Technical Memorandum

EnviroTrac Engineering PE, PC
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Prepared for: ZWorldwide Enterprises, LLC

Project Title: Former Baron Blakeslee Property Site Number C152204

Project No.: 01.991448.00

Technical Memorandum

Subject: 2019 Annual Periodic Review Report and Certification
Sub-Slab Depressurization System Date: August 2, 2019

To: Robert Corcoran, PE; New York State Department of Environmental Conservation

From: Dale Konas, PE; EnviroTrac Engineering PE, PC

Copy to: Mr. Peter Zimiles, ZWorldwide Enterprises, LLC

Prepared by: 8/2/19

Dale Konas, PE, License No. 081035, Expiration Date 08/31/2020

STATE OF NEW YORK
DALE C. KONAS
No. 081035
LICENSED PROFESSIONAL ENGINEER

EnviroTrac

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Section 1: Background

EnviroTrac Engineering, PE, PC (EnviroTrac) is submitting this 2019 Periodic Review Report (PRR) and Certification for the Former Baron Blakeslee Property, Site Number C152204, located at 86 Cleveland Avenue in Bay Shore, Suffolk County, New York 11706 (hereinafter referred to as the "Site").

The Site location is shown on Figure 1-1. The site is an approximately 1.84-acre area bounded by South 3rd Street to the north, a sand and gravel facility to the south, Cleveland Avenue to the east, and a construction materials recycling facility to the west (Figure 1-2). The property includes an approximately 47,000-square foot structure, comprising three interconnected buildings constructed of concrete block and corrugated steel on concrete slabs. At the time of the remedy implementation, the southern building was used by General Electric (GE) as an air conditioning appliance repair shop; the rest of the structure was vacant. The grounds consist of asphalt-paved parking and driveway areas with landscaped and limited vegetated areas occurring along the northern, eastern, and southern property boundaries. A chain link fence separates the abutting commercial and industrial properties to the west and south from the property.

The current owner of the Site is ZWorldwide Enterprises LLC, which acquired the property from GE in March 2017. The new owner's tenant is Long Island Tent and Party Rental, Inc. The Site investigation and remedy implementation were conducted by GE. Brown and Cadwell (BC), on behalf GE, implemented the remedy and provided operation and maintenance services. The Site remedy, described in the NYSDEC-approved Site Management Plan (SMP) dated February 2016, includes the soil cover, the soil vapor extraction (SVE) system, the sub-slab depressurization system (SSDS), as well as institutional controls (ICs). The soil cover, the SSDS and the ICs are intended to limit the exposure to the contamination remaining at the Site. The SVE system has since been removed from the Site, but was operated until VOC concentrations in the shallow, unsaturated soil under the buildings were reduced to levels that meet the 6 NYCRR Part 375-6 SCOs for Protection of Public Health - Restricted Residential use. The NYSDEC approved the shutdown of the SVE system on October 17, 2017. Soil sampling data collected from the beneath the slab in the southern warehouse in September, 2016 showed that the SVE was effective in decreasing levels of tetrachloroethylene. The SVE trailer was removed from the property and the SVE wells were abandoned according to NYSDEC protocols by BC. The SMP requires the documentation of the annual certification of the SSDS.

This report covers the reporting and certification of the following elements and time periods of the remedy:

- The SSDS – from July 2018 –through July 2019.

  BC operated the SSDS on behalf of GE until March of 2017. Following that, the operation of the SSDS was transferred to ZWorldwide Enterprises LLC. EnviroTrac currently monitors the SSDS on behalf of ZWorldwide Enterprises, LLC

The remaining reporting/certification requirements as set forth in the SMP have been transferred to ZWorldwide Enterprises LLC.

Section 2: SSDS

The SSDS is described in detail in the February 2016 FER provided by BC. The layout of the system is shown on Drawings 3 and 1A of the FER (Appendix A of this PRR). The objective of the system is to mitigate soil vapor intrusion into the onsite structure by creating a negative pressure underneath the floor slab of the structure. The SSDS consists of a total of 4 roof mounted Obar GBR 76 Compact Radial Blowers, 14 suction points (SP1-1 through SP1-6, SP2-1 through SP2-3, SP3-1 through SP3-3 and SP4-1 through SP4-2), 18 manual monitoring points identified on the as-built drawings as permanent test holes (PT-1 through PT-18) and 4 Radonaway Checkpoint IIA Mitigation System Alarms. EnviroTrac installed the alarms in May 2018 to replace the previous 4 remote monitoring points tied into the Vapor Guardian 5500 monitoring system. This remote monitoring system is no longer operating.

