GM Sustainable Workplaces
VEC East, 5th Floor
30400 Van Dyke
Warren, MI 48093

April 12, 2021

Peter Ramanauskas
U.S. EPA Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604-3590

Dear Mr. Ramanauskas:

Re: RCRA Corrective Action Administrative Order on Consent (AOC)
Progress Report 80, First Quarter 2021
GM Casting Operations Bedford Facility, ID 006036099, Docket No. RCRA 05 2017 0011
Bedford, Indiana

This Progress Report is submitted by General Motors LLC (GM) in accordance with the GM Bedford Casting Operations (BCO) Facility Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent (AOC – United States Environmental Protection Agency [U.S. EPA] Docket No. RCRA 05-2014-0011), executed on August 4, 2014. This report covers the period of the first calendar quarter of 2021 for the RCRA Corrective Action (CA) Project at the GM BCO – Bedford Facility (Facility) and select surrounding properties (Site), Bedford, Indiana.

The next RCRA progress report covering the second quarter of 2021 will be submitted on or before July 15, 2021.

1. List of Completed Activities

The following activities took place, and the following documents were prepared and distributed during this quarter:

1. The Groundwater Treatment Plant (GWTP) collected and treated water from the Pilot Trench, Vault sumps, and wet wells during the first quarter of 2021. An estimated 0.13 pounds of PCBs were removed during the quarter through collection and treatment of the groundwater. A summary of the volumes and sample results used for this calculation is provided in Table 1. Operational and compliance samples were collected monthly. Monthly discharge monitoring reports have been submitted to the State of Indiana in conformance with the National Pollutant Discharge Elimination System (NPDES) Permit Number IN0064424. A total of 12,233,762 gallons of treated groundwater were discharged.
2. Absorbent socks were removed and replaced from CH-5A and MW-X209Y053 in January, February, and March 2021. A cage and sock were installed in CAMW-3 on February 24,2021 and sock replacement activities began in March 2021. Table 2 summarizes oil removal (based on disposal weights) from the AOI-8 area.
3. During the February 2021 inspection of the solar sipper system, field staff noted that the system was not operating. Troubleshooting found the solenoid valve has been damaged due to the cold weather. The solenoid is planned for replacement on April 7, 2021.

4. Progress Report 79 covering the fourth quarter of 2021 was submitted to U.S. EPA on January 15, 2021. A revised report was submitted on February 10, 2021 in response to U.S. EPA questions regarding PCB mass removal calculations.
5. Reponses to U.S. EPA comments on the RFI Addendum were submitted to U.S. EPA on January 19, 2021.
6. U.S. EPA provided comments on the Proposed Adaptive Management Approach for the Corrective Measures Proposal on January 8, 2021.
7. Responses to U.S. EPA comments on the CA750 Report for the First Half of 2020 were submitted to U.S. EPA on January 21, 2021.
8. Recorded Environmental Restrictive Covenant for Parcel 400 was submitted to IDEM on January 22, 2021.
9. Memo summarizing the MGT area liner installation summary was provided to U.S. EPA on January 26, 2021.
10. The revised 2021 Financial Assurance cost estimate was submitted to U.S. EPA on February 12, 2021.
11. RFI Addendum #1 (final) was submitted to U.S. EPA on February 19, 2021.
12. CA750 Report for the Second Half of 2020 was submitted to U.S. EPA on March 5, 2021.
13. The memo summarizing the November 2020 cleanout inspection was submitted on March 9, 2021. U.S. EPA provided comments on March 10, 2021.
14. GM provided financial assurance demonstration as required by the RCRA AOC by letter submitted on March 31, 2021.
15. EI CA750 first quarter groundwater static measurements event was conducted in February 2021.
16. The dye trace study to monitor the Pilot Trench continues. Nearfield weekly monitoring began in December 2020 and continued throughout the first quarter of 2021.
17. A virtual meeting was held on March 2, 2021 to discuss the dye trace study.
18. On-site tailgate meetings for the reporting period were held daily, during field activities, to discuss safety and project scope.

2. Summaries of Problems and Planned Resolutions

GM identified a 3-inch galvanized pipe in the GUS sump that could be used as a groundwater extraction point. In November 2020, GHD used a slim pump inserted into the 3-inch pump to remove water. A limited amount of clear water was removed. GHD hypothesizes that over time, sediment has built up in the bottom of the sump, effectively creating a seal at the base of the 3-inch pipe. GHD is working with a drilling company to inject air into the pipe to mobilize the sediment, thus allowing removal. If successful, further pump testing within the 3-inch pipe can be conducted. The driller's first available window for field work is May 2021.

