Advanced Cleanup Technologies, Inc.
ENVIRONMENTAL CONSULTANTS

August 8, 2017

Mr. Peter Procida
LPC Developmet Group LLC
456 East 173rd Street
Bronx, New York 10457

Re: Soil Vapor Extraction System Implementation Plan
337 Berry Street, Brooklyn, New York

Dear Mr. Procida,

Advanced Cleanup Technologies, Inc. (ACT) is pleased to present the following Implementation Plan for the construction of the proposed Soil Vapor Extraction (SVE) system at 337 Berry Street, Brooklyn, New York. A preliminary design plan providing the proposed number and layout of SVE wells and system piping is attached. A Typical P&ID diagram for the SVE system is also attached.

The following outlines the details of construction and the methodology and sequencing of the construction related activities. The ground surface over the area to be remediated is currently bare dirt. Hence, vacuum measurements recorded during pilot testing will be viewed as conservative, with higher vacuum anticipated once the asphalt pavement has been installed.

Scope of Work

1. **Pilot Testing**

   The New York State Department of Health (NYSDOH) has indicated that a minimum vacuum of 0.1 in. w.c. is required to maintain an effective vacuum within an area influenced by an SVE system. A pilot test will be performed on an SVE well to be installed along the property boundary adjacent to 333 Berry Street to generate site-specific permeability data under varying conditions of pressure, flow and distance.

   Prior to pilot testing, temporary vacuum points will be installed at 5, 10 and 15 foot depths along the property boundary with 333 Berry Street and at one 10-foot step out to the south. Temporary sub-slab vacuum points (less than 6 in. deep) will also be installed inside the basement at 333 Berry Street at three distances from the southern property boundary.

The results of the pilot test will document the extraction well vacuum and flow rates required to maintain effective horizontal and vertical pressure fields beneath the site and its immediate vicinity. This information will be used to refine the proposed layout of the SVE system and sizing of vacuum blower and treatment equipment. The blower will be selected with approval from the NYSDEC.

2. Trenching

A backhoe will be utilized to dig a trench from each extraction well to lateral piping connecting the SVE well to the vacuum system. An additional trench will be dug along the northern property boundary to contain lateral piping from each SVE well to the vacuum system.

3. Extraction Well Installation

Each SVE well will be installed utilizing a rotary auger drill rig, which will drill an 8-inch diameter borehole to a depth of 15 feet below ground surface (bgs). The entire well assembly, including 5 feet of 4-inch diameter 20 mil slotted schedule 40 PVC well screen and 10 feet of 4-inch diameter solid PVC riser pipe, will be inserted into the borehole. A 4-inch to 3-inch PVC "T" will be installed four feet from the top of the well casing to provide connection to lateral piping.

The borehole will be filled with 6 feet of well gravel (#2 moray sand and rounded gravel) followed by 1 foot of hydrated bentonite clay pellets and then native soil to 1-foot bgs. An 8-inch diameter well cover labeled "Monitoring Well" will be installed at an elevation flush with the asphalt surface. The well cover will be secured in place with a concrete plug, inhibiting surface water infiltration into the well annulus.

4. Lateral Piping Installation

A 6-inch layer of crushed natural bluestone will be placed in the base of each pipe trench. A layer of filter fabric will be placed between the bluestone and the native soil. Three-inch diameter schedule 40 PVC piping will be laid out in the trenches in 10-foot sections. Each section will be welded to the next with PVC primer and cement. Care will be taken to make sure PVC couplings are fully inserted and dry before moving to the next section. Lateral piping will be covered with a 6-inch layer of crushed stone. The trenches will then be backfilled with native soil to grade.

5. Vacuum System Installation

Located in the northeast portion of the asphalt driveway, a vacuum system consisting of a vacuum blower, moisture separator, pre-filter, instrumentation and controls will be installed within a pre-fabricated metal enclosure. (See Attachment A for the proposed location of the vacuum system).

The enclosure will be soundproofed to reduce the sound level of the blower. Provisions to alternatively mount the vacuum system and enclosure on the roof of the building under construction will be made if it is determined that this would be a more suitable location.

6. Exhaust Treatment

Prior to operational startup, the vacuum system exhaust will be sampled and analyzed for volatile organic compounds pursuant to EPA Method TO-15. An ambient Air Quality Impact Analysis will be performed in accordance with NYS DAR-1 guidelines to determine if treatment of exhaust with granular activated carbon will be required.

