

MEMORANDUM

TO: Hans Jensen, City of Somerville

FROM: Jeffrey A. Nangle, P.E., L.S.P.

DATE: January 5, 2018

SUBJECT: Peer Review
343-349 Summer Street
Somerville, Massachusetts

As requested, this correspondence has been prepared to summarize our peer review comments pertaining to the document entitled "*Release Abatement Measure Status Report*" dated 24 October 2017 prepared by EnviroTrac Ltd. (EnviroTrac) for Release Tracking Number (RTN) 3-34098 at the above referenced property, which was presented and discussed by EnviroTrac at the recent public information session held on 18 December 2017.

EnviroTrac has rendered the opinion that the levels of Polynuclear Aromatic Hydrocarbons (PAHs) and metals remaining in soil are attributable to Anthropogenic Background as defined below and therefore not subject to consideration of capping or direct contact barriers in unrestricted earthen areas.

Anthropogenic Background means those levels of oil and hazardous material that would exist in the absence of the disposal site of concern and which are:

- (a) attributable to atmospheric deposition of industrial process or engine emissions and are ubiquitous and consistently present in the environment at and in the vicinity of the disposal site of concern;
- (b) attributable to Historic Fill;
- (c) associated with sources specifically exempt from the definitions of disposal site or release as those terms are defined in MGL c. 21E and 310 CMR 40.0006;
- (d) releases to groundwater from a public water supply system; or
- (e) petroleum residues that are incidental to the normal operation of motor vehicles.

Technically, if it is demonstrated that the metals and PAH constituents identified at the site are attributable to Anthropogenic Background, it is correct that these constituents could be excluded from the evaluation of risk and would therefore not require the consideration of any direct contact barriers in earthen areas or require the placement of any environmental land use restrictions, i.e. Activity and Use Limitation (AUL), on the property. However, it is recommended that consideration be given to the incorporation of direct contact barriers in areas of unrestricted access where the public may be present to mitigate any actual risk, regardless of the exclusion.

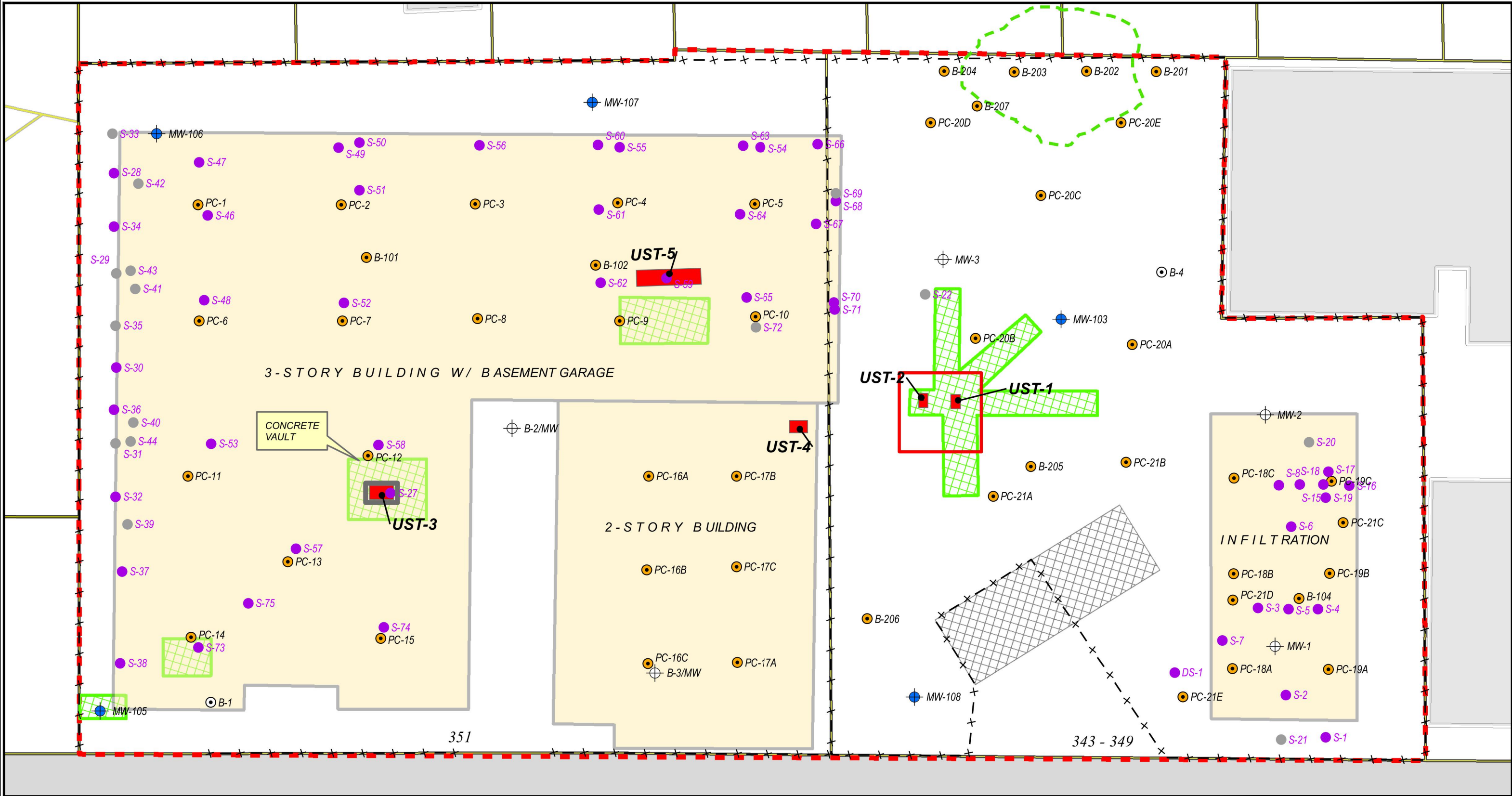
While a substantial amount of data was collected during RAM activities, there is little narrative within the RAM status report pertaining to data interpretation. During the recent public meeting, and in prior documentation, EnviroTrac has rendered the opinion that PAHs and metals exceedences are attributable to coal, coal ash or wood ash and as such would be exempt from consideration in the evaluation of risk. The fill material at the site has been characterized by EnviroTrac as follows:

