

IN THE  
**UNITED STATES COURT OF APPEALS  
FOR THE FIFTH CIRCUIT**

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SOUTHWESTERN ELECTRIC POWER COMPANY; UTILITY WATER ACT GROUP; UNION ELECTRIC COMPANY, doing business as Ameren Missouri; WATERKEEPER ALLIANCE, INCORPORATED; ENVIRONMENTAL INTEGRITY PROJECT; SIERRA CLUB; AMERICAN WATER WORKS ASSOCIATION; NATIONAL ASSOCIATION OF WATER COMPANIES; CITY OF SPRINGFIELD, MISSOURI, by and through the Board of Public Utilities; DUKE ENERGY INDIANA, INCORPORATED,

*Petitioners,*

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY; GINA MCCARTHY, in her official capacity as Administrator of the United States Environmental Protection Agency,

*Respondents.*

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On Petition for Review from Final Rule of the  
United States Environmental Protection Agency

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**OPENING BRIEF OF PETITIONERS AMERICAN WATER WORKS  
ASSOCIATION AND NATIONAL ASSOCIATION OF WATER COMPANIES**

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JOHN A. SHEEHAN  
CLARK HILL PLC  
601 Pennsylvania Avenue, Suite 1000  
Washington, D.C. 20004  
(202) 572-8665  
*Counsel for Petitioners American Water Works Association  
and National Association of Water Companies*

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**CERTIFICATE OF INTERESTED PERSONS**

Case No.15-60821 – *Southwestern Electric Power Co., et al. v. United States  
Environmental Protection Agency*

The undersigned counsel of record certifies that the following listed persons and entities as described in the fourth sentence of Rule 28.2.1 have an interest in the outcome of this case. These representations are made in order that the judges of this Court may evaluate possible disqualification or recusal.

Utility Water Act Group, (“UWAG”), an energy utility industry association  
*Petitioner/Intervenor*

Southwestern Electric Power Company (“SWEPCO”),  
*Petitioner*

Union Electric Company (d/b/a Ameren Missouri) (“Ameren”),  
*Petitioner*

Kristy A.N. Bulleit and Harry M. Johnson, III,  
*Counsel for UWAG, SWEPCO, and Ameren*

City of Springfield, Missouri, by and through its Board of Public Utilities (“City  
Utilities”),  
*Petitioner*

Thomas J. Grever,  
*Counsel for City Utilities*

Duke Energy Indiana, Inc.,  
*Petitioner*

Sean M. Sullivan,  
*Counsel for Duke Energy Indiana, Inc.*

Clean Water Action,  
*Intervenor*

Environmental Integrity Project,  
*Petitioner/Intervenor*

Sierra Club,  
*Petitioner/Intervenor*

Waterkeeper Alliance, Inc.,  
*Petitioner/Intervenor*

Thomas J. Cmar, Matthew Gerhart, and Joshua Smith  
*Counsel for Clean Water Action, Environmental Integrity Project,  
Waterkeeper Alliance, Inc., and Sierra Club*

Casey A. Roberts,  
*Counsel for Sierra Club*

American Water Works Association,  
*Petitioner*

National Association of Water Companies,  
*Petitioner*

John A. Sheehan,  
*Counsel for American Water Works Association and National Association of  
Water Companies*

/s/ John A. Sheehan  
John A. Sheehan  
*Attorney of record for American  
Water Works Association and  
National Association of Water  
Companies*

## **STATEMENT REGARDING ORAL ARGUMENT**

Pursuant to Federal Rule of Appellate Procedure 34(a)(1) and Circuit Rule 28.2.3, Petitioners American Water Works Association and National Association of Water Companies, respectfully request oral argument and suggest that oral argument would be beneficial to the Court to better understand the technical issues involved and allow counsel to further explain the record in the case and how it supports Petitioners contentions.

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## **JURISDICTIONAL STATEMENT**

Petitioners the American Water Works Association (“AWWA”) and the National Association of Water Companies (“NAWC”) seek review of certain provisions of the United States Environmental Protection Agency’s (“EPA’s” or the “Agency’s”) final rule promulgating Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category (the “Final Rule”) on November 3, 2015, at 80 Fed. Reg. 67,838. This Court has jurisdiction under section 509(b)(1)(E) of the Clean Water Act, which provides that review of EPA’s actions in approving or promulgating any effluent limitation or other limitation under 33 U.S.C. §§ 1311, 1312, 1316, 1345 may be had by any interested person in the Circuit Court of Appeals of the United States for the Federal Judicial District in which the person resides or transacts business that is directly affected by such action. 33 U.S.C. § 1369(b)(1)(E). A Consolidation Order was issued by the United States Judicial Panel on Multidistrict Litigation on December 8, 2015, and randomly selected the United States Court of Appeal for the Fifth Circuit in which to consolidate several petitions for review of this Final Rule.

