May 6, 2019

Mr. Chad Staniszewski
Mr. Eugene Melnyk
NYS Department of Environmental Conservation
270 Michigan Avenue
Buffalo NY 14203

Subject: **Babcock Street (OU-3) Hot Spot Work Plan**
Buffalo, New York
NYSDEC Site No. C915201D

Dear Mr. Staniszewski & Mr. Melnyk:

On behalf of Elk Street Commerce Park, LLC (ESCP), Amec E&E PC (Amec) submitted a Soil Excavation Confirmation Sampling Plan dated January 25, 2019 to delineate additional excavation to complete the Hot Spot Remedial Action on the former One Babcock Street property. The sampling was conducted to address the results of soil sampling completed on November 11, 2018. That sampling detected elevated levels of several polynuclear aromatic hydrocarbons (PAHs) in one bottom sample from the excavation and concentrations of benzo(a)pyrene exceeding the 1,000 microgram per kilogram Commercial Soil Cleanup Objective (SCO) in an additional six samples. Lead and mercury were detected at concentrations exceeding their respective Commercial SCOs and were subjected to Toxicity Characteristic Leachate Procedure (TCLP) extraction, in which lead concentrations were found to exceed 5 milligrams per liter (mg/l) in six of nine samples. The Soil Excavation Confirmation Sampling Plan assumed the basis for exceedance of the lead and mercury standards was noted discolored material (i.e., white and green material) included in the samples.

The New York State Department of Environmental Conservation (NYSDEC) reviewed that plan and provided a response in a letter dated February 13, 2019. In its rejection of the proposed sampling plan, NYSDEC stated that the primary purpose of this focused investigation work is to delineate the vertical and horizontal extent of metal contaminated soil/fill that was not previously known or characterized in an area with pronounced contamination. In additional discussions with NYSDEC indicated that the fill matrix consists of incinerator ash and that ash is the more likely source of the metals. NYSDEC further indicated that because this material was characterized with a limited number of samples and additional confirmatory sampling has demonstrated that the material contains lead which is capable of producing TCLP leachate with elevated lead concentrations, additional characterization will be required.

Amec subsequently submitted a second sampling plan dated March 15, 2018. The second sampling plan consisted of sampling concentric rings around the initial excavation area bounded between the northern and western property boundaries. A detailed description of the sampling and testing program is presented below:

Starting with samples collected in Row #1

1) Analyze soil samples collected from intervals 1.5'-2.0' and 2.5'-3.0' for total lead and mercury.
2) If total lead result from either of first two sample intervals exceeded 1,000 mg/kg, the soil sample collected at the 4.5'-5.0 interval was analyzed.
3) If total mercury result from either of first two sample intervals exceeded 50 mg/kg the soil sample collected at the 4.5'-5.0 interval was analyzed.
4) If total lead result from any sample intervals exceeded 1,500 mg/kg, that sample interval was analyzed for TCLP lead.
5) If total mercury results from either of first two sample intervals exceeds 50 mg/kg, that sample interval was analyzed for TCLP mercury.
6) If any total lead sample result was >5,000 mg/kg OR TCLP Lead sample result was >5 mg/L OR TCLP mercury sample was > 0.2 mg/L for any sample interval, the analyze starting at Step 1 was continued for samples collected from the

boring in Row #2 or Row #3 that is located within 20-30' of the Row#1 (or Row #2) sample that resulted in an exceedance.

On March 21 and 22, 2019, Amec conducted field sampling in general accordance with this sampling plan. The results of this program were used to delineate the areal extent and depth of impacted soils/fill material. Analytical results are attached in Table 1. Based on these results, the area of impacted material to be addressed is depicted in Figure 1.

