**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

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| **SIERRA CLUB and PRAIRIE RIVERS NETWORK,** | ) | |
| **Petitioners,** | ) | **PCB No. 22 - 69** |
| | ) | **(Third Party NPDES Appeal)** |
| **v.** | ) | |
| **ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and WILLIAMSON ENERGY, LLC,** | ) | |
| **Respondents.** | ) | |

**NOTICE OF FILING**

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board RESPONDENT WILLIAMSON ENERGY, LLC'S REPLY IN SUPPORT OF ITS MOTION FOR SUMMARY JUDGMENT and CERTIFICATE OF SERVICE, copies of which are herewith served.

Jeffrey R. Baron (ARDC # 6277085)
Bailey & Glasser, LLP
34 N. Gore Avenue, Suite 102
Webster Groves, MO 63119
T: (314) 863-5446
F: (304) 342-1110
jbaron@baileyglasser.com

Dated: November 23, 2022

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**RESPONDENT WILLIAMSON ENERGY LLC'S REPLY IN SUPPORT OF ITS MOTION FOR SUMMARY JUDGMENT**

Petitioners point to federal recommendations, other state laws, articles on the effects of chlorides in lakes, and even a YouTube video in an attempt to cobble together an ad hoc standard to demonstrate the Agency erred in issuing the Permit. But what is missing from their Petition and legal briefs is the one thing they must establish to prevail in this matter: evidence demonstrating that the Permit, as issued, violates the Act or Board regulations. Petitioners cannot make this case for the simple reason that the record demonstrates the opposite.

The Permit is the culmination of seven years of extensive testing and analysis of the waters and aquatic life of the Big Muddy River and Pond Creek, as well as the effluent to be discharged into these waters. The final Permit goes above and beyond the one or two samples per month typically required in an NPDES permit and includes a fully developed chloride monitoring system that is designed to provide real-time monitoring to ensure continuous permit compliance by monitoring real-time upstream and downstream conditions of the Big Muddy River, as well as real-time monitoring of the effluent being discharged into the river. It also requires that Williamson construct a reverse osmosis treatment plant to treat all effluent before discharge into Pond Creek,

with the expected result that over twelve miles of Pond Creek are expected to improve to the point of de-listing.

Presumably for this reason, Petitioners ask that the Board go outside the bounds of the Act and Board regulations and create a patchwork of novel, unadopted standards and requirements. But a third-party permit challenge is not the forum to advocate for more stringent laws, rules, or regulations. To the contrary, the Act and Board regulations instruct the Agency to issue a permit if it is in conformance with the laws of this State. Thus, the Agency correctly issued the Permit because the record unequivocally demonstrates that it is in conformance with the laws of this State, warranting summary judgment in favor of Williamson on all claims set out in the Petition.

**A. Petitioners' proposed burden of proof is the exact opposite of what the Act and Board regulations require.**

Petitioners "alone bear the burden in their appeal before the Board to prove that the permit, as issued, violated either the Act and/or the Board's regulations." *Illinois Environmental Protection Agency v. Illinois Pollution Control Bd.,* 386 Ill. App. 3d 375, 382 (3d Dist. 2008), citing 415 ILCS 5/40(e)(3). Petitioners argue in their Response brief this burden of proof means something more than its plain language. (Petitioners' Resp. Br. at 6-7). They claim that their burden of proof must be viewed in light of what they claim is IEPA's initial burden "to write a permit that ensures protection of standards and compliance with federal law." (*Id.* at 7). According to them, this means their burden of proof on summary judgment is limited only to them having "to show IEPA has failed to make certain that all of the applicable water quality standards are met" and that "if the record does not show that IEPA ensured protection of the water quality standards or indicates that the agency violated the rules regarding issuance of the Permit in any respect," the Permit must be remanded. (*Id*.).

Petitioners' proposed burden of proof is defective for two distinct reasons. First, it requires that IEPA "make certain" that the Permit include water quality standards and requirements that have not been adopted by the Board such as federally recommended chloride standards and requirements that the mine pay for third-party monitoring. But as explained by the Fourth District, the permitting procedures under Illinois law are not subject to such ad hoc requirements. "Illinois has specific regulations setting forth the procedures [the IEPA] must follow in issuing an NPDES permit . . . [The IEPA] complied with these procedures. Prairie Rivers' arguments that [the IEPA] should have provided additional opportunities pursuant to [US EPA] guidelines and the [Clean Water Act] are not persuasive, because these federal procedures are inapplicable here." *Prairie Rivers Network v. Illinois Pollution Control Bd.*, 335 Ill. App. 3d 391, 401 (4th Dist. 2002).