## **INTRODUCTION**

Congress passed the Clean Air Act and the Amendments of 1990 to significantly reduce air pollutant emissions from a number of the largest sources of pollutants. One of the largest sources of air pollutant emissions are steam electric power plants. The Act and its amendments have been successful in greatly reducing the aggregate amount of

air emissions of many pollutants as those plants have been required by the Act to install new air pollution control technologies to reduce harmful air emissions. A consequence of this reduction in air emissions, however, has been the transfer of these pollutants to wastewater which poses a significant public health concern when the wastewater is discharged to surface waters.

Realizing the impact of the Clean Air Act amendments on surface waters, EPA recognized the need to update the effluent limitations guidelines (“ELGs”) for the steam electric power generating industry, enacted under the Clean Water Act and last revised in 1982, to address the changes to wastewater discharges caused by the new air pollution control technology. The final rule at issue in the case, “the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category,” 80 Fed. Reg. 67,838 (November 3, 2015), is EPA’s effort to address and reduce the increased discharges of pollutants to surface waters.

While the final rule imposes new limits on a number of toxic metals and other harmful pollutants discharged from plants, EPA also recognized that one effect of the increased surface water discharges was increased levels of bromide in rivers used as drinking water after new air pollution control technology was installed at upstream steam electric power plants. EPA also recognized and acknowledged that with bromide present in drinking water source waters, carcinogenic substances began forming that

created both a public health risk and also led to drinking water utilities experiencing violations of Safe Drinking Water Act Maximum Contaminant Levels.

While the increased levels of bromide in surface waters may not have been EPA's primary focus in this rulemaking and while some of the science on this issue may have been only recently developed, it was arbitrary and capricious for EPA not to address the problem either by requiring the steam electric industry to meet discharge limits consistent with technologies that exist and are effective at removing bromide from the wastewater discharges at steam electric power plants or by considering other binding alternatives. Instead, EPA suggested a "voluntary incentives program" that steam electric power plants could choose to participate in and "recommended" that permitting authorities "collaborate" with drinking water utilities in effort to address the problem.

EPA's failure to require binding, enforceable controls to address this known public health danger was arbitrary and the rulemaking should be remanded without vacatur to the agency to fully consider more protective controls of bromide discharges.

### **STATEMENT OF THE ISSUES**

Whether EPA acted arbitrarily by not requiring more stringent controls on steam electric power plant discharges of bromide to surface waters when, as EPA fully recognized, the discharges create a known cancer risk and a serious public health concern, create exceedances of existing the Safe Drinking Water Act maximum contaminant levels at downstream drinking water systems, and when a demonstrated

technology basis exists for controlling bromide in the waste stream from steam electric power plants but was not selected by the agency.

## **STATEMENT OF THE CASE**

### **A. The Threat to Public Health and Water Quality from Bromide Discharges**

#### **1. Recent Changes Required by Clean Air Act Programs have Led to Increased Bromide Discharges to Surface Waters**

While the electric power industry has made great strides in recent years in reducing air pollutant emissions under Clean Air Act programs, many of the pollutants reduced from coal and oil fired power plants are transferred to the wastewater as the power plants employ technologies to reduce air pollution. 80 Fed. Reg. 67,840. Recent studies have shown that steam electric power plants that have installed a particular technology – flue gas desulphurization (FGD) technology – to control air emissions have created increased levels of bromide discharges to surface waters. 80 Fed. Reg. 67,840; Index.12566.E494.<sup>1</sup> Many of the rivers and streams receiving the increased bromide discharges are source waters for drinking water utilities. Index.12566.5,6; Index.12566.E493,E494,E500.

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<sup>1</sup> The parties conferred about adopting a uniform method to refer to documents listed on the Administrative Record Index, which was filed by EPA on July 8, 2016. The parties agreed that the most accurate and consistent way to refer to information in the Index was to refer to the “row number” on the left-hand side of the electronic version of the Record Index. Thus, the citation “Index.9667.1” refers to the Index, row 9667, page 1. Some of documents cited to by AWWA and NAWC are journal articles and the page numbers also contain letters. For example, a frequently cited article begins on page number E492, so the citation is: “Index.12566.E492.”

