<0.010	0.017	-	<0.010	<0.010	ND (0.010)
Sulfate	mg/l	250	-	95.7	88.3	62.7	-	94.4	96.6	74.7	-	75	108	39.5
Total Organic Carbon	mg/l	-	-	<1.0	1.2		-	1	1		-	<1.0	1.3	

Notes:

ND - not detected
J - estimated concentration

ND - not detected

Exceedances of a standard are highlighted in yellow and bolded

Detection of a compound is highlighted in blue

[a] Associated CCV outside of control limits high, sample was ND

[b] Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

* Groundwater filtered

Table 3 - SVE Sampling Results
BCP No. C224134
388 Bridge Street, Brooklyn, New York

Sample Date	System Install. Date	Compound	Tetrachloroethylene			Trichloroethylene		
		Sample ID	SVE- INLET	SVE- MIDSTREAM	SVE-OUTLET	SVE- INLET	SVE-MIDSTREAM	SVE- OUTLET
		NYSDOH AGV / Sampling Frequency	30	30	30	2	2	2
6/28/13	2013	Monthly	29400	1650	124	51	4.3	0.42
7/3/13	2013	Monthly	39700	1690	22	120	5.9	1.5
7/10/13	2013	Monthly	29800	80.7	73.9	73.1	0.42	0.42
7/17/13	2013	Monthly	8750	486	40	37	4.8	0.42
7/24/13**	2013	Non-routine	12	433	45	0.42	2.2	0.42
7/31/13	2013	Monthly	6850	163	31	19	0.42	0.42
8/7/13	2013	Monthly	4710	264	39	17	1.3	0.42
8/14/13	2013	Monthly	6750	475	39	30	1.7	0.42
8/28/13	2013	Monthly	5580	364	26	22	1.3	0.42
9/11/13	2013	Monthly	4650	321	NS	16	1.2	NS
9/25/13	2013	Monthly	5440	291	NS	21	1.1	NS
10/9/13	2013	Monthly	3040	232	30	14	0.42	0.42
10/23/13	2013	Monthly	4950	356	NS	18	1.2	NS
11/6/13	2013	Monthly	4400	311	NS	17	1.1	NS
11/20/13	2013	Monthly	5280	174	70.5	17	0.64	0.22
12/4/13	2013	Monthly	4140	334	45	14	0.97	0.1
12/18/13	2013	Monthly	5160	516	78.7	20	2.4	0.39
1/2/14	2013	Monthly	2840	248	18	10	1.6	0.32
1/15/14	2013	Monthly	7050	1470	62	20	5.3	0.42
1/29/14	2013	Monthly	8540	263	NS	19	2.2	NS
2/12/14	2013	Monthly	8000	664	31	23	4.5	0.42
2/27/14	2013	Monthly	9900	14	83.4	26	1.9	0.81
3/12/14	2013	Monthly	4240	1170	140	11	6.4	0.81
3/26/14	2013	Monthly	1630	156	50	7	0.51	0.81
4/23/14	2013	Monthly	3230	317	48	11	1.4	1
5/20/14	2013	Monthly	2530	269	39	7	0.91	0.1
6/18/14	2013	Monthly	1510	41	27	6.4	0.48	0.7
7/23/14	2013	Monthly	5230	466	22	17	3.6	0.35
8/27/14	2013	Monthly	3860	579	35	13	4	0.44

Table 3 - SVE Sampling Results
BCP No. C224134
388 Bridge Street, Brooklyn, New York

Sample Date	System Install. Date	Compound	Tetrachloroethylene			Trichloroethylene		
		Sample ID	SVE- INLET	SVE- MIDSTREAM	SVE-OUTLET	SVE- INLET	SVE-MIDSTREAM	SVE- OUTLET
		NYSDOH AGV / Sampling Frequency	30	30	30	2	2	2
9/24/14	2013	Monthly	2960	529	26	28	7.5	0.75
10/15/14	2013	Non-routine	1380	NS	NS	7	NS	NS
10/16/14	2013	Non-routine	2430	NS	NS	9.1	NS	NS
10/17/14	2013	Non-routine	14400	NS	NS	28	NS	NS
10/20/14	2013	Non-routine	1020	NS	NS	4.8	NS	NS
10/21/14	2013	Non-routine	1250	NS	NS	4.4	NS	NS
10/22/14	2013	Non-routine	324	NS	NS	1.6	NS	NS
10/29/14	2013	Monthly	3040	385	18	10	6.4	0.75
11/26/14	2013	Monthly	3560	524	22	17	9.7	1.1
12/15/14	2013	Non-routine	315	NS	NS	0.81	NS	NS
12/16/14	2013	Non-routine	202	NS	NS	1.4	NS	NS
12/17/14	2013	Non-routine	7730	NS	NS	13	NS	NS
12/18/14	2013	Non-routine	207	NS	NS	1.6	NS	NS
12/19/14	2013	Non-routine	142	NS	NS	0.59	NS	NS
12/22/14	2013	Non-routine	65	NS	NS	0.4	NS	NS
12/30/14	2013	Monthly	7660	589	1.3	13	8.1	0.16
1/29/15	2013	Monthly	5450	990	38	13	8.1	0.91
2/26/15	2013	Monthly	6760	1170	35	14	9.1	1
3/27/15	2013	Monthly	3490	1990	58	13	17	1.3
4/29/15	2013	Monthly	5110	834	60	11	9.1	2
5/27/15	2013	Monthly	4060	800	54	9.7	11	1.6
6/23/15	2013	Monthly	4300	530	44	9.7	8.6	1.2
7/30/15	2013	Monthly	5830	1180	54	12	13	1.4
8/26/15	2013	Monthly	3490	599	8.8	12	12	1.1
9/23/15	2013	Monthly	6250	1060	28	16	16	1.1
10/28/15	2013	Monthly	4130	759	36	20	12	1.1
*1/26/2016	2013	Non-routine	0.31	0.31	NS	0.2	0.2	NS

Table 3 - SVE Sampling Results
BCP No. C224134
388 Bridge Street, Brooklyn, New York

Sample Date	System Install. Date	Compound	Tetrachloroethylene			Trichloroethylene		
		Sample ID	SVE- INLET	SVE- MIDSTREAM	SVE-OUTLET	SVE- INLET	SVE-MIDSTREAM	SVE- OUTLET
		NYSDOH AGV / Sampling Frequency	30	30	30	2	2	2
3/30/16	2016	Non-routine	487	16	NS	8.6	10	NS
3/31/16	2016	Quarterly	NS	NS	8.1	NS	NS	15
8/5/16	2016	Quarterly	3410	80	0.81	28	0.52	0.2
9/20/16	2016	Quarterly	10800	399	5.4 J	31	4.9	2
12/9/16	2016	Quarterly	275	334	6.8	2.9	6.4	2.6
3/17/17	2016	Quarterly	773	13	10	7.5	1.3	4.9
6/13/17	2016	Quarterly	99.7	712	189	2.9	13	12
9/26/17	2016	Quarterly	10600	6580	5780	25	24	40
12/21/17	2016	Quarterly	4.7	33	21	6.4	4.1	5.3

Notes:
All concentrations measured in ug/m^3
Exceedences to NYSDOH Air Guideline Values highlighted in orange
* A new and downsized system was installed in 2016
** SVE Inlet data from 7/24/13 appears to be invalid based on results, data collected at this event is not to be used in future analyses

FIGURES

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

1 0.5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

FEET

CONTOUR INTERVAL 10 FEET

Site: *Brooklyn Quadrangle, New York 7.5 Minute series USGS Topographic Map (79287)\ Obtained from United States Geological Survey topography compiled 2010*