7. Electrical Work

The vacuum system will be energized using a new electrical distribution panel installed by the client. Circuit breakers will be labeled “Active Soil Vapor Extraction System.” Additionally, a system description label will be placed on the vacuum system enclosure and control panel.

Electrical conduit and wire will be run in a manner that meets or exceeds the NYC electrical code to the enclosure where the control panel will be located. A disconnect switch will be provided outside the enclosure which will serve as a local means of disconnect for emergency or maintenance use.

8. System Testing and Startup

Prior to the startup of the SVE system, the vacuum blower and controls will be tested for correct operation, both electrically and mechanically.

Temporary sub-slab vacuum points (less than 6 in. deep) will be installed inside the basements at 333 and 345 Berry Street. A minimum of 6 temporary vacuum points will be installed to verify that adequate vacuum is reaching each of the points.

Each of the vacuum points will be connected to a hand-held digital manometer to check for vacuum influence. This vacuum influence will be used to demonstrate that the SVE system is providing adequate depressurization coverage.

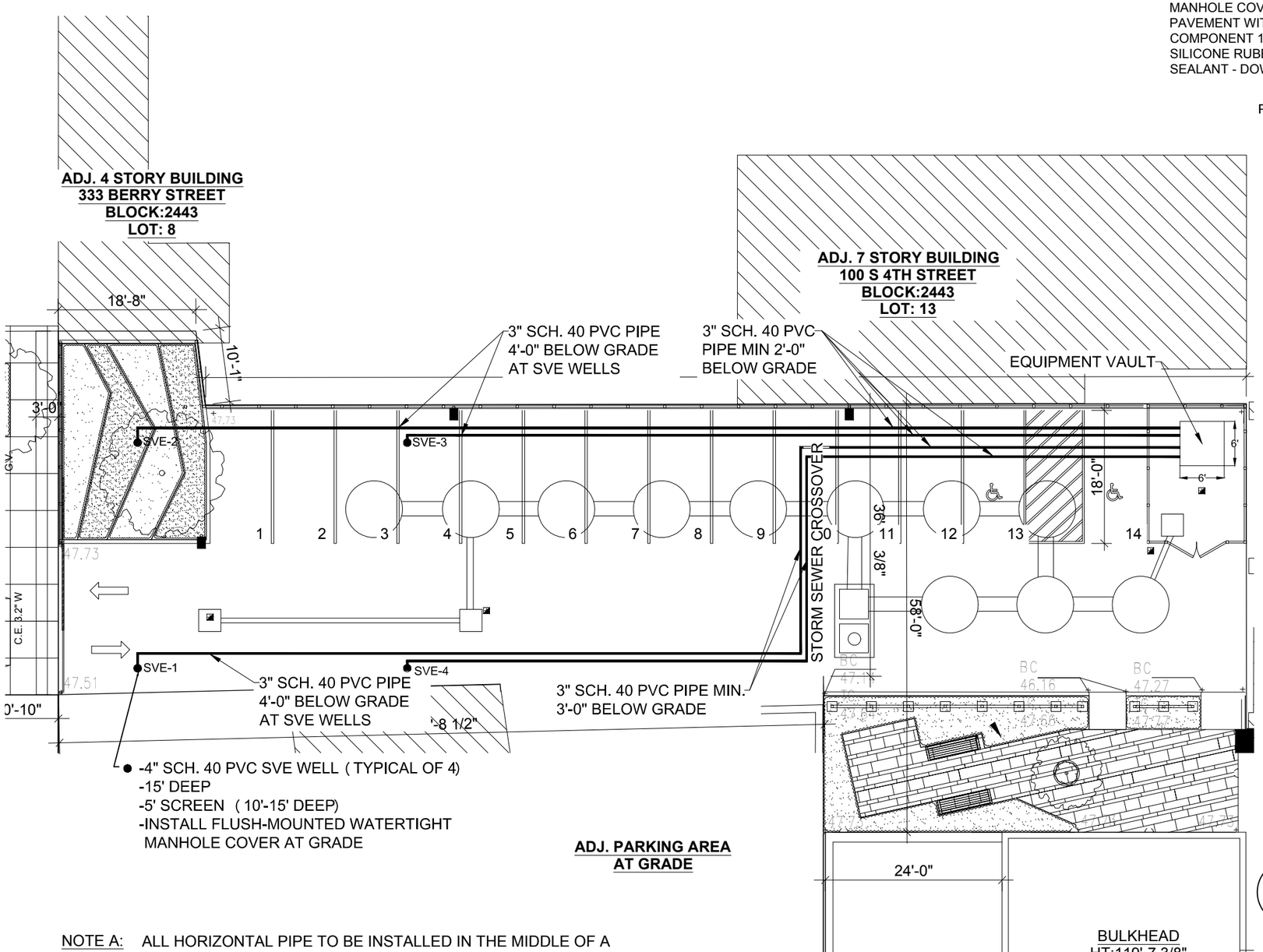
Following startup of the SVE system, the flow, vacuum, temperature and vapor concentrations in the influent and effluent will be monitored on a daily basis for the first 7 to 10 days and then monthly thereafter.