- In the areas of excavation, soil from the ground surface to approximately six feet bgs was generally characterized as sand with traces of silt and clay with observed coal, coal ash, bricks, concrete, and wood (fill). Soil from six to eight feet bgs is characterized as clay. All excavated soil was transported off-site under a MassDEP Bill of Lading (BOL) to Aggregate Recycling Corporation (ARC) in Eliot, Maine. Disposal documentation is provided in Appendix A. Further details related to the management of Remediation Waste are discussed in Section 3.4.
- Soil characteristics from the ground surface to approximately six feet bgs were observed to consist of sand with traces of gravel, with observed coal, coal ash, bricks, concrete, and wood (fill). Soil from six to 15 feet bgs was characterized as clay. Soil headspace readings during excavation ranged from BDL to 185.1 ppmv. All soil was excavated and transported off-site under MassDEP BOLs.
- Remediation Waste generated during the reporting period is summarized in Table 3. Approximately 10,697 tons of soil was transported and disposed of at the Clinton Landfill. Approximately 3,477 tons of soil was transported and disposed of at ARC. Disposal documentation is provided in Appendix A.

It is noted that MDEP has published guidance with respect to interpreting levels of various constituents, particularly metals, with respect to levels that would be attributable to coal ash and wood ash within fill material, with particular reference to comparison of site data to MDEP established background levels of metals.

As documented within the RAM Plan, supplemental soil sampling in northeast portions of the site (B-200 Series) revealed elevated levels of lead and PAHs (Table 1.0) just south of the property line (Figure 1) and the disposal site boundaries. It is noted that these levels were within the ranges across the subject property that had been identified during prior assessment activities, however, they are also above MDEP published background values for fill containing coal ash and/or wood ash.

Our final comment is a restatement of earlier request for a more timely submission of data as it is obtained, so that we may better advise the City as well as nearby residents concerning site conditions. As site characterization activities have been completed, this comment is directed towards the past actions of the Responsible Party (RP). It is hoped that if any changes to anticipated compliance requirements occurs prior to the development of the Release Abatement Measure (RAM) Completion Report, that this requirement will be complied with.



ENVIROTRAC SKETCH PLAN OF SITE
343-349 & 351 SUMMER ST
SOMERVILLE, MASSACHUSETTS

APPROXIMATE SAMPLE LOCATIONS

ENVIRONMENTAL CONSULTING ASSOCIATES, INC.

Environmental Engineering and Land Use Planning

45 Dan Road • Suite 115 • Canton • Massachusetts 02021

LEGEND

--- TREE CANOPY

● SOIL BORING

⊕ MONITORING WELL

○ HISTORIC SOIL BORING

⊕ HISTORIC MONITORING WELL

POST-EXCAVATION SOIL SAMPLE

● NOT ANALYZED

● ANALYZED

FORMER UST LOCATION

--- FENCE

BUILDING FOOTPRINT

MBTA VENT

TEST PITS

RTN 3-34098

DISPOSAL SITE BOUNDARY

RTN 3-33735

DISPOSAL SITE BOUNDARY

NOTES

REFERENCE: Figure 2 from
RAM Status Report
prepared by EnviroTrac;
October 24, 2017

025
Approximate Scale In Feet

Date: JAN 2018

Job No: 746.02

Figure
1

Table 1.0 Summary of Laboratory Analyses in Soil (mg/kg)¹
Site Location: 343 - 351 Summer Street - Somerville, MA