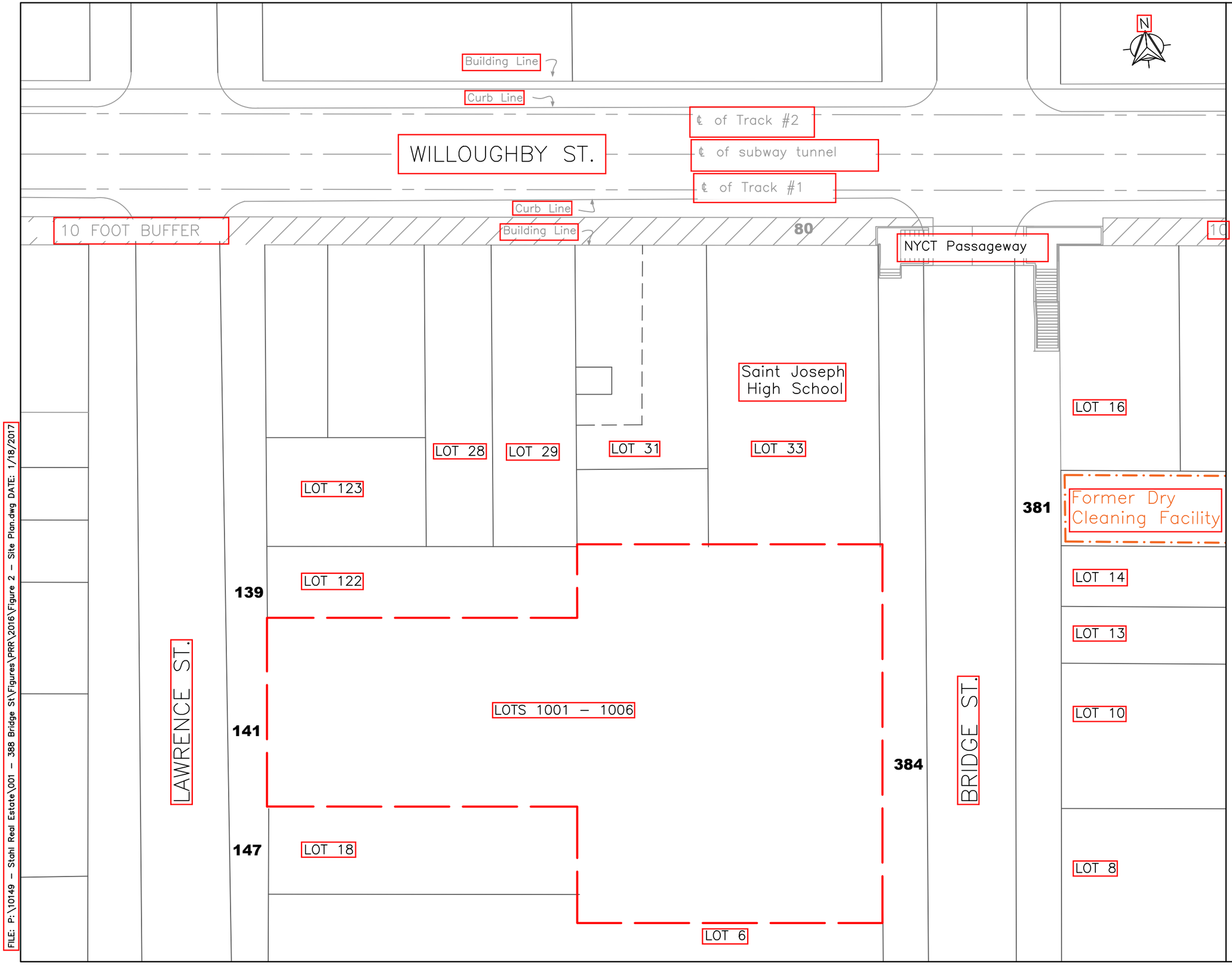
Fleming Lee Shue

Environmental Management & Consulting
158 West 29th Street, New York, NY 10001

Figure 1 – Site Location

January 2018

388 Bridge Street
Brooklyn, New York



FILE: P:\10149 – Stahl Real Estate\001 – 388 Bridge St\Figures\PRR\2016\Figure 2 – Site Plan.dwg DATE: 1/18/2017

Fleming Lee Shue

Environmental Management & Consulting

158 West 29th Street, 9th Fl.
New York, NY 10001

384 Bridge Street
Brooklyn, NY
BCP Site #C224134

Figure 2

Site Plan

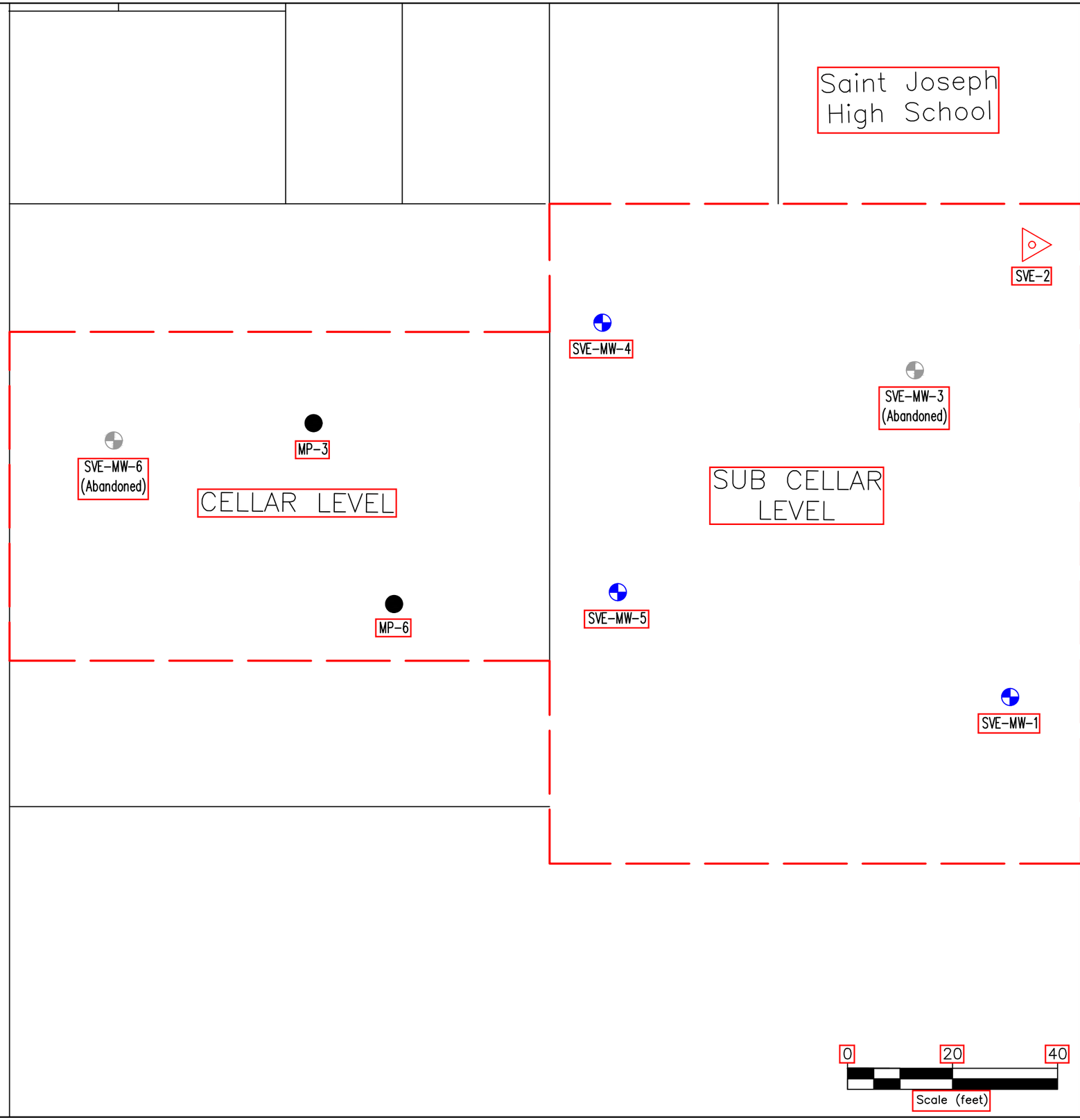
January 2017

Project Number
10149-001

LEGEND

384 Site Address

Site Boundary/
Development Footprint



Fleming Lee Shue

Environmental Management & Consulting

158 West 29th Street, 9th Fl.
New York, NY 10001

388 Bridge Street
Brookly, NY
BCP Site # C224134

Figure 3

SVE and Groundwater Monitoring Well Locations

January 2017

Project Number
10149-001

LEGEND

- Site Boundary
- Active SVE Well
- Groundwater Monitoring Well
- Vacuum Monitoring Point

