

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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.)	

RESPONDENT WILLIAMSON ENERGY LLC'S RESPONSE IN OPPOSITION TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT

According to Petitioners, the Permit is an incomplete work that will essentially allow an open and uncontrolled pipe into the Big Muddy River. But the Administrative Record reveals that Petitioners' characterizations and arguments have nothing to do with the actual Permit. Indeed, the Permit requires Williamson to construct an enormous reverse osmosis (RO) plant to treat one million gallons per day (1 mgd) of high-chloride water. 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. These studies and data informed IEPA's decision to grant the Permit and support its conclusion that water quality standards will be met and existing uses will be protected. Simply put, Petitioners offer no evidence to contradict IEPA's actual decision, let alone grounds to prevail on summary judgment. Briefly summarized, each of Petitioners' grounds for summary judgment fail.

First, contrary to the claims of Petitioners, the Permit has 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. This continuous, real-time monitoring goes above and beyond the one or two samples per month normally required in an NPDES permit. The Permit sets out steps to ensure the calibration curves used to make these measurements remain accurate in light of potential changes in the effluent or river. But these periodic recalibrations are a feature, not a bug. The periodic recalibrations do not suggest incompleteness but rather a Permit that requires an adaptable comprehensive monitoring plan to protect water quality standards and existing uses, even as variables in the system change.

Second, Petitioners complain that the Permit does not protect existing uses, but they fail to articulate any existing use that will be adversely affected by Williamson's effluent. All Big Muddy River segments at the discharge site and below are impaired (for non-mining-related reasons) for aquatic life, fish consumption, and primary contact. Likewise, Pond Creek is designated as impaired (for non-mining-related reasons) for aquatic life. Williamson's discharges will not further degrade those existing conditions because they will meet or exceed water quality standards for these receiving waters. In fact, the Permit requires that Williamson construct a reverse osmosis treatment plant to treat all effluent before discharge into Pond Creek. Thus, over twelve miles of Pond Creek are expected to improve to the point of de-listing.

Third, Petitioners complain that IEPA failed to take account of Williamson's history of permit violations in establishing monitoring requirements. But the record reveals the opposite. IEPA not only took into account Williamson's past history but added a special permit condition to the computer controlled real-time monitoring system that will shut down all discharges from Outfall 011 in the event discharges are noncompliant or the flow and volume of the river is either too low or high.

Fourth, Petitioners complain that IEPA failed to perform an adequate reasonable potential analysis in the permitting process to account for RO reject water to the Big Muddy River. However, the record reveals that IEPA set forth requirements that Williamson treat RO reject water in the RDA and holding cells and that the treated water must meet all the permit limits and conditions before it may be discharged through Outfall 011. Petitioners offer no rule or evidence that would suggest IEPA should reopen the analysis under these circumstances.

Fifth, Petitioners complain that IEPA should have done more to consider alternatives for chloride discharges. But, again, this misconprehends the actual record. IEPA considered nine alternatives assessed by Williamson, determining that a 1.0 MGD RO unit would be required for discharges at Pond Creek and concluding that other alternatives were not feasible or practical for discharges at Outfall 011. Petitioners offer no evidence or rule that contradicts IEPA's conclusion.

Last, Petitioners complain the Permit suffers from serious drafting errors that will allow excessive levels of chlorides and other pollutants in the Big Muddy River. But, Petitioners' argument misconstrues the Permit. The Permit, as drafted, does not allow violations of water quality standards.

STANDARD OF REVIEW

The Illinois Pollution Control Board reviews permits issued by the Illinois Environmental Protection Agency (IEPA) *de novo*; however, in this review, Petitioners “bear[] the burden of proof to show that the final permit issued by IEPA violated the [Environmental Protection Act] or Board regulations.” *Sierra Club, Natural Resources Defense Council, Prairie Rivers Network, and Environmental Law & Policy Center, Petitioners v. Illinois Environmental Protection Agency and Midwest Generation, LLC, Respondents*, 2016 WL 4400780, at *8 (April 7, 2016). This burden is arduous: “In a third-party challenge to a NPDES permit, the third party must prove that ‘the issuance of the permit violates the Act or Board's regulations.’” *Sierra Club, Natural Resources*

Defense Council, Prairie Rivers Network, and Environmental Law & Policy Center, Petitioners v. Illinois Environmental Protection Agency and Midwest Generation, LLC, Respondents, 2015 WL 9027115, at *3 (Dec. 10, 2015).