2.1 SSDS Status and Operations

During the period of the SSDS operation covered by this PRR (July 2018 to July 2019), the onsite structure was occupied by Long Island Tent and Party Rental, Inc. and utilized for the storage of party tents, tables, chairs, and other miscellaneous party rental items.

The SSDS was constructed in October-November 2015, the system start-up occurred in November 2015 – January 2016. Additional system adjustments were performed in February 2016. Following that, quarterly system inspections were performed starting with March 2016, with the exception of September 2016, when the operation of the system was suspended to allow for the completion of the soil sampling program. SSDS inspection data are shown in Appendix B. The following parameters were recorded:

- Air flow rate at suction pits
- Vacuum at suction points
- Vacuum at monitoring points

Equipment used to obtain SSDS system performance data are as follows:

- SSDS system blower performance data were obtained from system instrumentation;
- SSDS riser system flow measurements were obtained using an anemometer (TSI – Model VelociCalc 9545);
- SSDS riser vacuum data were obtained using a (0-40 inches water column) digital micromanometer (UEI – Model EM201B); and
- All permanent test ports (PT) sub-slab vacuum data were obtained using a low range (0-40 inches water column) digital micromanometer (UEI – Model EM201B).

Data are summarized in Table 2-1 (flow rates and vacuums at suction points) and 2-2 (vacuums at monitoring points).

The following events are a summary of mechanical system adjustments during the reporting period for the SSDS system:

- The blower for the SSDS legs SP-3-1, 3-2, and 3-3 was replaced on July 11, 2019 with the same exact model blower, an Obar GBR 76UD blower.

2.2 SSDS Performance Evaluation

Vacuum levels at the monitoring points were recorded during two (2) events on June 19, 2019 and July 11, 2019. No access issues were reported for the monitoring points.

2.2.1 SSDS Suction Points

The total extraction rate for the SSDS was stable on June 19 and July 11, 2019, at approximately 370.52 acfm. The vacuum at the suction points for the points tributary to the blowers serving the southern warehouse (SP1-1 through 6) was between 3.902 and 4.29 in. w.c. The vacuum at the suction points for the points tributary to the blowers serving the main building (SP-2-1 through SP-2-3 and SP-3-1 through SP-3-3) was between approximately 15.13 and 20.82 in w.c. The vacuum at the suction points for the points tributary to the blowers serving the northern building (SP4-1 and -2) was between approximately 4.088 and 4.429 in w.c., These flow rates and vacuums indicate that the SSDS was operating as designed.

2.2.2 SSDS Monitoring Points

The sub-slab vacuums recorded in the monitoring points located in the southern warehouse (PT-1 through 6) were maintained at levels higher than the SMP criterion of 0.004 in w.c. The vacuums at the monitoring points in the main part of the building (PT-7 through 14) were also greater than 0.004 in w.c. In the north office building, the vacuums were also greater than 0.004 in w.c.

In summary, the SSDS system operated as designed as shown during the annual monitoring events that occurred on June 19, 2019 and July 11, 2019 (following the replacement of the blower for system SP-3), and maintained sub-slab vacuums levels higher than 0.004 in w.c.

Section 3: Certification

3.1 SSDS Certification

I certify that all of the following statements are true:

- The SSDS employed at this site was unchanged from the date the system was put in place November 2015 through the end of the period covered by this PRR (July 2019);
- Nothing has occurred that would impair the ability of the SSDS to protect the public health and environment during the period covered by this PRR (July 2018 to July 2019);
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for the SSDS during the period covered by this PRR (July 2018 to July 2019);
- 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
- The information presented in this report is accurate and complete.

3.2 Signature

I certify that all information and statements in Sections 3.1 above 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, Dale Konas, of EnviroTrac Engineering, PE, PC, 5 Old Dock Road, Yaphank, NY 11980, am certifying as ZWorldwide Enterprises, LLC, for the Site for the periods indicated above.