EPA acknowledged at the outset of the preamble to this rule that the increased bromide concentrations in receiving streams formed as a result of increases bromide discharges from steam electric power plants has created a threat to drinking water supplies and to public health due to the creation of carcinogenic substances that are formed as a result of the increased bromide discharges. 80 Fed. Reg. 67,840.

Specifically, the increased concentration of bromide results in an increase in carcinogenic disinfection by-products (DBPs), particularly brominated DBPs, being formed at downstream drinking water utilities.<sup>2</sup> Index.12566.E494.

Index.6781.Exhibit.31. These DBPs cannot be removed by conventional water treatment processes used at drinking water plants and advanced treatment technologies must be installed for their removal.

## **2. The Formation of Carcinogenic Disinfection By-Products (DBPs)**

DBPs are formed when natural organic matter and bromide combine with the disinfectants used to meet the regulatory requirements at drinking water utilities. When bromide concentrations in the source water increase, the DBP concentrations resulting from the same concentration of disinfectant also increase. Index.12566.E493. The relative concentrations of the resultant DBPs depend on many characteristics such as the disinfectant used, temperature, pH and other water quality parameters, as well as the

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<sup>2</sup> Bromide is discharged in many of the waste streams from steam electric power plants and is calculated to be in the range of 0.51-6.2 lb./day of bromide per megawatt (MW) of power produced that will be discharged into the receiving streams. Index.12566.E495.

relative concentration of natural organic matter and bromide, both DBP precursors. Bromide combined with ozone creates bromate, a carcinogenic DBP that is regulated under EPA's National Primary Drinking Water Regulations (NPDWRs). 40 C.F.R. § 141.64. When bromide combines with chlorine, other regulated DBPs are also created, such as trihalomethanes (THMs) and haloacetic acids (HAAs).<sup>3</sup> Several other DBPs that are not currently regulated are also created. Studies indicate that exposure to THMs and other DBPs from chlorinated water is associated with human bladder cancer and can affect reproductive and developmental processes and has other adverse health effects after prolonged exposure. Index.9667.5; Index.12378.I-14 to I-17. Brominated THMs are mutagenic and carcinogenic and are among the most prevalent DBPs in chlorinated drinking water. Index.2752.1548-1549.

These THMs are regulated under EPA's NPDWRs as a sum, with Total Trihalomethanes (TTHMs) having a Maximum Contaminant Level (MCL) of 0.080 mg/L based on an annual average due to increased cancer risk and liver, kidney or central nervous system problems from long-term exposure. Index.2801.3. EPA also regulates five of the nine haloacetic acids (HAA5) with a MCL of 0.060 mg/L based on an annual average due to increased cancer risk. 40 C.F.R. § 141.64. If bromide is present in the source water, chlorine will react first with the bromide to produce free bromine. This bromine then reacts with the organic DBP precursors to form brominated

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<sup>3</sup> Trihalomethanes (THMs) are a chemical group consisting of four compounds: chloroform, bromodichloromethane (BDCM), dibromochloromethane (DBCM); and bromoform.

DBPs. Free bromine in drinking water reacts more quickly with organic DBP precursors than free chlorine. This preferential reaction with bromide is significant for three reasons:

- (1) Greater health risks are attributed to brominated DBPs than to chlorinated DBPs. For example, on a molar basis, DBCM is about five times more potent a carcinogen than chloroform. Index.12566.E492,493.
- (2) The TTHM MCLs are mass-based (weight-based), not molar-based, i.e., comparable brominated DBPs weigh more than their chlorinated analogues which may create DBP violations if more brominated DBPs are formed. For example, the molecular weight for bromoform ( $\text{CHBr}_3$ ) is 112 grams/mole versus 58 grams/mole for chloroform ( $\text{CHCl}_3$ ). Thus, if bromine exchanges for chlorine due to an increase in the bromide concentration in the source water, more of the brominated DBPs that are heavier will be produced and create compliance problems with the mass-based (weight-based) MCLs. This is important as a water system in compliance with the TTHM MCLs that are mass-based, may no longer be in compliance if bromide is added to the source water in amounts sufficient to increase the amount of brominated DBPs produced.

Index.12566.E493.

- (3) The formation of brominated DBPs increases as a result of the greater reactivity of bromide, so more DBPs (on a molar basis) will be produced because



the increased reactivity of bromine will mean more oxidation of organics by bromine, as well as bromine substitution reactions. Index.12566.E493.

**B. The Impact of Bromide on Drinking Water Treatment**

Bromide discharges from steam electric power plants create significant issues for downstream water systems, including compliance problems with EPA's NPDWRs for DBPs. 40 C.F.R. § 141.64. There is clear evidence from community drinking water systems in North Carolina, South Carolina and Pennsylvania that steam electric power plant wastewater discharges are elevating bromide levels in surface waters.