Second, Petitioners' proposed burden of proof is defective because it attempts to shift the burden away from them and onto IEPA. This is the exact opposite of what is required under Illinois law. For while "it is well settled by the Board and Illinois courts that IEPA's decision to issue a permit must be supported by 'substantial evidence,' … this does not, however, shift the burden away from the petitioners (Environmental Groups), who alone bear the burden in their appeal before the Board to prove that the permit, as issued, violated either the Act and/or the Board's regulations." *Illinois Environmental Protection Agency v. Illinois Pollution Control Bd.*, 386 Ill. App. 3d 375, 382 (3d Dist. 2008); 415 ILCS 5/40(e)(3).

In sum, Petitioners alone have the burden to show the Permit, as issued, violates either the Act or Board regulations, not unadopted standards or procedures Petitioners would like to see enforced. Nor is IEPA required to carry the burden and prove it met such ad hoc standards. Thus, Petitioners' proposed burden of proof should be rejected as contrary to Illinois law.

**B. The Permit complies with 35 Ill. Adm. Code 309.141 and is not incomplete, unclear or unprotective**

***1. The Permit is not incomplete and did not escape review by the public and the Board.***

Petitioners complain that the Permit's requirement of continuous chloride monitoring based on conductivity will be too difficult to implement because conductivity in the Big Muddy is not constant and the formula for deriving chloride levels from conductivity is not complete. (Petitioners' Resp. Br. at 11-16). These arguments suggest a lack of understanding and mischaracterization of the Permit. First, the Permit anticipates that conductivity levels may vary over the life of the Permit and sets forth procedures to deal with that possibility. Second, Petitioners confuse the fact that the Permit provides procedures to calibrate the real-time monitoring system to ensure its accuracy over the life of the Permit with incompleteness. The Permit includes procedures to check the accuracy of the calibration curves used to correlate conductivity and chloride levels in real time with actual samples of the effluent and river. (R00027-R00028).

Based on these results, the Permit allows adjustments to the calibration curves, if necessary, to ensure real-time monitoring continues to match the actual conditions at the Outfall. Special Condition 15 provides a formula by which the calculated downstream chloride concentration can be determined at the edge of the mixing zone. (*Id.*). The formula requires four data points: (1) the effluent chloride concentration, (2) the effluent flow rate, (3) the upstream flow rate, and (4) the upstream chloride concentration. (*Id*.) Thus, the calibration curves implicitly require continued data collection. This is a feature of the continuous monitoring that allows the mine to adjust in real time, and not an indication that the Permit is "incomplete" as Petitioners suggest.

Furthermore, under the Permit Williamson will continue to do traditional, routine sampling. For example, the Permit requires that Williamson sample the effluent for dissolved iron,

sulfate, and chlorides three times per week while discharging. (*Id.*). Three actual laboratory samples *per week* is more than the two *per month* typically required on a Discharge Monitoring Report. The real-time monitoring and control mechanisms are additive to this supersized laboratory monitoring regime, not in lieu of it.

There is also no merit to Petitioners' argument that the public has been denied its right to public participation in the development of permit standards and effluent limitations because of the inclusion of chloride-conductivity calibration curves. (Petitioners' Resp. Br. at 15). In fact, the requirement to develop calibration curves was incorporated in the Permit and subject to public review and comment. Additionally, the chloride-conductivity calibration curves are subject to review and approval by the Agency prior to discharge and will be available to the public. Williamson will utilize a database that correlates the conductivity and chloride concentrations for the river and for treated effluent discharged. (R00193). This data will not only be provided to the Agency but will also be publicly available. (*Id.*). In addition, IEPA must approve the calibration curves before the discharge, after six months of operation, and yearly thereafter. (R00027). Williamson must also report the calculated chloride concentrations at the mixing zone and downstream on discharge monitoring reports ("DMRs"). (*Id.*). And it must make all underlying data available to the Agency during mine inspections and retain the data for at least three years in accordance with Standard Condition 10 of the Permit. (R00027-R00028, R00031). Clearly, the Agency met all applicable public participation requirements.

### *2. The Permit does not contain serious drafting problems*

Petitioners argue that the Permit contains drafting errors in Special Condition 15, resulting in a lack of effluent limitations for chloride, nickel, copper, and iron (dissolved). (Petitioners' Resp. Br. at 17). This argument demonstrates a further lack of understanding of the Permit. Special

Condition 15 of the Permit prohibits discharges not meeting the WQS unless sufficient flow exists in the receiving stream and contains extensive guidance to Williamson on how to operate its discharge in compliance with Part 302 numeric water quality standards for chloride, sulfate, nickel, copper and iron (dissolved). (R00027-R00028).