Dale Konas, PE

_____

TABLES

Table 2-1
Vacuum Monitoring Point Measurements
86 Cleveland Avenue, Bay Shore, NY

Vacuum Monitoring Point	Vacuum Measurement inches of water									Vacuum Monitoring Point	Vacuum Measurement inches of water								
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019
PT-1	NA	NA	-0.063	-0.027	-0.029	-0.031	-0.052	-0.061	NA	PT-11	-0.060	NA	-0.052	-0.045	-0.044	-0.05	-0.48	-0.062	NA
PT-2	-0.040	NA	-0.042	-0.020	-0.020	-0.020	-0.039	-0.044	NA	PT-12	-0.015	NA	-0.368	-0.236	-0.222	-0.148	-0.098	-0.319	NA
PT-3	-0.030	NA	-0.127	-0.042	-0.040	-0.121	-0.145	-0.155	NA	PT-13	-0.004	NA	-0.051	-0.046	-0.045	-0.126	0.114	NA	-0.094
PT-4	-0.060	-0.150	-0.382	-0.020	-0.020	-0.020	-0.121	-0.091	NA	PT-14	-0.020	NA	-0.046	-0.105	-0.100	-0.096	-0.026	NA	-0.026
PT-5	-0.010	NA	-0.001	-0.064	-0.066	-0.036	-0.046	-0.087	NA	PT-15	-0.100	NA	-0.015	-0.488	-0.400	-0.022	-0.014	NA	-0.019
PT-6	-0.030	NA	-0.007	-0.022	-0.028	-0.210	-0.193	-0.261	NA	PT-16	-0.004	NA	-0.001	-0.717	-0.722	-0.02	-0.016	NA	-0.021
PT-7	-0.004	NA	-0.027	-0.017	-0.016	-0.018	-0.010	-0.024	NA	PT-17	-0.005	NA	-0.043	-0.071	-0.071	-0.028	NA	NA	-0.044
PT-8	-0.005	NA	-0.523	-0.059	-0.044	-0.040	NA	NA	-0.036	PT-18	-0.004	NA	-0.002	-0.230	-0.219	-0.026	-0.021	NA	-0.032
PT-9	-0.004	NA	-0.005	-0.022	-0.020	-0.127	NA	NA	-0.114										
PT-10	-0.280	NA	-0.444	-0.114	-0.111	-0.768	-1.088	-0.415	NA										

Notes:

PT - Test Point

NA = Not Available

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Table 2-2
ADS Blower and Riser Pipe Vacuum and Air Flow Measurements
86 Cleveland Avenue, Bay shore, NY