“[T]he Board’s review must be ‘exclusively on the basis of the record’ before [IEPA] at the time it made its decision.” *Sierra Club, Natural Resources Defense Council, Prairie Rivers Network, and Environmental Law & Policy Center, Petitioners v. Illinois Environmental Protection Agency and Midwest Generation, LLC, Respondents*, 2017 WL 352105, at *5 (Jan. 19, 2017). “IEPA’s decision to issue the permit in this instance must be supportable by substantial evidence. This does not, however, shift the burden away from the petitioner, who alone bears the burden of proof in this matter.” *Sierra Club*, 2015 WL 9027115, at *3 (internal quotation marks omitted). “Additionally, in examining what constitutes substantial evidence for purposes of administrative decisions, the Board has stated that the main inquiry is whether on the record the agency could reasonably make the finding.” *Id.* (same).

Summary judgment is appropriate only when the administrative record in a permit appeal demonstrates that there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. *City of Quincy v. IEPA*, 2010 WL 2547531, *26, PCB 08-86 (Jun. 17, 2010). Summary judgment “is a drastic means of disposing of litigation” and should be granted only when the movant’s right to the requested relief “is clear and free from doubt.” *Dowd & Dowd, Ltd. v. Gleason*, 181 Ill. 2d 460, 483 (1998).

A. The Permit is not a work in progress but rather provides ample monitoring requirements, including real-time monitoring of effluent and its effect on the Big Muddy River

Petitioners first argue that “the most obvious problem with the Permit is that IEPA and Williamson/Foresight have not completed their homework.” (Petitioners’ MSJ at 25). Specifically,

Petitioners claim the continuous chloride conductivity monitoring that is to occur above and below the discharge of the Big Muddy River “still has not been developed and made public” such that the Permit should be remanded to the IEPA for further development. (*Id.*).

Petitioners’ argument appears to 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. This is not an accurate characterization of the Permit. Anticipating changing conditions and setting out steps in the Permit to deal with those changes is anything but incomplete. As discussed below, the Permit’s chloride monitoring program is fully developed and contains procedures to ensure that chloride levels are not monitored just daily or weekly, but continuously.

To ensure this goal is met at Outfall 011, 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. Importantly, the real-time monitoring system will not be performed in a vacuum. It is one of several sampling and monitoring requirements that Williamson must perform to ensure that its discharges comply with water quality standards. (*Id.*).

Petitioners’ argument further ignores that this comprehensive monitoring program was developed only after IEPA reviewed multiple sets of sampling data and modeling results to ensure the procedures fit the actual conditions to be expected at the mixing zone. For example, in support of its application for a mixing zone, Williamson submitted a mixing zone study to the IEPA in November 2016. (R08372-R08453). The study provided, in part, chloride and conductivity sampling data and modeling results. (*Id.*). Williamson then submitted updated modeling results and calculations to IEPA in December 2019 and January 2020. (R01656-R01844, R05971-

R06154). IEPA also analyzed multiple samples from Cell 417 at the Pond Creek Mine, which retains the on-site waters that will be discharged through Outfall 011. (R00226-R00501, R01240-R01375, R08363).

Further, the record contains a report submitted by Dr. Yeager-Armstead, a professor and expert in aquatic ecology, who reviewed the data and determined monitoring the mixing zone in the Big Muddy River in real time is possible based upon the samples taken by the mine and modeling results. (R00508). Dr. Yeager-Armstead explained:

Additionally, the consistent relationship between individual salts and specific conductivity, once established, will allow for real-time monitoring of stream and discharge constituent concentrations. Generally, the relative mineral concentrations of water from the same source are consistent allowing specific conductivity, a surrogate measurement, to represent chloride in permit evaluations. This consistency is demonstrated with 7 samples collected from the holding basin location (417) on sampling dates from October 25, 2019, to January 13, 2020. Major ion concentrations (alkalinity, sulfate, chloride, and hardness) were summed to estimate total dissolved solids that was not determined. The relative contribution of chloride to the total ions ranged from 34.1% to 37.9% in these 7 samples with this minimal variability suggesting high confidence in the ability to develop a predictive relationship between chloride and conductivity, which can be measured in real-time.

(R00508-R00509).

Petitioners don't contest this substantial evidence in the record, but rather argue that real-time monitoring will not be easy because chloride and conductivity levels in the Big Muddy River will vary over time. (Petitioners' MSJ at 26). Yet, Petitioners set out no rule or authority to support their conclusion that because it may not be easy to accomplish real-time monitoring or that conductivity levels may vary over the life of the Permit, that this means the Permit is somehow incomplete. The sole support for this hypothetical argument is a reference to United States Geological Survey data collected at the Big Muddy River at Route 127 at Murphysboro, Illinois,

which showed variation in “specific conductance” at that location over an eighteen-month period in 2020 and 2021. (*Id.*).