Index.9667.1. For example, in a study of drinking water utilities identified as having documented increases in brominated DBPs, one utility experienced increased bromide levels in its source water and increased TTHM levels in 2008 after a wet scrubber was installed to reduce air emissions at an upstream coal-fired power plant.

Index.12566.E500-501; Index.12567.1. This water treatment plant had a quarterly TTHM sample well above the MCL (over 0.100 mg/L versus the MCL of 0.080 mg/L). For this plant, TTHM levels generally doubled and placed the water utility close to being out of compliance with the TTHM MCL.

After the wet scrubber was installed at the upstream power plant, the TTHMs not only increased but the speciation changed (which trihalomethanes make up the total) with the installation of the wet scrubber. Index.12566.E501. Before the wet scrubber was installed in 2008, around 25% of the plant's TTHMs consisted of brominated

compounds. After the installation of the scrubber at the power plant, greater than 80% of the TTHMs consisted of the brominated compounds, creating a significant health risks. Index.12566-E501-502.

At another water treatment plant in southwestern Pennsylvania, a study found the following: “with a source water bromide concentration of 50 µg/L, approximately 62% of the finished water THMs consisted of bromoform, dibromochloromethane (DBCM), and bromodichloromethane (BDCM). Index.12831.E434. However, with a source water bromide concentration of 150 µg/L, approximately eighty-three percent (83%) of the finished water THMs consisted of the brominated species.” The study found a statistically significant relationship between source water bromide concentrations and the percentage of brominated THMs. Index.12831.E434-435.

This shift to brominated species of DBPs as shown in these examples will occur at other water treatment plants located downstream of bromide discharges from steam power plants, as an increase in the bromide concentration in source water for a water treatment plant leads to a greater proportion of brominated THMs being formed. Index.12831.E432. The downstream water treatment plants would then be responsible the design, construction, and operation and maintenance of the additional treatment necessary to comply with EPA’s NPDRWs for DBPs.

**C. Substantial Additional Costs Are Imposed on Drinking Water Utilities Because of the Lack of Required Controls on Bromide Discharges**

In addition to the compliance problems being faced by public water utilities because of the increased bromide discharges from upstream power plants, significant additional costs are imposed on drinking water utilities that would not be incurred if EPA had imposed limits based on available controls on power plants to control their wastewater discharges. Index.9667.1 and 13.; Index.12579.2 The national cost of DBP mitigation associated with bromide discharges from power plants is significant and should have been taken into account in EPA's assessment of the impacts and costs for the final rule. Despite AWWA raising the issue of the significant cost to drinking water systems in its comments on the proposed rule, EPA did not take the costs for DBP mitigation for water treatment plants into account when developing the final rule.<sup>4</sup>

The total number of steam electric power plants that will eventually install FDG technology has been estimated to increase substantially as more power plants, particularly in the eastern United States, move toward the wet scrubber technology. A National Energy Technology Lab Report contains a projected increase in U.S. coal-fired wet FGD capacity. Index.9667.4. In the preamble to the rule, EPA notes that "the record indicates that steam electric power plant FDG wastewater discharges occur near

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<sup>4</sup> AWWA raised the issue of the costs to drinking water utilities in the following instances: (1) "installing such advance treatment will dramatically increase treatment costs and water rates in communities served," Index.9667.13; (2) "there will be a significant cost associated with this change in water quality at the treatment plants," Index.12579.1; (3) "removing the bromide at the drinking water plant is not economically sound," Index.9667.13. Clean Water Action also addressed the issue of EPA's failure to quantify the costs of the rule. Index.6781.Exhibit.31.

more than 100 public drinking water intakes on rivers and other water bodies...” 80 Fed. Reg 67,886. Thus, the number of water treatment plants experiencing DBP related compliance problems will increase significantly due to addressing DBPs in the water supply.

**D. An Appropriate Technology Basis Exists for the Limitation and Control of Bromide Discharges**

EPA evaluated six regulatory options in the final rule to control the increased discharges of pollutants from FGD wastewater from new air control technology. 80 Fed. Reg. 67,848. Index.12840.8.3. The regulatory options are contained in Table VIII-1. 80 Fed. Reg 67,848-49. When viewing the table, the treatment requirements become increasingly stringent for steam power plant discharges as the regulatory option moves from A through F. The most stringent treatment option in the proposal, option F, is for evaporation for the flue gas desulfurization (FGD) which would eliminate discharges of bromide to surface waters and would consequently eliminate the potential impacts to downstream water treatment plants.

