



August 18, 2023

Christopher J. Clark  
Pharmacia, LLC  
235 East 42<sup>nd</sup> Street, 219/5/1  
New York, NY 10017

Subject: Review of Remedial Action Options and Design Report  
Milwaukee Die Casting Company, Inc. FMR  
4132 N. Holton Street, Milwaukee, Wisconsin  
BRRTS #02-41-000023, FID #241228240

Dear Mr. Clark,

On July 6, 2023, the Wisconsin Department of Natural Resources (DNR) received the *Remedial Action Options and Design Report* (Report), dated June 30, 2023 for the property located at 4132 N. Holton St., Milwaukee, WI (Property). The Report was prepared on the behalf Pharmacia, LLC by Geosyntec Consultants (Geosyntec) and submitted with a fee and request for DNR review and written response.

#### Report Summary

The Report provides information based on eight quarters of groundwater sampling for chlorinated volatile organic compounds (CVOCs) and natural attenuation parameters conducted from September 2020 to July 2022. The groundwater sampling was conducted to evaluate groundwater conditions primarily affected by CVOC contaminated saturated soil in the area of monitoring well MW-1 and to determine if natural attenuation is effectively reducing CVOC concentrations and mass at the Property. The quarterly groundwater sampling has not demonstrated that natural attenuation is an effective remedy to bring groundwater into compliance with Wisconsin Administrative Code (Wis. Admin. Code) ch. NR 140 groundwater quality standards within a reasonable period of time.

Remedial design investigation work was conducted to further evaluate groundwater conditions and based on the investigation results, enhanced in-situ bioaugmentation (EISB) was identified as an effective remedial option for groundwater remediation. The EISB will consist of injecting a carbon source and a dechlorinating microbial culture to stimulate biodegradation of CVOCs in groundwater and reduce the period of time needed to meet the requirements of Wis. Admin. Code § 726.05(6)(b).

#### Post-Injection Performance Monitoring Plan

Post-injection performance monitoring will be conducted for one year to determine the effectiveness of the EISB by evaluating groundwater geochemical data, carbon source consumption, and CVOC decay rates and mass reduction. Post-injection monitoring will be conducted at a sampling frequency of 3-months, 6-months and 12-months. The plan includes the following:

- Abandoning monitoring well MW-1 prior to conducting the post-injection performance monitoring and installing replacement monitoring well MW-1R and performance monitoring wells PMW-1 and PMW-2.
- Sampling 7 monitoring wells (MW-1R, PMW-1, PMW-2, MW-6, MW-7, MW-13 and MW-14) during the 3-months, 6-months, and 12-months sampling events.

- Sampling 10 additional monitoring wells (MW-2, MW-4, MW-5, MW-8, MW-9, PZ-1, PZ-1A, PZ-2, PZ-6 and PZ-10) during the 12-month sampling event.

The proposed sampling frequency and the exclusion of piezometer sampling for the 3-month and 6-month sampling events is based on Geosyntec's experience with similar injection work conducted at other properties, the moderate soil permeability of the targeted injection zone, and the low soil permeability of the dense silt underlying the targeted injection zone.

#### Reporting

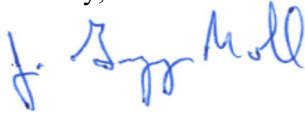
The EISB work will be documented in a Wis. Admin. Code § NR 724.15 construction documentation report within 60 days after the work is completed. Performance monitoring will be documented in Wis. Admin. Code § NR 724.13(3) compliant semi-annual progress reports after the 6-month and 12-month sampling events. The reports will provide recommendations and plans for continued groundwater monitoring or additional remedial action based on an evaluation of the performance monitoring data.

#### Next Steps

The DNR agrees with the plan to conduct the EISB, the post-injection performance plan, and the reporting frequency. Prior to conducting the EISB work, an Infiltration/Injection Temporary Exemption Request must be submitted to the DNR for review and approval. A WPDES permit must also be approved by the DNR prior to conducting the EISB work.

The DNR appreciates the efforts you are taking to address the contamination at this site. If you have any questions about this letter, please contact me at (262) 202-3921, or [john.moll@wisconsin.gov](mailto:john.moll@wisconsin.gov).

Sincerely,



J. Gregory Moll, PG  
Hydrogeologist  
Remediation and Redevelopment Program

cc: Greg Johnson, Geosyntec Consultants, [GJohnson@Geosyntec.com](mailto:GJohnson@Geosyntec.com)  
Mary Jo Anzia, BSI Group, [MaryJo.Anzia@bsigroup.com](mailto:MaryJo.Anzia@bsigroup.com)