However, Petitioners did not introduce this USGS data into the Administrative Record (meaning it should not be considered in a permit appeal under 415 ILCS 5/40(e); 35 Ill. Adm. Code § 105.214(a)). And, even if they had, the data offers no explanation as to what this means for the procedures set out in the Permit to ensure accurate real-time chloride monitoring at Outfall 011, which is miles from where the USGS data was collected at Murphysboro.

But, more fundamentally, Petitioners’ argument fails to acknowledge the Permit anticipates that conductivity levels may vary over the life of the Permit and sets forth procedures to deal with that possibility. Petitioners’ argument also ignores that real-time monitoring is only one of several sampling and monitoring requirements under the Permit, and that each plays a part in a comprehensive monitoring program that contains built-in safeguards to ensure that water quality standards are accurately and continuously monitored.

For example, Special Condition 15 of the Permit requires that Williamson assess chloride and conductivity in lab-analyzed water samples taken from the Big Muddy River, both upstream and downstream, and in the effluent. (R00027-R00028). These lab samples will not only inform whether the calibration curves remain accurate in and outside the mixing zone, but they will independently provide another source for measuring conductivity and sampling chlorides. Special Condition 15 further 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.*)

The Permit requires that Williamson sample the effluent for dissolved iron, sulfate, and chlorides three times per week while discharging. (*Id.*). Williamson must also install an upstream conductivity monitor to measure the upstream chloride concentration correlated to the conductivity value, which is derived from sampling data collected by the mine. (*Id.*). Special Condition 15 of the Permit further requires that Williamson install a downstream conductivity monitor within ten feet of the edge of the mixing zone to monitor downstream chloride concentrations correlated to the conductivity value, which again is developed in conformance with Williamson's sampling data. (R00027-R00028). For the calibration curves, 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"), and it must make all underlying data available to the IEPA during mine inspections and retain the data for at least three years in accordance with Standard Condition 10 of the Permit. (R00027-R00028, R00031).

Together, these permit conditions ensure that adequate data is collected, retained, and reported to ensure the accuracy of Williamson's real-time monitoring of chloride levels over the life of the Permit. In fact, Petitioners' argument that conductivity levels may vary supports, rather than detracts, from IEPA's decision to require such a robust sampling and monitoring program. For example, if the Permit affixed a specific ratio of conductivity to chloride level to govern the entire term, surely Petitioner would be claiming that the fixed-ratio did not account for variations in the river and in the effluent over time. Damned if you do, damned if you don't. The continuous

process of calibration, data collection, verification, and re-calibration enhances this Permit's protective effects.

Petitioners further argue that the Permit should not have been approved because the Board rules require that a completed permit be shown to the public, not a work in progress, and that this has denied the public its full right to participate in the development of the permit standards and effluent limitations. (Petitioners' MSJ at 27). But this argument again assumes the Permit is incomplete, which, as discussed above, is not correct. *See also, Prairie Rivers Network v. Illinois Pollution Control Bd.*, 335 Ill. App. 3d 391, 402-03 (4th Dist. 2002) (holding that IEPA's NPDES program does not require the reopening of the public comment period or the preparation of a new draft permit based on information submitted during the initial comment period or revisions thereafter incorporated into the final permit).

Moreover, Petitioners had full opportunity to participate in the development of the Permit. They provided written comments and participated in the public hearing on the draft Permit. (R00041-R00113, R02596-R02796). And they continue to participate in the Permit process as evidenced by this appeal. Further, Petitioners will have access to all the underlying data and calibration curves used to monitor chloride levels. Thus, there is no merit to Petitioners' claim that they have been denied the opportunity to participate in the development of the standards and effluent limitations set out in the Permit.

In sum, the Administrative Record contradicts Petitioners' argument that it is entitled to summary judgment on this issue. The Record reveals that IEPA considered sufficient evidence to approve the procedures set out to monitor chloride and conductivity levels in real time, which will be in addition to all the other sampling and monitoring requirements Williamson must undertake

at Outfall 011. That is, the record supports IEPA's decision that this comprehensive monitoring program satisfies the Act and Board regulations.

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

Petitioners next argue that the IEPA's grant of the Permit fails to protect the existing uses of the Big Muddy River in violation of 35 Ill. Admin. Code 302.105(a) & (c). Section 302.105(a) requires that uses actually attained in a surface water body must be maintained and protected. Section 302.105(c) provides, in part, that IEPA must assess whether the lowering of water quality standards is "necessary to accommodate important economic or social development" and whether an increase in pollutant loading to a receiving water will comply with water quality standards and protect existing uses. 35 Ill. Admin. Code 302.105(c) (1) & (2). The Record reveals IEPA complied with these regulatory requirements in issuing the Permit.

