



110 South Downey Avenue, Indianapolis, Indiana 46219-6406
Telephone 317-630-9060, Facsimile 317-630-9065
www.MundellAssociates.com

May 9, 2022

Don't Leave it to Beaver
Attn: Jennifer Kereny
Noblesville, Indiana

Re: **Initial Review of INTERA Report**
Hydrogeologic Assessment of Proposed Sand and Gravel Pit
North Allisonville Road
Noblesville, Indiana, 46060
MUNDELL Project No. M22009

Dear Ms. Kereny:

MUNDELL & ASSOCIATES, INC. (MUNDELL) is pleased to submit this letter to Don't Leave It To Beaver (DLITB) regarding our initial assessment of the INTERA report entitled *Hydrogeologic Assessment of Proposed Sand and Gravel Pit – Hamilton County, Indiana* prepared for Beaver Materials. This report provides a hydrologic assessment of a proposed aggregate mining pit located near the Potter's Bridge Park along Allisonville Road in Noblesville, Indiana. It is our understanding that because of this proposed mine and future development that there is a concern regarding the potential impact this activity could have on the surrounding community and the drinking water supply. The following paragraphs provide some comments regarding these concerns.

INTERA REPORT CONCLUSIONS

Utilization of groundwater in Hamilton County for municipal water supply has increased substantially over the last decade. As such, the increased reliance on groundwater supply should be accompanied by increased efforts to minimize the potential for contamination of that resource, as this reduces the potential need for additional water treatment and ultimately, cost to the consumer.

The INTERA Report reaches the following conclusions:

- 1) The groundwater from beneath the mine parcel could be induced to move into nearby drinking water supply production wells.
- 2) A conservative estimate of the time-of-travel for groundwater to flow from the mine Site to nearby drinking water supply production wells is between 1 to 3 years.
- 3) The risk that the proposed mining activities will affect the groundwater status of nearby drinking water supply production wells is extremely low.

- 4) Any potential contamination originating in the proposed mine excavation and captured by a nearby drinking water supply production well would be highly diluted.
- 5) An effective monitoring program at the Site could mitigate risk that a drinking water supply production well could be contaminated as a result of the proposed mine excavation.

The INTERA report provides data and a hydrologic modeling that illustrate that the aquifer is highly communicative over almost a half a mile distance, with pumping in the White River North drinking water wellfield influencing the water table at the proposed mining pit site. Modeling performed by INTERA indicates that some water from the proposed mining location could be pulled into the nearby White River North wellfield and the still under-development Church wellfield. Nearby widely-spaced geologic data also indicate the presence of a near surface clay layer that could provide some degree of protection for the underlying aquifer should some chemical release occur during the mining operations. Removing that clay opens a clear pathway into the shallower section of the aquifer, raising the concern for potential contamination to migrate into the lower parts of the aquifer.

The INTERA report indicates that the utilization of a monitoring well network to act as an early warning system for potential contamination migrating from the mining pit toward the wellfields. While such a system is an important tool to use to enable action once contamination occurs, it is not preventive of contamination itself. In addition, details of the kind of monitoring program (e.g., the number, location and depth of the wells; the frequency of testing, and the list of chemicals that will be tested for, etc.) will need to be provided to determine whether it would be effective in providing relevant and timely information to prevent impacts to the nearby wellfields. With the potential groundwater time-of-travel estimated to be as low as one year between the mine excavation and the nearest drinking water supply well, there is little margin for error and reaction time should contamination be introduced during mining operations or as a result of future development.

The INTERA report states that the only functions that would occur onsite at the proposed pit include dredging and loading into dump trucks. No sorting, washing, or maintenance of equipment will be performed. It seems unlikely, however, that a piece of equipment as large and difficult to transport as a dredge will be moved offsite every time refueling, fluid changes, maintenance or repairs are required. While the INTERA report notes that risks from heavy machinery can be mitigated using 'engineering controls and best practices', no further information is provided of what would be implemented to prevent spills from ongoing operations. As such, an accurate assessment of potential risk cannot be completed without knowing the details of engineering controls and operational best practices that Beaver Materials intends to use.

Post excavation, the area is proposed to be developed into a combination lake with residential and recreational uses. This development will likely require a detailed

engineering plan complete with final topographic contour lines, utility and stormwater corridor excavations, grading and filling plans, and recontouring of the lake to assure that the slope of the lake is stable and suitable for residential homes. All of these details, including the methods of construction, the handling of soils and waste materials generated during construction, the bringing in of off-site fill to establish final grades beneath the homes, and the fueling of construction vehicles, could impact the water quality within the lake as well as the potential for the introduction of contaminated fill materials at the site. In fact, contaminated fill materials are a significant risk issue which MUNDELL has encountered in several Marion County wellfields, and the INTERA report does not include a risk assessment of fill materials that may be brought onto the site post-excavation.

While all of these represent risks that can be mitigated using engineering controls and operational practices, no information or detailed information regarding these activities has been provided or evaluated at the current time.

Based on our initial review, the major points of concern are the following:

- 1) The removal of the protective surface clay layer over the shallow aquifer;
- 2) The mining pit located well within at least the Five-Year Time-of-Travel zone and possibly the One-Year Time-of-Travel zone for nearby wellfields;
- 3) No details have been provided on the engineering controls or operational practices during mining, including the "mine plan";
- 4) No details have been provided of the proposed monitoring program that would mitigate concerns for a future chemical release during the operation of the mine;
- 5) No assessment of risks posed by future site development and site grading and filling operations has been provided related to the potential for contaminated fill materials; and
- 6) No details on engineering controls or operational practices during post-mining construction have been provided.

In conclusion, while MUNDELL does not currently take issue with the general hydrogeologic assessment and groundwater modeling elements of the INTERA report, we believe that the potential risk posed to the drinking water aquifer and nearby wellfields has not been fully assessed and, as a result, may not be fully known at the present time. Details of engineering controls and operational practices for both active excavation and post-excavation activities, including filling, should be provided to allow for a full risk assessment to be performed.

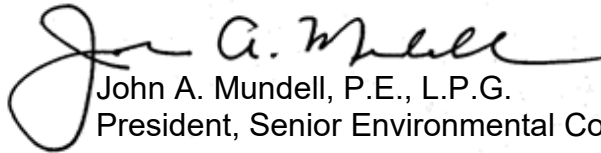
We appreciate the opportunity to provide this letter for your consideration. If you should have any questions regarding this letter, please do not hesitate to contact either of the undersigned via telephone (317-630-9060), or email (rwalker@MundellAssociates.com; jmundell@MundellAssociates.com).

Sincerely,

MUNDELL & ASSOCIATES, INC.



Rachel Walker, PhD, L.P.G.
Principal Geologist



John A. Mundell, P.E., L.P.G.
President, Senior Environmental Consultant