ADS Blowers	Vacuum Measurement inches of water							Riser	Vacuum Measurement inches of water									Air Flow cubic feet per miter								
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019
B-1	NA	NA	-2	-1.6	-1	-3	-1.8	1-1	NA	NA	-1.875	-0.072	-0.673	-2.728	-1.371	-4.29	NA	NA	NA	1.31	2.22	1.980	1.66	1.83	7.98	NA
B-2	NA	NA	-12	-13	-11	-15	-12.5	1-2	NA	NA	-1.821	-0.036	-0.612	-2.78	-1.687	-3.902	NA	NA	NA	2.40	1.45	3.790	1.74	2.71	15.3	NA
B-3	NA	NA	-10	-17.5	-9	-10	-10.5	1-3	NA	NA	-1.837	-0.212	-0.547	-2.549	-1.647	-4.264	NA	NA	NA	1.27	5.95	3.850	10.19	8.93	9.42	NA
B-4	NA	NA	-4.2	-4.5	-4	-4	-4.2	1-4	NA	NA	-1.76	-0.939	-0.513	-2.626	-1.6	-4.154	NA	NA	NA	21.41	41.02	22.250	29.23	21.93	32.95	NA
								1-5	NA	NA	-1.785	-0.744	-0.381	-2.546	-1.693	-3.998	NA	NA	NA	20.03	65.16	45.240	40.7	28.36	39.67	NA
								1-6	NA	NA	-1.822	-1.059	-0.558	-2.511	-1.617	-4.071	NA	NA	NA	14.93	26.35	15.420	25.39	16.1	30.94	NA
								2-1	NA	NA	-12.37	-14.390	-11.580	-15.38	-15.12	-15.13	NA	NA	NA	10.06	21.43	10.010	17.07	17.38	23.75	NA
								2-2	NA	NA	-12.26	-0.348	-11.530	-15.3	-15.03	-15.19	NA	NA	NA	19.37	18.39	14.610	16.52	17.15	16.25	NA
								2-3	NA	NA	-12.46	-14.410	-11.700	-16.42	-14.98	-15.8	NA	NA	NA	16.55	27.36	24.420	21.47	16.39	25.08	NA
								3-1	NA	NA	-10.49	-0.358	-9.384	-10.43	-12.31	NA	-20.82	NA	NA	13.07	22.54	11.190	12.66	21.01	NA	25.64
								3-2	NA	NA	-10.28	-0.475	-8.764	-10.22	-9.34	NA	-20.28	NA	NA	25.26	65.54	40.490	27.08	26.12	NA	42.33
								3-3	NA	NA	-10.30	-0.255	-8.898	-10.28	-10.49	NA	-20.43	NA	NA	15.60	40.33	24.660	18.56	17.51	NA	33.82
								4-1	NA	NA	NA	NA	-4.222	-4.113	-4.01	-4.429	NA	NA	NA	NA	NA	22.47	21.26	20.39	19.91	NA
								4-2	NA	NA	NA	NA	-4.016	-4.039	-3.981	-4.088	NA	NA	NA	NA	NA	50.98	32.49	30.68	42.48	NA

Notes:

B = Blower

NA = Not Available

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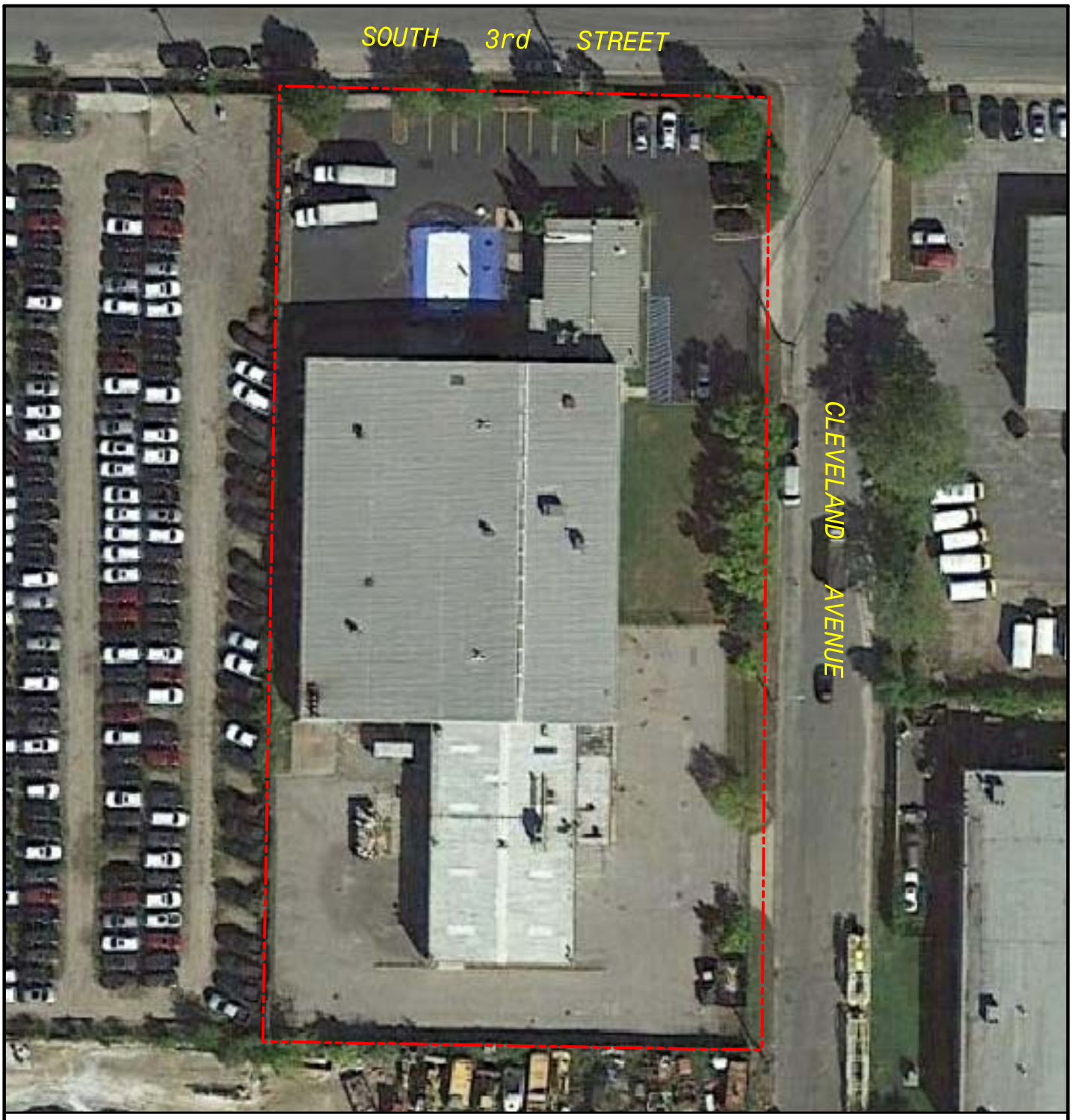
Environmental Services