As noted by IEPA in its Responsiveness Summary, the waters of the Big Muddy River and Pond Creek are designated as General Use. (R00119). Under Section 302.202 of the Board's regulations, IEPA must consider the types of uses that must be protected for waters classified as General Use—aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses—and the applicable water quality standards to protect these uses. 35 Ill. Admin. Code 302.202.

To accomplish this task, IEPA reviewed sampling data characterizing the Outfall 011 discharges. (R00226-R00501). And IEPA conducted an analysis of the reasonable potential for violation of water quality standards. (R21204-R21265). IEPA also considered a mixing zone study and modeling data of the proposed mixing effluent in the Big Muddy River. (R01656-R01844, R05971-R06154, R08372-R08453). The mixing zone study and modeling assumed worse-case

conditions 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).

Williamson further 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. (R00066-R00067). An additional mussel study was also conducted in April and June 2020, which found that no mussel beds were located in the mixing zone. (R00151-R00164). 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).

As for narrative standards, the regulations require that, “Waters of the State shall be free from sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin.” 35 Ill. Adm. Code 302.203. The Record supports IEPA’s determination 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). However, to safeguard against potential violations,

IEPA modified the Permit to incorporate a 32.2 mg/L for total suspended solids for Outfall 011, which standard is in compliance with the State's identified target for the Big Muddy River. (R00107).

Based on these data, models, and tests, 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 302.105I(B)(i), (ii). IEPA further considered all the impacts of the proposed increase in pollutant loading and determined that issuing the Permit would benefit the community at large by providing jobs for the community, tax revenue for federal, state, and local governments, and energy for the State and region. (R00125-R00127).

IEPA also updated the final Permit to include several special conditions to ensure existing uses will be protected, including Special Condition No. 13 (monitoring requirements for discharge rates, chlorides, sulfates, and hardness for Pond Creek); Special Condition No. 14 (installation of the RO for discharges into Pond Creek); Special Condition No. 15 (chloride, sulfate, and iron (dissolved) monitoring requirements for Outfall 011, discharge limits and discharge cessation requirements for Outfall 011 based on the volume and water flow levels of the river, and the installation of conductivity monitors to provide real-time monitoring of chloride levels); Special Condition No. 16 (real-time downstream monitoring requirements for Outfall 011 and discharge cessation requirements if certain pollutants exceed WQS); and Special Condition No. 18 (metal monitoring requirements for Outfalls 006, 007, and 011 with additional limits for these pollutants). (R00103-R00106). The real-time monitoring system is also computer controlled such that the system will shut down in the event discharges are noncompliant or the flow and volume of the river is either too low or high. (R00511).

Moreover, Dr. Mindy Yeager-Armstead conducted a review of the permitting procedures employed in the permit issuance and reviewed the potential for biological effects from the permit. (R00505-R00519). She concurred with the Agency's conclusion that the discharge would attain water quality standards and maintain existing uses of the stream based on the information provided by Williamson and the additional information provided in public comments. (R00509).

Petitioners somehow argue that all this effort, study, and enhancement of the Permit was not enough. They claim 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' MSJ at 10, 32). But the Permit requires that Outfall 011 discharges comply with the applicable 500 mg/L water quality standard for chloride set out in the Board's regulations at 35 Ill. Adm. Code 302.208(g). Petitioners cite no provision of the Act or regulations that require the application of a more restrictive chloride standard for the mine's discharges into the Big Muddy River.¹

Indeed, Petitioners' brief is bereft of any proof that their heretofore unadopted chloride standard would protect existing uses, while the State's adopted water quality standards would not. Which existing use is harmed by 500 mg/L chloride that would be protected at 230 mg/L? Petitioners do not say.

Similarly, Petitioners' complaints about chronic chlorides ignores the mixing zone is designed to prevent that issue. As IEPA explains in the Responsiveness Summary, the acute chloride criterion must be met at the edge of the mixing zone immediately surrounding an outfall, which is often referred to as the acute mixing zone or ZID. (R00049). The acute mixing zone was

¹ In support of their argument, Petitioners reference a YouTube video. (Petitioners' MSJ at 32, fn. 21). This video is not part of the Administrative Record, however. (*See* 415 ILCS 5/40(e), 35 Ill. Adm. Code § 105.214(a), limiting the Board's review of permit appeals to the administrative record), and is not the standard which guides IEPA in evaluating whether to grant or deny a Permit.