As addressed above, the Permit provides an equation to calculate chloride concentrations at the edge of the mixing zone and requires monitoring of all variables necessary to calculate such downstream concentrations. (R00027). It also includes procedures to check the accuracy of the calibration curves used to correlate conductivity and chloride levels in real time with actual samples of the effluent and river, and allows adjustments to the calibration curves, if necessary, to ensure real-time monitoring continues to match the actual conditions at the Outfall 011. (R00027-R00028). Studies conducted on the mixing zone calculations demonstrated that the instream dilution required for chloride discharges far exceeds the dilution required for sulfate, nickel, copper and iron (dissolved). (R05971-R05972). Thus, compliance with Permit's effluent limitation for chloride ensures compliance with the numeric water quality standards for sulfate, nickel, copper and iron (dissolved).

Nonetheless, Williamson is required to conduct regular monitoring and sampling of these constituents to ensure that water quality standards are being met. Special Condition 15 of the Permit requires that effluent concentrations of sulfate and iron (dissolved) be measured three times per week when Outfall 011 is discharging, and Special Condition 18 of the Permit requires that Outfall 011 effluent concentrations of copper and nickel be measured once per month for the first year and twice per year thereafter. (R00027-R00029). Additionally, Special Condition 16(b) of the Permit requires three samples of sulfate, nickel, copper, and iron (dissolved) be collected within 10 feet downstream of the edge of the mixing zone per week. (R00028). Thus, contrary to

Petitioner's argument, the Agency is not setting effluent limits "simply by telling the permittee not to violate water quality standards." (Petitioners' Resp. Br. at 18). Rather, the Permit articulates specific actions, practices and procedures that ensure compliance with the water quality standards.

The case law Petitioners rely on does not support their position. In *Natural Resources Defense Council v. U.S. E.P.A.*, 808 F.3d 556 (2d Cir. 2015), a case relied on by Petitioners, the court found that EPA could not require a permittee to meet applicable water quality standards "*without giving specific guidance on the discharge limits*[.]" *Id.* at 578 (emphasis added). The court held that this general permit condition requiring the permittee to comply with narrative water quality standards "is insufficient to give a [permittee] guidance as to what is expected or to allow any permitting authority to determine whether a [permittee] is violating water quality standards." *Id. Natural Resources Defense Council* is simply inapplicable to the facts at issue here. In this case, the Permit requires compliance with *numeric* water quality standards for chloride, sulfate, nickel, copper, and iron (dissolved), it provides extensive guidance to Williamson on how to operate its discharge in compliance with those standards, and it contains extensive monitoring and reporting requirements to allow the Agency to determine whether there are any violations.

Finally, Special Condition 15(b)(ii) does not, as Petitioners suggest, allow Williamson to eliminate chloride monitoring under the Permit. Special Condition 15(b)(ii) requires quarterly monitoring for discharge rate, sulfate, chloride and hardness at a location downstream from where complete mixing of the receiving stream has occurred. (R00041, R00028). The monitoring required under Special Condition 15(b)(ii) is not for compliance purposes, but to get sufficient data to calculate the sulfate water quality standard for the next permit cycle. (R00041). Williamson will continue to be required to monitor chloride discharges for compliance purposes.

### *3. The Act does not require third-party monitoring*

Petitioners continue to insist, without citing any applicable legal authority, that the Agency should require Williamson to pay for third-party monitoring, in addition to the already extensive monitoring requirements in the Permit, due to Williamson's past permit violations. (Petitioners' Resp. Br. at 20-21). However, there is no rule or regulation that requires such a burdensome and costly requirement. The Agency considered Williamson's past noncompliance by incorporating Special Condition 16(c)-(e) into the Permit, which operates as automatic cease-and-desist provisions when instream monitoring reveals exceedances of water quality standards. (R00052) (Agency's MSJ at 16-17, Agency's Resp. Br at 12). As noted by the Agency, both the national and Illinois National Pollutant Discharge Elimination System are fundamentally premised on self-monitoring and self-reporting. (Agency's Resp. Br at 12). Petitioners have offered no compelling reason why the Agency would be required to depart from this fundamental premise of the NPDES program.[1]

Additionally, the Permit requires that Williamson make certain monitoring data publicly available, including to Petitioners. Certainly, either IEPA or Petitioners would have those enforcement rights reserved to each of them, respectively, in the Act, should Williamson exceed the boundaries of the Permit. Thus, Petitioners have failed to show that there is any deficiency with the monitoring requirements in the Permit, and failed to cite any authority that requires the Agency to impose third-party monitoring requirements.

## C. Petitioners' claim that the Permit fails to protect the existing uses of the Big Muddy River and Pond Creek is contradicted by the Record

### *1. The Agency correctly applied the chloride standard set out in the Board's regulations.*

[1] Petitioners note that Williamson has had 78 violations from July 2005 through September 2021, but this represents a violation rate of less than 2% during this period. (Petitioners' Resp. Br. at 20) (R00049).