FIGURES



LEGEND:

PROPERTY BOUNDARY

N
W E
S

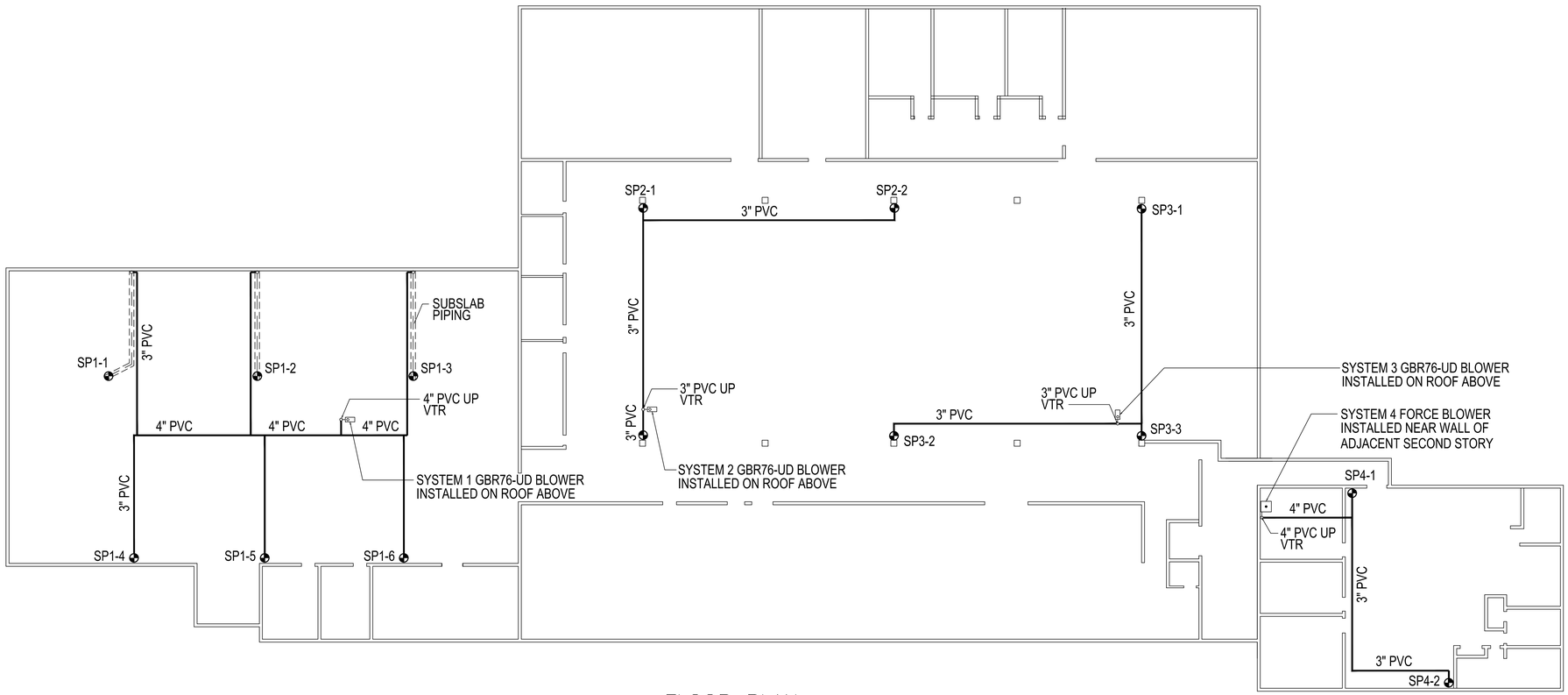
0 60
SCALE IN FEET

FIGURE #	AERIAL PHOTOGRAPH	DRAWN BY: B.S.	EnviroTrac ENVIRONMENTAL SERVICES
2	FORMER BARON BLAKESLEE SITE 86 CLEVELAND AVENUE BAY SHORE, NEW YORK	REVISION DATE: 8/7/2018	5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980 PHONE: (631)924-3001 FAX: (631)924-5001

APPENDICES

APPENDIX A

SSDS Layouts
