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December 18, 2018

Nick Acampora
Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Circle Road, SUNY at Stony Brook
Stony Brook NY 11790-3409

Re: Off Site Sediment Sampling
Former Cibro Terminal Site ID: 13015
7 Washington Ave, Island Park NY 11558

Mr. Acampora,

This letter presents a summary of the sediment sampling results with respect to the existing off-site sediment conditions directly adjacent to the former Cibro Terminal site. All work was completed in accord with the approved November 2017 Remedial Work Plan (RWP) with the exception of the sampling method noted herein.

There were no exceedances of the Part 375 Unrestricted Use for BTEX, PAHs, metals, and total organic carbon.

PROJECT BACKGROUND

The project was mobilized for initial staging in July 2018. As part of the remediation scope of work, the approximately 1100' long timber bulkhead that borders the site on its eastern, southeastern, and southern sides will be replaced. Per the approved November 2017 RWP, sediment samples were collected at the locations shown on Figure #1. The purpose of the sediment sampling was to investigate potential impacts to the existing sediment before starting the bulkhead replacement.

At the project kick-off meeting on July 31st, 2018 between Posillico and NYSDEC, we discussed our bulkhead replacement strategy. Posillico indicated that a subcontractor would be used to install sheet piles in front and at a higher elevation than the existing bulkhead in accord with the NYSDEC Tidal Wetlands permit #1-2820-01252/00009. NYSDEC and Posillico agreed that the existing bulkhead should remain in place due to concern of potential impacts to the navigable waters during bulkhead removal. The approved RAWP provided for off-site sampling and analysis of existing sediment prior to commencing the bulkhead replacement.

SAMPLING SUMMARY:

Five sediment samples were collected in the locations shown on Figure #1.

Sampling Frequency:

Sample Location	#BTEX Samples	#PAHs Samples	#Metals/Mercury Samples	#TOC Samples
Q3	1	1	1	1
Q7	2	2	2	2
S12	2	2	2	2
R14	2	2	2	2
L15	2	2	2	2

Sampling Intervals:

Sample Location	Interval 1	Interval 2
Q3	0-10'	NA
Q7	0-0.5'	1-2'
S12	0-0.5'	5-10'
R14	0-0.5'	5-10'
L15	0-0.5'	5-10'

SAMPLING METHODS:

Posillico contracted AARCO Environmental to assist in the collection of the sediment samples on September 26 and September 27, 2018. Per the NYSDEC approval on July 31, 2018, samples were collected using direct-push pneumatically driven sampler in-lieu of using a Vibracore sampler. Sample cores were advanced to 10' below mudline in the five locations tabulated above and shown on Figure #1.

Sample cores were photographically logged prior to sample collection. Sample cores were field screened using visual, olfactory, and photo-ionization device (PID) observations. Discrete samples for benzene, toluene, ethylbenzene and xylene (BTEX) were collected using laboratory-prepared Terra Core sampling kits from the core showing the highest potential for impacts, organic content, or highest silt content. Cores were then composited and samples for polycyclic aromatic hydrocarbons (PAHs), metals including mercury, total organic carbon (TOC), and grain size were collected from the composited volume.

The collected samples were stored in a laboratory provided ice-chilled coolers and were transported to the Test America Laboratories. Samples for BTEX, PAHs, metals, and TOC were transported to the NYS ELAP-accredited laboratory in Pittsburgh, Pennsylvania. Samples for grain size were transported to the NYS ELAP- accredited laboratory in Burlington, Vermont.

Samples were collected in accord with the approved RWP and were analyzed using the following methods:

- BTEX- EPA Method 8260C
- PAHs- EPA Method 8270D LL
- Metals- EPA Method 6020A
- Mercury- EPA Method 7471B
- Total Organic Carbon- EPA Lloyd Kahn

SAMPLING RESULTS SUMMARY

There were no exceedances of the part 375 Unrestricted Use for BTEX, PAHs, metals, and total organic carbon.

The results for BTEX, PAHs, metals, and total organic carbon are summarized in Tables 1 through 4.

CONCLUSIONS AND RECOMMENDATIONS:

No remedial measures or additional investigations are recommended based on the September 2018 observations and analytical results for the off-site sediments.