Petitioners first argue that IEPA failed to protect the existing uses of the Big Muddy River because the chloride levels should have been more restrictive than 500 mg/L. (Petitioners' Resp. Br. at 27). This argument ignores that this is the Illinois water quality standard for chloride set out in the Board's regulations at 35 Ill. Adm. Code 302.208(g). As noted by IEPA in its response to Petitioner's motion for summary judgment, the "Agency cannot ignore the Board's general use numeric water quality standards and incorporate site-specific standards based on arguments made by Petitioners; rather such arguments more appropriately would be presented to the Board in a petition to amend the Board's standards." (Agency's Resp. Br. at 16). Indeed, even if they had the right to highjack a permit appeal for such a purpose, their brief is bereft of any proof that their heretofore unadopted chloride standard would be of any marginal benefit here. They fail to show how their unadopted standard would protect existing uses, while the State's adopted water quality standards would not.

***2. The Agency considered total dissolved solids and cumulative effects.***

Next, Petitioners complain that "total dissolved solids (or total conductivity) is also a critical consideration, and that the cumulative, interactive effects of the numerous pollutants in the mine wastes also must be considered." (Petitioners' Resp. Br. at 27). But contrary to these arguments, the actual Permit includes water quality standards and narrative standards to address these issues. (*See e.g.*, Williamson's Resp. Br. at 15). For example, IEPA determined that narrative water quality standards will not be impacted within and outside of the mixing zone due to (1) low concentrations of phosphorus and deoxygenating compounds, (2) no interactions of the mixing plume with bottom sediments within the mixing zone, and (3) and compliance with numerical water quality standards. (R01296-R01301, R00105, R00072, R01656-R01844, R05971-R06154, R08372-R08453). IEPA, moreover, modified the Permit to incorporate a 32.2 mg/L limit for total

suspended solids for Outfall 011, which standard is in compliance with the State's identified target for the Big Muddy River. (R00107). Likewise, IEPA considered and determined that cumulative effects will not be an issue for the simple reason that the waters from the discharges will be in compliance with all water quality standards outside the mixing zone at Outfall 011. (R00049-R00051). Thus, IEPA reached its decision based upon substantial evidence that Williamson's discharges will not further degrade the existing conditions of the Big Muddy River.

But, Petitioners argue, IEPA should have lowered the 500 mg/L chloride standard anyway based upon the "extensive comments" and "scientific studies" that they submitted that put this numeric water quality standard in doubt. (Petitioners' Resp. Br. at 31). Specifically, Petitioners claim that comments made by Dr. Matthew Baker and Dr. JoAnn Burkholder raised concerns that conductivity related to both chlorides and sulfates can produce acute and chronic toxicity to "sensitive taxa" and "promote cyanobacteria that can produce microcystin and many other toxins." (Petitioners' Resp. Br. at 31-35). But this again is just another way of arguing that the Board should adopt a new chloride standard and apply it retroactively to the Permit.

Petitioners, further, fail to explain what these comments and concerns about "sensitive taxa" and "cyanobacteria" have to do with the actual Permit and conditions of the Big Muddy River. Petitioners simply ignore that IEPA reviewed sampling data characterizing the Outfall 011 discharges, (R00226-R00501), conducted an analysis of the reasonable potential for violation of water quality standards, (R21204-R21265), and considered a mixing zone study prepared by John Michael Corn, a third-party expert in mixing zones who is a professional engineer with a master's degree in environmental engineering. The study assumed worse-case conditions to ensure compliance with water quality criteria and to protect the most sensitive taxa with a built-in margin

of safety. (R01656-R01844, R05971-R06154, R08372-R08453). As explained by Dr. Mindy Yeager-Armstead, a professor and expert in aquatic ecology, in her report submitted in the record:

> Mixing zone concentrations are calculated as "worst case" with highest discharge concentrations and flow volumes mixed under low stream flow conditions to ensure compliance with the water quality criteria. Water quality standards are also determined as worst case; designed to protect for the most sensitive taxa and with a built-in margin of safety. Permit conditions limit discharge volumes and concentrations to be protective under both low-flow and high-flow conditions again utilizing "worst case" conditions for each. For these reasons, the biota in Big Muddy River will be protected from adverse conditions continuously when the diffuser is discharging.

(R00512). Petitioners offer no evidence either that the mixing zone study or Dr. Yeager-Armstead's analysis was flawed.