Throughout the evaluation of the available technology options in the proposed rule stage, EPA recognized the lack of bromide removal by the treatment technologies used in the other regulatory options. Addressing FDG wastewater, EPA recognized that “physical/chemical treatment is not effective for removing certain metals that contribute to the high concentration of TDS in FGD wastewater (e.g., bromides, boron).” 78 Fed. Reg. 34,460. When physical/chemical treatment was combined with biological

treatment, EPA recognized that “these technologies have not been effective at removing substantial amounts of boron and pollutants such as sodium and bromides that contribute to high concentrations of TDS.” 78 Fed Reg. 34,460.

In the final rule evaluation of options, EPA found that vapor-compression evaporation was effective in removing recalcitrant pollutants (e.g., boron, sodium, bromides, etc.). This option would have alleviated the impacts on downstream water plants and addressed the bromide problem at its source while putting the costs for addressing the problem on the power utilities instead of the water utilities. EPA rejected this option, however, citing high costs as the reason:

[W]hile evaporation systems are effective at removing boron and pollutants that contribute to high concentrations of TDS, EPA decided it would not be appropriate to identify evaporation as the BAT technology basis for FDG wastewater at all steam electric power plants because of the high costs of possible regulatory requirements based on evaporation for discharges of FGD wastewater at existing facilities. 80 Fed. Reg. 67,852.

Instead, EPA, called for a “voluntary incentives program” thus prioritizing costs over public health.<sup>5</sup> 80 Fed. Reg. 67,852, 858-59.

### **SUMMARY OF THE ARGUMENT**

EPA acted arbitrarily by not requiring more stringent controls on steam electric power plant discharges to reduce the known cancer risk and address the compliance problems created for downstream drinking water systems caused by the discharge of

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<sup>5</sup> EPA estimated that the annual costs for the electric power industry would be \$570 million. By not selecting the available evaporation technology as part of the chosen regulatory option, EPA is essentially passing the cost on to the public water utilities.

bromide when an appropriate and effective technology basis existed for controlling bromide in the waste stream. It was arbitrary for EPA not to exercise its responsibility for establishing effluent guidelines by requiring effluent limits based on available technology to protect the public from unacceptable risks to the drinking water supply and instead merely suggest voluntary measures may be adopted. As a result, EPA's decision imposes compliance difficulties and additional costs on downstream water treatment plants instead of on the upstream power plants responsible for the pollution. Accordingly, the Court should remand the issue of requiring control of harmful bromide discharges to the agency without vacating the current rule to fully consider more protective requirements.

### **STATUTORY BACKGROUND**

Congress enacted the Clean Water Act (CWA) in 1972 "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). As part of this mission, the Act declared a national goal that the discharge of pollutants into the navigable waters be eliminated by 1985. 33 U.S.C. § 1251(a)(1). It was designed to achieve this goal through a system of effluent limitations guidelines ("ELGs") and National Pollutant Discharge Elimination System ("NPDES") permits that set technology-based discharge limits for all categories and subcategories of water pollution point sources. The CWA requires

the EPA to identify and categorize all point sources warranting effluent guidelines. 33 U.S.C. §§ 1314(m), 1316(b)(1)(A).

ELGs are the rulemaking device prescribed by the CWA to set national effluent limitations for categories and subcategories of point sources. 33 U.S.C. § 1314(b). An "effluent limitation" is "any restriction established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance." 33 U.S.C. § 1362(11). These limitations are technology-based rather than harm-based; that is, they reflect the capabilities of available pollution control technologies to prevent or limit different discharges rather than the impact that those discharges have on the waters. *See generally E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 130-31, 97 S. Ct. 965, 976-77, 51 L. Ed. 2d 204 (1977); *Am. Petroleum Inst.*, 661 F.2d 340, 343-44 (5<sup>th</sup> Cir. 1981). The CWA prescribes progressively more stringent technological standards that the EPA must use as a guidepost in setting discharge limits for regulated pollutants. 33 U.S.C. § 1311 (b)(1).

Under this scheme, since March 31, 1989, a majority of ELGs have been required to represent the "best available technology economically achievable" ("BAT"). 33 U.S.C. §§ 1311(b)(2), 1314(b)(2). In other words, in promulgating

ELGs the EPA must set discharge limits that reflect the amount of pollutant that would be discharged by a point source employing the best available technology that the EPA determines to be economically feasible across the category or subcategory as a whole. BAT is the CWA's most stringent standard. "Congress intended these limitations to be based on the performance of the single best-performing plant in an industrial field." *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177, 226 (5th Cir. 1989).