Remedial Action

The total volume of impacted material delineated by the sample results is approximately 1,050 cubic yards. The excavation area extends to depths of between 1.5 feet and 13 feet below existing grade with the deeper portion within the footprint of the initial hot spot excavation area. ESCP proposes to stabilize this volume using in-situ stabilization (ISS) measures similar to what has been conducted on this property as part of the OU3 Remedial Action Work Plan. An excavator will bucket mix the soils in-situ with a Portland cement grout mix. The ISS area will be divided up into small workable cells on the order of 15 feet by 20 feet. During stabilization activities, samples will be collected for TCLP analysis for lead and for unconsolidated strength testing (UCS). TCLP testing would be conducted at a rate of one test per 500 cubic yards. Criteria for the TCLP testing is that the stabilized material tests results are lower the 5 mg/l hazardous limits. UCS sampling and testing will be conducted at a rate of one test per day with the minimum required strength at 40 psi.

At the completion of stabilization, the area will be covered with up to 6-inches of bituminous pavement in accordance with the OU3 RAWP.

Please contact me or Dayne Crowley at 724-514-1600 if you have any questions or require any additional information.

Sincerely,

AMEC E&E PC

Richard Egan, PE
Engineer of Record

Dayne M. Crowley, P.G.
Senior Principal Hydrogeologist

Attachment

cc: Mr. Paul Neureuter (ESCP)
Mr. Arnie Cubins (Krog)
Mr. Ben Genes (ESCP)
Mr. John Luttinger (Wood)

Table 1
Lead and Mercury Total Concentration and TCLP Results

Boring	Date	Depth (feet)	Total analyses (mg/kg)		TCLP Analyses (mg/l)	
			Lead	Mercury	Lead	Mercury
CB1	11/28/2018	4.0 - 5.0	**5360**	0.47	**12.2**	ND
CB2	11/28/2018	4.0 - 5.0	364	0.74	0.93	
CB3	11/28/2018	4.0 - 5.0	**2450**	44.4	**5.4**	
SW-1	11/28/2018	1.5 - 2.0	206	0.53	0.37	
SW-2	11/28/2018	1.5 - 2.0	**2490**	**130**	**13.5**	0.0015
SW-3	11/28/2018	1.5 - 2.0	**2070**	36.5	**15.6**	0.0062
SW-4	11/28/2018	1.5 - 2.0	**1950**	27.3	**11**	0.0025
SW-5	11/28/2018	1.5 - 2.0	**19400**	**282**	**15.1**	0.0044
SW-6	11/28/2018	1.5 - 2.0	271	0.64	0.11	
HS-B1	3/21/2019	10.0 - 11.0	69.6	0.089		
HS-B2	3/21/2019	10.0 - 11.0	436	0.072		
HS-B3	3/21/2019	1.5 - 2.0	42.4	0.071		
HS-B3	3/21/2019	4.0 - 5.0	607	0.74		
HS-B4	3/21/2019	1.5 - 2.0	564	9.8		
HS-B4	3/21/2019	4.0 - 5.0	892	0.74		
HS-B5	3/21/2019	1.5 - 2.0	535	0.5		
HS-B5	3/21/2019	4.0 - 5.0	**1420**	0.32	**6**	
HS-B5	3/21/2019	11.0-12.0	352			
HS-B6	3/21/2019	1.5 - 2.0	443	37.4		
HS-B6	3/21/2019	11.5-12.5	474			
HS-B6	3/21/2019	4.0 - 5.0	**2100**	9.3	1.9	
HS-B7	3/21/2019	1.5 - 2.0	823	24.9		
HS-B7	3/21/2019	4.0 - 5.0	953	1.6		
HS-B11	3/21/2019	1.5 - 2.0	**1730**	42.4	**9.8**	
HS-B11	3/21/2019	4.0 - 5.0	309	0.17		
HS-B12	3/21/2019	1.5 - 2.0	472	1.4		
HS-B12	3/21/2019	4.0 - 5.0	824	0.77		
HS-B16	3/22/2019	1.5 - 2.0	299	0.61	0.0055	
HS-B16	3/22/2019	4.0 - 5.0	224	0.082	0.0035	