Feel free to reach out if you have any questions or concerns.

Regards,

James Smyth
Environmental Engineer

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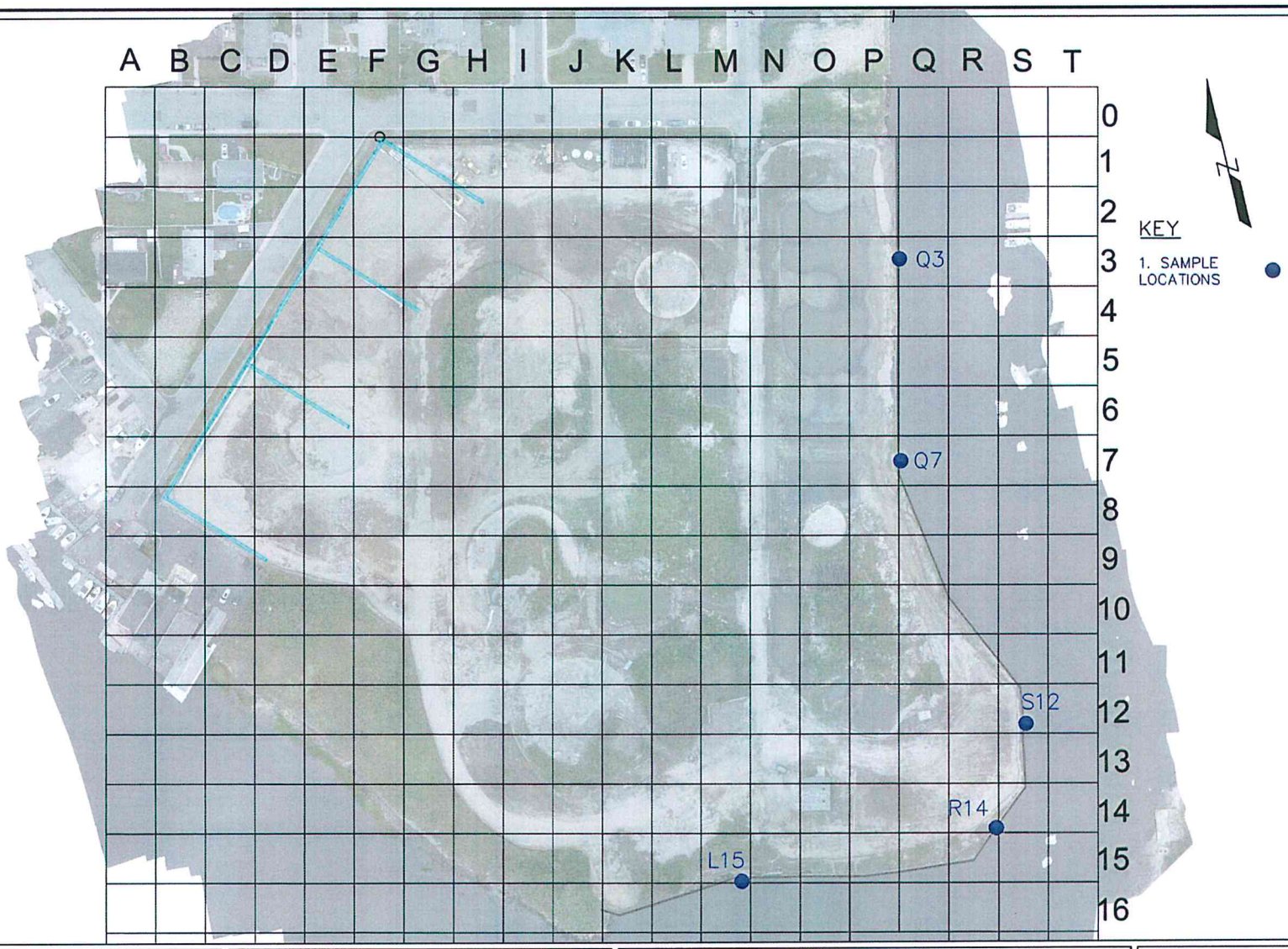