Likewise, Petitioners' argument about "sensitive taxa" ignores that Williamson provided a mussel study performed in the Big Muddy River Basin titled "Freshwater Mussels of the Big Muddy River" that was published on March 7, 2012, and an additional mussel study conducted in April and June 2020. (R00066-R00067). These studies confirmed that there are no mussel beds located in the mixing zone. (R00151-R00164). The Permit further requires that Williamson repeat a mussel and invertebrate study one year from the initial discharge from Outfall 011. (R00002). IEPA also relied upon data collected by it and the Illinois Department of Natural Resources, who routinely collect a variety of samples of fish and macroinvertebrates in the Big Muddy Basin both upstream and downstream of the mixing zone. (R00067-R00068). The Permit further requires that Williamson's discharges will be complaint with water quality standards such that they will not contain acutely high concentrations of contaminants that can gravely harm the fish, macroinvertebrates, mussels, plants, and other wildlife that depend on the Big Muddy River. (R00068-R00070).

In addition, Dr. Mindy Yeager-Armstead also reviewed the draft Permit for potential ecological effects. (R00505-R00519). She concluded that, "The potential for biological effects resulting from discharge mixing in the Big Muddy River is low due to current/historical habitat conditions from heavy sedimentation/siltation which have already limited biological communities in the vicinity of the discharge. The moderately healthy fish and mussel communities are comprised of taxa tolerant of the current conditions and are likely to continue to persist if water with the proposed discharge in compliance with the permitting conditions[.]" (R00511). In other words, no "sensitive taxa" live in the Big Muddy because of heavy sedimentation, only tolerant taxa do. It is called the Big Muddy for a reason.

These studies and data refute Petitioners' argument that Dr. Baker and Dr. Burkholder's concerns were left unaddressed. Further, the studies that Dr. Burkholder submitted are simply inapplicable to the conditions that will be present here. Dr. Burkholder's studies concern the effects of certain chemistry on growth of cyanobacteria in *lakes,* not streams and rivers ("Burkholder Studies"). (R00071-R00073, R00513). As pointed out by Dr. Yeager-Armstead, such conclusions related to increased chloride levels on aquatic life and cyanobacteria in lakes would not apply here because the chloride concentrations and conditions present in the Big Muddy River are simply not the same. (R00513). She noted that the Burkholder Studies applied to lakes with no outflow, which are not applicable to flowing stream environments like the Big Muddy River. (*Id*.) Based on the actual data and sampling of the Big Muddy River, Dr. Yeager-Armstead confirmed the safety of the chloride discharges in concentrations that will be present in the Big Muddy River outside of the mixing zone and refuted the issues raised in the comments of Dr. Burkholder. (*Id.*).

Thus, Petitioners' concerns about "sensitive taxa" and "cyanobacteria" have been addressed and do not change the conclusion that the Permit protects the existing uses of the Big Muddy River.

Petitioners also claim that they presented scientific studies and comments regarding how increased chloride and sulfate levels "would exacerbate the already excessive levels of mercury in the system by liberating mercury now buried in anoxic sediments as toxic forms." (Petitioners' Resp. Br. at 35). But, again, their comments are untethered to the actual conditions that will be present in the mixing zone and Big Muddy River as demonstrated by the mixing zone study that shows interactions of chlorides with sediments within the mixing zone was not likely to occur because the discharge plumes will not interact with bottom sediment, minimizing the risk of methylmercury release. (R00072, R01656-R01844, R05971-R06154, R08372-R08453). Petitioners offer no evidence to contradict this study and modeling. Simply put, Petitioners' studies are unconnected to conditions of the Big Muddy River or the discharges and do not have any regulatory support.

In sum, IEPA incorporated conditions in the Permit to assure that Outfall 011 discharges will both comply with numeric and narrative water quality standards and fully protect existing uses of the Big Muddy River in compliance with 35 Ill. Adm. Code 302.105.

### *3. Dr. Yeager-Armstead's opinions are sound and based upon the relevant records and data in this matter.*

Petitioners argue that Dr. Yeager-Armstead's opinions should be excluded because she "did not review most of the key reports and pieces of evidence in this case." (Petitioners' Resp. Br. at 38). They also criticize her responses to their "initial comments" because she should have realized that Petitioners "scrapped" these comments "together in the few days they had to request a public hearing without the benefit of having reviewed any permit documents." (*Id.* at fn. 31).

But Petitioners fail to explain how Dr. Yeager-Armstead should have known these comments were "scrapped together" or how their subsequent comments were better in any meaningful way.

Their argument also unfairly mischaracterizes Dr. Yeager-Armstead's qualifications and record upon which she relied in issuing her opinions. A witness qualifies as an expert by virtue of knowledge, skill, experience, training, or education, or any combination thereof. Ill. R. Evid. 702; *Lee v Chicago Transit. Authority*, 152 Ill. 2d 432, 459 (1992). In addition, an expert may base their opinion upon their own personal knowledge or upon facts presented to them. Ill. R. Evid. 703 ("facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing"); *Martin v. Sally*, 341 Ill. App. 3d 308, 314 (2d Dist. 2003); *Continental Ill. Nat. Bank & Trust Co. of Chicago v. Eastern Ill. Water Co*., 31 Ill. App. 3d 148, 106-07 (5th Dist. 1975).