If you have any questions or require additional information, please do not hesitate to contact the undersigned.

Very truly yours,

Paul P. Stewart, QEP
President

BERRY STREET

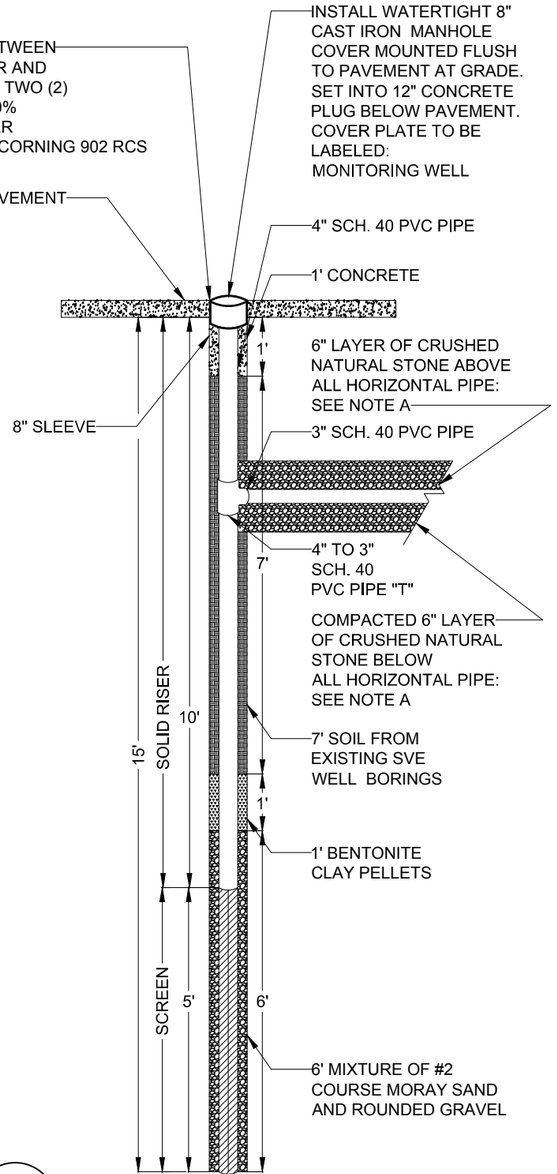


● -4" SCH. 40 PVC SVE WELL (TYPICAL OF 4)
-15' DEEP
-5' SCREEN (10'-15' DEEP)
-INSTALL FLUSH-MOUNTED WATERTIGHT
MANHOLE COVER AT GRADE

ADJ. PARKING AREA AT GRADE

NOTE A: ALL HORIZONTAL PIPE TO BE INSTALLED IN THE MIDDLE OF A 12" LAYER OF CRUSHED NATURAL BLUESTONE, MINIMUM OF $\frac{3}{4}$" SIZE, FREE OF ALL FRIABLE MATERIAL AND DEBRIS, GRADED IN ACCORDANCE WITH ASTM C136; ALL MATERIAL TO BE ABLE TO PASS THROUGH A 2" SEIVE.

NOTE B: SVE WELL QUANTITY AND LOCATIONS ARE SUBJECT TO PILOT WELL TESTING.