sized to prevent lethality to passing organisms in order to protect the designated use of the waterbody as a whole. (*Id.*) In the mixing zone itself, the acute criterion must be met, but the chronic criterion may be exceeded. (*Id.*) However, at the edge of the mixing zone, both chronic criterion and acute criterion must be met. (*Id.*)

Petitioners further complain that more studies are still required to determine “the potential effects of high levels of chloride and sulfate in the effluent on mercury levels in a river already known to be impaired by mercury.” (Petitioners’ MSJ at 34). Specifically, Petitioners argue that IEPA failed to consider comments made by Dr. Burkholder on this issue. Dr. Burkholder submitted studies purporting to show the effects of certain chemistry on growth of cyanobacteria in *lakes*, not streams, and on release of methylmercury (“Burkholder Studies”). But this argument is again contradicted by the record. (R00071-R00073, R00513) For example, IEPA considered the mixing zone study, prepared in 2016 by John Michael Corn, a third-party expert in mixing zones who is a professional engineer with a master’s degree in environmental engineering, as well as updated modeling results and calculations submitted to the Agency in December 2019 and January 2020. (R08372-R08453, R01656-R01844, R05971-R06154). That study showed the interaction 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). And, as discussed above, IEPA set chloride levels in accordance with the Board’s regulations to ensure chloride concentrations outside the mixing zone will not have an adverse effect or otherwise violate water quality standards. (R00057).

IEPA likewise considered the Burkholder Studies related to cyanobacteria in response to Question 103 in the Responsiveness Summary. IEPA explained that this concern related to

cyanobacteria is based upon an incorrect assumption that the mine's discharges will contain an increase in phosphorus. But the sampling data set out in the record demonstrates that the mine's discharges will not contain phosphorus. (R00105).

Additionally, the record contains Dr. Mindy Yeager-Armstead's report on the ecological effects of the Permit, which further contradicts Petitioners' arguments. (R00505-R00519). In this report, she considered public comments about the impacts of increased chloride levels and noted that the references provided in the public comments were not consistent with the chloride concentrations that will actually be present in the Big Muddy River. (R00513).

She noted, moreover, that the Burkholder Studies applied specifically to lakes, with no outflow, and are not applicable to flowing stream environments like the Big Muddy River. (*Id.*). Rather, in flowing systems, dissolved salts disperse downstream, generally becoming more diluted. (*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 Burkholder Studies. (*Id.*).

The same goes for Petitioners' complaints about cumulative effects. IEPA determined that this 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. All Big Muddy River segments at the discharge site and below are already impaired (for non-mining-related reasons) for aquatic life, fish consumption, and primary contact. (R00049-R00051). Thus, IEPA concluded that Williamson's discharges will not further degrade those existing conditions. This conclusion is supported by sufficient evidence in the record.

Petitioners next argue that, as for Pond Creek, IEPA failed to ensure compliance with "even the numeric standards that it claims to use as its Bible." (Petitioners' MSJ at 34). Specifically,

Petitioners argue that the Permit allows Williamson to discharge up to the acute concentration for cadmium, copper, nickel, and zinc. (*Id.*). Petitioners again mischaracterize the Permit and Record. IEPA evaluated the reasonable potential of discharges from Outfalls 001 through 008 to exceed acute water quality standards for cadmium, copper, nickel, and zinc. (R00211-R00220, R21204-R21265). IEPA concluded that discharges from Outfalls 001 through 008 are non-continuous, intermittent discharges. To protect aquatic life against long term effects from prolonged exposure to pollutants under these intermittent conditions, IEPA set forth daily maximum effluent limits *less than* the acute water quality standards, sufficient to protect aquatic life under these conditions. (R00006, R00008, R00010, R00012). Further, due to the current status of Pond Creek as impaired for aquatic life, the Permit requires that Williamson construct an RO treatment plant to treat all effluent before discharge into Pond Creek. (R00026). Thus, with the influx of RO water into Pond Creek, over twelve miles of Pond Creek are expected to improve to the point of de-listing. Petitioners present no evidence to contradict this conclusion or cite a rule that has been violated.

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, Petitioners’ argument 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.

Simply put, the Administrative Record amply supports IEPA's conclusion that discharges into the Big Muddy River and Pond Creek under the Permit will meet or exceed all applicable water quality standards and maintain existing uses of these waters.

C. IEPA imposed reasonable conditions in the Permit based on past violations

There is no merit to Petitioners' argument that the Agency failed to take into account Williamson's history of permit violations in establishing monitoring requirements under the Permit. (Petitioners' MSJ at 30). In fact, the Agency confirmed it did take account of Williamson's past noncompliance by incorporating Special Condition 16(c)-(e) into the Permit. (R00052) (Agency's MSJ at 16-17). Special Condition 16(c)-(e) operates as automatic cease-and-desist provisions in the Permit, requiring Williamson to automatically cease discharging from Outfall 011 when instream monitoring reveals threshold exceedances of water quality standards for chloride, sulfate, iron (dissolved), copper, or nickel. (R00028). Additionally, Williamson is

required to have a continuous conductivity monitor located within ten (10) feet of the edge of the mixing zone downstream of Outfall 011 to ensure that the chloride concentration stays within the chloride water quality standard. (R00027).