Here, Petitioners do not challenge Dr. Mindy Yeager-Armstead's qualifications to provide expert opinions in this matter and for good reason. Her Curriculum Vita attached to her report demonstrates that she received a B.S. in Biology at the University of Charleston, an M.S. in Aquatic Ecology from Marshall University, and a Ph.D. in Aquatic Ecology from Virginia Polytechnic Institute and State University. (R00515). She has over 20 years of consulting experience in the mining industry with a focus on mine permitting and compliance involving projects to determine the appropriate water quality standards, assessing aquatic community health, and developing strategies to improve or protect stream ecosystems. (R01856). Dr. Yeager-Armstead also has more than 10 years of teaching and research experience at Marshall University where she is a tenured professor and serves as Chair of the Department of Natural Resources and the Environment. (R00507). Dr. Yeager-Armstead's CV also shows that she has conducted research and published articles on the study of algae, selenium, conductivity effects on the chronic

toxicity of mining influenced streams, total dissolved solids, and the development of site-specific water quality criteria. (R01856-R01864).

And Dr. Yeager-Armstead's opinions, contrary to Petitioners' claims, are based upon the relevant records and data in this matter. She reviewed the draft Permit, Williamson's antidegradation report, water sampling data, aquatic life studies, the mixing zone study, data on Big Muddy River Total Maximum Daily Load, and the August 12, 2019, comments provided by Petitioners. (R00507-R00508). These records are all pertinent to the issues currently being challenged by Petitioners in this appeal. And while it is true that Dr. Yeager-Armstead did not respond specifically to Petitioners' January 17, 2020, comments, Petitioners fail to acknowledge she could not have done so because she also submitted her report on the same day, January 17, 2020.

In any event, Petitioners' January 17 comments concern the same issues that they raised in their August 12 comments and in their appeal here. Dr. Yeager-Armstead's opinions more than addresses the substance of these issues as demonstrated by her detailed report. Petitioners' true complaint appears more related to their displeasure that Dr. Yeager-Armstead did not agree with their opinions and arguments, but as she noted in her report, Petitioners' opinions and claims are simply not based upon the actual data or conditions at the Outfall. (R01851-R01853).

***4. Williamson's discharges will not impact streams in the area.***

Petitioners also argue that IEPA did nothing to determine the effect on existing uses on streams as a result of the "drawdown of 3 MGD" other than to state that "creeks in the immediate vicinity would probably not be affected because the groundwater drained out of more distant unknown and unsung creeks or groundwater." (Petitioners' MSJ at 35). But as IEPA noted in its Responsiveness Summary, "water recharging to the depth of the mine would be coming from

upland areas further away, not local creeks." (R00105). Thus, IEPA has already considered and addressed this issue based on the evidence in the Record concerning the depth of the mineworks and saline aquifer. (R02815, R07640-R07654). Further, there is no *evidence*—only rank speculation—that the scenario imagined in Petitioners brief will come true. For example, no hydrogeologist has submitted a report attesting to Petitioner's theory of depletion of water recharge.

Petitioners' argument also fails to acknowledge that saline groundwater is already being withdrawn from the mine. (R08313, R08329-R08330). The Pond Creek Mine experiences an influx of up to 3.5 million gallons per day of saline groundwater in the underground mineworks from an overlying saline aquifer. (*Id*.). Williamson must remove the saline groundwater from the mine to protect the health and safety of its employees and to conduct mining operations. (*Id*). Indeed, the fact that the infiltrating groundwater is saline and *not* fresh water undercuts Petitioner's argument. If Williamson were draining surface recharge water, the water infiltrating the mine would have characteristics of that surface water (i.e. fresh water) and not the elevated chloride levels that are the subject of the permit.

Even if it had any scientific merit, Petitioners' complaint relating to groundwater drawdown belongs in a different forum. The Permit does not concern the removal of this water from the underground mineworks. It concerns only whether Williamson may discharge these waters into the Big Muddy River.

**D. Discharges from Outfalls 001 to 008 will not violate numeric water quality standards.**

Petitioners take issue with the permit limits set for Outfalls 001 to 008 for cadmium, copper, nickel and zinc because the limits are based on the acute water quality standards, rather than chronic water quality standards. (Petitioners' Resp. Br. at 22). Petitioners are concerned that the acute water quality standards may not provide enough protection if Williamson were to

discharge continually or in large volumes from one or more of Outfalls 001 to 008. (*Id.* at 22-23). However, Petitioners fears are misplaced.