(from Final Engineering Report)



FLOOR PLAN

0 12' 36'
6' 24' 48'
GRAPHIC SCALE

LEGEND

SP#-#	SUCTION POINT
	MAGNEHELIC PANEL
	VAPOR GUARDIAN PANEL
	OBAR GBR76-UD BLOWER
	FRT FORCE BLOWER
PB#1	PRESSURE PROBES
	FIRE COLLAR (AS REQ'D.)

CLEAN VAPOR LLC
P.O. BOX 688, BLAIRSTOWN, NJ 07825
Ph. 908 362- 5616 Fax. 908 362-5433
www.cleanvapor.com

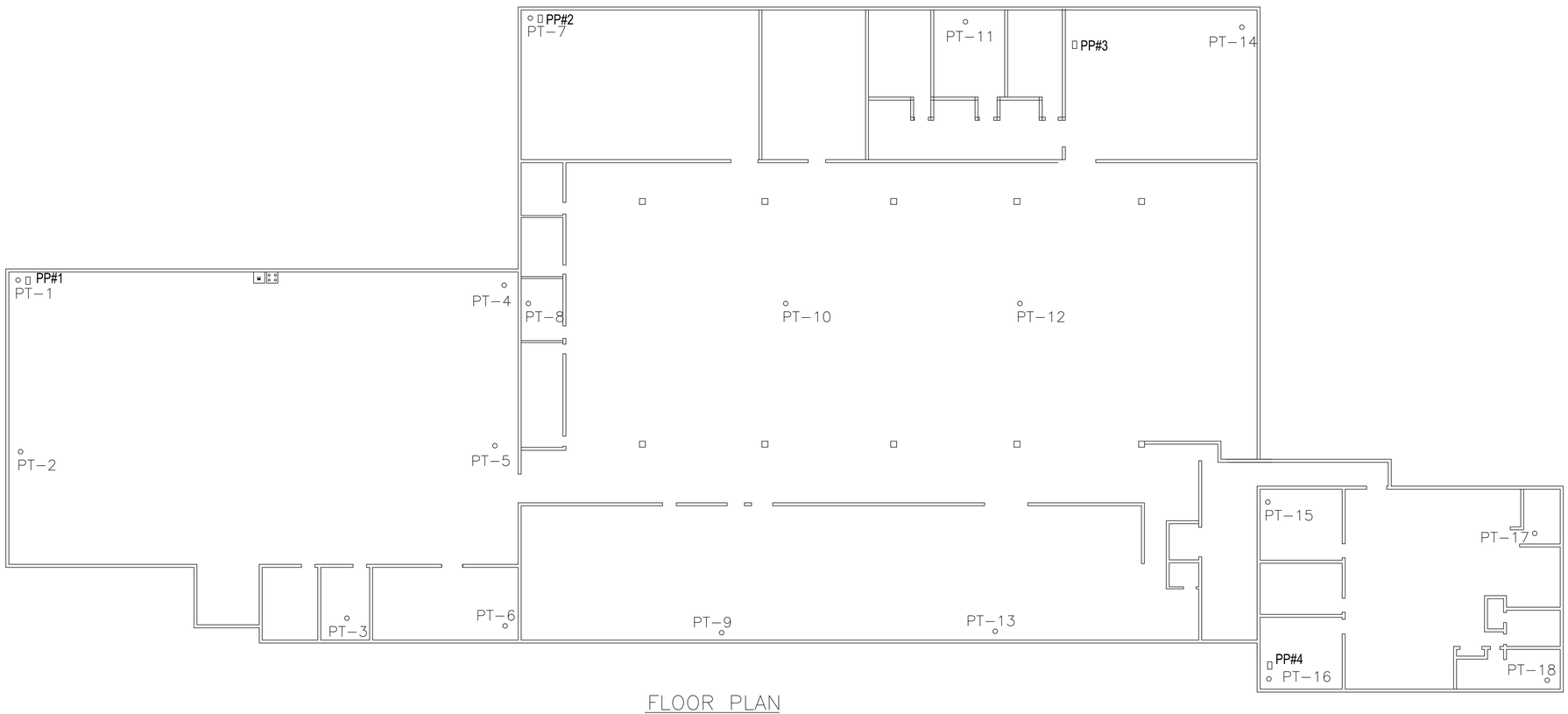
CLEAN VAPOR LLC
VOC & RADON FLUX DESIGN AND REMEDIATION