Petitioners complain that the continuous conductivity monitoring will be managed by Williamson and argue that instead Williamson should be required to pay a disinterested third party to conduct the monitoring based on the unsubstantiated implication that Williamson will intentionally fail to accurately report monitoring results. (Petitioners' MSJ at 30-31). Petitioners, however, cite no rule or regulations requiring such a burdensome and costly requirement. They do not even offer a valid reason why additional third-party monitoring is necessary given the extensive monitoring requirements in the Permit. Williamson has no history of misreporting information to IEPA, and the suggestion that it would do so here is completely unfounded speculation. And, in fact, the Permit requires that Williamson make certain data related to this operation 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.

Accordingly, Petitioners have failed to show that there is any deficiency with the monitoring requirements in the Permit. The Administrative Record clearly demonstrates that the Agency complied with 415 ILCS 5/39(a) by modifying the Permit and imposing reasonable conditions through Special Condition 16 to detect and prevent noncompliance with water quality standards. (R00086-R00087).

D. The Agency followed applicable regulations in conducting an analysis of the reasonable potential for violation of water quality standards at Outfall 011

In their Motion for Summary Judgment, Petitioners assert that it is unclear whether IEPA considered the effect of allowing Williamson to discharge RO reject water to the Big Muddy and

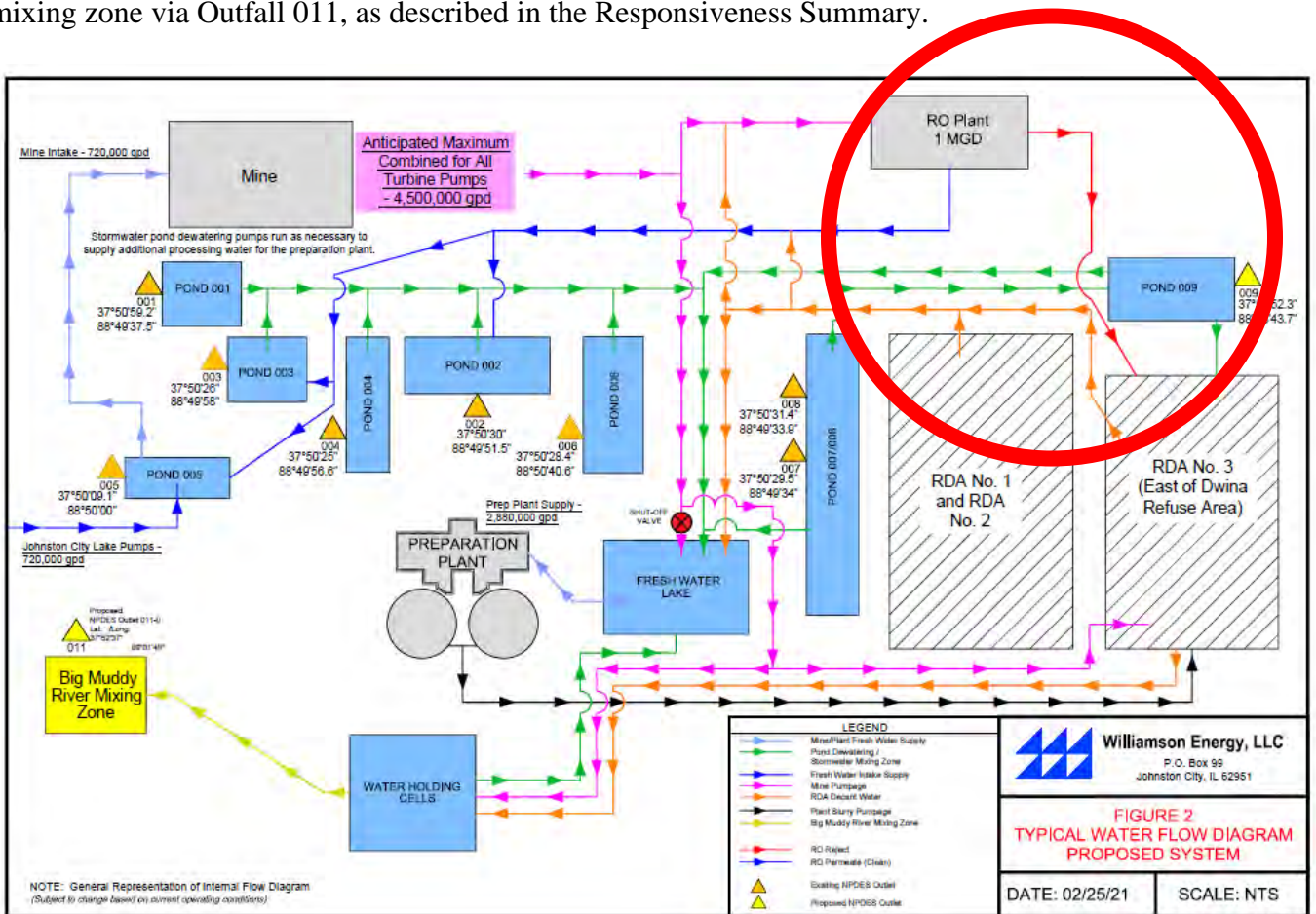
whether the Agency conducted a new reasonable potential analysis to reflect the fact that this reject water was being added to the Outfall 011 discharge. (Petitioners' MSJ at 18, 34). However, the Administrative Record reveals that the Agency followed all the applicable regulations in analyzing Williamson's proposed new discharge to the Big Muddy River and in determining that it would not cause or contribute to violations of water quality standards.