The CWA specifies several factors that must be considered by the EPA in determining BAT limits: factors relating to the assessment of best available technology shall take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate . . . . 33 U.S.C. § 1314(b)(2)(B). The EPA nonetheless has discretion in evaluating the relevant factors and determining the weight to be accorded to each in reaching its ultimate BAT determination. *See Natural Resources Defense Council v. EPA*, 863 F.2d 1420, 1426 (9th Cir. 1988).

While an important component of the CWA framework, ELGs are not self-executing. They cannot be enforced against individual dischargers, and individual



dischargers are under no legal obligation to obey the limits set by ELGs. NPDES permits, issued by EPA or an authorized state, are the CWA's implementation mechanism; they are the instrument by which ELGs are made binding on individual dischargers. The CWA makes it unlawful to discharge any pollutant from any point source without an NPDES permit. 33 U.S.C. § 1311(a); *Am. Petroleum Inst. v. EPA*, 787 F.2d 965, 969 (5th Cir. 1986). These permits must generally incorporate, as a technology-based floor, all applicable ELGs promulgated by the EPA for the pertinent point source category or subcategory. 33 U.S.C. § 1342(a)(1).

### **STANDARD OF REVIEW**

The Court's review is governed the Administrative Procedure Act, 5 U.S.C. § 706(2), in which a Court will hold unlawful and set aside agency actions, findings and conclusions found to be arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law. 5 U.S.C. § 706(2). The Fifth Circuit has held that an agency's rulemaking is arbitrary and capricious "if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Tex. Oil & Gas Ass'n v. E.P.A.*, 161 F.3d 923, 933 (5th Cir. 1998) (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins.*

*Co.*, 463 U.S. 29, 43, 103 S. Ct. 2856, 77 L. Ed. 2d 443 (1983)). If the agency’s reasons and policy choices conform to minimal standards of rationality, then its actions are reasonable and must be upheld.” *Tex. Oil & Gas Ass’n*, 161 F.3d at 934. Nonetheless, the reviewing court “may not supply a reasoned basis for the agency’s action that the agency itself has not given.” *Motor Vehicle Mfrs. Ass’n*, 463 U.S. at 43. Although the EPA’s decision is entitled to a presumption of regularity, that presumption should not shield the agency’s action from a “thorough, probing, in-depth review.” *American Petroleum Inst. v. EPA*, 661 F.2d 340, 348 (5<sup>th</sup> Cir. 1981) (quoting *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 415 (1971)). In assessing an agency’s decision, a court must consider “whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment.” *Id.*

## **ARGUMENT**

### **I. EPA Acted Arbitrarily by Failing to Require Technology Based Limits for the Control of Bromide when a Sufficient Technology Basis Existed**

The Clean Water Act establishes a statutory scheme to protect and improve the quality of the country’s waters. *Gulf Restoration Network v. McCarthy*, 783 F.3d 227, 229 (5<sup>th</sup> Cir. 2015). The effluent limitations guidelines (“ELG’s”) approach was designed to protect the public health by setting national effluent limitations which restrict the discharge of harmful pollutants. 33 U.S.C. § 1314(b).

At the very outset of the preamble to this rulemaking, EPA clearly recognized a problem existed. Recent studies had documented the formation of carcinogenic disinfection by-products at drinking water utilities downstream of power plants where FGD wastewater was discharged. 80 Fed. Reg. 67,840; Index.12566.E500-E502. One recent study had analyzed four drinking water systems downstream from power plants using FDG systems and found that bromide was present in the drinking water source waters and carcinogenic by-products had begun forming. 80 Fed. Reg. 67,840; Index.12566.E500-E502.

Even though this problem had only recently been documented, EPA had before it a sufficient technology option to control or eliminate bromide discharges from steam electric power plants. EPA reviewed and considered an available technology – option F, evaporation – that would substantially control or eliminate bromide discharges. However, the Agency did not select this technology option in the final rule, citing the costs to the electric industry:

[W]hile evaporation systems are effective at removing boron and pollutants that contribute to high concentrations of TDS, EPA decided it would not be appropriate to identify evaporation as the BAT technology basis for FDG wastewater at all steam electric power plants because of the high costs of possible regulatory requirements based on evaporation for discharges of FGD wastewater at existing facilities. 80 Fed. Reg. 67,852.