SVE 1–4 SOIL VAPOR EXTRACTION WELL

SCALE: 3/8"=1'–0"

- FINE TO COURSE SAND AND ROUNDED GRAVEL
- BENTONITE PELLETS
- BANK RUN SAND AND GRAVEL
- CONCRETE
- SVE — SOIL VAPOR EXTRACTION WELL

ANDREW ROBERT LEVENBAUM P.E.
424 NEW YORK AVENUE
HUNTINGTON, NY 11743
T-631-423-8682 F-631-423-4083

STRUCTURAL CONSULTANT:

MEPS CONSULTANT:

NO	DESCRIPTION	DATE

PROJECT DATA:

ALTERATIONS & ADDITIONS TO:
337 BERRY STREET
BROOKLYN, NY, 11249

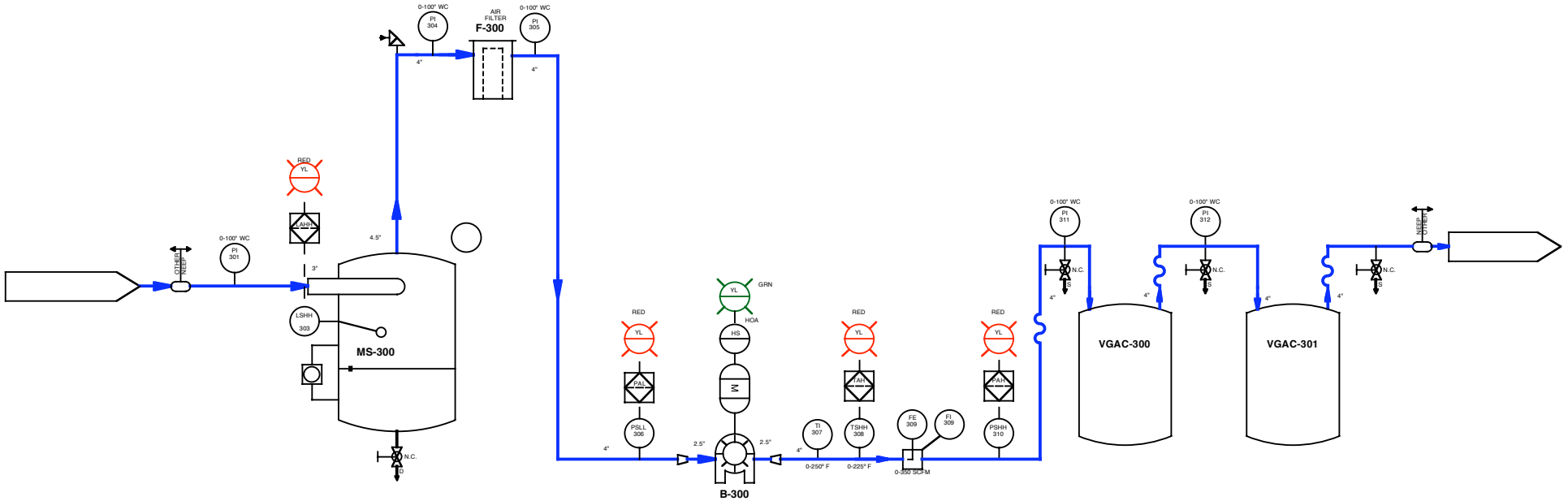
JOB NUMBER: 593

DOB BSCAN:

DRAWING TITLE:
SITE PLAN

DRAWN BY: SCF	CHECKED BY: ARL
SCALE: $\frac{1}{16}$"=1'-0"	DATE: 06.05.17

C-101.00
1 of 1


0-100" WC
PI 304
AIR FILTER
F-300
0-100" WC
PI 305
4"
4"
RED
YL
ANH
0-100" WC
PI 301
OTHER
NEEP
3"
4.5"
LSHH 303
MS-300
N.C.
D
RED
YL
PAL
PSLL 306
4"
2.5"
YL
GRN
HOA
HS
M
2.5"
B-300
TI 307
4"
0-250° F
RED
YL
TAH
TSHH 308
0-225° F
FE 309
FI 309
0-350 SCFM
RED
YL
PAH
PSHH 310
0-100" WC
PI 311
N.C.
D
4"
VGAC-300
0-100" WC
PI 312
N.C.
S
4"
VGAC-301
4"
N.C.
S
OTHER
NEEP

TYPICAL P&ID