For Outfall 011, the Agency conducted the reasonable potential analysis as required by 35 Ill. Adm. Code 309.141(h)(3). Williamson submitted a mixing zone study to the Agency in November 2016 (R08372-R08453) and submitted updated modeling results and calculations to the Agency in December 2019 and January 2020. (R01656-R01844, R05971-R06154). The Agency reviewed all the sampling data characterizing the Outfall 011 discharge (R00226-R00501, R01240-R01375, R08363); conducted an analysis of the reasonable potential for violation of water quality standards (R21204-R21265); and considered modeling data of the proposed mixing of effluent in the Big Muddy River. (R01656-R01844, R05971-R06154, R08372-R08453).

Based on its reasonable potential analysis for Outfall 011, the Agency determined that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. (R00057). The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. (*Id.*) Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel. (*Id.*) The Agency also modified Special Condition No. 15 of the draft permit to reduce the maximum chloride concentration for Outfall 011 from 12,000 mg/L to 5,000 mg/L. (*Id.*) Because of this reduced

chloride standard in Special Condition No. 15, there is no reasonable potential for discharges from Outfall 011 to violate the water quality standards for chloride.

Based on the data and analyses contained in the Administrative Record, its apparent that the Agency followed all the applicable regulations in conducting a reasonable potential analysis for Outfall 011 discharges. Contrary to Petitioners' suggestion, there is no requirement or reason to conduct a separate reasonable potential analysis on the RO reject water. The RO reject water is not discharging directly through Outfall 011, and instead flows into RDA No. 3 where it will be combined with permeate, then treated in a water holding cell before being discharged into the Big Muddy. (R00047). The embedded water flow diagram is presented as a demonstrative exhibit to illustrate the path that the RO reject water takes before being discharged into the Big Muddy mixing zone via Outfall 011, as described in the Responsiveness Summary.



RDA No. 3 as well as the water holding cell will act as a settling basin to settle out suspended solids and remove turbidity. (R00047). Furthermore, the RO plant does not add any constituents to the water. Thus, there is no need to reanalyze the RO reject water. It will not contain any *new* constituents of concern simply because it went through a membrane process. It is being recombined with permeate and treated in the settling basins before being discharged in compliance with the permit limits and monitoring requirements. Plaintiff has presented no evidence, only incorrect suggestions, that the reasonable potential analysis is incomplete.

Clearly, the Agency considered the effect of allowing Williamson to discharge RO reject water to the Big Muddy and conducted a reasonable potential analysis for Outfall 011 discharges. Petitioners have failed to show that there is any deficiency with the Agency's reasonable potential analysis for Outfall 011.

E. The Record contradicts Petitioners' claim that the Agency failed to adequately consider Alternatives

There is no basis for Petitioners' assertion that the Agency did not seriously consider alternatives for addressing chloride discharges. (Petitioners' MSJ at 35). Williamson's Permit application included assessments of alternatives to the proposed increases in pollutant loading, and, at the request of the Agency, Williamson provided additional information on the proposed alternatives. (R08324-R08337, R08341-R08354, R08790-R08798, R05886-R05894). Those alternatives include the following: discharge to the Big Muddy River; do not mine; reverse osmosis (RO); deep well injection of the mine infiltration water; evaporation; mechanical evaporation; crystallization; cost effective sulfate removal (CESR) process; coagulation (chemical) precipitation; and supervac. (R08324-R08331). The Agency, in compliance with Section 302.105(c)(2)(B)(iii), 35 Ill. Adm. Code 302.105(c)(2)(B)(iii), considered nine alternatives assessed by Williamson. (R05886-R05894, R08324-R08331) (Agency's MSJ at 13). The Agency

determined that a 1.0 MGD RO unit would be required and, based on the information in the Record, concluded deep well injection, evaporation and crystallization were not feasible or practical. (R00087-R00090).