While generally EPA has the discretion to consider costs when deciding which control technology to select to address a pollution control problem, it was arbitrary and

capricious for EPA to use costs as a reason for wholly failing to address a serious public health threat that the agency has recognized, as it did here. It was arbitrary and capricious for the agency to ignore a significant public health risk posed by carcinogenic disinfection by-products and subject water users to unacceptable health risks, and instead call for a “voluntary incentives program.” 80 Fed. Reg. 67,852; Index.12840, section 8-12. That effectively is an abdication of the agency’s authority to act in the public interest to protect the public health. There is no certainty that a voluntary program will be implemented and, consequently, EPA failed to address this problem and failed to protect the public water supply.<sup>6</sup>

Federal courts have held that if an agency has a non-discretionary duty to implement a law and relies on future or voluntary efforts to implement that law, that reliance is speculative and uncertain, and thus arbitrary and capricious. *Defenders of Wildlife v. Jewell*, 68 F. Supp. 3d 193, 209-10 (D.C. Cir. 2014); *see also Oregon Natural Resources Council v. Daley*, 6 F. Supp. 2d 1139, 1154-59 (D. Or. 1998) (National Maritime Fisheries Service delisting a species as threatened under the Endangered Species Act was arbitrary and capricious because the future voluntary measures considered in making the decision were speculative). While in the present case EPA is not carrying out a non-discretionary duty, the same reasoning should apply because the

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<sup>6</sup> Petitioners recognize that there are certainly situations when voluntary controls with incentives by federal or state agencies are a reasonable and appropriate means of reducing pollution and bringing regulated entities into compliance. Here, however, where a public health risk is at stake and the cost implications to the water utilities are substantial, voluntary measures are not appropriate.

agency is acting to protect public health from an identified threat. The standard should be no less rigorous and the reliance on unenforceable voluntary measures to protect the public was arbitrary and capricious.

Moreover, by failing to address and control bromide discharges from steam electric power plants, EPA impermissibly shifted the costs and the responsibility for addressing the pollution problems to downstream water treatment plants.<sup>7</sup> Downstream water treatment plants will now be forced to make their customers pay for the additional capital costs and the operations and maintenance costs for additional treatment to address the threat to the drinking water supply. Appropriate pollution controls should be used at the source of the problem and paid for by the companies that produce and discharge bromide, and not sent downstream to be addressed and paid for by downstream communities.

In short, EPA's decision not to require effluent limits for steam electric power plants based on evaporation technology to control bromide discharges, either in combination with other control options or by itself, was arbitrary and capricious and should be set aside.

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<sup>7</sup> Further demonstrating the arbitrariness of its decision regarding the proper control technology, EPA not only failed to require the cost be borne by the source of the problem – the steam electric power utilities – it failed to review and assess the cost imposed on the drinking water utilities for the design, construction, operation and maintenance of the additional treatment necessary to address the bromide discharge problem.

## **II. EPA Arbitrarily Refused to Require Permitting Authorities to Impose Water Quality Based Bromide Limitations for Steam Electric Power Plant NPDES permits.**

Similar to EPA's arbitrary decision to reject the selection of an effective control technology for bromide discharges and instead suggest a voluntary incentives program in its place, EPA also cast aside an approach to impose a requirement on permitting authorities to establish water quality based effluent limitations on bromide and, this time, stated that "it may be appropriate for permitting authorities to establish water quality based effluent limitations on bromide." 80 Fed. Reg. 67,886. Here, again, even while recognizing the significant threat to the drinking water supply posed by increased bromide discharges, EPA, instead of using its authority to address the problem straight on, "recommends" that permitting authorities "collaborate" with drinking water utilities to address the problem. 80 Fed. Reg. 67,887. This decision is similarly arbitrary because in the face of a significant threat to the drinking water supply, EPA chose not to impose requirements to address the threat and instead recommended collaboration.

Water-quality based effluent limitations are necessary when the technology basis is insufficient to meet the applicable water quality standards. 33 U.S.C. § 1311(b). Water-quality-based effluent limitations are based upon the impact that a discharge has on its receiving waters. The water quality standards established for a particular waterbody serve as the basis for imposing water quality based treatment controls in NPDES permits beyond the technology based levels of treatment required by CWA

301(b). The CWA requires that all NPDES permits include limitations as necessary to comply with water quality standards developed by the states.

EPA recognized in its analysis of whether water quality based effluent limitations were necessary that its regulations require that limitations must control all pollutants or pollutant parameters (either conventional, nonconventional or toxic) which “the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.” 80 Fed. Reg. 67,887; 40 C.F.R. 122.44(d)(1). Recognizing that the presence of bromide in drinking water can result in excursions and exceedances of drinking water MCLs, EPA should have taken the appropriate next step to make it a requirement for NPDES permitting authorities to impose water quality based effluent limitations on point sources discharges of bromides. It was arbitrary and capricious for the agency to fail to do so.