ACTIVE SOIL DEPRESSURIZATION
86 CLEVELAND AVENUE
BAY SHORE, NEW YORK 11706

REVISION	DATE
AS-BUILTS	11-23-15
	5/27/15
DRAWN BY	DAB
APPROVED	TEH
SCALE	3/32"=1'
CHECKED BY	TEH

SHEET TITLE
SUCTION PT. & BLOWERS

SHEET NO.
3



FLOOR PLAN

0 12' 36'

6' 24' 48'

GRAPHIC SCALE

LEGEND

- PT-1 — PERMENANT TESTHOLE
- MAGNEHELIC PANEL
- VAPOR GUARDIAN PANEL
- PP#1 — REMOTE MONITORING PORT

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CLEAN VAPOR LLC
VOC & RADON POST DESIGN AND REMEDIATION

ACTIVE SOIL DEPRESSURIZATION
86 CLEVELAND AVENUE
BAY SHORE, NEW YORK 11706

REVISION	DATE
AS-BUILTS	11-23-15
	11/23/15
DRAWN BY	DAB
APPROVED	TEH
SCALE	3/32"=1'
CHECKED BY	TEH

SHEET TITLE

MONITORING CONTROLS

SHEET NO.

1A

APPENDIX B

SSDS Operation Data

Table 2-1
Vacuum Monitoring Point Measurements
86 Cleveland Avenue, Bay Shore, NY

Vacuum Monitoring Point	Vacuum Measurement inches of water							
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019
PT-1	NA	NA	-0.063	-0.027	-0.029	-0.031	-0.052	-0.061
PT-2	-0.040	NA	-0.042	-0.020	-0.020	-0.020	-0.039	-0.044
PT-3	-0.030	NA	-0.127	-0.042	-0.040	-0.121	-0.145	-0.155
PT-4	-0.060	-0.150	-0.382	-0.020	-0.020	-0.020	-0.121	-0.091
PT-5	-0.010	NA	-0.001	-0.064	-0.066	-0.036	-0.046	-0.087
PT-6	-0.030	NA	-0.007	-0.022	-0.028	-0.210	-0.193	-0.261
PT-7	-0.004	NA	-0.027	-0.017	-0.016	-0.018	-0.010	-0.024
PT-8	-0.005	NA	-0.523	-0.059	-0.044	-0.040	NA	NA
PT-9	-0.004	NA	-0.005	-0.022	-0.020	-0.127	NA	-0.009
PT-10	-0.280	NA	-0.444	-0.114	-0.111	-0.768	-1.088	-0.415