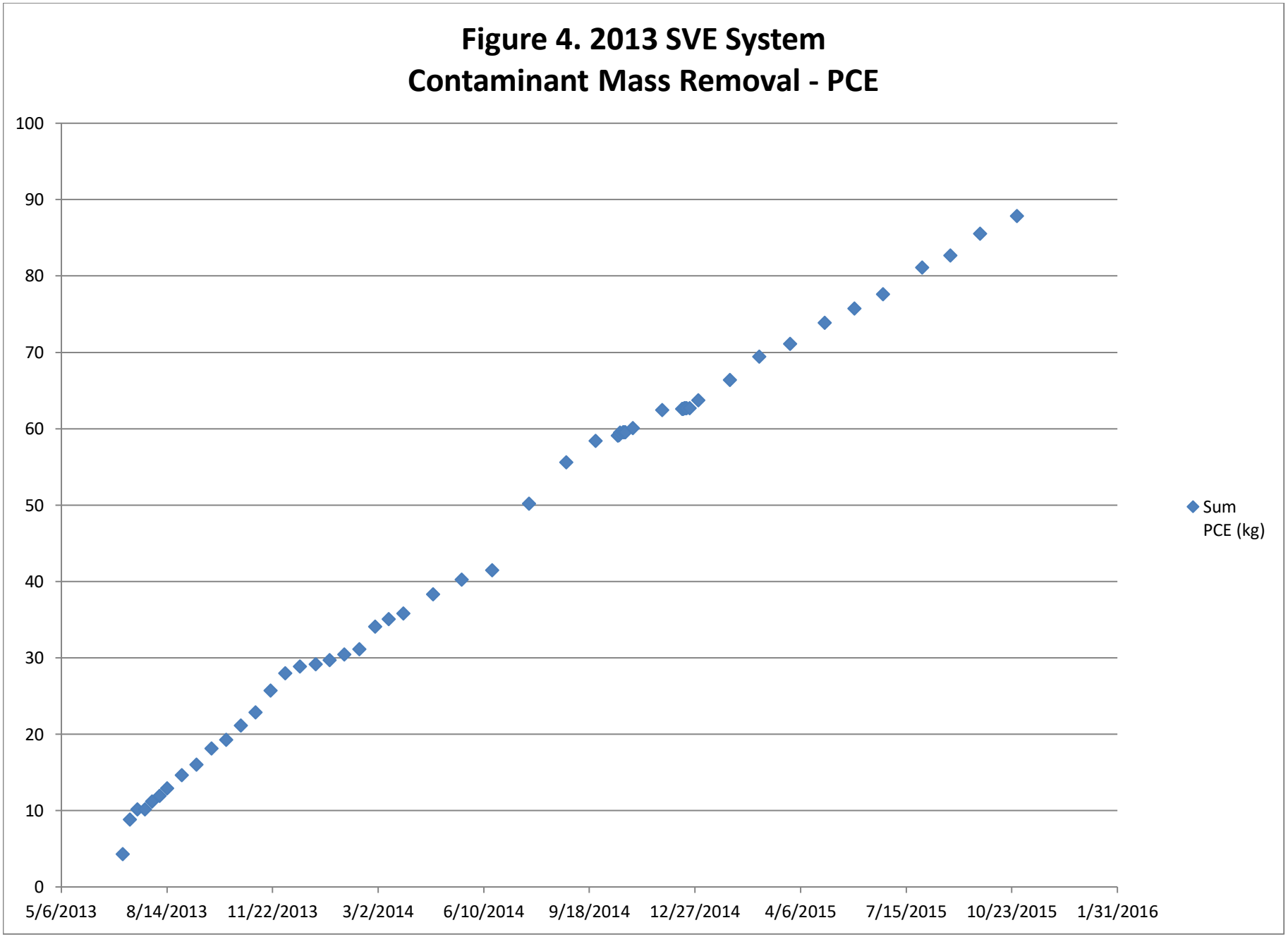


Figure 4. 2013 SVE System
Contaminant Mass Removal - PCE
100
90
80
70
60
50
40
30
20
10
0
5/6/2013
8/14/2013
11/22/2013
3/2/2014
6/10/2014
9/18/2014
12/27/2014
4/6/2015
7/15/2015
10/23/2015
1/31/2016
Sum
PCE (kg)

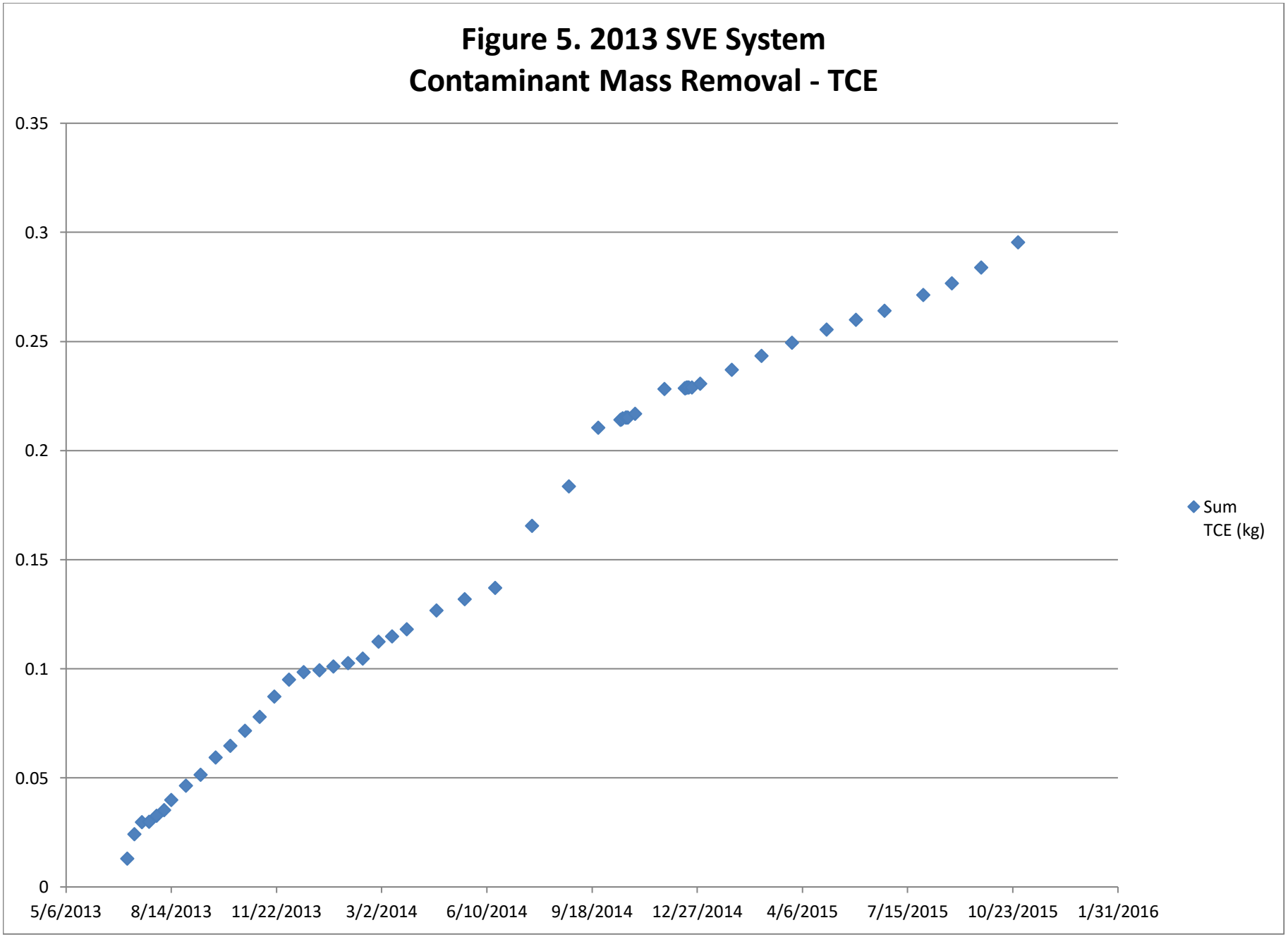


Figure 5. 2013 SVE System
Contaminant Mass Removal - TCE
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
5/6/2013
8/14/2013
11/22/2013
3/2/2014
6/10/2014
9/18/2014
12/27/2014
4/6/2015
7/15/2015
10/23/2015
1/31/2016
Sum
TCE (kg)