The Agency conducted a reasonable potential analysis for discharges from Outfalls 001 through 008 to the tributary of Pond Creek, and set appropriate limits based on its analysis. (R00211-R00220, R008241-R08250, R21204-R21265). Moreover, the Agency added Special Condition No. 14 to the Permit to require a 1.0 million gallon per (MGD) day reverse osmosis (RO) unit. (R00002). Reverse osmosis is a water purification process whereby water is pumped through a closed membrane system at extremely high pressures, and purified water is produced while contaminants are trapped on the membrane. (R08794). The Permit specifies that the treated, permeate water will discharge through Outfalls 001 through 008. (R00002). In fact, the expectation and goal is that these actions will improve Pond Creek to such an extent that it will be removed from the 303(d) list. Nonetheless, the discharge from each of the eight outfalls is required to comply with the water quality standards. For example, Special Conditions No. 1 and No. 2 prohibit violations of the water quality standards and require effluent monitoring prior to entry into the receiving stream. (R00025). Thus, the Permit does not allow Williamson to exceed the chronic water quality standards. Such standards must be complied with, and the Permit contains monitoring requirements to ensure the water quality standards are met. Accordingly, the permit contains limits and conditions to ensure that the discharges from Outfalls 001 through 008 meet the WQS, which are protective of the existing uses of Pond Creek. (R00061).

**E. Ammonia is not a constituent of concern**.

Petitioners argue for the first time in their Response Brief[2] that the Permit should be remanded due to significant levels of deoxygenating waste in the proposed discharge, including

[2] Petitioners failed to raise this argument in their Motion for Summary Judgment and thus the issue is waived. *See Freedom Oil Co. v. Illinois Pollution Control Bd.*, 275 Ill. App. 3d 508, 514 (4th Dist. 1995)

ammonia concentrations. (Petitioners' Resp. Br. at 24-26). However, there is no evidence in the Administrative Record that ammonia has or will be discharged under the Permit. Petitioners base their argument on test results taken between October 25, 2019 and December 16, 2019 that show ammonia levels in the RDA. (*Id.* at 24; *see also* R01296-R01301).

Ammonia is not a constituent of concern for two reasons. First, ammonia is not normally present in coal mining wastes. Given the freshness of this issue—with Petitioners only raising it in their Response Brief—Williamson has not had sufficient time to fully research the issue. However, the likely scenario (as it relates to any trace levels of ammonia and phosphorous) is as follows. Heavy rains caused flood stages in multiple streams and rivers in the area during October and December 2019. Nat'l Oceanic And Atmospheric Administration Weather Event Summaries (*available at* https://www.weather.gov/media/pah/StormData/2019/dec2019.pdf and https://www.weather.gov/media/pah/StormData/2019/dec2019.pdf ). This led to runoff from farm fields to fill creeks and back up into water holding systems at Williamson, which ultimately gets transferred to the RDA, where the samples at issue were taken.

Second, the RDA is not a discharge point. Pond 006 is the discharge point associated with the RDA. If the ammonia detected in the RDA was discharged, it would have been detected in Pond 006. However, sampling results from Pond 006 during that same period of time show that ammonia was not detected in Pond 006. (R00233, R00242, R00251, R00260, R00269, R00279). Likewise, sampling results taken from Pond 006 in December 2014 and November 2009 show that ammonia has not been historically detected in Pond 006. (R08768, R17634). Because ammonia is not normally present in mining wastes and has not been detected in Pond 006 or at any discharge point, Petitioners concerns related to ammonia discharges are unfounded.

("Generally, issues and defenses not previously raised before the Board cannot be raised for the first time on direct review.").

Finally, Petitioners incorrectly assert that the testing results indicate significant levels of phosphorus. (Petitioners' Resp. Br. at 25). The samples results cited by Petitioners, taken between October 25, 2019 and December 16, 2019, show negligible levels of phosphorus in the RDA ranging from <0.05 to 0.13 mg/L. Those results are well below the effluent standard for phosphorus in lakes and reservoirs of 20 acres or more of 1.0 mg/L. 35 Ill. Adm. Code 304.123(b). Further, samples show that phosphorus was not detected in Pond 006 during that same period. (R00233, R00242, R00251, R00260, R00269, R00279). Nor was phosphorus detected in sampling results taken from Pond 006 in December 2014 and November 2009. (R08768, R17634). Accordingly, the Agency correctly determined that Williamson's effluent does not have sufficient phosphorus to contribute to DO impairment or potential impairment of phosphorus. (R00108).

