SIERRA CLUB
IOWA CHAPTER

July 7, 2026

Chad Fields
Iowa Department of Natural Resources
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Re: water withdrawal permit for Pattison Sand Company
Log No. 33,483

Dear Chad:

Sierra Club Iowa Chapter submits the following comments in response to the draft permit for Pattison Sand Company.

INTRODUCTION

The Iowa Chapter of the Sierra Club has over 6,500 members across Iowa and is part of a national organization with over 700,000 members. Our mission is to preserve and protect Iowa's environment. One of the Sierra Club's priority issues is the protection of Iowa's water resources. As such, we have been active in following the application by Pattison Sand Company to increase the amount of water use requested by Pattison. The Sierra Club has also expressed concerns about how the DNR issues permits for water withdrawal. Those concerns are illustrated in stark relief with respect to the Pattison permit.

BACKGROUND

Pattison Sand Company is a quarry operation in Clayton County that mines silica sand. Pattison currently has a water withdrawal permit that authorizes a maximum withdrawal of 976.8 million gallons per year from several sources, primarily the Jordan Aquifer. The water is used for various aspects of the mining operation.

Pattison now wants to increase its permit limit to 3.743 billion gallons per year, almost 4 times the current limit. Pattison claims the increased amount of water withdrawn will be used in its mining operation. But it is not clear why such an increase is justified simply to be used in the mining operation. And apparently, the DNR has not questioned that. In fact, in March of 2025 the DNR was ready to issue a permit for the 3.743 billion gallons per year as Pattison requested.

However, after much public comment and concerns raised about the amount of water that would be permitted and the lack of knowledge regarding the status of the water resources, the DNR decided to hold the permit in abeyance and requested that the Iowa Geologic Survey ("IGS") conduct an investigation of the hydrogeology that would be impacted by Pattison water withdrawals. The IGS did conduct a study and issued a report on February 3, 2026. The implications of the IGS report are discussed in subsequent sections of these comments.

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Now, after receiving public comment and the IGS study, the DNR has proposed a different permit with a reduced limit of 2.27 billion gallons per year with a withdrawal only from the Jordan Aquifer. Further, the permit relies on monitoring wells, rather than hard data, to allegedly ensure that the permit parameters are appropriate. But many questions still remain that must be addressed before any permit is finalized.

BENEFICIAL USE IS NOT DEMONSTRATED

Iowa Code defines beneficial use as "the application of water to a useful purpose that inures to the benefit of the water user and subject to the user's dominion and control but does not include the waste or pollution of water." IOWA CODE § 455B.261(7). Iowa Code § 455B.262 further states:

> . . . water resources of the state be put to beneficial use which includes ensuring that the waste or unreasonable use . . . be prevented, and that conservation and protection of water resources be required with the view to their reasonable and *beneficial use in the interest of the people*, and . . . the promotion and expansion of the *beneficial use* of water resources be invested to the end that the *best interest and welfare of the people* are served.

(emphasis added). Iowa Code § 455B.267 explicitly states that an activity does not constitute beneficial use if it "impair[s] the long-term availability of water from a surface or groundwater source" or "adversely affect[s] the public health or welfare." From the statute's language alone, beneficial use implies that there must be a direct correlation to benefit the public at large.

This public benefit inquiry can be seen in DNR's own administrative decisions. In *In re Arlene & Thomas Griffin & Twenty-Nine*, appellants appealed DNR's decision to issue a water withdrawal permit to Clay County Water Rural District. 1991 WL 11670022 *1 (Mar. 21, 1991). DNR concluded that the water withdrawal was for beneficial use because the district was seeking a permit to provide water to "4,343 persons in its service area and may serve more persons in the future." *Id.* at *13. *See also, In re City of Stuart, IA*, 1985 WL 21039 *2 (June 19, 1985) (finding beneficial use in the city's request to provide water to two nearby communities).

Pattison's withdrawal request fails to show that it is for beneficial use because there is no language that shows Pattison's withdrawal would directly benefit the public. Pattison is seeking to expend water at a rate of more than five times the amount used by all residents in Clayton County. How would one company's request to monopolize the County's water be beneficial to the public? Without any proper justification, Pattison's request is undermining the water usage of residents in Clayton County and directly harming the "interest of the people" under § 455B.262.

In line with Pattison, DNR also failed to articulate why Pattison's proposed pumping rate would be considered beneficial use. DNR justifies quarrying as beneficial use simply because quarry

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water use is defined under 567 I.A.C. § 50.2. However, DNR has a responsibility to articulate "a reasonable and rational" basis for deciding whether an activity constitutes beneficial use under § 455B.262. Water Permit No. 1017-R1, Supreme Beef, LLC, 23DNRWQ0001 25 (Nov. 12, 2024). Pointing towards a definition does not show how Pattison's increased water usage would benefit the public under § 455B.262, or whether Pattison's request would adversely affect public health or welfare under § 455B.267.