KEY

1. SAMPLE LOCATIONS

REVISIONS/ISSUES			
NO.	DATE	BY	DESCRIPTION
0	12/17/2018	MB	SEDIMENT SAMPLE LOCATIONS (ORIGINAL)

PDC AT HARBOR ISLE
7 WASHINGTON AVE, ISLAND PARK, NY 11558

DRAWN BY: MB | CHECKED BY: JS | DATE: 12/17/2018

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Posillico Engineering Services
1750 New Highway
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November 2018
Former Cibro Petroleum Terminal Site
Brownfield Cleanup Site C130153
Island Park, New York

Table 1
Results for BTEX BY 8260C

Sample ID	NY 375-6.8(a)	POS-SED-Q7-S1 (0-0.5')		POS-SED-Q7 S1 (1'2')		POS-SED-Q3-S2 (0-5)		POS-SED-S12-S1 (0-0.5')		POS-SED-S12-S2 (5'-10')		POS-SED-R14-S1 (0-0.5')		POS-SED-R14-S2 (5'-10')		POS-SED-L15-S1 (0-0.5')		POS-SED-L15-S2 (5'-10')	
Sampling Date	Unrestricted	9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018	
Matrix	Use Soil	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Dilution Factor	Soil Cleanup	1		1		1		1		1		1		1		1		1	
Units	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
BTEX BY 8260C	Criteria	Result		Result		Result		Result		Result		Result		Result		Result		Result	
Benzene	60	2.6	U	2.4	U	2.8	U	0.40	U	3.0	U	3.1	U	3.4	U	2.8	U	4.2	U
Ethylbenzene	5500	2.9	U	2.7	U	3.0	U	0.44	U	3.3	U	3.4	U	3.7	U	3.0	U	4.6	U
m-Xylene & p-Xylene	NA	2.5	U	2.3	U	2.6	U	0.38	U	2.9	U	2.9	U	3.2	U	2.6	U	4.0	U
o-Xylene	NA	3.3	U	3.0	U	3.4	U	0.50	U	3.7	U	3.8	U	4.2	U	3.4	U	5.2	U
Toluene	1500	2.3	U	2.1	U	2.4	U	0.34	U	2.6	U	2.6	U	2.9	U	2.4	U	3.6	U
Xylenes, Total	1200	5.8	U	5.4	U	6.0	U	0.88	U	6.6	U	6.8	U	7.4	U	6.1	U	9.2	U
Total Conc	NA	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	

U : Indicates the analyte was analyzed for but not detected.

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Table 2
Results for PAHs BY 8270D LL

Sample ID	NY 375-6.8(a)	POS-SED-Q7-S1 (0-0.5')		POS-SED-Q7 S1 (1'-2')		POS-SED-Q3-S2 (0-5)		POS-SED-S12-S1 (0-0.5')		POS-SED-S12-S2 (5'-10')		POS-SED-R14-S1 (0-0.5')		POS-SED-R14-S2 (5'-10')		POS-SED-L15-S1 (0-0.5')		POS-SED-L15-S2 (5'-10')	
Sampling Date	Unrestricted	9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018	
Matrix	Use Soil	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Dilution Factor	Soil Cleanup	3		25		2		4		5		10		4		10		5	
Units	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
PAHs by 8270D LL	Criteria	Result		Result		Result		Result		Result		Result		Result		Result		Result	
Acenaphthene	20000	3.4	U	28	U	2.3	U	11	J	31		13	U	5.5	U	21	J	8.8	J
Acenaphthylene	100000	3.2	J	24	J	1.9	J	8.1	J	15	J	19	J	4.2	U	35	J	12	J
Anthracene	100000	7.0	J	48	J	3.0	J	34		97		29	J	5.2	J	69		24	J
Benzo[a]anthracene	1000	18		130		11		37		130		86		15	J	240		68	
Benzo[a]pyrene	1000	26		150		13		42		110		95		15	J	280		75	
Benzo[b]fluoranthene	1000	29		200		18		54		150		120		22		360		100	
Benzo[g,h,i]perylene	100000	24		130		11		34		75		80		12	J	230		56	
Benzo[k]fluoranthene	800	14		100		9.4		26		50		48		10	J	140		49	
Chrysene	1000	23		220		15		63		210		93		17	J	300		88	
Dibenz(a,h)anthracene	330	4.3	J	37	J	2.8	J	9.0	J	18	J	12	J	4.2	U	65		17	J
Fluoranthene	100000	29		340		23		81		290		160		35		570		160	
Fluorene	30000	2.3	U	19	U	1.6	U	6.4	J	26		10	J	3.7	U	16	J	8.7	J
Indeno[1,2,3-cd]pyrene	500	21		89	J	9.2		26		72		59		12	J	190		49	
Naphthalene	12000	6.0	J	19	U	1.8	J	29		28		13	J	3.7	U	7.9	U	5.5	J
Phenanthrene	100000	17		94	J	7.5	J	36		310		70		16	J	200		110	
Pyrene	100000	62		330		23		89		240		210		36		440		190	
Total Conc	NA	283.5		1892.0		149.6		585.5		1852.0		1104.0		195.2		3156.0		1021.0	