= results trigger TCLP analysis
= Mercury result associated with sample in which Lead exhibits Hazardous Characteristics
15.1 = Bolded red text mean TCLP results exhibit Hazardous characteristics
69.6 = orange text means result meets Commercial SCO

SW-1
LEAD 206mg/kg @ 1.5FT
MERCURY 0.539mg/kg @ 1.5FT

HS-B1
LEAD 69.6mg/kg @ 11FT
MERCURY 0.089mg/kg @ 11FT

HS-B2
LEAD 436mg/kg @ 10FT
MERCURY 0.072mg/kg @ 10FT

SW-6
LEAD 271mg/kg @ 1.5FT
MERCURY 0.64mg/kg @ 1.5FT

HS-B7
LEAD 823mg/kg @ 1.5FT
MERCURY 24.9mg/kg @ 1.5FT
LEAD 953mg/kg @ 4.0FT
MERCURY 1.6mg/kg @ 4.0FT

HS-B6
LEAD 443mg/kg @ 1.5FT
MERCURY 37.4mg/kg @ 1.5FT
LEAD 2100mg/kg @ 4.0FT
TCLP LEAD 1.9mg/l @ 4.0FT
MERCURY 9.3mg/kg @ 4.0FT

HS-B3
LEAD 42.4mg/kg @ 1.5FT
MERCURY 0.071mg/kg @ 1.5FT
LEAD 607mg/kg @ 4.0FT
MERCURY 0.74mg/kg @ 4.0FT

HS-B4
LEAD 564mg/kg @ 1.5FT
MERCURY 9.8mg/kg @ 1.5FT
LEAD 892 mg/kg @ 4.0FT
MERCURY 0.74 mg/kg @ 4.0FT

HS-B16
LEAD 299mg/kg @ 1.5FT
MERCURY 0.61mg/kg @ 1.5FT
LEAD 224mg/kg @ 4.0FT
MERCURY 0.082mg/kg @ 4.0FT

HS-B11
LEAD 309mg/kg @ 4.0FT
MERCURY 0.17mg/kg @ 4.0FT

HS-B12
LEAD 472mg/kg @ 1.5FT
MERCURY 1.4mg/kg @ 1.5FT
LEAD 824mg/kg @ 4.0FT
MERCURY 0.77mg/kg @ 4.0FT

HS-B5
LEAD 352mg/kg @ 11FT

HS-B3 (4.0)
HS-B4 (4.0)
HS-B16 (1.5)
HS-B11 (4.0)
HS-B5 (11.0)
HS-B12 (1.5)
HS-B1
HS-B2
HS-B6 (4.0)
HS-B7 (4.0)
SW-1
SW-2
SW-3
SW-4
SW-5
SW-6
CB-1
CB-2
CB-3

NON-BCA Area

Formerly Prenatt St.

APPROX. LOCATION OF FORMER RIVER CHANNEL

ISS AREA

SLURRY WALL (WEST)

SB-45 50 X 50 GRID

SB-50, MW-26, SB-27, SB-49, SB-48, SB-16, SB-20, SB-47, SB-31, PDI-SB-02, MW-25, MW-24, MW-1, SB-24, MW-2

LEGEND:

- ϕ EXCAVATION CONFIRMATION SAMPLE LOCATION
- HOT SPOT EXCAVATED CELL TO 3-FT, ISS FROM 3-FT TO NATIVE SOILS
- IN-SITU STABILIZATION AREA
- B-019 HOT SPOT SAMPLE LOCATION
- (4.0) DEPTH OF IN-SITU STABILIZATION

0 20 40 80
SCALE IN FEET

Prepared/Date: WJW 5/07/19
Checked/Date: RSE 5/07/19

Elk Street Commerce Park, LLC
600 Elk St., Buffalo, NY

amec

OU3
HOT SPOT IN-SITU STABILIZATION
Project 3617-16-7397
Figure 1

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