Figure 6. 2016 SVE System
Contaminant Mass Removal - PCE

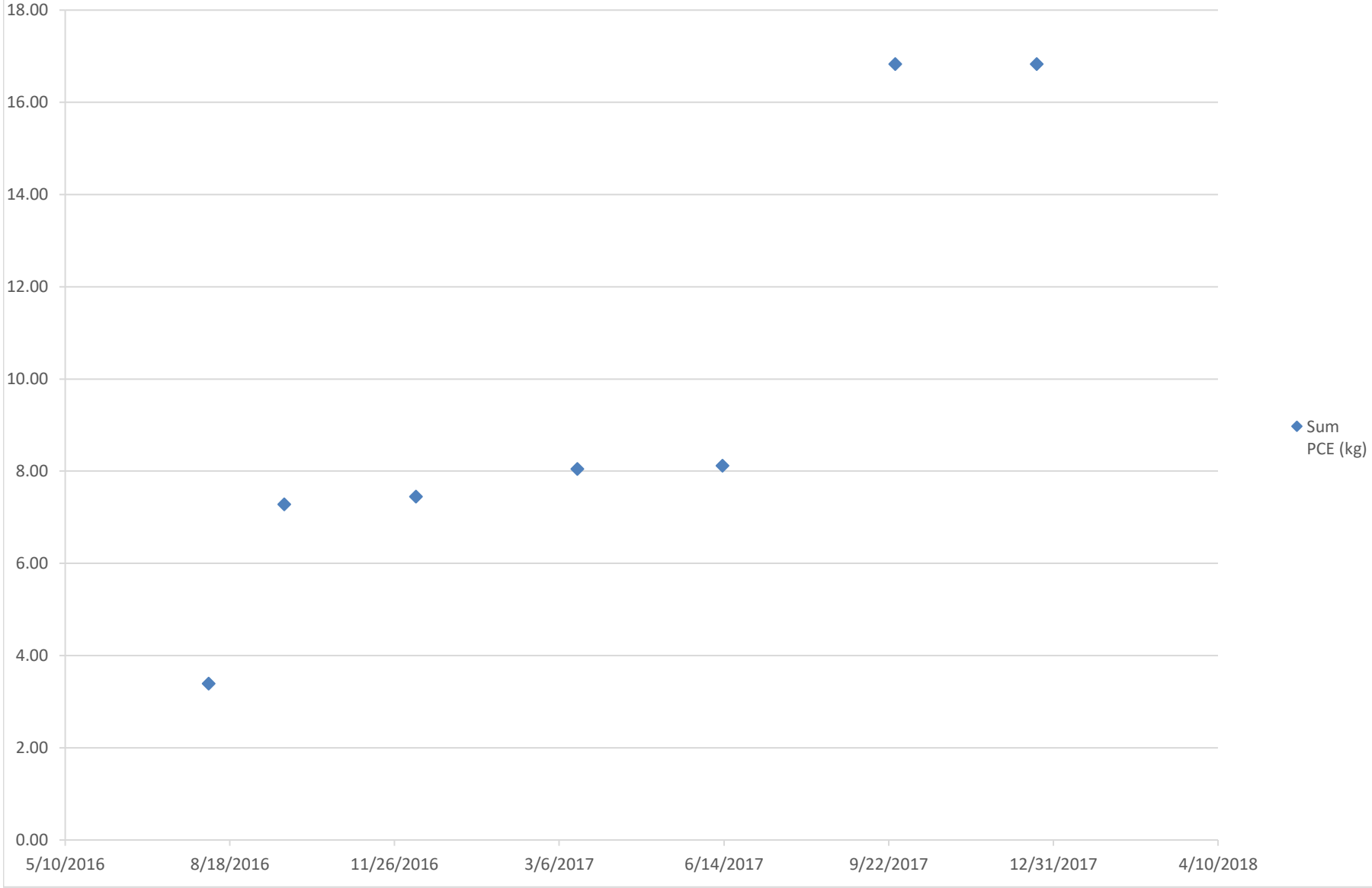
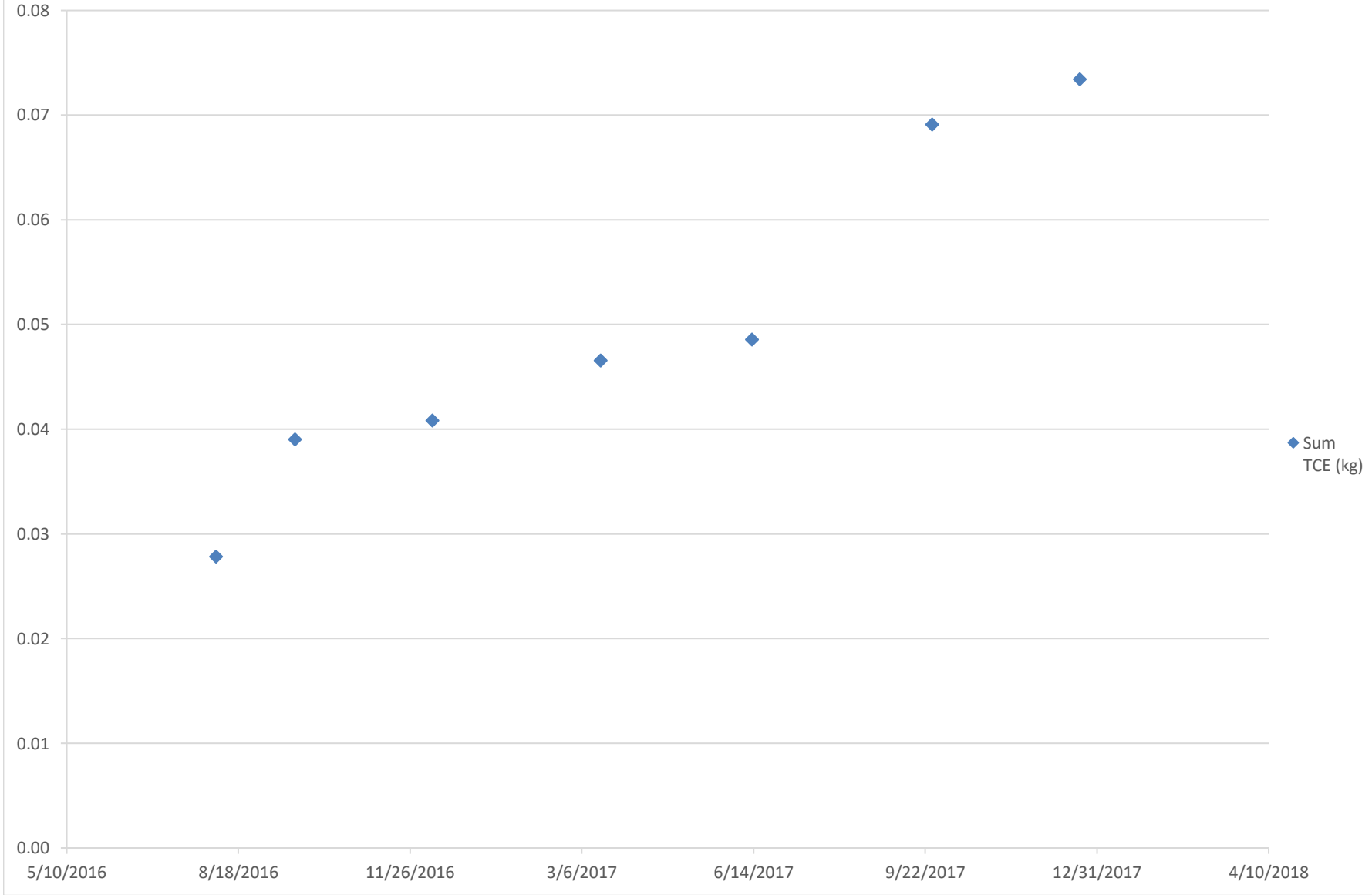


Figure 7. 2016 SVE System
Contaminant Mass Removal - TCE



APPENDIX A

Metes and Bounds

SCHEDULE "A"
ENVIRONMENTAL EASEMENT
PROPERTY DESCRIPTION

The Condominium (in the Building located at and known as The Bridge Street Condominium and by Street Number 384-394 Bridge Street, New York), designated and described as Units Parking, Commercial 1, Commercial 2, Lower 80/20, Upper 80/20 and Divisible (hereinafter called the "Unit") in the Declaration (hereinafter called "Declaration") made by the Sponsor under the Condominium Act of The State of New York (Article 9-B of the Real Property Law of the State of New York), dated March 21, 2012 and recorded June 14, 2012 in the Office of the Register, the City of New York, County of New York, in CRFN 2012000231607 establishing a plan for Condominium ownership of said Building and the land upon which the same is erected (hereinafter sometimes collectively called the "Property") and also designated and described as Tax Lot Nos. 1001-1006 Block 152, Borough of Brooklyn, on the Tax Map of the Real Property Assessment Department of the City of New York and on the Floor Plans of said Building certified by Professional Engineer, on and filed as Condominium Plan No. 3222 on June 14, 2012 in the aforesaid Register's Office.

Together with an undivided 100 percent interest in the common elements of the property described in the Declaration.

The land upon which the Building containing the Unit is erected as follows:

Legal Description of Environmental Easement Area (former Lots 37 & 118 Block 152 Joined as one)

“Being the same piece or parcel of Land conveyed to R, K, & G Associates from 1929 Realty, Inc., by deed dated June 15, 1977 recorded in Reel 926 Page 725 and also the same parcel of land conveyed to 384 Bridge Street LLC from 141 Lawrence Street LLC, by deed dated December 19, 2011 recorded as CRFN: 2012000020329 in the Office of City Register of the City of New York.”

ALL that certain plot, piece or parcel of land, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING at a point on the Westerly side of Bridge Street distant 100 feet southerly from the corner formed by the intersection of the Westerly side of Bridge Street and the Southerly side of Willoughby Street;

RUNNING THENCE Westerly parallel with Willoughby Street 107 feet 6 inches;

THENCE Southerly parallel with Bridge Street 25.0 feet;

THENCE Westerly parallel with Willoughby Street I07 feet 6 inches to the Easterly side of Lawrence Street;

THENCE Southerly along the easterly side of Lawrence Street 62 feet;

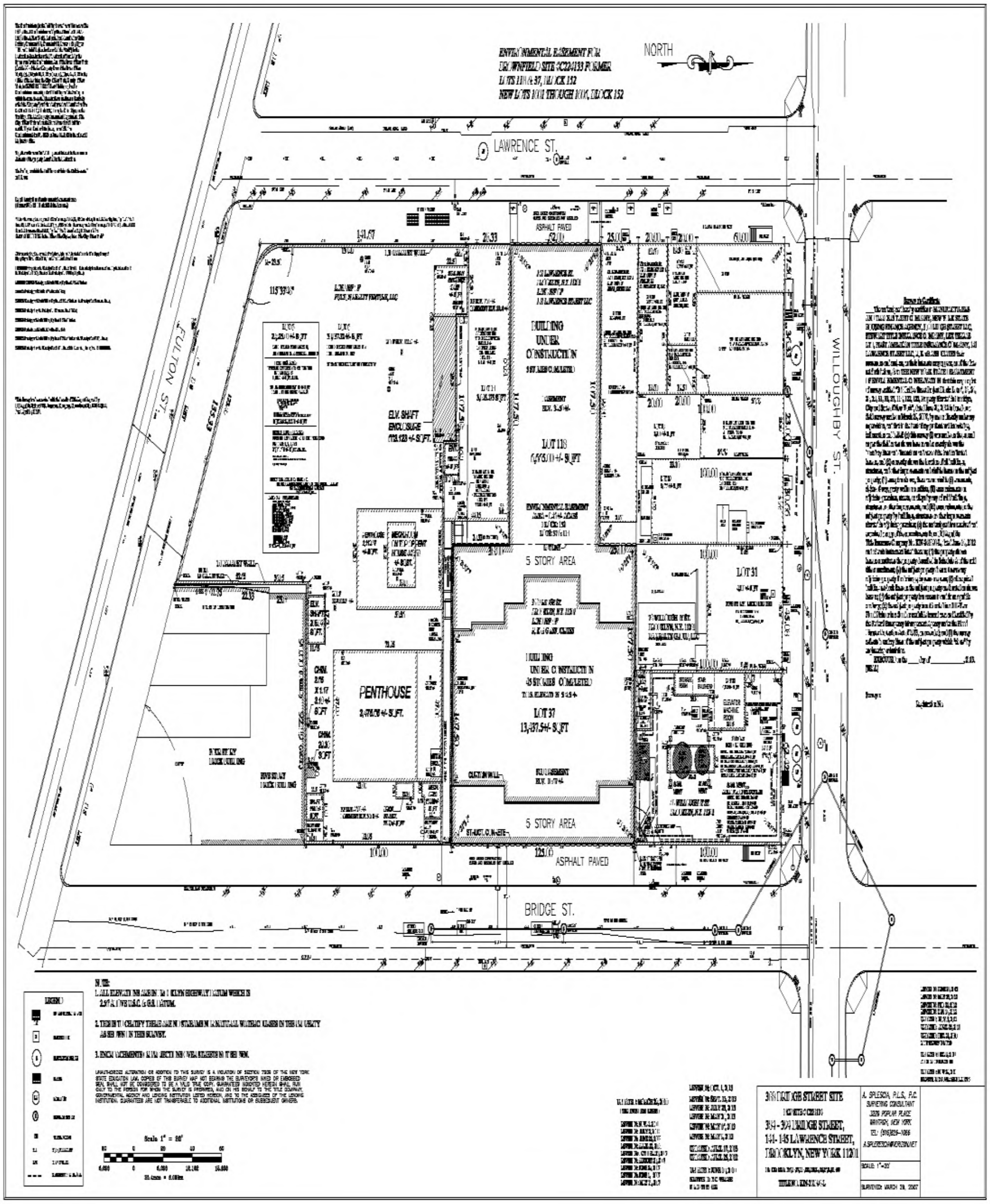
THENCE Easterly parallel with Willoughby Street 107 feet 6 inches;