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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Former Cibro Petroleum Terminal Site
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Table 3
Results for Metals by 6010A (MG/KG) and Mercury 7471B (MG/KG)

Sample ID	NY 375-6.8(a)	POS-SED-Q7-S1 (0-0.5')		POS-SED-Q7 S1 (1'2')		POS-SED-Q3-S2 (0-5)		POS-SED-S12-S1 (0-0.5')		POS-SED-S12-S2 (5'-10')		POS-SED-R14-S1 (0-0.5')		POS-SED-R14-S2 (5'-10')		POS-SED-L15-S1 (0-0.5')		POS-SED-L15-S2 (5'-10')	
Sampling Date	Unrestricted	9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018	
Matrix	Use Soil	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
	Soil Cleanup																		
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Metals by 6010A (MG/KG)	Criteria	Result		Result		Result		Result		Result		Result		Result		Result		Result	
Arsenic	13	1.3		1.4		1.0		1.5		2.7		1.9		4.3		1.6		9.1	
Cadmium	2.5	0.075		0.13		0.038	J	0.074		0.12		0.10		0.29		0.17		0.49	
Chromium	NA	4.8		6.2		3.2		6.5		12.6		7.6		17.7		7.4		31.0	
Copper	50	3.3		6.0		1.4		6.8		7.1		7.1		7.3		15.5		20.0	
Lead	63	6.1		11.4		2.0		13.3		8.1		20.7		7.3		46.2		22.1	
Nickel	30	1.8		3.1		1.3		3.3		5.4		3.6		9.2		4.9		15.0	
Silver	2	0.035	J	0.12		0.0092	J	0.047	J	0.074		0.093		0.040	J	0.14		0.22	
Zinc	109	9.8		20.5		4.2		89.5		16.5		21.3		25.6		41.1		56.9	
Mercury by 7471B (MG/KG)																			
Mercury	0.18	0.018	J	0.017	J	0.0044	U	0.017	J	0.048	U	0.033		0.0084	J	0.026		0.15	

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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November 2018
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Table 4
Results Summary for Total Organic Carbon by Lloyd Kahn

Sample ID	NY 375-6.8(a)	POS-SED-Q7-S1 (0-0.5')		POS-SED-Q7 S1 (1'2')		POS-SED-Q3-S2 (0-5)		POS-SED-S12-S1 (0-0.5')		POS-SED-S12-S2 (5'-10')		POS-SED-R14-S1 (0-0.5')		POS-SED-R14-S2 (5'-10')		POS-SED-L15-S1 (0-0.5')		POS-SED-L15-S2 (5'-10')	
Sampling Date	Unrestricted	9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018		9/26/2018	
Matrix	Use Soil	Sediment		Sediment		Sedient		Sediment		Sediment		Sedient		Sediment		Sediment		Sedient	
	Soil Cleanup																		
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Total Organic Carbn byLloyd Kahn	Criteria	Result		Result		Result		Result		Result		Result		Result		Result		Result	
Total Organic Carbon - Duplicates (mg/kg)	NA	1770		2860		901		2180		3050		5060		9530		2640		12300	

U : Indicates the analyte was analyzed for but not detected.