This type of one-dimensional analysis was rejected in a recent case. The administrative judge flatly rejected DNR's argument that "water for livestock production" was a per se beneficial use simply because it was listed under § 455B.266(2). *Id.* Instead, determining beneficial use "means the DNR must consider the 'effect of the use upon the owners of any land which might be affected' and 'the interest of the people' and the 'best interests and welfare of the people." *Id.* at 25. DNR has failed to do its necessary analysis under the requirements of § 455B.262. And even if DNR provided sufficient explanation, quarrying still cannot be considered beneficial use. DNR can point to no statutory or regulatory authority establishing that quarries are considered beneficial use.

NO JUSTIFICATION FOR REVISED PERMIT LIMIT

Allegedly based on public comments and the IGS study, the DNR now proposes to issue a revised permit. One of the revisions in the permit is a reduction in the maximum withdrawal allowed. The limit of 3.743 billion gallons per year has now been reduced to 2.27 billion gallons per year. But the DNR has presented absolutely no justification or basis for that new limit. Pattison also failed to provide sufficient justification under 567 I.A.C. § 50(1)(b).

The 2.27 billion gallons per year just seems to be an arbitrary number at this point. If the DNR cannot justify the limit, a permit should not be issued.

In addition, neither Pattison nor the DNR, pursuant to 567 I.A.C. § 50(1)(b), have explained or justified why such a significant increase in water use, either at the 3.743 billion gallons per year or the 2.27 billion gallons per year, is necessary for Pattison's operation. § 50(1)(b) states that "[a] request to modify an existing water use permit . . . must include an explanation of the necessity for the modification." Because the increased water withdrawal will allegedly be used for Pattison's mining operation, it is imperative that Pattison justify why such an increase over its prior use for the mining operation is necessary.

LACK OF DATA ON RECHARGE BOUNDARY AT THE MISSISSIPPI RIVER

The most important information gap in the IGS data is the lack of direct hydrogeologic evidence of a recharge boundary at the Mississippi River. From the results of the modeled scenarios, the presence or absence of the recharge boundary condition clearly determines the magnitude of drawdown from the requested pumping rates. To address this limitation in the evaluation, the

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IGS suggested four additional investigation activities could be conducted to confirm the presence or absence of the recharge boundary:

• Conduct a larger, longer and more focused pumping test. This test would require a higher pumping rate than was used in the 9/29/25 pumping test, pumping for a longer interval, and more control of the pumping sources on the site. This option would result in disruption of quarry activities for an undetermined amount of time, likely longer than a month.

• Create a detailed hydrogeologic model. The scenarios modeled for this report used a simple model that did not consider hydrogeologic variability between the St Peter Fm, Prairie du Chien Gp, and Jordan Fm nor how these units may differ further away from the permit site. A detailed model may provide more accurate results but would require several more geographically distributed pumping tests, new monitoring wells, and additional data collection.

• Conduct a geochemical study of water sources. Water quality can be used to confirm the presence of a recharge boundary if the water chemistry between the C-O aquifer and Mississippi River is sufficiently different. For this approach, samples should be collected from the Mississippi River, C-O wells west of the permit site, a C-O well between the main pumping areas on site and Mississippi River, and one of the main pumping sources on site. Water chemistry will be different depending on whether water originates from the Mississippi River or the C-O aquifer. Potential parameters to test include nitrate, chloride, and sulfate, however other parameters could also be useful. This approach could supplement the findings of an extended pumping test. However, the successful application of a water quality source tracking approach to assess the recharge boundary is unknown. The most important consideration is whether or not the water sources are sufficiently different to assess relative contributions, or if the blending of water sources in the area is detectable against normal background variations.

• If the recharge boundary were to be left unknown, sentinel monitoring wells could be installed west of the site to closely monitor groundwater levels as pumping rates increase. Due to the difference between drawdown with and without a recharge boundary, the response of water levels in monitoring wells should clearly show whether the boundary is present. If the recharge boundary is absent, drawdown in excess of several feet would be anticipated within a mile of the permit site within a couple months of pumping at the requested amount. Drawdown amounts at selected locations are shown in Table 7. If using monitoring wells, it will be important to install them prior to pumping rates increasing substantially at the permit site so background trends in water levels can be noted and any responses from pumping can be observed. Groundwater levels should be measured at least once a month until there is enough data to understand ambient

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> fluctuations in water levels and the presence/absence of a recharge boundary has been determined.[1]

In response to these suggestions, DNR decided to install sentinel monitoring wells to experiment whether a recharge boundary exists or not. But DNR is explicitly rejecting IGS's three other recommendations to conduct more research on the boundaries and opting instead to install a sentinel monitoring well in hopes that there might be a recharge boundary. This is even more critical given that IGS has made it clear that their models are based on one pumping test done on September 29, 2025.

The permit in this case should be based on the best data, not blindly issuing a permit and hoping that subsequent information justifies the permit.