THENCE Southerly parallel with Bridge Street 38.0 feet;

THENCE Easterly parallel with Willoughby Street 107 feet 6 inches to the Westerly side of Bridge Street;

THENCE Northerly along the Westerly side of Bridge Street 125.0 feet to the point or place of BEGINNING.

SURVEY


NORTH
LAWRENCE ST.
FULTON ST.
WILLOUGHBY ST.
BRIDGE ST.
ASPHALT PAVED
BUILDING UNDER CONSTRUCTION
ELV. SHAFT ENCLOSURE
5 STORY AREA
PENTHOUSE
LOT 37
LOT 31
ASPHALT PAVED

APPENDIX B

Engineering Controls / Institutional Controls Certifications

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Site Management Periodic Review Report Notice

Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. C224134

Site Name 388 Bridge Street

Site Address: 384-394 Bridge Street and 141-145 Lawrence Street Zip Code: 11201
City/Town: Brooklyn
County: Kings
Site Acreage: 0.5

Reporting Period: January 03, 2017 to January 03, 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 thru 4, include documentation or evidence that documentation has been previously submitted with this certification 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? Residential, 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 DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

	Box 2A	
	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☒
If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.		
9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	X	☐
If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.		

SITE NO. C224134	**Box 3**
Description of Institutional Controls	

Parcel	Owner	Institutional Control
1-152-1001	R,K&G Associates, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan
- land use restriction - groundwater use restriction - soil management plan		
1-152-1002	R,K&G Associates, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan
- land use restriction - groundwater use restriction - soil management plan		
1-152-1003	R,K&G Associates, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan
- land use restriction - groundwater use restriction - soil management plan		
1-152-1004	R,K&G Associates, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan
- land use restriction - groundwater use restriction - soil management plan		
1-152-1005	R,K&G Associates, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan
- land use restriction - groundwater use restriction		

- soil management plan

1-152-1006 384 Bridge Street LLC

Ground Water Use Restriction
Soil Management Plan
Landuse Restriction
Monitoring Plan
Site Management Plan
O&M Plan
IC/EC Plan

- land use restriction
- groundwater use restriction
- soil management plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
1-152-1001	Vapor Mitigation Air Sparging/Soil Vapor Extraction

- composite cover system
- sub-slab depressurization system
- soil vapor extraction system
- monitored natural attenuation of groundwater
- adjacent off-site vapor mitigation system

1-152-1002 Vapor Mitigation, Air Sparging/Soil Vapor Extraction

- composite cover system
- sub-slab depressurization system
- soil vapor extraction system
- monitored natural attenuation of groundwater
- adjacent off-site vapor mitigation system

1-152-1003 Vapor Mitigation

- composite cover system
- sub-slab depressurization system
- soil vapor extraction system
- monitored natural attenuation of groundwater
- adjacent off-site vapor mitigation system

1-152-1004 Vapor Mitigation

- composite cover system
- sub-slab depressurization system
- soil vapor extraction system
- monitored natural attenuation of groundwater
- adjacent off-site vapor mitigation system

1-152-1005 Vapor Mitigation

- composite cover system
- sub-slab depressurization system
- soil vapor extraction system
- monitored natural attenuation of groundwater
- adjacent off-site vapor mitigation system

1-152-1006 Vapor Mitigation

- composite cover system
- sub-slab depressurization system
- soil vapor extraction system
- monitored natural attenuation of groundwater
- adjacent off-site vapor mitigation system

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   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 compete.

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 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;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C224134

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 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 ARNOLD F. FLEMING at 158 W 29th ST NY NY 10001.
print name print business address

am certifying as OWNERS REPRESENTATIVE (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Arnold F. Fleming, PE 1/29/18
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification Date

IC/EC CERTIFICATIONS

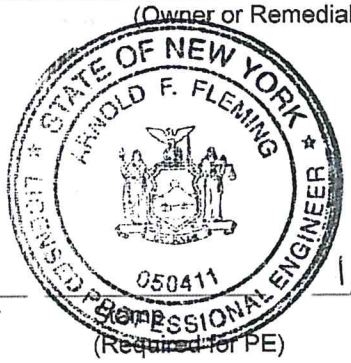
Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 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 ARNOLD F. FLEMING at 158 W 29th ST NY NY 10001.
print name print business address

am certifying as a Professional Engineer for the OWNER
(Owner or Remedial Party)



Arnold F. Fleming PE
Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

1/29/18
Date

APPENDIX C

Quarterly Inspection Checklists

388 Bridge Street
SVE OMM and Pressure Readings

Date	3/17/2017	**Op. Freq. (Hz)**	60	**Amb. Air Temp. (°F)**	39

Process Area	Indicator ID	Paramenter	Unit	Reading/ Status	Time
System Inlet	SP 100	Pressure (man.)	inwc	---	---
		Air speed	fpm	---	---
		Flow	cfm	---	---
		Temp.	°F	---	---
	VI 101	Pressure	inwc	32	9:30
Post- Moist. Separator /	VI 102	Pressure	inwc	46	9:30
Pre- Blower	F-102	Dilution Valve	---	closed	---
Pre- Blower /	PI 101	Pressure	inwc	28	9:30
Before Heat Exchanger	TI 101	Temp.	°F	100	9:30
After heat exchanger / Pre	PI 103	Pressure	inwc	11	9:30
Carbon Treatment	TI 102	Temp.	°F	84	9:30
Between Carbon Units	PI 104	Pressure	inwc	6	9:30
Post- Carbon Treatment	PI 105	Pressure	inwc	0	9:30

Monitoring Point	Pressure (in. wc.)	Location	Comments
SVE Well #1	---	Sub-cellar garage	Converted to monitoring well
SVE Well #2	-24.9	Sub-cellar garage	
SVE Well #3	---	Sub-cellar garage	Abandoned
SVE Well #4	---	Sub-cellar garage	Converted to monitoring well
SVE Well #5	---	Sub-cellar garage	Converted to monitoring well
SVE Well #6	---	Cellar workshop	Abandoned
SSDS MP #1	---	Not installed	
SSDS MP #2	---	Not installed	
SSDS MP #3	0.02	Cellar hallway	
SSDS MP #4	---	Not installed	
SSDS MP #5	---	Not installed	
SSDS MP #6	-0.027	Cellar garage	

Monitoring Point	Pressure (in. wc.)	Port Location	Comments
R1	---	Behind Boiler Room	locked
R2	---	Boiler Room	covered by closet
R3	-0.003	Boiler Room	
R4	-0.039	Boiler Room	
R5	---	Workshop	locked
R6	---	Back Storage Room	locked
R7	-0.005	Storage Room hallway	
R8	-0.045	Storage Room entrance	
R9	---	Cafeteria area	beneath floor
R10	---	East Storage room	inaccesible
R11	---	East Storage room	inaccesible
R12	---	Stairwell	locked
R13	-2.834	Kitchen storage	

Sample ID	Flow Controller No.	Canister No.	Initial Time	Final Time	Initial/Final Vacuum
SVE inlet	FC127	A550	8:56	10:27	29 / 5
SVE midstream	FC573	A1103	8:57	10:47	29 / 5
SVE outlet	FC361	1328	9:30	11:30	30 / 5

Notes

388 Bridge Street
SVE OMM and Pressure Readings

Date	6/13/2017	**Op. Freq. (Hz)**	50	**Amb. Air Temp. (°F)**	91

Process Area	Indicator ID	Paramenter	Unit	Reading/ Status	Time
System Inlet	SP 100	Pressure (man.)	inwc	---	---
		Air speed	fpm	---	---
		Flow	cfm	---	---
		Temp.	°F	---	---
	VI 101	Pressure	inwc	18	13:00
Post- Moist. Separator /	VI 102	Pressure	inwc	36	13:00
Pre- Blower	F-102	Dilution Valve	---	closed	13:00
Pre- Blower /	PI 101	Pressure	inwc	20	13:00
Before Heat Exchanger	TI 101	Temp.	°F	122	13:00
After heat exchanger / Pre	PI 103	Pressure	inwc	8	13:00
Carbon Treatment	TI 102	Temp.	°F	115	13:00
Between Carbon Units	PI 104	Pressure	inwc	3	13:00
Post- Carbon Treatment	PI 105	Pressure	inwc	0	13:00