**F. The Agency's Alternatives Analysis Complied with Antidegradation Requirements.**

Despite all evidence to the contrary, Petitioners continue to argue that the Agency did not seriously consider alternatives for addressing chloride discharges and that Williamson provided a cost estimate for only one alternative. (Petitioners' Resp. Br. at 42-43). As detailed in Williamson's Response to Petitioners motion for summary judgment, Petitioners are objectively incorrect because Williamson provided supplemental cost estimates for each alternative option, as well as combinations of alternatives, on December 17, 2019. (R05886-R05894; *see also* Williamson's Resp. Br. at 21-23). Williamson's supplemental submission provided information on the cost of alternatives for reverse osmosis used in conjunction with deep well injection and with crystallization (R05890-R05891), deep well injection of the mine infiltration water (R05892), evaporation used in conjunction with deep well injection or crystallization (R05893), and crystallization (R05894). Thus, there is no basis for Petitioner's argument that the Agency's consideration of the 35 Ill. Adm. Code 302.105(c)(2)(B)(iii) factors was inadequate.

Petitioners further complain about the Agency's conclusion regarding the efficacy of constructed wetlands to address the proposed Outfall 011 discharge. (Petitioners' Resp. Br. at 43-44). However, the Administrative Record supports the Agency's conclusion. Williamson provided analysis showing that pilot wetlands at two other mines indicated that constructed wetlands could not feasibly be used to treat the volume of stormwater expected at the facility. (R08337). Williamson also identified other limitations with constructed wetlands including 1) low and consistent rates of inflow, 2) eventual sludge accumulation requiring dredging and wetland reconstruction, 3) release of hydrogen sulfide and other digestive gases into the atmosphere from the sulfate digestion processes, and 4) enormous land requirements that would crowd out other beneficial land uses. (R08337). Accordingly, the Record clearly supports the Agency's conclusion that there are no additional "technically and economically reasonable measures" to avoid the Outfall 011 discharge. *See* 35 Ill. Adm. Code 302.105(c)(2)(B)(iii).

Finally, Petitioners incorrectly state that its uncontested that the Agency did not consider the community as a whole under 35 Ill. Adm. Code 302.105(c)(2)(B)(iv). (Petitioners' Resp. Br. at 45). Section 302.105(c)(2)(B)(iv) of the Board's regulations directs the Agency to assess any proposed increase in pollutant loading that necessitates a new, renewed or modified NPDES permit to assure that "[t]he activity that results in an increased pollutant loading will benefit the community at large." 35 Ill. Adm. Code 302.105(c)(2)(B)(iv). The Agency reasonably found benefits to the community at large based on continuing local employment and significant tax revenues associated with the mine (R00090, R05888-R05889, R06181, R08323-R08324, R08327-R08328).

Furthermore, the Agency did not ignore Petitioners complaints. With respect to Petitioners' comment regarding the bioaccumulation of pollutants such as mercury in fish that are eaten by

local fishers and families, the Agency fully analyzed Petitioners' concern. At the direction of the Agency, Williamson conducted additional sampling for heavy metals, and the Agency modified the Permit to include a limit of 12 ng/L for mercury at Outfalls 001 (the data indicated there was no reasonable potential for Outfalls 002 and 008 to exceed the WQS for mercury). (R00072-R00073). With the Permit effluent limits and conditions, the Agency concluded that discharge from the mine will be fully protective of existing uses, including protective of human health. (*Id.*) Petitioners' additional complaint that the coal being mined will fuel climate change is not proper grounds to deny an NPDES permit. The Board's regulations do not authorize the Agency to deny an NPDES permit solely because the proposed discharge is connected with the fossil fuel industry. In short, the Agency's consideration of the 35 Ill. Adm. Code 302.105(c)(2)(B)(iii) and (iv) factors fully met all applicable antidegradation requirements.

## CONCLUSION

For all the reasons in Williamson's Motion for Summary Judgment, Response to Petitioners' Motion for Summary Judgment, and in the above, Williamson requests that the Board grant it summary judgment on Petitioners' Petition for Administrative Review.

Jeffrey R. Baron (ARDC # 6277085)
Bailey & Glasser, LLP
34 N. Gore Avenue, Suite 102
Webster Groves, MO 63119
T: (314) 863-5446
F: (304) 342-1110
jbaron@baileyglasser.com

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**CERTIFICATE OF SERVICE**

The undersigned herby certifies that a copy of the foregoing was electronically filed through the *Clerk's Office On-Line (COOL)* system and sent via email on this 23rd day of November, 2022 to the following:

Carol Webb, Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph Street, Suite 11-500
Chicago, IL 60601
Carol.webb@illinois.gov

Kevin D. Bonin
Andrew B. Armstrong
Illinois Environmental Protection Agency
500 South 2nd Street
Springfield, Illinois 62701
Kevin.bonin@ilag.gov
Andrew.armstrong@ilag.gov

Albert Ettinger
70 E. Lake, Suite 1500
Chicago, IL 60601
Ettinger.Albert@gmail.com

Sarah Rubenstein
Great Rivers Environmental Law Center
319 N. 4th Street, Suite 800
St. Louis, MO 63102
srubenstein@greatriverslaw.org

Jeffrey R. Baron (ARDC # 6277085)