3. Projected Work for the Next Reporting Period

Work anticipated for the next reporting period includes:

1. Continue OMM for the GWTP

2. Continue GWTP discharge reporting under the NPDES permit
3. Collect monthly transducer data from the pilot trench monitoring location.
4. Continue dye tracing study as part of Pilot Trench Performance Monitoring Plan
5. Submit the quarterly progress report
6. Submit the Clarifier NAPL Recovery Assessment plan
7. Submit the Focused Corrective Measures Study report for the final trench alignment
8. Submit the Corrective Measures Proposal
9. Submit responses to U.S. EPA comments on the Spring 018 Interim Measure Completion memo
10. Submit the Parcel 400 and 430/431 Construction Completion reports
11. Submit responses to U.S. EPA comments on the Adaptive Management Approach for the Corrective Measures Proposal
12. Submit the 2020 Annual Vault Report
13. Implement the Clarifier NAPL Recovery Assessment plan
14. Provide bond for financial assurance
15. Repair the leak in the catch basin within Detention Basin 3
16. Submit responses to comments on the cleanout memo
17. Mow the East Plant Area cover system
18. Conduct the semi-annual cover system inspection
19. Attempt to re-develop GUS sump in order to initiate water collection
20. Conduct the first half 2021 EI CA750 monitoring
21. Provide U.S. EPA and IDEM project updates via emails and/or telephone calls
22. Conduct first half of Annual Project Meeting

Please feel free to call me at 313-506-9465 if you have any questions concerning this information or otherwise regarding the Bedford GM LLC Project.

Sincerely,

Ed Peterson
Project Manager, Eco-Restorers
GM Sustainable Workplaces

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Encl.

cc: Daniel Haag; U.S. EPA
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Table 1

GWTP PCB Mass Removal Estimate
GM Bedford BCO Facility
Bedford, Indiana

	Groundwater Treatment Plant (GWTP) Treated Volume (gallon)	PCB Influent Concentration [1,3] (µg/L)	Mass PCB Treated [2] (pound)
January 2019	5,467,881	0.71	0.032
February 2019	5,393,116	ND	0.000
March 2019	4,916,870	0.92	0.038
April 2019	5,547,708	1.5	0.069
May 2019	3,670,000	1.3	0.040
June 2019	5,542,417	1.2	0.056
July 2019	1,743,512	1.6	0.023
August 2019	930,385	1.1	0.009
September 2019	753,569	1.6	0.010
October 2019	977,015	1.5	0.012
November 2019	2,104,042	2.2	0.039
December 2019	3,099,964	1.4	0.036
January 2020	4,690,161	0.68	0.027
February 2020	3,642,899	1.1	0.033
March 202	4,853,095	0.96	0.039
April 202	2,681,548	1.4	0.031
May 2020	3,767,813	1.2	0.038
June 2020	2,295,164	0.96	0.018
July 2020	1,465,351	1.6	0.020
August 2020	2,109,119	0.89	0.016
September 2020	822,061	1.5	0.010
October 2020	1,663,537	1.24	0.017
November 2020	2,798,824	1.1	0.026
December 2020	2,045,106	1.1	0.019
January 2021	3,375,573	1.3	0.037
February 2021	4,192,610	1.2	0.042
March 2021	4,665,579	1.25	0.049
Total Estimated Volume of Water Treated, First Quarter 2021 (gallons)			12,233,762
Total Estimated Mass of PCB Treated, First Quarter 2021 (pounds)			0.13
Total Estimated Mass of PCB Treated, Since January 2019 (pounds)			0.78

Notes:

1 PCB concentration based on an average of parent and duplicate sample, if duplicate sample was collected. Quarterly influent sampling began in February 2021. March 2021 PCB concentration is average of January and February 2021 data.