Monitoring Point	Pressure (in. wc.)	Location	Comments
SVE Well #1	---	Sub-cellar garage	Converted to monitoring well
SVE Well #2	-3.2	Sub-cellar garage	
SVE Well #3	---	Sub-cellar garage	Abandoned
SVE Well #4	---	Sub-cellar garage	Converted to monitoring well
SVE Well #5	---	Sub-cellar garage	Converted to monitoring well
SVE Well #6	---	Cellar workshop	Abandoned
SSDS MP #1	---	Not installed	
SSDS MP #2	---	Not installed	
SSDS MP #3	-0.009	Cellar hallway	
SSDS MP #4	---	Not installed	
SSDS MP #5	---	Not installed	
SSDS MP #6	-0.032	Cellar garage	

Monitoring Point	Pressure (in. wc.)	Port Location	Comments
R1	---	Behind Boiler Room	locked
R2	---	Boiler Room	inaccessible
R3	-0.225	Boiler Room	
R4	0	Boiler Room	
R5	-0.025	Workshop	
R6	---	Back Storage Room	locked
R7	-0.004	Storage Room hallway	
R8	---	Storage Room entrance	
R9	---	Cafeteria area	beneath floor
R10	---	East Storage room	inaccesible
R11	---	East Storage room	inaccesible
R12	---	Stairwell	locked
R13	-0.994	Kitchen storage	

Sample ID	Flow Controller No.	Canister No.	Initial Time	Final Time	Initial/Final Vacuum
SVE-Inlet	FC676	M327	11:22	13:22	30/7
SVE-Midstream	MC249	A692	11:22	13:08	28/5
SVE-Outlet	FC481	A1127	11:22	13:22	30/11

Notes
0 gallons drained from moisture separator
Temperature switch remained set to 140F, first time VFD has adjusted from 60 Hz

388 Bridge Street
SVE OMM and Pressure Readings

Date	9/26/2017	**Op. Freq. (Hz)**	50	**Amb. Air Temp. (°F)**	72

Process Area	Indicator ID	Paramenter	Unit	Reading/ Status	Time
System Inlet	SP 100	Pressure (man.)	inwc		
		Air speed	fpm		
		Flow	cfm		
		Temp.	°F		
	VI 101	Pressure	inwc	21	10:35
Post- Moist. Separator / Pre- Blower	VI 102	Pressure	inwc	38	10:35
	F-102	Dilution Valve	---	closed	---
Pre- Blower / Before Heat Exchanger	PI 101	Pressure	inwc	18	10:35
	TI 101	Temp.	°F	120	10:35
After heat exchanger / Pre Carbon Treatment	PI 103	Pressure	inwc	8	10:35
	TI 102	Temp.	°F	110	10:35
Between Carbon Units	PI 104	Pressure	inwc	3	10:35
Post- Carbon Treatment	PI 105	Pressure	inwc	0	10:35

Monitoring Point	Pressure (in. wc.)	Location	Comments
SVE Well #1	---	Sub-cellar garage	Converted to monitoring well
SVE Well #2	-2.9	Sub-cellar garage	
SVE Well #3	---	Sub-cellar garage	Abandoned
SVE Well #4	---	Sub-cellar garage	Converted to monitoring well
SVE Well #5	---	Sub-cellar garage	Converted to monitoring well
SVE Well #6	---	Cellar workshop	Abandoned
SSDS MP #1	---	Not installed	
SSDS MP #2	---	Not installed	
SSDS MP #3	-0.008	Cellar hallway	
SSDS MP #4	---	Not installed	
SSDS MP #5	---	Not installed	
SSDS MP #6	0.021	Cellar garage	

Monitoring Point	Pressure (in. wc.)	Port Location	Comments
R1	---	Behind Boiler Room	locked
R2	---	Boiler Room	inaccessible
R3	-0.24	Boiler Room	
R4	---	Boiler Room	inaccessible
R5	0.042	Workshop	
R6	---	Back Storage Room	locked
R7	-0.018	Storage Room hallway	
R8	-0.211	Storage Room entrance	
R9	---	Cafeteria area	beneath floor
R10	---	East Storage room	inaccesible
R11	---	East Storage room	inaccesible
R12	---	Stairwell	locked
R13	-1.05	Kitchen storage	

Sample ID	Flow Controller No.	Canister No.	Initial Time	Final Time	Initial/Final Vacuum
SVE inlet	FC336	1065	11:20	13:13	30/4
SVE midstream	FC726	M134	11:20	13:13	30/5
SVE outlet	FC681	A071	11:20	13:20	30/8

Notes

388 Bridge Street
SVE OMM and Pressure Readings

Date	12/21/2017	**Op. Freq. (Hz)**	50	**Amb. Air Temp. (°F)**	36

Process Area	Indicator ID	Paramenter	Unit	Reading/ Status	Time
System Inlet	SP 100	Pressure (man.)	inwc		
		Air speed	fpm		
		Flow	cfm		
		Temp.	°F		
	VI 101	Pressure	inwc	22	14:57
Post- Moist. Separator /	VI 102	Pressure	inwc	40	14:57
Pre- Blower	F-102	Dilution Valve	---	closed	---
Pre- Blower /	PI 101	Pressure	inwc	16	14:57
Before Heat Exchanger	TI 101	Temp.	°F	105	14:57
After heat exchanger / Pre	PI 103	Pressure	inwc	6	14:57
Carbon Treatment	TI 102	Temp.	°F	90	14:57
Between Carbon Units	PI 104	Pressure	inwc	2	14:57
Post- Carbon Treatment	PI 105	Pressure	inwc	0	14:57

Monitoring Point	Pressure (in. wc.)	Location	Comments
SVE Well #1	---	Sub-cellar garage	Converted to monitoring well
SVE Well #2	---	Sub-cellar garage	Car parked on MP
SVE Well #3	---	Sub-cellar garage	Abandoned
SVE Well #4	---	Sub-cellar garage	Converted to monitoring well
SVE Well #5	---	Sub-cellar garage	Converted to monitoring well
SVE Well #6	---	Cellar workshop	Abandoned
SSDS MP #1	---	Not installed	
SSDS MP #2	---	Not installed	
SSDS MP #3	-0.085	Cellar hallway	
SSDS MP #4	---	Not installed	
SSDS MP #5	---	Not installed	
SSDS MP #6	-0.045	Cellar garage	

Monitoring Point	Pressure (in. wc.)	Port Location	Comments
R1	---	Behind Boiler Room	locked
R2	-0.084	Boiler Room	
R3	-0.076	Boiler Room	
R4	---	Boiler Room	inaccesible
R5	---	Workshop	locked
R6	---	Back Storage Room	locked
R7	-0.006	Storage Room hallway	
R8	-0.116	Storage Room entrance	
R9	---	Cafeteria area	beneath floor
R10	---	East Storage room	inaccesible
R11	---	East Storage room	inaccesible
R12	---	Stairwell	locked
R13	---	Kitchen storage	inaccesible

Sample ID	Flow Controller No.	Canister No.	Initial Time	Final Time	Initial/Final Vacuum
SVE inlet	FC475	A1139	14:51	16:51	35/6
SVE midstream	FC283	A573	14:51	16:51	29/4
SVE outlet	FC109	A1143	14:51	16:51	30/4

Notes
Carbon change-out undertaken by Brookside prior to SVE sampling

APPENDIX D

Site Photographs

Site Photographs
BCP No. C224134
388 Bridge Street, Brooklyn, New York

Photo1: View of the building facing north with Bridge Street

Photo 2: View Saint Joseph High School facing north with Bridge Street

Site Photographs
BCP No. C224134
388 Bridge Street, Brooklyn, New York

Photo 3: SVE system carbon drums

Photo 4: SVE system control panel and insulated moisture separator

APPENDIX E

Corrective Measures Report

Fleming Lee Shue

Environmental Management & Consulting

Sent by electronic mail (michael.maccabe@dec.ny.gov)

June 23, 2017

Michael D. MacCabe, P.E.
Senior Environmental Engineer
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7016

Re: **Corrective Measures Report**
388 Bridge Street Site – Brooklyn, New York
BCP Site #C224134

Dear Mr. MacCabe:

Fleming-Lee Shue, Inc. (FLS) has prepared this Corrective Measures Report (CMR) to document activates completed in the first half of the year to address condensation accumulation and overheating issues affecting the soil extraction (SVE) system operating at 388 Bridge Street (Site).

Background and Corrective Measures - Condensation Accumulation

On January 6, 2017, FLS conducted the annual Site inspection as required by the Site Management Plan. Upon arrival, it was noted that the system was operating despite the control panel indicating a moisture separator (MS) high level alarm. This alarm, activated when a mechanical float is lifted by water accumulated in the MS, should automatically shut down the system. This measure is in place to prevent water damage to the blower.

This observation revealed two issues with the control panel: the system did not shut down after the MS alarm and the alarm did not reset after draining approximately 5 gallons from the tank.

To address these issues, FLS returned on January 12 with a technician from NES, the system's manufacturer. First, NES updated the control panel's programming to resolve the shutdown error. Then NES used a camera to inspect the interior of the MS and determined that the alarm was not resetting properly because the water in the tank was frozen.