Vacuum Monitoring Point	Vacuum Measurement inches of water							
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019
PT-11	-0.060	NA	-0.052	-0.045	-0.044	-0.05	-0.48	-0.062
PT-12	-0.015	NA	-0.368	-0.236	-0.222	-0.148	-0.098	-0.319
PT-13	-0.004	NA	-0.051	-0.046	-0.045	-0.126	0.114	-0.019
PT-14	-0.020	NA	-0.046	-0.105	-0.100	-0.096	-0.026	-0.004
PT-15	-0.100	NA	-0.015	-0.488	-0.400	-0.022	-0.014	-0.011
PT-16	-0.004	NA	-0.001	-0.717	-0.722	-0.02	-0.016	-0.017
PT-17	-0.005	NA	-0.043	-0.071	-0.071	-0.028	NA	N/A
PT-18	-0.004	NA	-0.002	-0.230	-0.219	-0.026	-0.021	-0.018

New Floor

Notes:

PT - Test Point

NA = Not Available

EnviroTrac
Environmental Services

7/11/19

New Floor

PT-1 NA
PT-2
PT-3
PT-4
PT-5
PT-6
PT-7
PT-8 -0.036
PT-9 -0.114
PT-10 NA

-0.020

7/11/19

PT-11 NA
PT-12
PT-13 -0.094
PT-14 -0.026
PT-15 -0.019
PT-16 -0.021
PT-17 -0.044
PT-18 -0.032

Table 2-2
ADS Blower and Riser Pipe Vacuum and Air Flow Measurements
86 Cleveland Avenue, Bay shore, NY

Riser	Vacuum Measurement inches of water								Air Flow cubic feet per miter							
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019
1-1	NA	NA	-1.875	-0.072	-0.673	-2.728	-1.371	-4.290	NA	NA	1.31	2.22	1.980	1.66	1.83	7.98
1-2	NA	NA	-1.821	-0.036	-0.612	-2.78	-1.687	-3.902	NA	NA	2.40	1.45	3.790	1.74	2.71	~~3.902~~ 15.30
1-3	NA	NA	-1.837	-0.212	-0.547	-2.549	-1.647	-4.264	NA	NA	1.27	5.95	3.850	10.19	8.93	9.42
1-4	NA	NA	-1.76	-0.939	-0.513	-2.626	-1.6	-4.154	NA	NA	21.41	41.02	22.250	29.23	21.93	32.95
1-5	NA	NA	-1.785	-0.744	-0.381	-2.546	-1.693	-3.998	NA	NA	20.03	65.16	45.240	40.7	28.36	39.67
1-6	NA	NA	-1.822	-1.059	-0.558	-2.511	-1.617	-4.071	NA	NA	14.93	26.35	15.420	25.39	16.1	30.94
2-1	NA	NA	-12.37	-14.390	-11.580	-15.38	-15.12	-15.13	NA	NA	10.06	21.43	10.010	17.07	17.38	23.75
2-2	NA	NA	-12.26	-0.348	-11.530	-15.3	-15.03	-15.19	NA	NA	19.37	18.39	14.610	16.52	17.15	16.25
2-3	NA	NA	-12.46	-14.410	-11.700	-16.42	-14.98	-15.80	NA	NA	16.55	27.36	24.420	21.47	16.39	25.08
3-1	NA	NA	-10.49	-0.358	-9.384	-10.43	-12.31	N/A	NA	NA	13.07	22.54	11.190	12.66	21.01	N/A
3-2	NA	NA	-10.28	-0.475	-8.764	-10.22	-9.34	N/A	NA	NA	25.26	65.54	40.490	27.08	26.12	N/A
3-3	NA	NA	-10.30	-0.255	-8.898	-10.28	-10.49	N/A	NA	NA	15.60	40.33	24.660	18.56	17.51	0.00
4-1	NA	NA	NA	NA	-4.222	-4.113	-4.01	-4.429	NA	NA	NA	NA	22.47	21.26	20.39	19.91
4-2	NA	NA	NA	NA	-4.016	-4.039	-3.981	-4.088	NA	NA	NA	NA	50.98	32.49	30.68	42.48

EnviroTrac
Environmental Services