INAPPROPRIATE ASSESSMENT OF ENVIRONMENTAL AND ECOLOGICAL IMPACT

DNR concluded that the environmental and ecological impacts on wildlife near Buck Creek are minimal based on the IGS study. However, the purpose of the IGS study was not to make any assessment on the habitats of endangered species. It was to

> [i]nvestigate the properties of relevant hydrogeological units in the study area, including the hydrological connection between the units, their distribution, and regional hydraulic gradients; [d]etermine how proposed pumping rates at the permit site may impact surface water and groundwater levels; [u]se existing GeoSam and Iowa Water Information System (IWIS) datasets to inventory wells and analyze how they may be impacted by pumping at the permit site; [i]nvestigate potential impacts to water quality under the proposed pumping rates.

In other words, the purpose of the IGS was specifically geared towards understanding the hydrological impact of Pattison's proposed water withdrawal.

However, DNR solely relies on the IGS study to make assumptions about the impact on Iowa Pleistocene Snails and two SGCN Esox species. There is not a single sentence or word in the IGS study that mentions or even implies the impact of the proposed pumping rate on endangered species. Determining the ecological impacts on species cannot be supported by a hydrological study alone.[2] Instead, DNR should collaborate with FWS to determine a more accurate picture on the impact of these endangered species.

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[1] IOWA GEOLOGICAL SURVEY, PATTISON SAND COMPANY HYDROGEOLOGIC INVESTIGATION 26–27 (2026).

[2] *See, e.g.,* Allison R. Aldous & Leslie B. Bach, *Hydro-ecology of Groundwater-Dependent Ecosystems: Applying Basic Science to Groundwater Management*, 59 HYDROLOGICAL SCIS, J. 530, 530 (2014); James E. Landmeyer, W. Scott McBridge & William B. Tate, *Determination of Recharge Areas that Supply Decades Old Groundwater to Creeks Inhabited by the Threatened Oskaloosa Darter*, 9

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FAILURE TO SEEK A PERMIT FROM U.S. FISH AND WILDLIFE SERVICE

The area of the Mississippi River from which DNR expects the Jordan Aquifer to be recharged from river water is the area of the Upper Mississippi River Wildlife Refuge. Pattison and DNR should seek a special permit from FWS for seeking economic use of the refuge waters in the Upper Mississippi River. As a national wildlife refuge area under FWS's protection, FWS requires a special permit for

> . . . public or private economic *use of the natural resources* of any wildlife refuge, in accordance with 16 U.S.C. 715s, where [FWS] determine that the use *contributes to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission*.

50 C.F.R. § 29.1 (2000) (emphasis added).

The DNR, based on the IGS study, has issued a permit to Pattison on the assumption that the Jordan aquifer is hydrologically connected to the Upper Mississippi River. Pattison is allowed to withdraw water only because the protected water within the Upper Mississippi will recharge approximately 2.27 billion gallons of water that will be withdrawn from the aquifer. Given the billions of gallons leaving the aquifer, there is bound to be an impact on the water quantity and quality of the Upper Mississippi River. Despite such consequences, Pattison and DNR failed to consult FWS about the modification.

In addition, not seeking a special permit from FWS goes against the purpose of the Upper Mississippi River Refuge. The Upper Mississippi River Wildlife Refuge purpose is to "support abundant and diverse native fish, wildlife, and plants for the enjoyment and thoughtful use of current and future generations."[3] To support this mission, the refuge acknowledges that "[h]ydrology and water quality play a vital role in maintaining the ecological integrity of the Refuge . . . . Water quantity and quality within the Upper Mississippi River Basin and the floodplain go to the very heart of the conservation conundrum of the Refuge."[4] DNR allowed permit modification only because they assumed that the Upper Mississippi River would replenish the Jordan aquifer. The 2.27 billion gallons of water being drawn from the Mississippi River will noticeably have an impact on the native fish, wildlife and plants near the Upper Mississippi River.

Compliance with laws and regulations designed to protect the Wildlife Refuge must be confirmed before a permit is issued.

HYDROLOGY, 1,1 (2022) (showing groundwater habitat studies in collaboration with FSW and Geological Survey).

[3] UPPER MISS. RIVER NAT'L. WILDLIFE & FISH REFUGE, COMPREHENSIVE PLAN APPROVAL 12 (2006).

[4] *Id.* at 34.

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CONCLUSION

Water is one of Iowa's most important resources. As explained above, withdrawal of water must be only for a beneficial use in the best interest and welfare of the people of Iowa. The DNR must evaluate every permit for water withdrawal to ensure that it is for a beneficial use.

It is important to emphasize in this case that the permit that Pattison seeks is not just a routine water withdrawal proposal. This would be one of the largest, of not the largest, water withdrawals in the state. Furthermore, the hydrogeology in this area of northeast Iowa makes Pattison's requested withdrawal especially perilous.

That is why, even though the DNR requested a study from the IGS, there are still concerns that must be addressed before a permit is issued to Pattison. The DNR's duty is to the people of Iowa and the environment, not to a single entity like Pattison Sand. The proposed permit should not be issued.

Very truly yours,

/s/ *Wallace L. Taylor*

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