In addition to repairing the alarm functionality, FLS wanted to prevent any future freezing of moisture. On May 16, FLS oversaw the installation of heat trace and insulation. As shown on the photograph log, heat trace was installed on the system inlet pipe, on the MS tank itself, and secured with aluminum foil tape. Following heat trace installation, the inlet

pipe and MS tank were wrapped in insulation. These system add-ons are shown on the updated SVE system's process and instrumentation diagram and photograph log, Attachments 1 and 2, respectively.

Background and Corrective Measures - Overheating

As presented in the CMR dated September 23, 2016, (included as Attachment 3) the SVE system experienced overheating issues in June 2016. FLS addressed this by replacing and adjusting the temperature switch. This remedy prevented blower high temperature alarms until FLS observed that the alarm had been triggered prior to the quarterly sampling event on June 13, 2017.

In order to immediately remedy the overheating, FLS decreased the blower's speed from 60 hertz (Hz) [equivalent to 3600 revolutions per minute (rpm)] to 50 Hz (3000 rpm) by adjusting the blower's variable frequency drive. This 17% decrease in blower speed resulted in a minor reduction of inlet vacuum (about 13%). The system had not experienced any additional overheating alarm when FLS returned to the system on June 16.

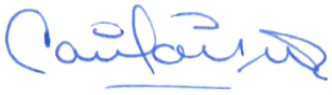
Conclusion and Recommendations

The heat trace was tested immediately after installation, deemed operational, and switched off. When the ambient air temperature drops below freezing, the heat trace will be turned on and retested. FLS does not foresee having future problems with water freezing in the MS tank.

FLS will return to the Site in the hotter summer months of July and August to confirm that the system is no longer overheating. In the fall, FLS will return the blower operating frequency to 60 Hz.

Please contact us with any questions.

Sincerely,
Fleming-Lee Shue, Inc.



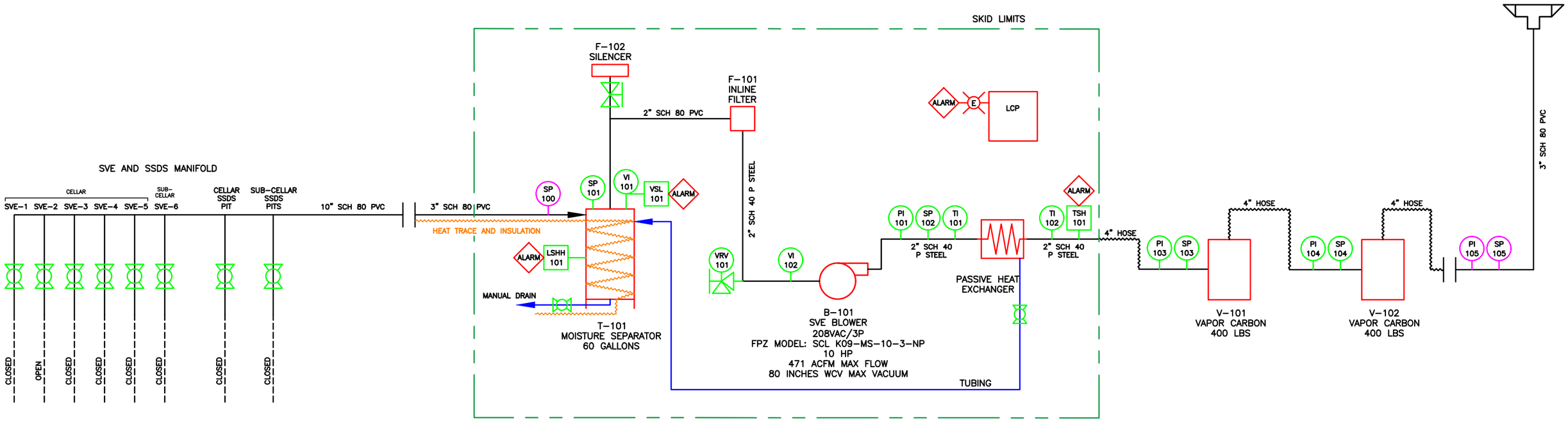
Camila Israel
Sr. Project Manager

cc:	Roger Fortune	Stahl Realty
	Bridget Callaghan	NYSDOH
	Arnold Fleming, P.E.	Fleming-Lee Shue

enc: Attachment 1 – Process and Instrumentation Diagram
Attachment 2 – Photograph Log
Attachment 3 – 2016 Corrective Measures Report

ATTACHMENT 1

Process & Instrumentation Diagram



ABBREVIATIONS

PT	PRESSURE TRANSDUCER
SP	SAMPLING PORT
VI	VACUUM INDICATOR
TI	TEMPERATURE INDICATOR
LSHH	LEVEL SWITCH HIGH HIGH
VSL	VAPOR SWITCH LOW
VRV	VACUUM RELIEF VALVE
TSH	HIGH TEMPERATURE SWITCH

VALVES

- BALL VALVE
- VACUUM RELIEF VALVE
- GATE VALVE

NOTES:
1. DIAGRAM NOT TO SCALE
2. DIAGRAM NOT TO BE INTERPRETED AS A SYSTEM LAYOUT
3. SVE SYSTEM INSTALLED 11/14/2015, ORIGINAL CARBON ON-SITE
4. MAGENTA COLORED METERS WERE INSTALLED BY FLS ON 7/14/2016
5. HEAT TRACE AND INSULATION INSTALLED ON 5/16/2017
6. CELLAR PIT IS #5, SUB-CELLAR PITS ARE #1-4
7. SVE SYSTEM SKID LOCATED ON 5TH FLOOR, MANIFOLD LOCATED IN CELLAR
8. THIS FIGURE IS A REVISED VERSION OF THE P&ID INCLUDED IN THE NES O&M MANUAL, UPDATED TO REFLECT EXISTING CONDITIONS

DRAWN BY	A. CONTI
PROJECT MANAGER	C. ISRAEL
DATE	JUNE 21, 2017
SITE	STAHL REAL ESTATE 388 BRIDGE STREET BROOKLYN, NY 11201
TITLE	SOIL VAPOR EXTRACTION SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	6/21/17	Heat trace and insulation	AC

APPROVED

BY _____

Fleming Lee Shue
Environmental Management & Consulting
ARNOLD F. FLEMING, P.E.
&
FLEMING, LEE SHUE, INC.
158 WEST 29TH STREET, 9TH FL.
NEW YORK, NY 10001

PROJECT NUMBER	DRAWING NUMBER	PAGE
10149-001	1	1 OF 1

ATTACHMENT 2

Photograph Log

Photograph Log
388 Bridge Street
Brooklyn, NY

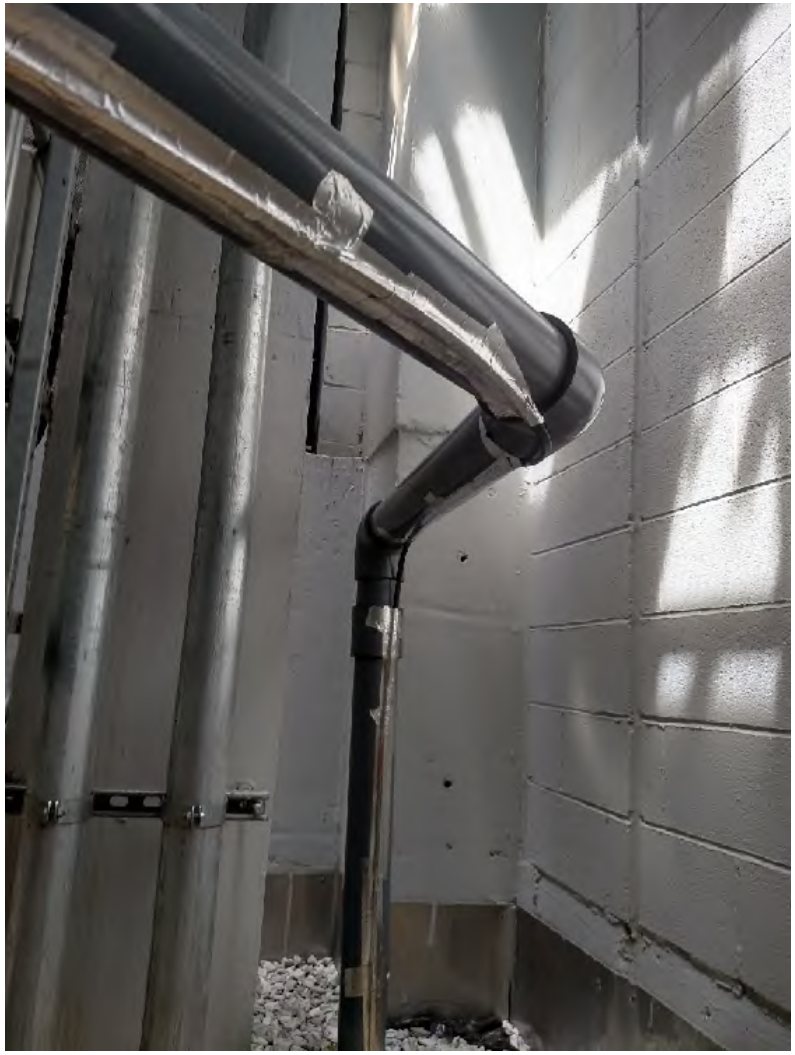


Photo 1: Heat trace on inlet pipe	Photo 2: Heat trace on moisture separator

Photograph Log
388 Bridge Street
Brooklyn, NY

Photo 3: Insulation on inlet pipe

Photo 4: Insulation on moisture separator and inlet pipe

ATTACHMENT 3

2016 Corrective Measure Report

Fleming Lee Shue

Environmental Management & Consulting

September 23, 2016

Michael D. MacCabe, P.E.
Senior Environmental Engineer
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7016

RE: Corrective Measures Report
388 Bridge Street Site – Brooklyn, New York
BCP Site #C224134

Dear Mr. MacCabe:

Fleming-Lee Shue, Inc. (FLS) has prepared this letter to update you on the status of the soil vapor extraction (SVE) system operating at 388 Bridge Street (Site), and is a follow-up on the 7/1/2016 email informing you that the system has experienced shutdowns triggered by high-temperature alarms. Figure 1 presents the SVE system's process and instrumentation diagram (P&ID) which provides a schematic of the equipment, pipe, gauge, and alarm locations.