Williamson also provided alternatives for addressing discharges of total suspended solids, total settleable solids, and sedimentation/siltation, including the following: discharge to the Big Muddy River; do not mine; no discharge of stormwater; reducing the number of outfalls; use of alternative control and treatment devices; and alternate treatment technologies including filtration, constructed wetlands, and coagulation (chemical) precipitation. (R08331-R08337). The Agency properly considered the alternatives for addressing total suspended solids/sedimentation during the antidegradation assessment. (R06178-R06182).

In support of their argument, Petitioners incorrectly assert that the costs of the potential alternative options were not truly evaluated and that crystallization was the only alternative for which Williamson provided a cost estimate. (Petitioners' MSJ at 35-36). Petitioners' assertion is factually inaccurate. Williamson provided updated cost estimates each alternative option on December 17, 2019. (R05886-R05894). In this information, Williamson provided a cost estimate for a reverse osmosis plant with a capacity of 3.5 MGD which included a \$15 million of up-front capital investment and approximately \$200,000 per month in operational and maintenance expenses. (R05890). Williamson also included an estimate for deep well injection of the mine infiltration water which amounted to approximately \$39 million in up-front capital investment with an anticipated operation cost of \$0.9 million per year. (R05892). Evaporation was estimated to cost \$30 million with an annual operating budget of \$4.2 million. (R05893). Crystallization was estimated to cost \$65 million in capital cost with an annual operating budget of \$6.7 million. (R05894). The Agency evaluated the supplemental information on alternatives and cost estimates

that Williamson provided on December 17, 2019. (R00087-R00090). Thus, Petitioners are wrong in asserting that the costs of the potential alternative options were not truly evaluated.

Petitioners are also incorrect in asserting that the Agency failed to consider a combination of alternatives. (Petitioners' MSJ at 36). Williamson provided an analysis and cost estimates for a combination of alternatives. (R05886-R05894). For example, Williamson provided an assessment and cost estimates of using RO technology with deep well injection and using RO technology with crystallization. (R05890-R05891). An RO system with deep well injection is estimated to have a capital cost of \$54 million and an annual operating cost of \$3.3 million, and an RO system with crystallization and a solid waste land fill would have a capital cost of \$79 million and an annual operating cost of \$9.10 million. (*Id.*). The Agency considered this information provided by Williamson. (R00087-R00090), and thus Petitioners have no basis for asserting that the Agency failed to consider a combination of alternatives.

F. The Permit does not suffer from serious drafting errors

Petitioners next argue that Special Condition No. 16 contains serious drafting errors that will allow Williamson to freely discharge excessive levels of chlorides and other pollutants into the Big Muddy River. But this argument, again, misconstrues the Permit. These conditions are not a free pass to pollute. Rather, Special Condition 16(c) operates as an automatic "cease and desist" provision, requiring Outfall 011 discharges to immediately cease when the real-time monitoring system reveals levels of chlorides in excess of the limits set forth in that subpart. (R00028). This program is achieved through the computer controlled real-time monitoring system that will shut down all discharges from Outfall 011 in the event discharges exceed certain limits or the flow and volume of the river is either too low or high. (R00511). Likewise, Special Condition 16(b), 16(d) and 16(e) require Williamson to sample for sulfate, nickel, copper and iron (dissolved) three times

per week, and immediately cease discharging when those constituents are in excess of the levels in subparts (d) and (e). (R00028).

Petitioners' argument that the Permit allows violations of the WQS further ignores the Agency's conclusion that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. (R00057). Nonetheless, pursuant to Special Condition 15, all discharges must still comply with water quality standards outside the mixing zone. (R00027-R00028). To the extent this intent is not clear due to any typographical errors in the Permit, Williamson has no objection to IEPA revising these sections by fixing any typographical errors to clarify that intent.

CONCLUSION

For all the reasons stated above and in Williamson's Motion for Summary Judgment, Williamson requests that the Board deny Petitioners' Motion for Summary Judgment on their Petition for Administrative Review.



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CERTIFICATE OF SERVICE

The undersigned hereby 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 4th day of November, 2022 to the following:

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