### **III. The Rulemaking Should Be Remanded to EPA Without Vacatur for Further Study and Analysis of the Impact of Bromide Discharges**

“Scientific uncertainty does not allow EPA to avoid responsibility for regulating discharges,” *Massachusetts, et al. v. EPA*, 549 U.S. 497, 534 (2007).

EPA clearly recognized in this lengthy rulemaking process that bromide discharges leading to the formation of DBPs pose a threat to public health.<sup>8</sup> 80 Fed.

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<sup>8</sup> EPA’s NPDWRs for DBPs have been developed through a rigorous scientific process that takes into account the inherent uncertainties in the underlying health effects studies. 40 C.F.R. § 141.64.

Reg. 67,886 (“Studies indicate that exposure to THMs and other DBPs from chlorinated water is associated with human bladder cancer”). While the rulemaking took place over a number of years, some of the more significant studies and research regarding bromide came in the later stages of the rulemaking. The larger focus of the rulemaking was concentrated on controlling other pollutants and evaluating technology options to control those pollutants. Nevertheless, EPA had enough information to select a regulatory option to control bromide at its source – the steam electric power plant discharge point.

Additionally, this rulemaking only addresses mercury removal as a bromide source that could adversely impact water treatment plants. Other sources of bromide, such as natural bromide in the coal, bromides used in solutions sprayed on coal and bromide in algaecides used to control biogrowth in cooling towers, should have been considered by the agency. The cumulative impacts from bromide discharges should be taken into account in developing regulatory requirements for permitting authorities to establish water quality based effluent limitations for steam power plants.

The Court should set aside EPA’s decision as it relates to the control of bromide discharges and order the agency to reconsider the issue. The proper remedy here where EPA has failed to adequately address one aspect of a rulemaking is to remand without vacatur. When a Court invalidates an environmental regulation because it is under protective, but vacating the regulation would result in less protection, then the Court should leave the regulation in place on remand. *See Nat’l Lime Ass’n v. EPA*, 233 f.3D



625, 635 (D.C. Cir. 2000), as amended on denial of reh'g (Feb. 14, 2001) (leaving invalidated regulations in place at petitioner's request, because vacating them would defeat petitioner's purpose of protecting the environment). Here, the majority of the rule puts important protections in place for waters that would otherwise be vulnerable. Because vacating the rule could place these waters in jeopardy, the Court should allow the rule to remain in effect during the remand.

### **CONCLUSION AND PRAYER FOR RELIEF**

In light of EPA's arbitrary decisions related to the control of bromide discharges from steam electric power plants, the Court should remand the rulemaking to the agency without vacating the current rule to fully consider more protective controls of bromide discharges.

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Respectfully submitted,

/s/ John A. Sheehan  
John A. Sheehan  
Clark Hill, PLC  
601 Pennsylvania Avenue  
Suite 1000  
Washington, D.C. 20004  
Ph: 202-572-8665  
[jsheehan@clarkhill.com](mailto:jsheehan@clarkhill.com)

*Counsel for Petitioners American Water  
Works Association and National  
Association of Water Companies*

**CERTIFICATE OF SERVICE**

I hereby certify that on December 5, 2016, I electronically filed the foregoing Opening Brief of Petitioners American Water Works Association and National Association of Water Companies with the Clerk of the Court using the CM/ECF system which will send notification of this filing to the attorneys of record.

December 5, 2016

/s/ John A. Sheehan  
John A. Sheehan

**CERTIFICATE OF COMPLIANCE WITH WORD AND  
FORMATTING REQUIREMENTS**

I certify that the forgoing Opening Brief of Petitioners American Water Works Association and the National Association of Water Companies, filed through the Court's ECF system, is an exact copy of the paper document, 5<sup>th</sup> Cir. R. 25.2.1, does not contain any personal identifiers requiring redaction, 5<sup>th</sup> Cir. R. 25.2.13, and has been scanned for viruses with the most recent version of a commercial virus scanning software and is free of viruses.

I further certify that (1) this brief complies with the type-volume limitations of Fed. R. App. P. 32(a)(7)(B) and complies with the Court's Order dated September 28, 2016 because it contains 5,730 words excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii); and (2) this brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because it has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman 14-pt font.

December 5, 2016

/s/ John A. Sheehan  
John A. Sheehan