Background

On June 24, 2016, FLS went to the Site to collect quarterly soil vapor samples at the SVE system. Upon arrival, it was noted that the system shut down because of a blower high discharge temperature alarm triggered by the temperature switch (TSH 101, see P&ID) located immediately before the primary carbon vessel. This alarm's function is to prevent the soil vapor from reaching a temperature that would adversely affect the system's hoses and carbon vessels. FLS noted that the combination of the summer heat and the relocation of the system to the building's exterior were contributing factors to the alarm.

At the time of the alarm, the temperature switch was set to shut the system off if the soil vapor exceeds 130°F. In an attempt to bring the vapor temperature down by preventing the introduction of hot ambient air into the system, the dilution valve was closed. This did not solve the overheating problem so FLS contacted the system's design engineer at National Environmental Systems (NES) who requested additional information to assist in determining a solution. Specifically, NES requested pictures of the system's surroundings and a system inlet temperature reading.

Corrective Measures

FLS returned on July 15 to install a sampling port (VI 101) at the system influent and took a temperature reading. It was determined that the influent vapor temperature was generally similar to ambient air temperature.

In order to determine the sub-slab soil vapor temperature, FLS returned on July 29 to install sampling ports at the SVE manifold. The readings collected at the manifold, located in the building's cellar, revealed that the soil vapor temperature matches the sub-cellar's air temperature. After the port installations, FLS restarted the system to conduct an alarm test, which consisted of adjusting the temperature switch between 130°F (factory setting), 140°F (conservative), and 150°F (system maximum) while recording the temperature gauge (TI 102) reading when the high temperature alarm is triggered. Results are presented below.

TSH 101 Setting (°F)	**TI 102 Reading** (at shutdown, °F)	**Reading Difference** (°F)
130	122	8
140	128	12
150	130, no shutdown	N/A

The switch and gauge were installed only 6 inches apart and, as shown above, the reading correlation varies by up to 12°F. In both alarm trigger events, the system was prematurely inactivated. NES was notified of this discrepancy and decided that the existing switch may be damaged or inaccurately calibrated. Therefore, NES ordered a new switch, tested it in-house, and sent it to FLS.

On August 5, FLS installed the new switch and repeated the alarm test, with the initial setting at 120°F. The test results, shown below, revealed a consistent 8°F difference between the alarm's trigger and gauge temperatures. While the switch was set to 140F, the system's equilibrium temperature was 128°F.

With the system remaining operational at 140°F and the consistent reading correlation, FLS and NES agreed that setting the temperature switch to 140°F was the best course of action. Considering the new switch, switch setting and reading difference, a vapor temperature in excess of 132°F may trigger the alarm, but that temperature has not been previously observed at the system throughout the summer.

TSH 101 Setting (°F)	**TI 102 Reading** (at shutdown, °F)	**Reading Difference** (°F)
120	112	8
130	122	8
140	128, no shutdown	N/A

FLS returned to the Site on August 16 and the system was shut down from the high temperature alarm. FLS concluded that the vapor may have exceeded approximately 132°F at one point over the last week and, after consulting with NES, agreed that keeping the switch at 150°F would be the required setting for both keeping the system running and protecting the equipment. FLS had been hesitant at setting the switch to 150°F because it is maximum temperature rating for the hoses and carbon vessels.

On August 23, FLS trained the maintenance staff on how to take weekly readings for the system's operations, monitoring and maintenance. The system has operated continuously from August 23 to the date of this report.

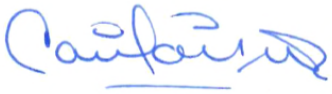
Conclusion and Recommendation

The possible explanations considered for repeated high temperature alarms were: high temperature inlet air, high temperature dilution air, and a defective temperature switch. After confirming that the alarms were not a result of high temperature inlet or dilution air, FLS had a thoroughly tested switch installed. The new switch did not prevent the premature alarms when set at a conservative 140°F, so it was adjusted to the system's maximum temperature rating of 150°F.

After implementing the corrective measure, the system did not shut off during days in which ambient air temperatures exceeded 95°F. FLS recommends keeping the temperature switch set at 150°F for the duration of the system's operation. Should the high alarm temperature be triggered again, FLS will consider installing telemetry that would immediately notify personnel in the event of a shutdown.

Please contact us with any questions.

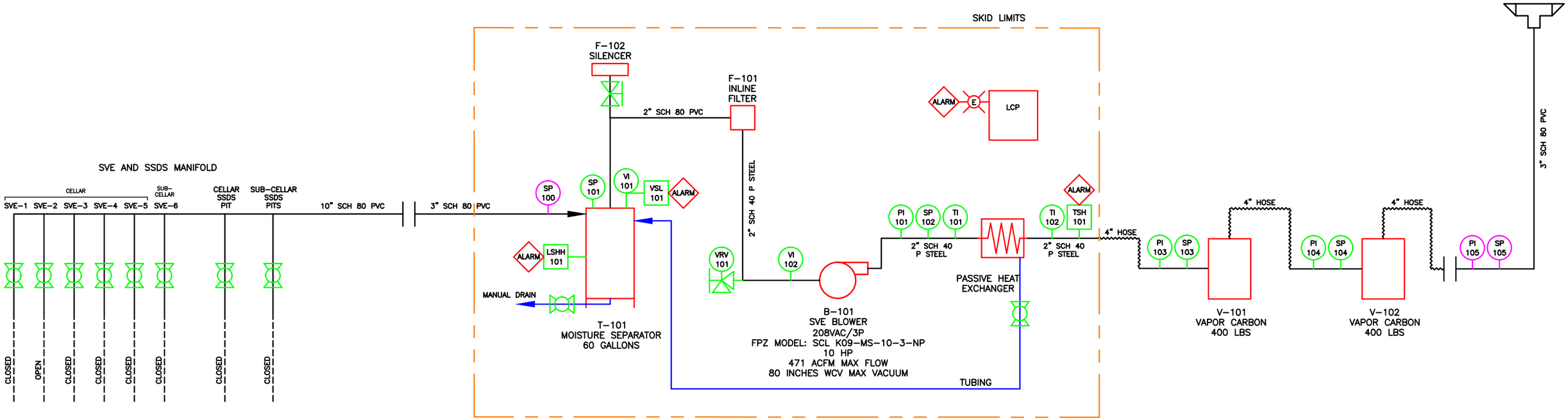
Sincerely,
Fleming-Lee Shue, Inc.



Camila Israel
Sr. Project Manager

cc:	Roger Fortune	Stahl Realty
	Bridget Callaghan	NYSDOH
	Arnold Fleming, P.E.	Fleming-Lee Shue

enc: Attachment 1 – SVE System Process and Instrumentation Diagram



ABBREVIATIONS

PT	PRESSURE TRANSDUCER
SP	SAMPLING PORT
VI	VACUUM INDICATOR
TI	TEMPERATURE INDICATOR
LSHH	LEVEL SWITCH HIGH HIGH
VSL	VAPOR SWITCH LOW
VRV	VACUUM RELIEF VALVE
TSH	HIGH TEMPERATURE SWITCH

VALVES

- BALL VALVE
- VACUUM RELIEF VALVE
- GATE VALVE

NOTES:
1. DIAGRAM NOT TO SCALE
2. DIAGRAM NOT TO BE INTERPRETED AS A SYSTEM LAYOUT
3. SVE SYSTEM INSTALLED 11/14/2015, ORIGINAL CARBON ON-SITE
4. MAGENTA METERS WERE INSTALLED BY FLS ON 7/14/2016
5. CELLAR PIT IS #5, SUB-CELLAR PITS ARE #1-4
6. SVE SYSTEM SKID LOCATED ON 9TH FLOOR, MANIFOLD LOCATED IN CELLAR
7. THIS FIGURE IS A REVISED VERSION OF THE P&ID INCLUDED IN THE NES O&M MANUAL UPDATED TO REFLECT EXISTING CONDITIONS

DRAWN BY	A. CONTI
PROJECT MANAGER	C. ISRAEL
DATE	JULY 21, 2016
SITE	STAHL REAL ESTATE 388 BRIDGE STREET BROOKLYN, NY 11201
TITLE	SOIL VAPOR EXTRACTION SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM

REVISIONS

NO.	DATE	DESCRIPTION	BY

APPROVED

BY _____

Fleming Lee Shue
Environmental Management & Consulting

ARNOLD F. FLEMING, P.E.
&
FLEMING, LEE SHUE, INC.
158 WEST 29TH STREET, 9TH FL.
NEW YORK, NY 10001

PROJECT NUMBER	DRAWING NUMBER	PAGE
10149	1	1 OF 1