2 Mass removed = $\frac{treated\ volume\ (gallons) x\ PCB\ concentration(\frac{ug}{L})\ x\ 3.7854}{453.59 \text{ x } 1{,}000{,}000}$

Table 2

AOI-8 Oil Removal
GM Bedford BCO Facility
Bedford, Indiana

Date	Well	Oil Mass (lbs)	PCB Content (mass %)	PCB Mass (lbs) [1]
10/31/2018	CH-5	2.16	11%	0.24
11/5/2018	CH-5	2.28	11%	0.25
11/23/2018	CH-5	2.09	11%	0.23
12/4/2018	CH-5	2.81	11%	0.31
1/9/2019	CH-5	2.22	11%	0.24
1/23/2019	CH-5	2.16	11%	0.24
2/11/2019	CH-5	2.3	11%	0.25
2/26/2019	CH-5	2.33	11%	0.25
3/7/2019	CH-5	2.18	11%	0.24
3/18/2019	CH-5	2.29	11%	0.25
4/1/2019	CH-5	2.39	11%	0.26
7/15/2019	CH-5	2.85	11%	0.31
7/31/2019	CH-5	1.88	11%	0.21
8/22/2019	CH-5	1.1	11%	0.12
11/20/2019	CH-5	1.2	11%	0.13
12/17/2019	CH-5	2.5	11%	0.27
1/20/2020	CH-5	3	11%	0.33
2/13/2020	CH-5	2	11%	0.22
4/24/2020	CH-5	1.5	11%	0.16
7/16/2020	CH-5	1.25	11%	0.14
8/12/2020	CH-5	2.75	11%	0.30
9/24/2020	CH-5	2	11%	0.22
11/19/2020	CH-5	2	11%	0.22
12/21/2020	CH-5	3	11%	0.33
1/25/2021	CH-5	1.65	11%	0.18
2/24/2021	CH-5	2	11%	0.22
3/16/2021	CH-5	2	11%	0.22
Total PCB Removed from CH-5 (LNAPL) [3]				**6.31**
3/25/2019	MW-X209Y053	24.21	40%	9.68
7/15/2019	MW-X209Y053	2.45	40%	0.98
7/31/2019	MW-X209Y053	1.98	40%	0.79
8/22/2019	MW-X209Y053	1.1	40%	0.44
1/20/2020	MW-X209Y053	2.1	40%	0.84
2/13/2020	MW-X209Y053	1	40%	0.40
4/24/2020	MW-X209Y053	1	40%	0.40
7/16/2020	MW-X209Y053	1.0	40%	0.40
9/24/2020	MW-X209Y053	1.6	40%	0.62
11/19/2020	MW-X209Y053	1.0	40%	0.40
12/21/2020	MW-X209Y053	2.8	40%	1.10
1/25/2021	MW-X209Y053	0.8	40%	0.32
2/24/2021	MW-X209Y053	1.5	40%	0.60
3/16/2021	MW-X209Y053	1.0	40%	0.40

Table 2

AOI-8 Oil Removal
GM Bedford BCO Facility
Bedford, Indiana

Date	Well	Oil Mass (lbs)	PCB Content (mass %)	PCB Mass (lbs) [1]
Total PCB Removed from MW-X209Y053 (DNAPL) [2,4]				**17.38**
3/28/2019	CH-2A (solar sipper)	74.05	58%	42.95
2/11/2021	CH-2A (solar sipper)	159.72	58%	92.64
Total PCB Removed from CH-2A (DNAPL) [2,5]				**135.59**
3/16/2021	CAMW-3	1	31%	0.31
Total PCB Removed from CAMW-3 (DNAPL) [6,7]				**0.31**

Notes:

[1] PCB weight based on average of analytical data

Location	Sample Date	PCB (mg/kg)	Average (mg/kg)
CH-5	9/19/2005	224,500	109,067
	8/16/2011	89,700	
	4/9/2014	13,000	
MW-X209Y053	9/19/2006	400,000	400,000
CH-2A	11/5/2008	380,000	580,000
	4/9/2014	780,000	
CAMW-2	11/21/2019	310,000	310,000

[2] PCB weight from solar sipper and the initial removal from MW-X209Y053 (3/25/2019) is based on an approximate gallons of oil removal. DNAPL density of 1.16 g/cc used when converting volume (gallons) to mass (pounds). Density value determined by laboratory analysis from the 4/19/2014 CH-2A sampling event.

[3] CH-5 Mass (lbs)= $\frac{Sock\ net\ weight\ (lbs) x\ 109{,}067 (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

[4] MW-X209Y053 Mass(lbs) = $\frac{Sock\ net\ weight\ (lbs) x\ 400{,}000\ (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

3/25/2019 mass removal calculated based on removal of 2.5 gallons of NAPL

[5] CH-2A Mass (lbs) = $\frac{Liquid\ weight\ (lbs) x\ 580{,}000\ (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

[6] CAMW-3 Mass (lbs)= $\frac{Sock\ net\ weight\ (lbs) x\ 310{,}000 (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

[7] PCB concentration at CAMW-2 used for removal calculations as no data is available for CAMW-3 and the two locations are in close proximity.