Lockheed Martin Corporation
497 Electronics Parkway
Liverpool, NY 13088

November 4, 2020

Mr. Jacky Luo
Project Manager
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7010

Re: *August 2020 Biological Monitoring Sampling Results*
Bloody Brook, Onondaga County, New York

Dear Mr. Luo:

According to the *February 2018 Bloody Brook Site Management Plan* (SMP), updated in March 2020, biological monitoring was required to document cadmium concentrations in aquatic biota following completion of the remedial activities on the site. In July 2014, biota samples were collected from within Bloody Brook to evaluate possible cadmium exposure for aquatic receptors prior to the start of remediation activities in the West Branch of Bloody Brook (WBBB) and Bloody Brook from below the confluence of the West and Middle Branches of Bloody Brook (collectively referred to as WBBB). Samples were collected from three general locations in WBBB, including an upper location (between Ontario Place and Cranberry Drive), a middle location (downstream from Floradale Road), and a lower location (upstream from Onondaga Lake Parkway). These locations are shown in Figure 1, enclosed with this letter. The 2014 data, which served as baseline, were provided to New York State Department of Environmental Conservation (NYSDEC) in the September 9, 2014 Monthly Progress Report for the Bloody Brook site and were included in Appendix F (Field Sampling Plan [FSP]) of the SMP.

According to the SMP, biota samples were to be collected two and four years following completion of construction activities from the same locations that were sampled during the 2014 baseline sampling to support an evaluation of the effectiveness of the site remedial program in mitigating potential cadmium impacts in WBBB. In accordance with the SMP, the first post-remediation monitoring data were collected on August 13, 2018 using the kick-net method, per the FSP and consistent with the collection methods used during the baseline sampling. Results for these samples were provided to NYSDEC in a letter dated October 31, 2018 and indicated that the remedy has been effective in mitigating cadmium impacts. The second and final year of post-remediation monitoring data were collected on August 26, 2020. The results for these samples are discussed below collectively with the 2014 and 2018 results and are provided in Table 1, enclosed with this letter.

Whole body crayfish samples were analyzed by Test America Laboratories for total cadmium by USEPA SW846 Method 6020, and the data underwent full third-party data validation. Analytical results for the 2014 baseline sampling and both the 2018 and 2020 post-remediation monitoring are summarized in Table 1.

From the lower location, upstream from Onondaga Lake Parkway, the average concentrations were lower during the post-remediation monitoring compared to the baseline sampling. Average concentrations decreased each year of monitoring, with an average baseline concentration of 0.97 milligrams per kilogram-wet weight (mg/kg-ww) in 2014 and average post-remediation concentrations of 0.14 mg/kg-ww in 2018 and 0.07 mg/kg-ww in 2020. All five proposed samples were collected during each year of monitoring at the lower location. Although no samples were able to be collected from the middle location (downstream from Floradale Road) in 2018, four of the five proposed samples were collected in 2020. The average concentration decreased with an average baseline concentration of 4.0 mg/kg-ww in 2014 and an average post-remediation concentration of 0.51 mg/kg-ww in

2020. From the upper location, between Ontario Place and Cranberry Drive, average cadmium concentrations decreased from the baseline of 3.4 mg/kg in 2014 to the post-remediation of 0.79 mg/kg in 2018, based on four of the five proposed samples, and 1.4 mg/kg-ww in 2020, based on three of the five proposed samples. Despite the slight increase in average concentration in 2020 from the 2018 concentration, the post-remediation average concentrations remain lower than the 2014 baseline average concentration.

The available samples collected at the lower, middle, and upper locations indicate the remedy has been effective in mitigating cadmium impacts as can be seen with the cadmium concentrations in the biological samples discussed herein.

If you have any questions, or you would like to discuss the data results, please contact me at (315) 456-1993 or Kelly Lurie at (518) 542-2944.

Sincerely,

Jill Fonte
Environmental Engineer

Enclosure

cc (with enclosure): Robert Nunes – USEPA, Region II
Argie Cirillo, Esq. – USEPA, Region II
Margaret Sheen, Esq. – NYSDEC
Scarlett McLaughlin – NYSDOH
Rebecca Quail – NYSDEC
Harry Warner, P.E. – NYSDEC, Region 7
Robert R. Tyson, Esq. – Bond, Schoeneck & King
Mark Sergott - NYSDOH
Lisa Letteney – Onondaga County Department of Health
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LEGEND:

- APPROXIMATE BIOTA MONITORING SAMPLE LOCATION
- BLOODY BROOK
- APPROXIMATE SITE BOUNDARY

NOTE:

1. BASE MAP SOURCE: ESRI ARCGIS STREET MAP.

0 800 1,600 Feet

GRAPHIC SCALE

AECOM

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BIOLOGICAL MONITORING LOCATIONS

WEST BRANCH OF BLOODY BROOK
ONONDAGA COUNTY, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
Bio Mon Plan.dwg	---	60572195	10/ 2018	1

Plotted By: Bookasr
Layout-Sheet Name: 11X17
Plot File Date Created: Aug/31/2017 2:08 PM

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Table 1
Analytical Data for Baseline (July 2014), First Year (August 2018), and Second Year (2020) Biota Monitoring
Bloody Brook
Onondaga County, New York

Sample Location	Sample Location	2014 Cadmium (mg/kg-ww)	2018 Cadmium (mg/kg-ww)	2020 Cadmium (mg/kg-ww)
Upper Channel - between Ontario Place and Cranberry Drive	CR-1-01	3.1	0.53	1.2
	CR-1-02	3.6	0.56	2.3
	CR-1-03	3.2	1.3	0.84
	CR-1-04	2.5	0.76	
	CR-1-05	4.4		
	Average	3.4	0.79	1.4
Middle Channel - downstream from Floradale Road	CR-2-01	4.3	Not sampled	0.47
	CR-2-02	3.5	Not sampled	0.37
	CR-2-03	5.2	Not sampled	0.82
	CR-2-04	3.6	Not sampled	0.36
	CR-2-05	3.5	Not sampled	
	Average	4.0	No samples	0.51
Lower Channel-upstream from Onondaga Lake Parkway	CR-3-01	0.97	0.059 J	0.085 J
	CR-3-02	0.76	0.13	0.088
	CR-3-03	1.3	0.12	0.069 J
	CR-3-04	1.5	0.22	0.043 J
	CR-3-05	0.33	0.18	0.067
	Average	0.97	0.14	0.070

Notes:

1.Biota samples were whole body crayfish.

2. Results are reported in wet weight.

3. No crayfish were located in the "middle" sample from 2018.

4. J - estimated value; detected above the method detection limit but below the reporting limit.