SAMPLE ID	B201		B202		B203		B204	B207		B205		B206		METHOD 1 2014					
DEPTH (In Feet)	0-2'	7-8'	0-1'	7-8'	1-2'	7-8'	7-8'	0-2'	7-8'	2-3'	7-8'	2-3'	7-8'	S-1		S-2		S-3	
SAMPLE DATE	9/15/2017									9/21/2017				GW-2	GW-3	GW-2	GW-3	GW-2	GW-3
Extractable Petroleum Hydrocarbons (mg/kg)																			
C9-C18 Aliphatics	11	<10	<11	<12	<55	<12	<12	44	27	11	<12	<11	<11	1,000	1,000	3,000	3,000	5,000	5,000
C19-C36 Aliphatics	44	<10	21	<12	400	16	<12	21	19	46	13	16	<11	3,000	3,000	5,000	5,000	5,000	5,000
C11-C22 Aromatics	48	<10	30	<12	380	<12	<12	45	17	36	33	67	<11	1,000	1,000	3,000	3,000	5,000	5,000
Acenaphthene	0.28	<0.10	<0.11	<0.12	1.5	<0.12	<0.12	<0.11	<0.11	<0.11	0.2	0.3	<0.11	1,000	1,000	3,000	3,000	5,000	5,000
Acenaphthylene	<0.11	<0.10	<0.11	<0.12	<0.55	<0.12	<0.12	<0.11	<0.11	<0.11	<0.12	0.2	<0.11	600	10	600	10	600	10
Anthracene	0.9	<0.10	0.2	<0.12	3.0	<0.12	<0.12	0.3	<0.11	0.3	0.5	0.9	<0.11	1,000	1,000	3,000	3,000	5,000	5,000
Benzo(a)anthracene	1.1	<0.10	0.5	<0.12	8.9	<0.12	<0.12	0.5	<0.11	0.4	1.1	2.6	<0.11	7	7	40	40	300	300
Benzo(a)pyrene	1.1	<0.10	0.5	<0.12	8.3	<0.12	<0.12	0.6	<0.11	0.4	1.0	2.3	<0.11	2	2	7	7	30	30
Benzo(b)fluoranthene	1.5	<0.10	0.8	<0.12	14.0	<0.12	<0.12	0.8	<0.11	0.6	1.3	3.0	<0.11	7	7	40	40	300	300
Benzo(g,h,i)perylene	0.5	<0.10	0.4	<0.12	6.3	<0.12	<0.12	0.4	<0.11	0.2	0.5	1.3	<0.11	1,000	1,000	3,000	3,000	5,000	5,000
Benzo(k)fluoranthene	0.5	<0.10	0.3	<0.12	4.6	<0.12	<0.12	0.3	<0.11	0.2	0.5	1.2	<0.11	70	70	400	400	3,000	3,000
Chrysene	1.2	<0.10	0.8	<0.12	11.0	<0.12	<0.12	0.6	<0.11	0.4	1.2	2.8	<0.11	70	70	400	400	3,000	3,000
Dibenz(a,h)anthracene	0.2	<0.10	<0.11	<0.12	1.5	<0.12	<0.12	<0.11	<0.11	<0.11	0.2	0.4	<0.11	0.7	0.7	4	4	30	30
Fluoranthene	3.3	<0.10	1.4	<0.12	28.0	<0.12	<0.12	1.5	<0.11	1.0	2.6	5.6	<0.11	1,000	1,000	3,000	3,000	5,000	5,000
Fluorene	0.5	<0.10	0.1	<0.12	1.7	<0.12	<0.12	<0.11	<0.11	0.1	0.2	0.4	<0.11	1,000	1,000	3,000	3,000	5,000	5,000
Indeno(1,2,3-cd)pyrene	0.6	<0.10	0.3	<0.12	6.6	<0.12	<0.12	0.3	<0.11	0.3	0.6	1.5	<0.11	7	7	40	40	300	300
2-Methylnaphthalene	0.2	<0.10	<0.11	<0.12	<0.55	<0.12	<0.12	<0.11	<0.11	<0.11	<0.12	<0.11	<0.11	80	300	80	500	80	500
Naphthalene	0.3	<0.10	<0.11	<0.12	2.0	<0.12	<0.12	<0.11	<0.11	<0.11	<0.12	<0.11	<0.11	20	500	20	1,000	20	3,000
Phenanthrene	3.4	<0.10	1.1	<0.12	20.2	<0.12	<0.12	1.2	<0.11	0.8	1.7	3.2	<0.11	500	500	1,000	1,000	3,000	3,000
Pyrene	2.8	<0.10	1.2	<0.12	26.0	<0.12	<0.12	1.4	<0.11	1.0	2.3	5.3	<0.11	1,000	1,000	3,000	3,000	5,000	5,000
Total Metals (mg/kg)																			
Lead	33	4.1	46	3.3	830	13	13	52	3.5	50	86	210	2.4	200	200	600	600	600	600

File No. 746.02
<2.0 indicates not detected at or above the laboratory reporting limit specified
NA: Not Applicable
Method 1 criteria effective June 20, 2014.